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Total Factor Productivity Growth in Pomegranate Crop of Maharashtra

DB Yadav¹, DJ Sanap², VG Pokharkar³

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Abstract

Looking to the importance and scope of the pomegranate crop in Maharashtra this study has been undertaken to identify the growth in Total Factor Productivity of the Pomegranate crop in Maharashtra. An attempt has been made to study the Total Factor Productivity Growth in Pomegranate crop of Maharashtra. The data on area, production and productivity of pomegranate for Maharashtra and India was collected from the various published sources viz: Director of horticulture, Maharashtra state, Pune, Economic Survey of Maharashtra, National Horticulture Database (NHB) etc.

The information on expenditure on research, extension, salary, contingency etc. was availed from the office record of AICRP on Arid Fruits, Central Campus, MPKV Rahuri. The information on sale of University released Bhagwa variety were taken from the office record of Chief Seed office, MPKV, Rahuri, Seed Council Reports from 2000-2001.

The time series data on costs and returns of pomegranate crop for the year 2000-01 to 2016-17 were collected and compiled from the quick estimate reports of State cost of Cultivation Scheme, Department of Agril. Economics, MPKV, Rahuri. Maharashtra state ranks first in area and production of pomegranate in India contributing 65 to 70 percent of area and production of the country. The production of pomegranate was increased through both area expansion and productivity improvement for the entire period. There is a contribution of technology and input in TFP growth even though the input indices decreasing. Research investment (0.08), N to P ratio (0.66) and area under drip (0.99) have significantly contributed to TFP growth in pomegranate. The contribution of research and rainfall was significant in TFP growth for pomegranate in Maharashtra. Hence the Government should allocate substantial funds to public research in pomegranate for productivity improvement of pomegranate crop.

Keywords: Pomegranate, input index, Output Index, total factor productivity factor share, future prospects.

Introduction

India has diverse and varied agro-climatic conditions i.e. temperate to tropical, which are highly favorable and conducive to the production of horticultural crops. Horticultural crops form an

essential part of the total agricultural produce.

Recently the pomegranate crop has obtained great economic significance in raising the income of even marginal farmers too. That also indicated its sustainability for small holdings for replacing subsistence farming as well as its significance

in alleviating poverty levels of rural areas. Now growers of study region are taking pomegranate crop as livelihood and a good source of earning. The net return from orchards up to ₹ 5 lakh ha⁻¹ annum⁻¹ have been demonstrated by some growers. Overall, this crop has contributed in increasing rural economy and provided a good earning source especially for unemployed rural youths. As well as it revolutionized agricultural economy to a large extent in drier tracts of the district.

This undoubtedly makes it necessary to go into the details of the economical aspects of pomegranate crop grown in the study area. The study of the economics of pomegranate is indispensable since there is no proper farm business data on its cost of production and marketing.

India produces about 50 percent World's production of pomegranate. The area under pomegranate in India was 2.33 lakh hectares and production was 28.44 lakh tonnes with productivity of 12.16 MT/ha during 2017-18. In India, Maharashtra is the leading pomegranate growing state. In Maharashtra, the area under pomegranate was 1.47 lakh ha and production was 17.89 lakh tonnes with productivity of 12.10 tonnes/ha, during 2017-18. (NHB Database, 2017-18). Maharashtra contributes 63 percent area and production of the country.

Looking to the importance and scope of the pomegranate crop in Maharashtra this study has been undertaken to identify the growth in Total Factor Productivity of the Pomegranate crop in Maharashtra.

Methodology

Collection of data

The data on area, production and productivity of pomegranate for Maharashtra and India was collected from the various published sources viz: Director of horticulture, Maharashtra state, Pune, Economic Survey of Maharashtra, National Horticulture Database (NHB) etc.

The information on expenditure on research, extension, salary, contingency etc. was availed from the office record of AICRP on Arid Fruits, Central Campus, MPKV Rahuri. The information on sale of University released Bhagwa variety were taken from the office record of Chief Seed office, MPKV, Rahuri, Seed Council Reports from 2000-2001.

The time series data on costs and returns of pomegranate crop for the year 2000-01 to 2016-17 were collected and compiled from the

quick estimate reports of State cost of Cultivation Scheme, Department of Agril. Economics, MPKV, Rahuri.

Analytical tools

Compound growth rate

The compound growth rates were computed based on time series data on area, production and productivity of pomegranate for Maharashtra and India for study period viz., 2000-01 to 2016-17 using log-linear function.

Compound growth rate was estimated to study the percentage increase or decrease in the selected parameter. The following exponential growth function was used

$$Y = ab^t e$$

Where,

Y = Dependent variable for which growth was estimated

(i.e. area, production and productivity)

a = Intercept or constant

b = Regression/trend coefficient

t = Periods in years (1, 2, 3...n)

e = Error terms with zero mean and constant variance

Log linear production function

The TFP is influenced by research, extension, human capital, intensity of cultivation, application of plant nutrients, infrastructural development and climatic factors. As an input to public investment decisions, it is useful to understand the relative importance of these productivity-enhancing factors in determining productivity growth. In order to assess the determinants of TFP, the TFP index was regressed against the following variables.

$$Y = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} e^u$$

Where,

Y = Total factor productivity index (TFP)

a = Constant term

x₁ = Agricultural research investment (Rs./Ha)

x₂ = Rural Literacy (%)

x₃ = N to P ratio

x₄ = Rainfall(mm)

x₅ = Road density (km per 100 Sq.km)

x₆ = Area under drip (%)

T = Time variable (years 1, 2, 3...n)

u = Error term

(b_1 to b_6) are regression coefficients of respective variables).

Total Factor Productivity approach

Analysis of Total Factor Productivity (TFP)

Total factor productivity concept implies an index of total output per unit of total factor inputs. TFP growth measures the increase in output i.e. not accounted for by the increase in total inputs. Thus total factor productivity index that measure the growth in net output i.e. not accounted for by the growth in basic factor input such as land, labour, capital superior to partial approach as it is composite measure of productivity, which related of output all inputs, simultaneously.

TFP measures the extent of increase in the total output, which is not accounted for by increases in the total inputs. TFP is defined as the ratio of an index of aggregate output to an index of aggregate input. One of the most defensible methods of aggregation in productivity measurement is Divisia aggregation. Divisia indices have two important attractive properties: (i) they satisfy the time reversal and factor reversal tests for index numbers, and (ii) it is a discrete of the components, so that aggregate could be obtained by the aggregation of sub aggregates. For discrete data, the most commonly used approximation to the (continuous) Divisia index is the Tornqvist approximation. The Divisia Tornqvist or translog index of TFP is commonly used for computing the total output, total input and TFP indices by commodity/farm system/sector, etc. under different locations as outlined below.

For the productivity measurement over a long period of time, chaining indexes for successive time periods is preferable. With chain-linking, an index is calculated for two successive periods, t and $t-1$, over the whole period 0 to T (sample from time $t=0$ to $t=T$) and the separate indexes are then multiplied together.

The output index, input index and TFP index are constructed separately for pomegranate crop. To construct output index the time series data (2000–01 to 2015–16) on main product, by product and prices used, where as to construct input index, the time series data with regard to per hectare input use like seeds, manure, chemical fertilizer (NPK), human labour, bullock labour, machine labour, plant protection chemicals, irrigation and prices of inputs are used. Finally the TFP index is computed by dividing output index by input index.

We have specified that the index is equal to 1.00 in a particular year i.e. here we considered 2001–02 as base year and TFP chain index constructed as it provides annual changes in productivity over a period of time.

The Chain base- linking index takes into account the changes in relative values/costs throughout the period of study. This procedure has the advantage that no single period plays a dominant role in determining the share weights and biases are likely to be reduced. The TFP indices computed using the software TFPI version 1.0, which developed by Tim Coelli, Centre for Efficiency and Productivity Analysis, University of Queensland, Australia. Time series data on costs and returns of pomegranate crop for the years 2000–01 collected and compiled from the state cost of cultivation scheme, Department of Agricultural Economics, MPKV, Rahuri. All the data was calculated in real terms by deflating the time series data on investment using the consumer price index with 2001–02 as a base year.

TFP indices computed as follows:

Total output index:

$$(TOI) = TOI_t / TOI_{t-1} = \prod_j (Q_{jt} / Q_{jt-1})^{(R_{jt} + R_{jt-1})/2}$$

Total input index:

$$(TII) = TII_t / TII_{t-1} = \prod_j (X_{jt} / X_{jt-1})^{(S_{jt} + S_{jt-1})/2}$$

Total factor productivity index (TFPI) of t^{th} year is 100 times the ratio of TOI, to the TII, and is given by,

$$TFPI_t = (TOI_t / TII_t) \times 100$$

Input price index is given by,

$$\frac{IPI_t}{IPI_{t-1}} = \prod_j \left[\frac{P_{it}}{P_{it-1}} \right]^{(S_{jt} + S_{jt-1})/2}$$

Where,

R_{jt} = Share of j^{th} output in total revenue

Q_{jt} = Output ' j '

S_{jt} = Share of i^{th} input in total input cost

X_{it} = input ' i '

P_{it} = Price of i^{th} in period t

By specifying TOI $t-1$, TII $t-1$ and IPI $t-1$ equal to 100 in the initial year, the above equation provides the total output, total input, total factor productivity and input price indices for the specified period ' t '.

Results

Table 1: Area, production and productivity of pomegranate in major states and India.
[Area (In '000 Ha) Production (In '000 MT), Productivity (In T/Ha)].

Sr. No.	State	2015-16			2016-17			2017-18		
		Area	Production	Productivity	Area	Production	Productivity	Area	Production	Productivity
1.	Maharashtra	128.40 (65.18)	1480.10 (64.18)	11.53 (98.47)	140.72 (65.13)	1616.50 (61.86)	14.49 (120.05)	147.91 (63.22)	1789.46 (62.91)	12.10 (99.51)
2.	Karnataka	13.20 (6.70)	138.50 (6.01)	10.49 (89.63)	26.58 (12.30)	378.14 (14.47)	14.23 (117.90)	25.97 (11.10)	268.23 (9.43)	10.33 (84.95)
3.	Gujarat	18.54 (9.41)	278.10 (12.06)	15.00 (128.14)	23.18 (10.73)	350.82 (13.43)	15.14 (125.43)	30.51 (13.04)	461.75 (16.23)	15.13 (124.42)
4.	Andhra Pradesh	5.60 (2.84)	56.40 (2.45)	10.07 (86.04)	7.95 (3.68)	119.9 (4.59)	14.99 (124.19)	9.47 (4.05)	139.02 (4.89)	14.69 (120.81)
	Total India	197.00 (100.00)	2306.00 (100.00)	11.71 (100.00)	216.03 (100.00)	2612.82 (100.00)	12.07 (100.00)	233.93 (100.00)	2844.52 (100.00)	12.16 (100.00)

Source: NHB database, 2017-18.

Area, production and productivity of pomegranate in major states and India

The information on area, production and productivity of pomegranate during the year 2015-16 to 2017-18 in major producing states and India is presented in Table 1. It is revealed from the

table that, Maharashtra state ranks first in area and production of pomegranate in India contributing 65 to 70 percent area and 64 to 70 percent production of the country. However, Maharashtra state ranks third in productivity of country. In general Gujarat ranks first in productivity in India. The four major pomegranate producing states of India viz., Maharashtra, Karnataka, Gujarat and Andhra Pradesh contributes more than 90 percent area and production of pomegranate of the country.

Compound Growth rates

The compound growth rates of area, production and productivity of pomegranate during the period 2000-01 to 2016-17 for India and Maharashtra have been estimated and presented in the Table 2.

The time series data on area(A), production(P) and productivity(Y) of Maharashtra and India were divided into two sub periods as period I(2000-01 to 2009-10), period II (2010-11 to 2016-17), and overall period (2000-01 to 2016-17).

It is revealed from the Table that the area, production and productivity of pomegranate have fluctuated widely during the period under study in Maharashtra and India. The growth rates of area and production of pomegranate for state was observed to be positive and highly significant at 1 percent level of significance for the entire period of 16 years. The area and production of pomegranate increased at the rate of 2.91 percent and 6.24 percent per annum respectively, during the entire period. However, the productivity of pomegranate has also increased by 2.35 percent per annum at 5 percent level of significance. It clearly indicates that the production of pomegranate was increased by both area expansion and productivity improvement for the entire period in the state.

The area, productivity and productivity of pomegranate has increased at higher rates during the period II as compared to period I. It may be due to the release of Bhagwa variety (2003-04) and Phule Bhagwa Super variety (2013-14) and introduction of Nation horticultural Mission (NHM) in the year 2005-06. The similar trend was observed at national level. The area and production of pomegranate was increased at the rate of 4.71 and 7.76 percent and highly significant at 1 percent level of significance for entire period in the country. The production of pomegranate has also increased at the rate of 2.91 percent per annum at 5 percent level of significance in the country. It indicates that the production of pomegranate has increased by both area expansion and productivity improvement in the country.

Table 2: Annual compound Growth rates of area, production and productivity of pomegranate in Maharashtra and India.

Period	Maharashtra			India		
	A	P	Y	A	P	Y
Period-I (2000-01 to 2009-10)	2.95***	2.99***	0.02	4.03***	5.07***	0.99*
Period-II (2010-11 to 2016-17)	11.35***	27.98***	14.99***	5.07***	27.16***	17.11***
Overall (2000-01 to 2016-17)	2.91***	6.24***	2.35**	4.71***	7.76***	2.91**

*, ** and *** indicate significance at 10, 5 and 1 % level.

Table 3: Input, Output, TFP index and Share of input and TFP in output of pomegranate.

Year	Input index	Output index	TFP index	Input share	TFP Share	Total
2001-02	1.00	1.00	1.00	99.94	0.06	100.00
2002-03	0.88	1.20	1.36	73.26	26.74	100.00
2003-04	0.90	1.22	1.35	73.77	26.23	100.00
2004-05	0.98	0.99	1.00	98.99	1.01	100.00
2005-06	0.72	1.03	1.45	69.17	30.83	100.00
2006-07	0.91	1.23	1.35	74.31	25.69	100.00
2007-08	0.78	1.56	2.01	49.82	50.18	100.00
2008-09	0.95	1.38	1.45	68.94	31.06	100.00
2009-10	0.42	1.56	3.71	26.94	73.06	100.00
2010-11	0.69	0.97	1.40	71.23	28.77	100.00
2011-12	0.57	1.00	1.76	56.68	43.32	100.00
2012-13	0.86	1.65	1.92	52.04	47.96	100.00
2013-14	0.66	1.21	1.83	54.75	45.25	100.00
2014-15	0.74	1.76	2.37	42.24	57.76	100.00
2015-16	0.72	1.38	1.92	52.17	47.83	100.00
Mean	0.78	1.28	1.75	63.70	36.30	100.00
CGR (%)	-2.56	2.16	4.86			

Total factor productivity growth and its share in pomegranate

The output, input and TFP indices of pomegranate fruit crop are presented in Table 3.

From the Table 3 it is observed that the TFP for pomegranate increased from 1.36 in 2002-03 to 1.92 in 2015-16. The highest TFP index was observed in 2009-10 (3.71). The average TFP index for 15 years was 1.75.

The output index of pomegranate increased from 1.20 in 2002-03 to 1.38 in 2015-16. The output growth fell to increase in 2010-11 and reached the lowest (0.97). It may be due to severe drought conditions and incidence of oily spot disease in Maharashtra. The highest output index was

observed in 2014-15 (1.76). The average output index for fourteen years was 1.28. In the case of input index, there were heavy fluctuations, decreasing from 0.98 in 2004-05 to 0.42 in 2009-10. The average input index of pomegranate for fourteen years was 0.78. Total factor productivity measures the efficiency of all the inputs to a production process. Increase in TFP results usually from technological innovations or improvements. TFP is the output per unit of non-input. Pomegranate is a high value crop. Hence, farmers always give attention towards the input use. In Table 3, it is noted that TFP is increasing indicating that technology plays a significant role in pomegranate. TFP increasing at the rate of 4.86 percent per annum. Share of input calculated by dividing input index to output index.

When we subtract input share from m 100 it gives TFP share. The average share of input in output estimated to be 63.70 percent and TFP share in total output was 36.30 percent.

Sources of Total Factor Productivity (TFP) growth in pomegranate

The growth rate in TFP was analyzed to quantify the contributions of various factors to TFP growth such as research expenditure, rural literacy, rainfall, road density, N to P ratio, net irrigated area etc. (Table 4).

Table 4: Estimated parameters of TFP for pomegranate for the period 2000-01 to 2015-16.

Variables	Coefficients	Standard Error
Intercept (a)	0.43	13.13
Research Investment(x_1) (Rs./ha)	0.08**	0.03
Rural literacy (x_2) (%)	0.84	4.60
N to P ratio (x_3)	0.66***	0.20
Rainfall (x_4) (mm)	0.06	0.55
Road Density (x_5) (km per 100 sq. km)	1.05	1.90
Area under drip (x_6) (%)	0.99*	0.51
R ²	0.64	
F value	5.49**	
N (No. of observations)	15	

*, ** and *** indicate significance at 10, 5 and 1% level.

The results indicate that research investment (0.08), N to P ratio (0.66) and area under drip (0.99) have significantly contributed to TFP growth in pomegranate. The ratio of nitrogen to phosphorous nutrient (0.66) was taken as proxy for the balance use of fertilizers. This coefficient was highly significant indicating that if farmers used correct N to P ratio, the output will be increased. Road density (1.05) was taken as a proxy for rural infrastructure. It is also non-significant but positive. The estimated R² value was 0.64 indicating that 64 percent of variation in TFP explained by the factors included in the model. The F value was significant at 5 percent level indicating good fit of the model.

Conclusions

1. Maharashtra state ranks first in area and production of pomegranate in India contributing 65 to 70 percent of area and production of the country.
2. The production of *pomegranate* was increased through both area expansion and productivity improvement for the entire period.
3. There is a contribution of technology and input in TFP growth even though the input indices decreasing.
4. The contribution of research and rainfall was significant in TFP growth for pomegranate in Maharashtra. Hence the Government should allocate substantial funds to public research in pomegranate for productivity improvement of pomegranate crop.

References

1. Anonymous, (2015-16) Report published by National Horticultural Board, Ministry of Agriculture, Government of India, New Delhi (ON941).
2. Boehlje MD, and Eidman VR. Farm Management: An overview of farm business analysis. *American Journal of Agricultural Economics* 1985;67(2):446-47.
3. Kumar K, Nandia BS, and Prakash TN. Economic impact of Aerobic rice technology in Karnataka. *Indian Journal of Agricultural Economics* 2011;47(3):451-57.
4. National Horticultural Board. (2017-18). Annual report. National Horticultural Board, Ministry of Agriculture, Government of India, New Delhi (ON941).
5. Patil AV, and Karale AR. Pomegranate. In TK Kose and SK Mitra (Eds.) *Fruits: Tropical and Subtropical*. Calcutta: Naya Prokash 1990;614-31.
6. Suresh K, and Chandrakant MG. Total factor productivity and returns to investments in Ragi (Finger millets) crop research in Karnataka state, India. *Indian Journal of Economics and Development*. 2015;3(3): 199-205.

Service Sector Impact on Economic Growth of Bihar: An Econometric Investigation

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Abstract

The objective of this study is to examine the service sector impacts on economic growth of Bihar, since it plays an important role in contributing in Bihar's GSDP. At the all India Level, services share has increased at a greater rate than industry after 2003-05 while in Bihar, services through have easily increased at a greater rate than agriculture. The economy of Bihar is largely service oriented, but it also has a significant agricultural base. This study discusses the nature of growth of services in Bihar and compare with the overall India level. This study also look into the sectoral contribution of services in Bihar and other important feature of the services led growth in the state. India has experience rapid change in the growth of service sector since 1990-91, to become the economy's leading sector, during the same period services in Bihar have too up grown. The study also find that there are variations in growth and performance of different sub-sectors of services. While the main contributors to services growth in India are transportation, trade, hotel and communication, the main contributors in Bihar are hotels, trades, and restaurants. After the economic reforms of the 1990s, the share of all the services subsectors in GDP has increased. The share of financing, trade and transport sectors in total services sector has increased while that of community, social and personal services has declined.

Keywords: Service Sector; Gross State Domestic Product (GSDP); Bihar

Introduction

India is a developing country, and its growth is depending upon the service sector at the present era. In other word we can say that Indian economy is services led growth. According to the development economics, development is a three stage process of any economy. There is primary sector (agriculture sector), secondary sector (industrial sector), and tertiary sector (service sector), if these three sector are developed in a sequencing form, so that economy is known as the matured or developed economy, because the developed nation has

followed the same trend of growth. But in context of India there is only two sector growth, because after the agriculture, service sector growth is higher than the industrial sector, this sector is accelerated during the liberalisation phase (after 1980). This service sector growth process is common in all the state but there determinant and nature is different.⁶

Above mentioned the growth trend for Indian economy is same for the Bihar's economy, because in Bihar the contribution by the Industries is stagnant and its rate of growth also. The contribution of services sector in Bihar GDP is higher than the other sector which is 58.8 per cent where the other

sector's contribution are primary 22.0 per cent and, secondary 19.2 per cent (2014-15) and its growth rate is also higher among the state which is 17.3 per cent (2013-14) according to the Economic Survey of India¹¹.

Service sector:

Those who are provided the services range from president to sweeper, and sophisticated IT or BPO sector to a simple vegetable street vender or barber all are under the service sector.

There are four types of service employment:-

1. Personal services are those services which are for consumers own purposes, like - entertainment, repairs, eating and drinking.
2. Social services are those services which are for society or social welfare, like - medical, education, government.
3. Producer services are those services which are related to banking legal services, communication, accounting, and other business services.
4. Distributive services are those services which are related to whole sale trade, retail trade, transportation.

The following are the examples of activities can be considered to be the part of service sector:

- Trade
- Hotels and restaurants
- Transport including tourist assistance activities as well as activities of travel agencies and tour operators
- Storage and communication
- Banking and insurance
- Real estate and ownership of dwellings
- Business services including accounting; software development; data processing services; business and management consultancy; architectural, engineering and other technical consultancy; advertisement and other business services
- Public administration and defence
- Other services including education, medical and health, religious and other community services, legal services, recreation and entertainment services
- Personal services and activities of extra-territorial organisations and bodies.⁷

Objective of the study

1. This would be examine the factors of services sector growth in Bihar.
2. This would examine the Sectoral contribution of services in Bihar.
3. The study also find that there are variations in growth and performance of different sub-sectors of services.

Justification of the study

Service sector of Bihar is contributing higher share of GSDP, and higher employment also, so our purpose is to verify the reason behind the growth or obstacle of this sector, which may help to generating more employment and GSDP growth.

Review of the literatures

It is hard to find a theoretical frame work of the growth of service sector in macroeconomic context on the country.⁶ It is well known since Alfred Marshall's time that both goods and services satisfy the wants of the consumers and therefore should be included in the estimation of National product.¹ But in context of India the service sector growth accelerated after liberalisation during the period 1980-90s. This led to agriculture based economy to a knowledge based economy.⁷ These things were also found by Ashok Kotwal, Bharat Ramaswami and William Wadhawa in their paper (Economic liberalisation and Indian Economic growth: what's the evidence?), according to them India's was one of the most protected and heavily regulated economies in the world at the end of the 1970s to 1980s. They found that the decade of the 1970s, the variance in GDP growth rate was 15.8 per cent. It came down to 4.6 per cent in the 1980s. After that in 1990s the Indian economy faced reforms in all sectors, this reform's main purpose was opening up the economy which led to more private and foreign trade and investment. Where, the period (1980-2000) have played important role for Indian economy development, especially for Service sector. During the period (1980-2004), the Indian Economy growth was relatively same as 'Asian Model'. But this 'Asian Model' is based on Industrial Growth, private and foreign investment and export of manufactured product, but still India's economy was not as developed as to export. During this phase Indian economy was experiencing different type of development which is services led growth rather than manufacturing, due to liberalisation, import was easy so that technology import, better intermediate inputs was able to increase the productivity in industry

and service sector, which led to attract the labour force from agriculture to industry and services sector. This spill-over effect was good for Indian labour market, because this labour demand was able to increase the wages, both sectors (organised and unorganised). In organised sector due to new technology the demand for skilled worker was high and their wage was also high, and at the same time unskilled worker in organised sector, through the collective bargaining power their wages was also increased. Whereas unorganised sector was able to absorbed direct benefit. They describe it through

the example first a small unit of benefit due the improved communication such as cell phones. Second cheaper products of the organized sector is increase the income of the unorganised sector due to this they are able to consume more of these products and services. This demand for goods and services also depend upon the price of the relative goods and services. This paper is also trying to find the effect upon the goods and services due to economic reform during the period 1991.²³ Whereas firstly tariff barriers on import –which shows by this table-2.1

Table:2.1: Per cent of Manufactured imports subject to nontariff barriers

Industry group	1980-85	1986-90	1991-95	1996-2000
Intermediate inputs	98	98	42	28
Capital goods	95	77	20	8
Consumer goods	99	88	46	33

Source: Das (2007)

The import duties were higher among the world about 200 per cent is common (cited in Ahluwalia 1999) this table shows that effect rates of protection for the period 1980-2000. Whereas the non- tariff barriers worked through import licences that automatically restrict the amount of goods and services. Second, restriction on both the domestic and foreign private sector–this restriction is prohibited to FDI (foreign direct investment) in many sector of the economy; this is about 40 per cent. Third, state control of banking and insurance–fourteen leading private banks were nationalized in 1969 and six more in 1980. This initiative is taken by the government for expansion of the banking network especially in the rural areas. Fourth, public sector monopolies–eighteen most important heavy industries in the pre-1991 reserved as for public sector enterprises including telecommunications and its equipment, iron and steel industries, mineral oils, air transport services, electricity generation and distribution and mining. Another reason behind the growth of service sector is openness of the economy because the demand for services in closed economy is a function of the output generated in the commodity producing sectors of agriculture and industry only. Whereas in an open economy, domestic services can expand either directly through external demand for specific services or indirectly through external demand for specific services or through the remittances from emigrant labour which is helpful for boosting in the economy. This is also true for the Indian state.⁶

Gaurav Nayyar cited in his book “the service sector in India’s development”, according to Fisher (1935), Clark (1940), Chenery (1960), and Kuznets

(1971), they suggest that in the early phase of economic development, the share of agriculture in both output and employment is overwhelmingly large. Subsequently, the industrialization precedes the share of agricultural sector falls, with the decline being greater in output than in employment. At the same time the share of industrial sector rises. Once countries have industrialised and reached an advance stage of economic development, the share of industry declines while the share of the services sector increases. In Gaurav Nayyar’s words “This literature shows the pattern of structural change to the income elasticity of demand–which for industrial goods is higher than for agricultural goods, whereas that for services is even higher than that for industrial goods. With rising level of income, the demand for agricultural goods will increase at a proportionally lower rate than income because the income elasticity of demand for agricultural goods is less than one, which means they are ‘necessities’. On the other hand demand for industrial goods will grow at a proportionately higher rate than income as the income elasticity of demand for industrial goods is greater than one. This leads to the growth of the industrial sector. However, an economy reaches a sufficiently high level of income, the rate of increases in demand for services increases sharply as the services have a higher income elasticity of demand than the industrial goods”.

He found that “factors underlying the demand side of services are that for the economic growth government final consumption is not only significant variable, there is also much of the private sector which is contributing in the expansion of service

sector over the last two decades. But the growth of India's services exports does although the overall size of this effect is still relatively small, being concentrated in the business services segment. Above lines suggest that exports of software, business process outsourcing, communication and financial services must continue to be encouraged. And on the supply side, privatization and greater deregulation induced growth in sectors—such as communication services—that were state monopolies in the pre-reform period. This implies that the liberalization of sectors such as retail trade and education and health services is likely to enable producers to meet growing domestic household demand. According to him, the availability of the huge skilled labour is one of the reasons behind the growth of certain skill-intensive services, later its positive impact on export of the business services. In contrast, according to data at the macro-economic level, the high income elasticity of households final demand for services appear to have a significant impact on the growth of India's services sector.¹⁸

(Cited in Rakshit, 2007) shows that private consumption is by far the largest component of final demand for both goods and services, similarly, (Cited in Eichengreen and Gupta, 2010) they conclude that growth of private final demand for output accounted half growth of the services-sector output since 1991. The other half is divided between outsourcing and exports by the industrial sector, unfortunately, National Accounts do not show the final data of private final consumption expenditure of goods and services (Cited in Geordon and Gupta, 2004), This is true, at the all India level it is hard to find the relation between house holds final demand on services growth.⁹ Arpita Mukharjee found in their paper "service sector in India, 2013, which the share of services sector in India's total trade is higher than the global average and, India is under top ten WTO member's countries which has accounted higher trade of services in terms of both export and import. Still India does not have a policy related to service sector growth. In present era there is need to work on it because India's services sector growth and export both are lower than that of competitive countries, like-PRC. There is a huge difference in growth of different type of service, there is dominancy of some services, India is unable to access of some basic services such as education and medical facility, there is huge population (poor people) who cannot access these services.¹⁶

Analysis of Service sector Growth

Introduction

The service sector is the largest and fastest growing sector in India, contributing significantly to GDP, GDP growth, employment, trade and investment. The services sector has in recent decades been performing much better than agriculture and industry in India and in many other developing countries as well. At the all India level, services share has increased at a greater rate than industry after 2003-05 while in Bihar, services though have easily increased at a greater rate than agriculture. The increase in the share of services has been accompanied by the rapid decline in agriculture the economy of Bihar is largely service-oriented, but it also has a significant agricultural base.²⁰

This paper discusses the nature of growth of Services in Bihar and, compares the growth of GDP and Services in Bihar with the overall India level. This study also looks into the sectoral contribution of services in Bihar and other important features of the Services led growth in the state. India has experienced a rapid change in the growth of services sector contributed 55% of India's real gross domestic product (GDP) at factor cost, having grown annually at 8% since 1990-91, to become the economy's leading sector [Nagraj 2009]. During the same period services in Bihar too have grown at the rate of 5.12% where Industry and Agriculture grew at 1.31 and 4.35 percent respectively.¹⁰

The objective of this chapter is to examine the performances of Indian services sector, focusing on its contribution to GDP growth and states' domestic product, and makes comparison. This paper also examine the performance of different sub-sectors of service sector, such as trade, hotels and restaurants, tourism, shipping and port services, telecommunications related, storage, transportation, real estate, information technology(IT) and IT enabled services (ITes), accounting and auditing services, research and development (R&D).

There are variations in growth and performance of different sub sectors of services. Business services (including IT), communications and trade have grown faster than the overall services sector growth in India. Others such as real estate, legal services, transport, storage and personal administration and defence services have grown at the same rate as the overall services sector growth (see Gordon and Gupta 2003). This chapter shows that the share of different sub-sectors of services in the GDP. After the economic reforms of the 1990s, the share of

all the services subsectors in GDP has increased. The share of financing, trade and transport sectors in total services sector has increased while that of community, social and personal services has declined.⁹

Sectoral Growth of Service Sector in India

Table – 3.1 shows that the share of services sector which includes ‘construction’, ‘Trade, Hotels, Transportation & Communication’, ‘Financial, Insurance, Real Estate & Business Services’,

Table 3.1: Sectoral growth of Services Sector at Constant prices (at Factor Cost) (Rs. Crore).

Year	Construction	Trade, Hotels, Transportation and communication	Financial, Insurance, Real Estate, and Business Services	Community, Social and Personal Services	Total
1990-91	951.84 (14.23)	2377.36 (35.55)	1551.65 (23.20)	1805.64 (27.00)	6686.49 (100)
1991-92	971.44 (13.92)	2431.78 (34.86)	1719.56 (24.65)	1852.32 (26.55)	6975.1 (100)
1992-93	1005.26 (13.67)	2568.97 (34.94)	1813.2 (24.66)	1963.32 (26.70)	7350.75 (100)
1993-94	1010.99 (12.92)	2746.82 (35.10)	2015.68 (25.76)	2051.01 (26.21)	7824.49 (100)
1994-95	1065.39 (12.87)	3019.97 (36.48)	2094.01 (25.29)	2097.42 (25.34)	8276.79 (100)
1995-96	1129.11 (12.44)	3425.36 (37.76)	2263.48 (24.95)	2251.57 (24.82)	9069.51 (100)
1996-97	1150.27 (11.87)	3702 (38.20)	2403.54 (24.80)	2432.88 (25.11)	9688.7 (100)
1997-98	1270.73 (12.02)	3981.09 (37.65)	2684.95 (25.39)	2634.86 (24.92)	10571.63 (100)
1998-99	1350.48 (11.82)	4286.13 (37.52)	2894.4 (25.34)	2890.85 (25.30)	11421.86 (100)
1999-00	1463.8 (11.56)	4760.88 (37.59)	3149.9 (24.87)	3287.71 (25.96)	12662.3 (100)
2000-01	1553.78 (11.63)	5067.42 (37.94)	3292.71 (24.65)	3439.63 (25.75)	13353.55 (100)
2001-02	1615.74 (11.35)	5503.83 (38.68)	3527.92 (24.79)	3579.84 (25.16)	14227.32 (100)
2002-03	1749.59 (11.48)	5969.06 (39.16)	3800.81 (24.93)	3720.48 (24.41)	15239.95 (100)
2003-04	1967.08 (11.88)	6634.32 (40.09)	4022.43 (24.31)	3921.21 (23.70)	16545.05 (100)
2004-05	2288.55 (12.67)	7277.2 (40.31)	4371.74 (24.21)	4113.61 (22.78)	18051.1 (100)
2005-06	2581.29 (12.86)	8154.07 (40.64)	4923.4 (24.53)	4404.26 (21.95)	20063.02 (100)
2006-07	2848.06 (12.89)	9100.84 (41.20)	5610.63 (25.40)	4528.23 (20.50)	22087.76 (100)
2007-08	3154.95 (12.94)	10095.2 (41.42)	6281.24 (25.77)	4839.17 (19.85)	24370.56 (100)
2008-09	3323.29 (12.46)	10851.25 (40.70)	7036.29 (26.39)	5444.97 (20.42)	26655.8 (100)
2009-10	3544.36 (12.08)	11978.91 (40.84)	7719.05 (26.32)	6083.69 (20.74)	29326.01 (100)
2010-11	3747.08 (11.70)	13440.24 (41.97)	8491.89 (26.51)	6341.67 (19.80)	32020.88 (100)
2011-12	4151.87 (12.11)	14022.61 (40.90)	9455.34 (27.58)	6652.47 (19.40)	34282.29 (100)
2012-13	4197.95 (11.52)	14733.53 (40.44)	10487.48 (28.79)	7005.79 (19.23)	36424.75 (100)
2013-14	4266.64 (11.03)	15178.26 (39.24)	11837.13 (30.60)	7394.77 (19.11)	38676.81 (100)

Source: Author's Calculations from RBI (handbook of statistics on Indian Economy).

'Community, Social & personal Services' in GDP improved from Rs. 13478.89 crore, in 1990-91 to Rs. 23484.81 crore in 2000-01 and further increase to about Rs. 57417.91 crore in 2013-14. The share of construction declined from 14.23 per cent in 1990-1991 to 11.63 per cent 2000-01, thereafter it increasing at some time but not reach the previous higher level (14.23 in 1990-91) and gone the lowest level of 11.03 in 2013-14. This sector's contribution in the service sector is lowest. its growth trend is also steady between 10 to 15 per cent. The share of Trade, Hotels, Transportation & communication was 35.55 per cent in 1990-91 and reached at a maximum of 41.97 in 2010-11, thereafter it declined at 39.24 in 2013-14. The share of 'financing Insurance, Real Estate and Business Services' has been increasing from 23.20 per cent in 1990-91 to 25.76 per cent 1993-94. Thereafter it started decreasing, and in 2007-08 it started increasing continuously and reached at the higher point 30.60 per cent in 2013-14. The share of 'Community, social and personal services' has been 27.00 per cent in 1990-91, which is highest point of this sub sector but after that it has been decreasing continuously, it was increased in 2008-10 at 20.74 per cent. Thereafter it has declined and reached its minimum level at 19.11 per cent in 2013-14.

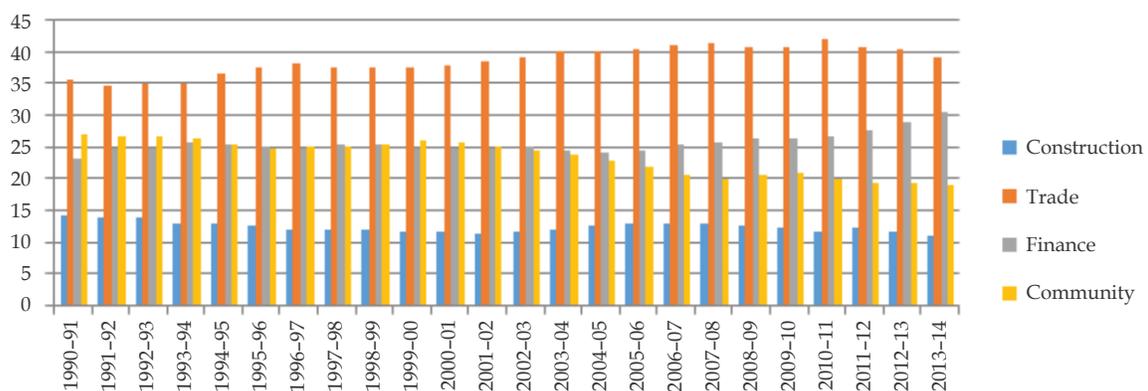
Here, in graph:- 3.1 we have taken the data from the year 1991 to 2014, percentage of each sector like-construction, trade, hotels, transport & communication, financing, insurance, real estate & business services, community, social & personal services (at constant price), has been analysed in the above figure. Through the graph, we can see that, the growth rate of construction, trade, hotel, and other sectors contribution are high in service sector.

First, growth trend of Trade, Hotels, Transport and communication has contributed better in service sector rather than other sectors; we can see that this

sector growth is higher during the period 2003-04 to 2012-13, during these periods it is about 40 to 42 per cent. Before and after this period its growth has declined. But one thing is good about this sector is that; its contribution is always higher in the service sector. Second, community, social, & personal services, its contribution in service sector is second lowest, in the earlier phase 1991 to 2001 its growth trend was good, it was about more than 25 per cent or 25 per cent, but after 2001 it has diminished rapidly and reached its lowest level about less than 20 per cent. Third, Financing Insurance, Real Estate & Business Services, and this sector has recorded tremendous growth after 2005, and its contribution is second highest in service sector. It is about 25 per cent from the period 1990-91 to 2005-06 and after that, it is increasing and reached its higher level about 30 per cent. Fourth, construction sector, its growth trend is steady, between 10 to 15 per cent and its contribution is lowest among the all sectors.

Now, I am going to discussing about the trend growth of Bihar's services sector below the table 3.2 it shows that sub sector's percentage share in services sector of Bihar, which is calculated by the Economic Survey of Bihar 2014-1510.

The table 3.2: shows that the percentage share of sub sector in services sector of Bihar. Through the table we can see that higher contribution in services sector by Trade/Hotel/Restaurant, 28 per cent in 1999-00 and 40 per cent in 2012-13. The growth rate of Trade/Hotel/Restaurant is increases with increasing rate over the period (1999-2013). The second higher contribution of Other Services, in 1999-00 the percentage was 29 per cent and in 2012-13, it has 20 per cent. The growth rate of Other Services is increasing with decreasing rate. Third highest contribution in the services sector is Transport/Storage & Communication this was accounted 12 per cent in 1999-00 and, in 2012-13 it



Graph: 3.1: Sector wise percentage share of service sector in India.

Source: Author's Calculations.

is also 12 per cent. Its maximum growth is 14 per cent in 2010-11. Its growth is increasing at steadily over the period (1999-2013). Fourth one is Public

Administration its percentage was 13 per cent in 1999-00 and 9 per cent in 2012-13. It increases at the decreasing rate. Table 3.2 According to the

Table 3.2: Sector Wise Percentage Share of Services Sector of Bihar. (Rs. Crore and in percentage).

Year	Transport, Storage and Communication	Banking and insurance	Real Estate, ownership of dwellings and business	public administration	other services	Trade/ Hotel/ Restaurant	Total
1999-2000	3936 (12.555)	1940 (6.188)	3211 (10.242)	4282 (13.659)	9134 (29.136)	8847 (28.221)	31349 (100)
2000-2001	4285 (12.570)	2148 (6.301)	3385 (9.9304)	4661 (13.673)	9400 (27.576)	10207 (29.944)	34087 (100)
2001-2002	4285 (11.890)	2638 (7.320)	3530 (9.795)	5036 (13.974)	9369 (25.997)	11180 (31.022)	36038 (100)
2002-2003	4586 (12.103)	2524 (6.661)	3676 (9.701)	4342 (11.459)	9439 (24.911)	13324 (35.165)	37890 (100)
2003-2004	4293 (11.085)	2448 (6.321)	3843 (9.923)	4925 (12.716)	9818 (25.351)	13402 (34.605)	38728 (100)
2004-2005	4612 (10.840)	2586 (6.078)	4041 (9.498)	5179 (12.712)	9842 (23.133)	16286 (38.279)	42545 (100)
2005-2006	5105 (11.867)	2941 (6.836)	4403 (10.235)	5107 (11.872)	10598 (24.637)	14862 (34.549)	43016 (100)
2006-2007	5776 (11.992)	3513 (7.293)	4819 (10.005)	5153 (10.698)	10873 (22.574)	18030 (37.434)	48164 (100)
2007-2008	6322 (12.049)	3915 (7.461)	5270 (10.044)	5284 (10.078)	11183 (21.314)	20493 (39.058)	52467 (100)
2008-2009	6957 (11.838)	4205 (7.155)	5788 (9.849)	6525 (11.103)	12058 (20.518)	23233 (39.534)	58766 (100)
2009-2010	8738 (13.255)	5266 (7.988)	6343 (9.622)	6872 (10.424)	13294 (20.166)	25408 (38.543)	65921 (100)
2010-2011	10512 (14.475)	6304 (8.681)	6834 (9.411)	7492 (10.317)	13530 (18.632)	27944 (38.481)	72617 (100)
2011-2012	11240 (13.922)	7495 (9.283)	7486 (9.272)	7691 (9.526)	14754 (18.275)	32065 (39.717)	80732 (100)
2012-2013	12093 (12.817)	8726 (9.248)	8235 (8.728)	8606 (9.121)	18921 (20.053)	37769 (40.030)	94351 (100)

Source: Author's calculation (economic survey of Bihar 2014-15).



Graph 3.2: Growth trend of the Trade/Hotel/Restaurant (in percentage).

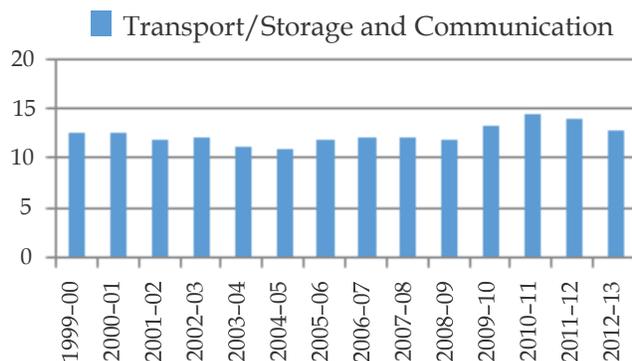
Source: Author's calculation.

above table in 1999-00, the share of Trade/Hotel/Restaurant was higher in service sector of Bihar (about 28.221) and in 2012-13 its percentage is about 40 per cent, this sector growth trend is increasing with constant rate this was between 25 per cent to 40 per cent this growth trend is clearly shown by the below the graph - 3.3

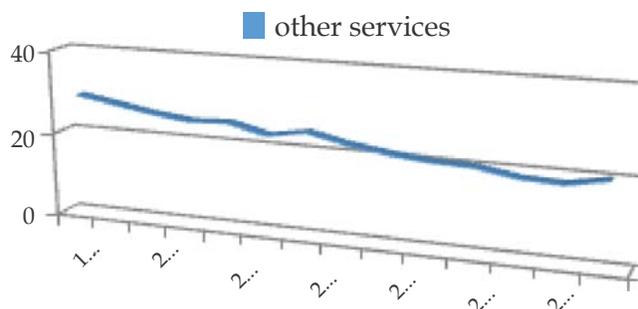
Trade/Hotel/Restaurant has accounted increasing growth trend (during the period 1999-13) due to this historical background that attracted more of tourist like-pilgrim centres, Patna, Bodhgaya, Gaya, Rajgir, Vaishali, Nalanda university. These are the tourist destinations which attracted more of the tourist each year this led to increase of Hotel/ Restaurant and tourism sector (which is include in other services) as well as the transportation and communication services. Graph - 3.3 Second most important sector is Transport, Storage and Communication it also plays a big role in service sector about 11 to 14 per cent in the year 1999-00 it was about 12.55, and it reached its highest level about 14 per cent in 2010-11 and after that it is declining, according to the current scenario 12.81 in 2012-13. We can see through the table its percentage of growth is between 10 to 15 per cent but according to the Economic Survey of Bihar 2014-15, communication services is increased fifteen times more in 2005-06 it connection is about 42.14 lakh, and in 2014-15 it increased and reached

its maximum level about 661.69 lakh, this growth in the telecom due to the private network, with declining share of BSNL. The telecom density has increased from 1.15 to 51.17 per hundred populations during 2001-2015. However, the rural telecom density of Bihar is still lowest among all the major state of the India.

If we are looking back to previous data then we can get this very clearly according to the economic survey of Bihar (2006-07) the share of primary sector was fair enough in 1993-94 but over the period of time it decreases(1999-00), but during the period 2004-05 this accounted little bit growth due to some government initiative, Whereas the secondary's contribution in GSDP of Bihar and its growth rate is also lower than the other two sectors (during the period 1993-05) and, The tertiary sector (service sector) contribution in the GSDP was quit low rather than primary sector but still high than the secondary sector in 1993-94, whereas its growth rate is higher than the other sectors (during the period 1993-2005). Graph-3.4 after that the other services (which included education, health, tourism, construction, recreation and cultural services) also contributing second highest in the GSDP of Bihar which is about 29 per cent in 1999-00 and 20 per cent in 2012-13. Its growth rate is declining over the period of time, in other word we can say that it is increasing in the form of numeric



Graph 3.3: Growth trends of the Transport, Storage and Communication (in percentage).
Source: Author's calculation.



Graph 3.4: Growth trends of the other services (in percentage).
Source: author's calculation.

value which shown by the table but it's percentage share in the growth of services sector is declining over the period of time.¹⁰

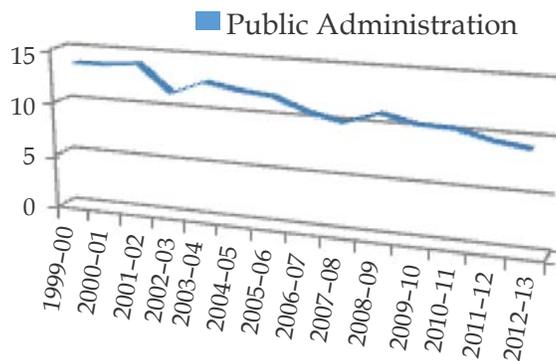
Source: author's calculation

Table-3.5: Now if we are talking about share of public administration its contribution is quite good toward the GSDP of Bihar, this is increases with slow growth, but its percentage share is decreasing year via year in service sector. According to this table during the period 1999-00 it is about 13.65 per cent and after that its growth is accounted declining

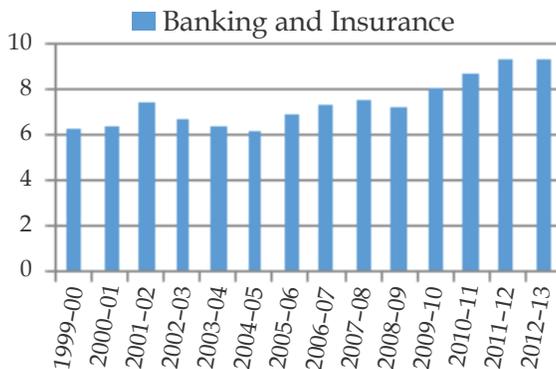
and reached its minimum level which is 9.21 per cent in 2012-13. This is clearly shows by this graph

Graph -3.6 now I am going to discuss about the contribution of Banking and Insurance in services sector as well as GSDP of Bihar. Its contribution is little bit smaller than the others but it is an important sector for growth of the economy because, without its presence you

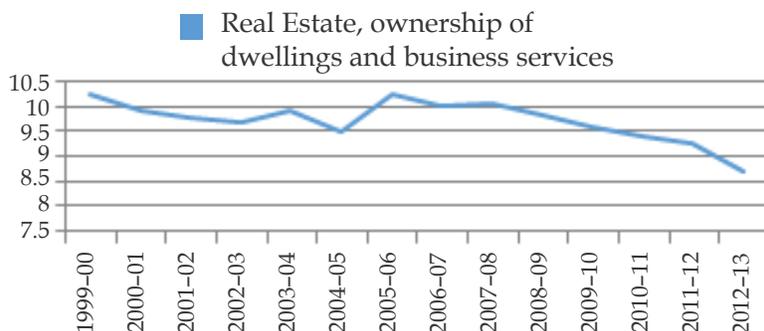
Cannot measure the economic growth. According to the table its contribution is quite significant and its growth trend is also increasing year via year due to some initiative taken by the government in



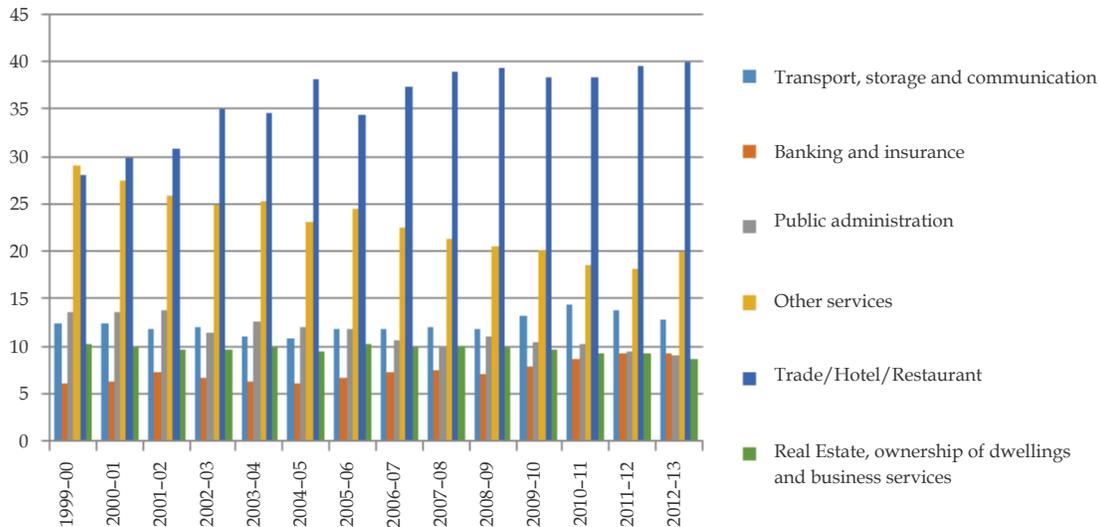
Graph 3.5: The growth trend of the Public Administration (in percentage).
Source: Author's calculation.



Graph 3.6: The growth trend of the Banking and Insurance (in percentage).
Source: Author's calculation.



Graph 3.7: The growth trend of Real Estate, ownership of dwellings and business services.
Source: Author's calculation.



Graph 3.8: Sector wise percentage share of service sector of Bihar.

Source: Author's calculation.

terms of reform in Banking and Insurance services. We can see through this growth trend by the given graph.

Graph- 3.7: shows that the growth trend of Real Estate, ownership of dwellings and business services. This sub sector have accounted decreasing trend of growth over the period of time. There is a lot of problem with the development the real estate, ownership of dwellings and business services, like-lack of clear land, lack of credit, rising labour cost and material cost, administrative related difficulties. The another problem with real estate related is the urban development and housing department, through a notification issued on December 2013, imposed a ban on approved of maps for any multi-store building over the height of 11 and length of road abutting the building on all side is 20 feet in width. Due to this judgment many construction stopped in mid-way. Loss of the builders loss was around 10000-12000 crore.

Through the graph 3.8 we can see the percentage share of each sub sector in services sector, whereas the Trade/Hotel/Restaurant contribution in services sector is higher about 40 per cent, and its growth is also high rather than other sub sectors. After that the second highest contribution in services sector is other services (it included construction, tourism, education, health, recreation and cultural services) about 20 per cent, but its growth trend is declining over the period of time, but still its numeric value is increasing over the period of time. Third highest contributor in the services sector is transport/storage and communication about 12 per cent, yet it is increasing after the period 2006-07. Before it the contribution of the public administration is

high. But after the 2006-07 public administration growth rate as well as contribution in the services sector is declining. Besides these four sub sector the contribution of Banking and Insurance and Real Estate, ownership of dwellings and business are quite good and its contribution in the economy is also significant.

Database and Methodology

The present section presents the Regression Analysis and its empirical result. Here we have taken each sub sector as dependent variable, and Time "t" as Independent variable, the complete detail of those variables has been given in the table 3.3.

For the analysis purpose, time-series data on various variables have been taken from the Economic Survey of Bihar 2014-15; all those variables have been taken in log terms to make interpretation in proportionate terms. Time has taken here as Independent Variable for each sub sector, why? The answer is, this will shows the growth trend of all those variables over the period of time¹⁰.

Estimation specification and result

Firstly Trade, Hotel & Restaurant has accounted significant result. The result shows that over the period 1999-2013, the output of Trade, Hotel & Restaurant increases at the annual rate of 29 per cent, R square is 98 also significant. Overall we can say that the growth rate in the Trade, Hotel & Restaurant is the highest over time. Second, significant result is Real Estate, ownership of dwellings and business, its shows that over the period of time (1999-2013) the output of it increases

Table 3.4: Regression Result.

No.	Sub Sectors	p-value	β_1	β_2t	R ²	Adjusted R ²	F	t stat
1.	T,S&C	0.00000	8.040943	0.090709	0.915587	0.908553	130.159	11.40872
2.	B, I	0.00000	7.361679	0.110789	0.936284	0.930975	176.3367	13.27918
3.	R,B	0.00000	7.928078	0.074006	0.980887	0.979294	615.833	24.81598
4.	P A	0.00000	0.050216	0.050216	0.873266	0.862705	82.68651	9.093213
5.	O Ser.	0.00000	8.979456	0.047401	0.86483	0.853566	76.777	8.762249
6.	T,H,R	0.00000	8.998453	0.105179	0.985969	0.9848	843.274	29.03918

Source: Author's calculation ($Y_t = \beta_1 + \beta_2 t + \epsilon_i$).

at the annual rate of 24 per cent, R square is also significant about.⁹⁸ Third significant result of Banking and Insurance, its result shows that over the period of time (1999-2013) the output of Banking and Insurance increases at the annual rate of 13 per cent and its R square is also significant about .93. Fourth, Transport, storage & communication ($Y_t = \beta_1 + \beta_2 t + \epsilon_i$), its result shows that over the period 1999-2013 the output on transport, storage & communication increases at the annual rate of 11 per cent, R square is significant. Fifth, Public Administration has accounted significant result. The result shows that over the period 1999-2013, the output of Public Administration is increases at the annual rate of 9 per cent.

Conclusion

Service sector of Bihar accounted more than 50 per cent contribution in GSDP since 1999; it is a dominant sector in terms of both growth and share. It is also generating second highest employment after the agriculture. Because service sector gives the opportunity to both type of workers, skilled and non- skilled and, people are moving towards it due to non-profitability of agriculture sector. Behind the service sector growth contribution of the private institution is more than the government sector, like-the Trade, Hotel and Restaurant, whose contribution is higher in services sector, whereas the public administration accounted for declining growth trend. The real estate and dwelling is also accounted declining growth rapidly.so, there is need to take the initiative by the government to improve these sub sectors. Service sector of Bihar has lots of opportunity in terms of both generating employment and contributing in GSDP. For example-Bihar has a rich cultural heritage. If government as well as private institution participate equally then it must be accounted highest growth. Tourism sector and recreational spot attracted more tourists, foreign and domestic. This sub sector is inter-related with the other services like retaining,

hotel, restaurant, transportation and, this will help to generating employment as well as income. Second thing to do with the industry development, because there are many activities correlated with the services sector like- transportation, storage, communication and, construction etc. Regression analysis also shows that over the period of time service sector's growth is increasing.

References

1. Aanestad M. James, "measurement problems of services sector", palgravemacmillan journals, vol. 22, no. 2 (April 1987), pp. 32-37,
2. Analysis of budgetary transactions of state government, 2007-08 to 2011-12 (BE)
3. Bihar through figures 2011,
4. Bihar- the state profile, June 2012,
5. Bihar state profile, 2013-14,
6. Chakravarty, Deepita. "Growing services in India: an inter-sectoral analysis based on state-level data." *Economic and Political Weekly* (2006): 3061-3067.
7. Dr. Kaur Kuldip and SinghMandeep, "India's services sector and its determinants: an empirical investigation" *journal of Economic and development studies*, June 2014, Vol. 2, No. 2, pp. 385-406,
8. Dr. Prasad C.A.H. and Sathish R. "policy for India's services sector", department of economic affairs ministry of finance government of India, working paper No. 1/2010-Dea, March 2010,
9. Eichengreen Barry, & Gupta Poonam, *The Service Sector as India's Road to Economic Growth?* April 2010, Working Paper No. 249,
10. *Economic Survey of Bihar 2006-07, 2011-12, 2012-13, 2013-14, 2014-15,*
11. *Economic survey of India 2014-15, 2015-16,*
12. GoldarBishwanath and BangaRashmi, *EPW*, Vol. 42, No. 26 (JUN. 30- JUL. 6, 2007), PP. 2769-2777,

13. Hand Book of Statistics on Indian Economy, 2014-15,
14. Kapilauma, Indian economy since independent "services in India's growth process". (2005)
15. Kansal M. S. "contribution of 'other services' sector to gross domestic production in India: an evaluation", EPW, Vol. 27, No. 38 (Sep. 19, 1992), PP. 2047-2051+2054-2056,
16. Mukherjee Arpita, "the service sector in India" ADB Economic Working Paper Series, No. 352, June 2013,
17. Mujahid Hira & Alam Shaista, Service Sector as an engine of growth: Empirical analysis of Pakistan, Asian Economic and Financial Review, 2014, 4(3): 377.386,
18. N. Gaurav "the service sector in India's development", 2005,
19. State Domestic Product 2004-05 to 2010-11,
20. State Domestic Product 2004-05 to 2010-11 (Adv.) & District Domestic Product 2004-05 to 2007-08 Bihar,
21. State Domestic Product 2004-05 to 2010-11 (Adv.) & District Domestic Product 2004-05 to 2007-08 Bihar, palgravemacmillan journals, vol. 22, no. 2 (April 1987), pp. 18-24,
22. Swan, Neil M. "The service sector: Engine of growth?" Canadian Public Policy/Analyse de Politiques 11 (1985): 344-350.
23. Wadhwa William, Ramaswami Bharat and, Kotwal Ashok, "Economic Liberalization and Indian Economy Growth: What's the Evidence?" Journal of Economic Literature, Vol. 49, No. 4 (December 2011), PP 1152-1199,
24. SOME IMPORTANT WEB SITE
25. <http://dbie.rbi.org.in>
26. finance.bih.nic.in
27. bih.nic.in
28. biharstat.com

A Bitter Brew: Peshok's Boon in Disguise

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Abstract

Darjeeling known for its exquisite quality of tea but the bitter truth of the ongoing plantation exploitation and closure can't be turned a blind eye. Peshok tea garden is one of the eloquent tea gardens of the Darjeeling hills which have been dogged with incessant closure since the early nineties. There has been a huge paradigm shift in the social ecology, economic and cultural aspects of the tea garden as we know for a fact that change is the only constant. The resilience to change is what builds a society into a remarkable one, Peshok tea garden has outdone their agony and lacking and has emerged into a path breaking, extraordinary tea garden. The formation of the societies has emerged as a breeding ground for entrepreneurship development, self sufficiency and a sense of ownership. The household, society and factory have formed an extremely dignified chain, thus helping in the participatory development of the human and their society. There is also a major role to be played by the government through improvement at the administrative level and also for the up gradation of the various plantation and labour acts for the smoothing run of this venture. These social innovations are the stepping stones needed to conquer greater human possibilities.

Keyword: Incessant closures; Paradigm shift; Resilience; Social ecology; Social innovation; Self sufficiency.

Introduction

Darjeeling Tea is a heritage, cherished with tradition, taste and passion, which is an accumulation of 87 myriad tea gardens present in the different areas of the region. The aroma of two buds and a leaf has spread through mountains and valleys to own a remarkable GI tag for its conservation worldwide. Whereas the ground reality has been a bitter sweet experience with the unfolding of many stories that are still left untold.

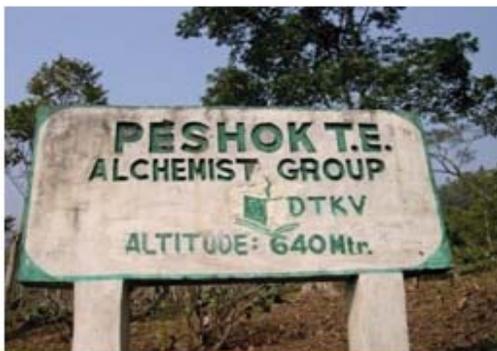
Methods: The text creation has been based on case study approach. The case study is basically a systematic probing to reveal a factual character of any event and system. The text generated through ground truth verification technique, entire case has been re-written, edited and configured.

Entry: Peshok tea garden

Peshok Tea Garden village is located in Rangli Rangliot Tehsil of Darjeeling district in West Bengal, India. Darjeeling is the district headquarter of Peshok tea garden village. As per 2009 stats, Lamahatta is the gram panchayat of Peshok tea garden village. Darjeeling is nearest town to Peshok tea garden which is approximately 32km away.

The tea estate dogged by misfortune

The Peshok tea estate has been shut down for quite some time due to myriad reasons starting from workers shortage to mismanagement. However, the workers have recuperated from the situation and has been an exemplar considering the present situation. It stands tall in the hour of the crisis and chaos in the tea industry.



Basic information of the tea estate.

Total area	988.54ha
Tea garden area	314.70ha
Wasteland	251.19ha
Village area	422.65ha
Population	4200
Household	910
Male population	2040
Female population	2160

History of the tea garden

The tea garden has a bitter story of its own struggle from glory to ashes. It was started off by the British in the mid 1800 with the advent of tea in the Darjeeling hills. Darjeeling tea was undebatably known as one of the most successful ventures of the British Raj in India and Peshok was fairly considered as one of the gems of that era. Until Pre-independence the year 1957, when the garden was sold to Ramdin Singh, he ran it up to 1975 with the closing and reopening dramas occurring ever since the late 1960's, eventually the garden was rendered closed due to the mismanagement as they were unable to clear the wages and other legal benefits were left pending for several months. Therefore, it was brought under the Government supervision. The Govt. gave it to the Tea Tanning Corp Ltd on lease in the year 1978, they ran the garden for 17 years up to 1993. Thereafter, the garden remained closed for 12 years at this time the Govt. of India granted the workers a pension of Rs.500 per month with an interference of the labour court, the pension was to be granted to the workers until they attained an age of 57.5 years after which it stopped. This created a feeling of distrust towards the management as well as the financial stability of the tea as a means of income, therefore, the workers shifted their focus on other occupation which led to it being a highly agriculturally inclined area in the Darjeeling district where they grew ginger, cardamom, mandarin, vegetables etc. In the year

2006, the Alchemist Company ran the garden up to 2009, after which due to losses and mismanagement they left the garden but not on an official notice until very recently in 2018 they officially left the garden thus declaring it a shutdown tea estate yet again.

The Reasons that led to the downfall

The workers are adamant to point fingers towards the mismanagement which is one of the factors undeniably but there are others factors too which has led the tea garden into its present plight. The reasons are discussed in brief.

Exhaustion of the soil

The garden started off in the 1800 during the British era even after such long period of time replanting is still not predominantly done in the garden, which makes the crop exhausted and it loses its genetic viability. Moreover, tea garden is a mono crop therefore it leads to exhaustion of the soil making it devoid of the necessary nutrients as tea is an exotic plant. Even after uprooting the tea bushes it takes years for the soil to be suitable for any other cultivation purpose.

Impact of ongoing population pattern

There has been increase in the population of the inhabitants, thereby creating a huge pressure on the social ecology and economy of the garden area which has remained constant over the years. The management did nothing to provide alternative livelihood strategies earlier which led to overdependence, but over the years the population pattern as well as peoples dependency on tea decreased. So now on the other side of the coin, people have less children as of now mostly they have 2 children in comparison to the earlier time when the no. was 6 or 7. Therefore there is shortage of labour in the tea garden hampering the hand plucked essence of Darjeeling tea.

Frequent strikes and statehood agitation

The strikes and statehood agitation has a history of its own but the politically unstable Darjeeling hampered the tea business therefore, being the reason for the losses faced by the garden owner leading to its shutdown.

Globalisation and liberalisation

Darjeeling tea is renowned to be the "champagne of tea" around the world. There are 87 tea gardens in total producing the high quality Darjeeling tea under an area of 19,500ha, producing 8-9 million ton of Darjeeling tea but in the liberalized world market about 40 million tea are sold as Darjeeling tea, which is unfair and injustice to the workers who toil so hard to produce one of the best tea's in the world. Despite of the GI (Geographic Indication) tag the misbranding is still quite prevalent. Worldwide all GIs face with primary two kinds of risk, one arising from the generic use to indicate a class of products without any regional nexus and the other from their dilutive use of as trademarks on similar or dissimilar goods or services. Enforcement of Darjeeling as a geographical indication has been no exception. (Kumar Rajendra et al., 2011)

Current scenario of the tea garden

The residents of the Peshok Tea garden have managed to re-engineer and reinvent their way of life and are prospering in a multicultural environment. At present under the Workers committee Peshok which is approved by the BDO (Block Development Officer), the tea garden labourers individually maintain their own stretch of tea growing land provided to the labour household residing in that part of the garden under mutual understanding and cooperation. The labour do the plucking to pruning and all other related activities related to the cultivation of the tea leaves and thereafter sell the green tea leaves through the workers committee to the other tea factories (Khawas Vimal, 2006). In 2019, they sold the green leaves for Rs.40 per kg.



The Govt. of India provides the tea garden workers Rs.1500 per month under the FAWLOI Scheme (Financial Assistance to the Workers of Locked Out Industries) after it was declared officially closed in the year 2018. Besides this, agriculture and livestock prospectus of the area is tremendous thereby being an important means of livelihood for the inhabitants. There is also an increase in the number of people going other nearby places and cities in search for a better future.

Under Supervision Of	No. of Labourers Working
British Time	1200-1000
Ramdin Singh	950-900
TTCL	800-750
Alchemist Company	570

Similarly the people of Mineral Spring, a closed tea garden in Darjeeling, have organized themselves into a collective which is in the process of being registered as Sanjukta Vikas Sanstha. It has a membership of 450 families. The governance structure is based upon member families with 1 vote, 12 hamlet committees and a board of 26 members. There is a women's wing called the Sanjukta Nari Sangathan. The President and Secretary of the Sanjukta Nari Sangathan are nominated to the board. Election stake place once every two years. DLR Prerna has a non-voting advisory status within the collective. The board also has functional working committees and employees from within the members to implement its activities. Therefore, the closed tea gardens are becoming the breeding ground of self sufficient societies. (Rai Roshan, 2006).

The different ecological parameters in the tea garden

Water table

Natural springs serve as a major source of domestic and drinking water across the hill villages. They also rely on the P.H.E for drinking water and the forest dept also provide them water. The natural springs have somehow, declined over the years with some sources even drying up.

Water use pattern

The water use pattern is more inclined towards the agricultural production, as the tea garden is now redundant. The natural water sources have dried up due to deforestation, thus water scarcity is coming up as a burning topic.

Livelihood

The shift from monoculture to multicultural environment has been truly astounding. The people have mostly turned to agriculture after the betrayal and closure of the tea estate. The people grow vegetables, ginger, cardamom, avocado, beans, tomato and now they see a prospective of growing coffee too. The shift from tea to other agricultural crops has gradually increased over the years after the mistrust towards the garden officials over the period of time. People also rear livestock as they are

considered handy in case of emergencies, as they have persistently seen the lockdown and opening of the tea estate enough not to consider it a stable source of income.

Employment

During the days when the tea estate was in operation, the belief in resident garden society was that the only employment they could get, was that of a worker in the state. This made them neglect their children's education and education per se was not a priority. Today, some have learnt and improved their agrarian skills while others look beyond the tea estate for employment. Some of them have joined the army while others have gone to faraway places such as Delhi, Bangalore or Mumbai to work. All return with different experiences and exposure that benefits society on the whole.

Plant biodiversity

Over the years there has been an increase in the plant biodiversity as cutting of wood for fuel has completely declined due to the various schemes of the Govt. channelized to provide gas connections to rural household. These schemes have worked tremendously for protecting the flora population over the years.

Further amelioration of the tea garden

The successful evolution of Peshok Tea garden over the years is a gentle nudge in the right direction. In order to purview this growth further beyond, there are some responsibility on the part of the Govt to promote it by providing their helping hand in bringing about some drastic changes on the existing Plantation act, estate acquisition act and the labour act. (Chettri Neelkamal, 2007)

The colonial management

The management of tea gardens is still under the perception of master and slave relationship. This outlook needs to change so that the exploitation of workers are not turned a blind eye through the rose tinted glasses of the owners.

The estate acquisition act

The estate acquisition act needs to be amended so that the resident plantation society finally gets the much needed space that has been denied to them all these years, so that it instills a sense of belongingness. Ownership of the houses that they have been living has to be transferred from the company to the actual working inhabitants of the

plantation. A clause needs to be added that ensures the plantation land to be distributed among the resident garden society as and when the plantation closes down.

The plantation labour act

The plantation labour act of 1951, by the central Govt. was for the welfare of the workers working under the different plantations in India. However its ground reality is still a façade in the Darjeeling tea industry and Peshok tea estate is no different to it. The proper implementation for what it stands for is still, a farfetched dream. The existing labour act needs to incorporate a social security net that will include multi-skill training, job counseling, in order to stimulate multi-skill environment so that the residents of the tea gardens won't suffer during the shutdown. When tea gardens are closed or locked out one clearly sees the inadequacies in the Plantation Labour Act. With closure, the workers are devoid of any assets, skills or policy support for life and livelihoods. The starvation deaths that one hears about in closed tea gardens of North Bengal are the result of this inadequacy.

Conclusion

The future of the Tea estate looks very hazy, as it's already under a lockdown and most of the household labours are mid age workers and the committee formed are run by the old garden workers, there is no participation of the young generation in anything related to the tea estate. They don't seem interested in conserving and working towards the betterment of their age old heritage. Most of the young generation prefer going outside than working for an unstable income. In terms of growth of employment, Assam's performance has worsened in recent years. Although labour productivity had increased relatively comfortably during the 1980s, during the 1990s labour productivity growth slumped in many of the districts of Assam. Employment elasticity has come down in Assam in the nineties in comparison to the eighties. (Mishra k Deepak, et al., 2006) This is an all India trend and Darjeeling is no different. On the brighter side, the world tea trade is based on monopsony, the role of corporate bodies is critical. Corporate social responsibility, much touted, needs to be put in place, based on trusteeship and not exploitation. Tea gardens like Mineral Spring, Peshok thus, prove that tea can be grown in models more equitable and sustainable other than is prevalent in monoculture plantations

and mindsets. A new development strategy must, therefore, improve the economic access of the resident garden society; ensure that its proposed solutions are conducive to local milieus and are efficient in welfare-terms rather than merely in productivity terms, and that these bring economic productions into closer consonance with the natural ecosystems. In practice, such solutions demand social innovation by re-orienting economic activity towards human development rather than technological developments. Such innovation comprises the integration of formal with informal activity, the proper utilization of resources and, most importantly, institutional responsiveness and adoption of technology appropriate to mountain areas where these tea gardens are located. (Chettri Neelkamal, 2007)

References

1. Bhutia Sherap. Economic development and Environmental issues in Darjeeling Himalaya of West Bengal, India: A Theoretical Perspective, *International Journal of Humanities and Social Science Intervention* 2014;3:42-47.
2. Chettri Neelkamal (2007). Case Study of Garden Society of Peshok Tea Estate, Behind Closed and Abandoned Tea Gardens-Status of India, Centre for Education and Communication (CEC), New Delhi.
3. Khawas Vimal (2006). Socio-Economic conditions of Tea Garden Labourers in Darjeeling Hills, Council of Social Development, Kalpana Publishing, New Delhi.
4. Kumar Rajendra and Nair Vaundhara, K&S Partners; (2011) Darjeeling Tea-Challenges in the Protection and Enforcement of Intellectual Property Rights, World Intellectual Property Organization http://www.wipo.int/sme/en/case_studies/darjeeling_tea.htm (accessed on December 20, 2019).
5. Mishra K Deepak et al.; Crisis' in the Tea Sector: A Study of Assam Tea Gardens, *The Indian economic journal: The quarterly journal of the Indian Economic Association* 2008;56(3):39-56.
6. Rai Roshan (2006). Mineral Spring, Darjeeling, India, an Alternative to Closed and Abandoned Tea Gardens, Behind Closed and Abandoned Tea Gardens-Status of India, Centre for Education and Communication (CEC), New Delhi.

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Farmers and Stressful Farming: The Conflict and Chaos

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Abstract

Indian farmers, especially the owners of marginal and fragmented holdings, are running and reeling under incessant stress and drudgery. The stressors are dwindling and uncertain income, insurmountable debt trap and unpredictable climate. When costs are simmering, returns are extremely stoic; the farmers are being thrown into a hell of chaos. The sociology of Indian farming steers down the pathway of chaos and entropy; farmers' suicides are the shocking indicator to measure the unfathomable agony and distress.

Keywords: Stress; Chaos; Entropy; Conflict; Indicator; Suicides.

Introduction

The word 'stress' has variable resonance to farmers as it is suspected that the word might have mantled from studies of white-collar professionals. While some researchers have regarded it as shorthand for anxiety, depression, frustration or worry, others have gone with failure, being unable to cope and making them distanced from difficulties of their circumstances. Stress has different forms and effects, from its acute and devastating impulse to more chronic and long-term impacts. To understand a comparatively holistic aspect of stress and to develop a complex depiction of how stressors fit together and change over time, intense observation on farmers are needed.

People from non-farm occupations often consider farming as a stress-free and risk-free occupation and assume that farming communities are living joyful life along with natural beauty, enjoying their work at farm on day and coming back to home. But reality is something different. Farming communities are facing lots of stress to survive. They are under influence of physical, financial, weather, over work load stress and unable to get rid of these due to various circumstances. This community is engulfed

by different kind of stressors. In general, every people work with positive energy and self-confidence for achieving ultimate goal but in distress they are incompetent to remove the burden with limited ability. These crucial conditions arise due to change in opportunities, demand, climate, environment, threat, constrains and old farming practices.

Adam Butler explained, the context of stress was often crucial whether it was perceived as 'good' or 'bad' stress; he also associated unmanageable stress with uncontrollable circumstances:

"But the trouble is, a challenge is also a stress. So today's challenge is tomorrow's stress."

There are various mental health risk factors of farmers. Farmers have to work for long hours often in isolation. Till now research has highly focused on farmers' experience and less concentrated on how stress affects farming communities more widely, or on the relationship between work-related and extrinsic causes of stress.

Objectives

- i) To study the stress level of farm community.
- ii) To analyze the different stressors and their impact on farmers.

- iii) To study the division of labor and gender discrimination in agriculture.

Methodology

- i) Concept building and frame working
- ii) Literature review and citations
- iii) Analysis and resolution
- iv) Bibliographic support

Farming: From blessings to burden

During the last few decades, agriculture has gone through a lot of changes and it has also become a potential area of stress. Greater use of technology, random use of organic cultivation, declined price of agricultural products, complicated legislation and paperwork have made the life of farmers more stressful. There are several signs or symptoms of stress, when a person may need help. These symptoms can be observed by family members, friends, neighbors or health and human service workers. There are daily issues regarding balanced budgets, family life, keeping up with development in the area and planning for future. Social isolation and working for long hours can increase stress. The extra pressure of managing a farm during natural disasters, climatic extremes and market fluctuation can be unbearable (Chitrasena Padhy et al., December 2018). Since many years Indian farming community, especially farmers from drought prone areas have been under constant occupational stress. Basically farmers are experiencing unpredictable weather and financial problems as major stress factors. Small farmers are most susceptible to stress. So, agricultural scientists, marketing and financial experts, policy makers should create a suitable environment for farmers to overcome the stressors (Javed Sabbir Kureshi et al., April 2018). Some researchers have used Hospital Anxiety and Depression Scale (HADS) to measure anxiety and depression symptoms. Both male and female farmers have high level of depression than the general working population but the levels of anxiety symptoms don't differ. The differences between farmers and the general-working population in depression symptom levels have increased with age (Magnhild Oust Torske et al., February 2016).

The Indian farming consists of 225 million workforces which covers 140 million hectares of cultivated land. In spite of rapid farm mechanization (149 million farm machinery), the vast resource-poor farming families have primary dependence

on traditional methods (520 million hand tools and 37 million animal-drawn implements are in operation). Drudgery due to work, traumatic accidents and injuries are the major concerns for ergonomics intervention and betterment of work in crop production activities. In four regions of the country, tractor accidents (falling from the tractor, overturning etc.) were highest (27.7%), followed by thresher (14.6%), sprayer/duster (12.2%), sugarcane crusher (8.1%) and chaff cutter (7.8%) accidents. Most of the fatal accidents have caused from the powered machinery with the annual fatality rate of 22 per 100000 farmers. In spite of the enactment of legislation, the shortcomings in monitoring of the machinery in field use are responsible for the high rate of accidents (42 thresher accidents/1000 mechanical threshers/year in southern India) (Pranab Kumar Nag and Anjali Nag, February 17, 2004).

Cancer has been skyrocketed in Punjab, which was a pioneer state in success of Green Revolution. A study of Punjab University in 2008. Paul, S. (30 October, 2012) Depicted a high rate of genetic damage among farmers, which was attributed to pesticide use. The widespread chemical pollution in communities by herbicides and pesticides is creating public health issues, which has disproportionately impacted farm women. Farm occupation leads to stress due to finance, weather, work overload, farm hassles and social interaction, though financial factors are found to be slightly higher than other factors as they don't have separate budget for health issues, occasions, entertainment etc.

Agricultural spot markets are being replaced by the contract-farming and the vertical coordination systems around the world (Hendrikse and Bijman, 2002) and there are a large number of publications focusing on contract farming (Allen and Leuck 1995; Bolwig et al. 2009; Hellin et al. 2009). In 1998, World Bank's structural adjustment policies forced India to open up its seed sector to global corporations like Cargill, Monsanto and Syngenta. The global corporations had changed the input economy overnight. Farm saved seeds were replaced by corporate seeds which need more fertilizers and chemical pesticides and this policy had created conflicts among small farmers (Shiva and Jalees). Globalization, policy change and increased competition in the domestic market are together putting pressure on agricultural cooperatives to make an efficient contract for vertical coordination with their member-farmers. The share of the cooperatives' profit is a crucial issue of conflict in the long-term sustainability of marketing (Wang et al., 2011).

In spite of several government schemes to boost income of farmers, their situation is terrific till date. Farm production is fully dependent on climate and weather. Due to weather fluctuation, natural calamities (flood, drought, hailstorm etc) and climate change, sometimes production is impeded and farmers face severe losses. In 2014 & 2015, two successive years of draught in several states in India basically in Maharashtra, Karnataka and Gujarat has made the situation of farmers' worst. In 2017-18, unseasonal rain and floods in many states have also added to the farmers' woes. As most of the farmers are not covered by insurance and do not receive relief for crop damage, sometimes the stress becomes so intense that they take the path of self-destruction.

As per a study conducted in 2002, 16.84 percent of farmers' suicide took place due to crop failure. Farmers' suicide has become a national catastrophe since 1990 mostly due to their inability to repay loans. In 2014, more than 60000 suicides had taken place only in Maharashtra. (Sainath, P. (21 July, 2014). According to National Crime Records Bureau (NCRB) of India, a total 296438 Indian farmers had committed suicide since 1995. States with loose financial and entry regulations like Maharashtra, Odisha, Telengana, Andhra Pradesh, Madhya Pradesh, Gujarat and Chhattisgarh are in leading position in case of farmers' suicide.(NCRB report-farmers suicides. Government of India). The core problems of rapid population growth, growing

inequality, rising unemployment and widespread poverty have find their origin in stagnation and retrogression of economy in rural areas. Under these circumstances it is not a surprise that a considerable number of farmers had committed suicide in the second half of the 1990s (Shiva and Jalees). Few years ago a British study had shown that farmers had a lower prevalence of psychiatric morbidity than the other population, but they were more likely to think that life was not worth living. Dr. Mohan Issac, a professor of psychiatry at NIMHANS believes that farmers' suicides are multifactored; several factors have been acting in a cumulative manner. In many cases, end comes due to losing the last straw. (Shiva V, Jalees K. Farmers Suicides in India).

Prof. M. D. Nanjundaswamy blames free imports, falling prices and lack of social security of farmers for this situation. He also believes that sometimes compensation for farmers committing suicide acts as an incentive.(Shiva V, Jalees K. Farmers Suicides in India)

Farming is facing severe threats due to price collapsing of farm commodities. In spite of huge pulse production in 2016-17, imports of about 6.6 million tons was arrived which made problem in national market. Again in successive year, another 5.6 million tons pulse crop was imported which devastatingly depressed domestic prices. According to NITI AYOOG, maximum farmers don't realize remunerative prices due to limited reach of Minimum Support Prices (MSP) and agricultural

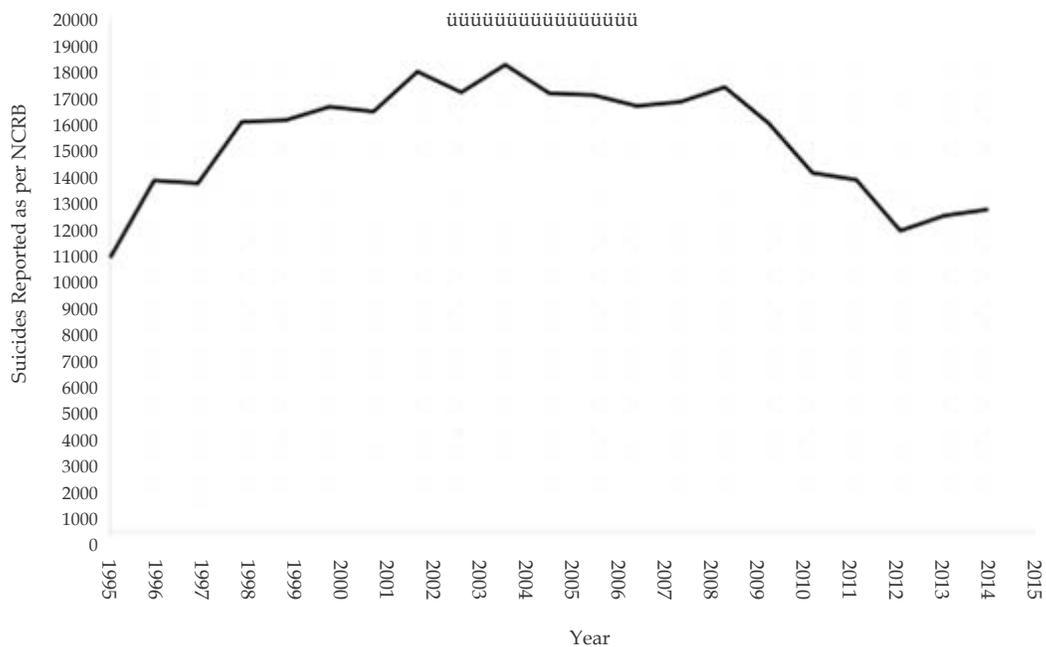


Fig. 1: NCRB report-farmers suicides. Government of India.

marketing system which delivers only a small fraction of final price to the actual farmers. NITI AYOJ has also stated that marketing potential is neglected by farm sector. (Gupta, S. (13 December, 2018).

On the other hand, Pradhan Mantri Fasal Bima Yojana was launched in 2016 to provide financial support and insurance in case of crop failure due to natural calamities, disease and pest infestation. But this scheme has seen lower enrolments due to high premiums and lack of innovations by insurance firms. Though the central government sanctioned Rs.40000 crore long-term irrigation funds for 99 large irrigation projects all over country through National Bank for Agriculture and Rural Development (NABARD), but bureaucratic delay and slow implementation have hindered the progress.

Linked to the stigma of mental illness, many farmers are displeased to discuss about the ways in which farming is affecting their mental health. The Centre for Study of Developing Societies (CSDS), (Sood, J. (12 March, 2018). a pioneer social science research institute has stated that the country is going through a deep farming crisis. According to their survey, 76 percent farmers want to give up farming due to low income, stress and health breakdown. Farmers are lacking motivation nowadays. Many farmers are not in farming by their choice but because it is the only way for them to earn bread butter. Many farmers have no knowledge of recent agricultural innovations and still depend on the knowledge passed over their ancestors. Sometimes farmers do have knowledge about any innovation but they don't want to try any new crop because they think what if the new innovation turns out bad. They don't want to take any risk. Small farmers don't even afford risk. The average inflation in our country in 2014-15 was 6.37% but for the same time period MSP (minimum support price) of wheat was increased by only 3.07% which means that same amount of things which a farmer had bought for rupees 100 in 2013, he/she had to pay rupees 106.37 in 2014-15 but he/she had only 103.07 rupees. This is also ensuring decrease in farmers' interest in farming.

In case of farm women, their access is limited to less skilled job like sowing, transplanting, weeding and harvesting, which fit well within the framework of domestic work and child-rearing. They are also used as unpaid subsistence laborer. Globally more than 400 million women engage in farming, but they always lack equal rights in land ownership

in more than 90 countries. According to a study of Oxfam (2013), ((16 October, 2013). Around 80 percent of farm work has been done by women in this country but they possess only 13 percent of the land. Another statistics released by University of Maryland and National Council of Applied Economic Research (NCAER) Pachauri, S. (19 February, 2019). In 2018 stated that in India women constitute over 42 percent of the agricultural labor force but own less than two percent of land. Farm women are affected by lack of official recognition as female agricultural worker and exclusion from rights and entitlements, such as institutional credit, pension etc.

A woman cultivator or woman labor works for 14 hours in and outside the home. During peak season she has to work for more than 16 hours a day. A female labor or cultivator has to do household activities, child care, buying and selling of agricultural commodities at the same time in which involvement of male members of the family is very low (M. R. Ravichandran, 2014). A study conducted in Haryana revealed that farm women can't decide any farm operation independently and can dominate only decisions related to home sphere such as storage of farm produce, purchase or sale of animal and credit etc. Now, why the women's role in Indian economy is not recognized and is given such an inferior position must be a matter of concern.

Gender disparity in wages in agriculture is a widely documented phenomenon. In developing countries, wage differences between male and female agricultural laborers are a very common problem. The standard wage discrimination analysis suggests that gender wage gap variation among different countries is due to cross-country variation in 'explainable' differences in observed characteristics and the variation in 'unexplained' differences attribute to wage discrimination.

People often talk about women empowerment i.e. women should have powers to determine their own activities; women should have an authority to make decisions and guide their own destiny. This power in decision making can be acquired only if they have a thorough and clear knowledge about the plans and programmes, current issues, basic human development and social policies.

References

1. Allen DW, Lueck D. Risk Preferences and the

- Economics of Contract. 85(2):447-51. Available from: <http://www.jstor.org/stable/2117964>.
2. Bolwig S, Gibbon P, Jones S. The Economics of Smallholder Organic Contract Farming in Tropical Africa. *World Development* [Internet]. 2009 [cited 2020 Jan 5];37(6):1094-104. Available from: 10.1016/j.worlddev.2008.09.012
 3. Hellin J, Lundy M, Meijer M. Farmer Organization, Collective Action and Market Access in Meso-America. 2007; Available from: 10.2499/capriwp67
 4. Hendrikse G, Bijman J. Ownership Structure in Agrifood Chains: The Marketing Cooperative. *American Journal of Agricultural Economics* [Internet]. 2002 [cited 2020 Jan 5];84(1):104-19. Available from: 10.1111/1467-8276.00246
 5. Kureshi JS, Somsundaram KV. Assessment of occupational stress among farmers in Aurangabad district, Maharashtra. *Int J Community Med Public Health* [Internet]. [cited 2020 Jan 5];5(4):1434. Available from: 10.18203/2394-6040.ijcmph20181213
 6. NAG PK, NAG A. Drudgery, Accidents and Injuries in Indian Agriculture. *INDUSTRIAL HEALTH* [Internet]. 2004 [cited 2020 Jan 5];42(2):149-62. Available from: 10.2486/indhealth.42.149
 7. Padhy C, Satyanarayana Raju P. Stress among Farmers and Its Alleviation. 2018 Dec [cited 2020 Jan 5];8(XII):2882-7. Available from: <https://pdfs.semanticscholar.org/4cf3/d18342591f03cf4a858c4dd0076a8000d090.pdf>
 8. Shiva V, Jalees K. Farmers Suicides in India [Internet]. New Delhi: Research Foundation for Science, Technology and Ecology; Available from: https://www.navdanya.org/attachments/Organic_Farming10.pdf
 9. Torske MO, Hilt B, Glasscock D, Lundqvist P, Krokstad S. Anxiety and Depression Symptoms Among Farmers: The HUNT Study, Norway. *Journal of Agromedicine* [Internet]. 2016 [cited 2020 Jan 5];21(1):24-33. Available from: 10.1080/1059924x.2015.1106375
 10. Wang HH, Park JW, Baker T. Contracting, negotiation, and the policy change: The conflict between Korean farmers and their agricultural coo. *Agric Econ - Czech* [Internet]. 2011 [cited 2020 Jan 5];57(No. 10):467-73. Available from: 10.17221/173/2010-agricecon

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Death of Firms: A Qualitative Study of Gaya District (Bihar)

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Abstract

The objective of this study is to examine the reason for closure of the business in Bihar's Gaya district, since it plays an important role in Bihar's economy to generating the employment. While this study is based on primary data. Which is collected by schedule and interviews. Observation method has played crucial role in this study. Moreover this study discusses the reason of chosen that occupation and also the reason for leaving that firm. This study also find that there is lack of official data on death of firm in government of India. The study also find that age is determining factor behind the death of firm because as age decline their health is also not supporting and lack of helping hand they are keen to shut down their firm. Despite of that due to lack of managerial and analytical capacity many firm closed.

Keywords: Informal Sector; Self-Employment; Death of Firm.

Introduction

Despite the presence of a large number of firms in the informal sector in India, very little is known about their characteristics and evolution over time. Indian economy has preponderance of informal and unorganized sector both in terms of number of workers and enterprises. This segment of economy has vulnerabilities, and the study of unorganized sector based on reliable data is desirable for important decision making and addressing the problems faced. Unorganized or informal sector constitutes an important part of the Indian economy. More than 90% of workforce and about 50% of the national product are accounted for by the informal economy (NCEUS). And this informal sector comprises high proportion of socially and economically underprivileged sections of society. There are also growing interlinkages between formal and informal economy. For inclusive growth of this sector to be guaranteed, it needs special attention. A balanced growth requires that the needs of the sector in terms of credit, skills, technology, etc. are addressed. However, it is increasingly realized that

lack of reliable statistics on the size, distribution and economic contribution of the sector has been a major constraint in providing a realistic understanding of the significance of the Indian economy, leading to its neglect in planning. Keeping in mind the above facts, the particular study, 'Death of firms', attempts to take a small step ahead towards focusing on the informal sector and one of its concerns "death" or closure. It implies closure of a small establishment or proprietorship owing to reasons not under control of the proprietor. These reasons may be market oriented or idiosyncratic. Such reasons or factors may be inevitable further depending on the managerial capabilities of the firm owner. However, there are many other determinants which need to be explored through this study. The further importance of this study can be revealed through a comparison with labor regulations like The Factories Act, 1934. This act applies to establishments employing 10 or more persons with power use or 20 or more persons. It aims to improve the working conditions in factories; its scope also extends to include welfare, health of workers. Similarly, legislation like The Minimum wages Act

ensures minimum wages for the workers working both in formal and informal establishments. But discrimination and exploitation of informal workers is apparent. All the legislations are focused mainly towards formal workers. But what about the workers working in informal establishments? In spite of the predominance of informal workers, there is no proper legislation regarding the welfare of those workers. Attention needs to be provided not only in terms of government intervention, but also in form of research activities. It is a well-known fact that much of research activities ultimately go into government planning and decision-making. As far as this particular topic is concerned, "Death of firms", causes threat to the livelihood of the proprietors. Proprietors may include small vendors, shop owners etc who have 'hand to mouth' existence. Closure of such businesses goes unregistered and unnoticed. It is urgent that such activities get due recognition and acclaim so that the livelihood of such marginal people may be secured through relevant government programs. Informal sector provides livelihood to millions of people, yet their contribution to economic development is negligible. It consists of typically small inefficient firms run by poorly educated entrepreneurs. They produce low-quality products for low-income consumers using little capital and adding little value. Informal firms enjoy advantage like avoidance of tax and regulations. However, they do not threaten formal firms; the increase in value that informal entrepreneurs would achieve by operating formally is too small to offset the additional costs that would arise from taxes and regulations. Thus, the giant informal sector competes unfairly with law-abiding formal firms (Farrell 2004). Supporting this view, one must understand that informal sector needs to be monitored and studied so that they can be brought under the purview of government and the hidden entrepreneurial abilities be tapped. However, it also cannot be denied that informality is a byproduct of

poverty (Porta and Shleifer, 2014) in a developing country like India, and formalizing it would be a tedious task. So, at this juncture, it can be said that informal sector requires extra attention in policy making, for example, making formalization easy, so that the demerits of informalization to the economy can be checked. And studies like this particular one is a little drop to the ocean which would serve the above purpose.

The Table 1 reflects the predominance of informal sector in the Indian economy, and as such the relevance of the topic is acknowledged. In 2004-05, 92.3% of total workers lied in informal sector in comparison to a minimal 7.7% of formal sector.

Informal Sector

"Informal Sector" refers to the activities in which many, if not most, urban workers regularly engage as full participants in the existing economic order (Peattie, 1980; Davies, 1979). As a social stratum, "informal sector refers to the most deprived sectors of the population, primarily in urban areas. Deprivation is variously defined in terms of access to and quality of employment, earnings and consumption. (Raczynski, 1977).

According to an ILO sponsored study, the defining characteristic of informal enterprise is ease of entry, determined by low capital and skill requirements. Street vending, domestic service, minor household repairs, custodial duties can be performed by anyone without special training or resources. This sector has workers with low levels of education and such segments of the population as women, children and aged and recent urban migrants. Their earnings are lower than workers of formal sector and their opportunities for advancement out of informal activities are severely limited. (Gerry, 1978; Tokman, 1978). Informal sector has other characteristics like reliance on indigenous resources, family ownership of enterprises, small scale of operation, labour-intensive and adaptive

Table 1: Estimated Number of Informal/Formal Sector Workers in 1999-2000 and 2004-05 (in millions).

Category of workers	2004-05					
	Informal Sector		Formal Sector		Total	
Informal Workers	391.73	(99.6)	28.91	(46.2)	420.67	(92.3)
Formal Worker	1.42	(0.4)	33.65	(53.8)	35.03	(7.7)
Total	393.15	(100.0)	62.56	(100.0)	455.7	(100.0)
1999-2000						
Informal Workers	339.71	(99.5)	23.04	(42.0)	362.76	(91.5)
Formal Worker	1.79	(0.5)	31.85	(58.00)	33.64	(8.5)
Total	341.50	(100.0)	54.89	(100.0)	396.4	(100.0)

Source: Report of the Committee on Unorganized Sector Statistics, National Statistical Commission, Government of India, February 2012.

technology, skills acquired outside the formal school systems, and unregulated and competitive markets. Urban growth in India can be attributed to migration from the rural areas. The motivation behind such migration is economic in nature. The so called 'modern sector' in manufacturing and social establishments has failed to cause an increase in labour demand owing to its capital-intensive nature. However, the excess labour supply caused by migration is generally found to be absorbed by rest of the urban economy loosely termed as the 'informal sector'.

Literature Review

There is a crisis of Indian literature on death of firms. However, there has been a lot of work done on U.S firms and other foreign firms. A review of the existing literature suggests various factors which determine the decision of the closure of a firm and ultimately its "death". *Royston Greenwood and Roy Suddaby (1997)* state a meta-theory that-Failure, exit, bankruptcy, liquidation, hostile takeovers are largely viewed as results of managerial 'bungling'. *Hopenhayn (1996)* in his study develops a model in which firms are faced with individual productivity shocks and this is the only source of uncertainty. Their decision to exit the industry depends on these shocks. He explains that as a result of this idiosyncratic uncertainty, resources are reallocated from exiting to new and expanding firms. His model further suggests that incumbent firms maximize profit with a perfect foresight on future prices and as a consequence, exit decisions are a function of the sequence of future prices.

Rajshree Agarwal and Michael Gort (2000), in a neo-classical model approach, suggest that the probability of a firm's survival for a given interval of time is a function of a vector of market attributes and a vector of attributes that relate to the individual firm. Market attributes consist of variables such as growth in demand, barriers to entry, scale economies and others. *Norujuki Doi, (2000)* in his study of 101 four-digit SIC manufacturing industries over the period 1981-89 found that capital intensity and subcontracting relationships have an exit-promoting effect, while profits, industry growth, concentration and R&D opportunity have a negative relationship to exit. He also found that in industries with large initial number of firms, gross exit rate tends to increase. *John Austin and David Rosenbaum (1989)* in their study of U.S manufacturing industries try to answer the question about the forces behind exit. One answer is that exiting firms may have better

use for their physical and financial capital. The reasons that attracted them to the industry are no longer sufficient for them to stay. They may have got attracted to some other industry. Firms may also be driven out due to high costs which make it difficult to compete with the market. Excessive competition caused by existing firms, new entrants or import competition may snatch opportunities from the existing firms. *Noboyuki Harada, (2007)* in his paper examined small firm exit behaviors, on the basis of a large scale questionnaire survey. He divided his findings into 'economic-forced exit' and 'non-economic forced exit'. The logit estimates of the former suggested that exit rates were high if the manager was young and male, and the firm had loans from a financial institution as its sales tended to increase. Non-economic factors comprised reasons such as aging and health issues, 'to take life easy', 'to take a new job or start a new business', etc. According to *Storey and Johnson (1986)*, the founder of a new enterprise is strictly linked to his own background. His previous job experience also plays a vital role in the birth of a business. Instead of searching for the most profitable opportunity, a potential entrepreneur starts concentrating on a familiar sector. He acquires his technical and managerial capabilities during his previous job. Educational and family backgrounds also are key factors determining birth of new firm as an act of self-employment. Higher education and family traditions in the field of entrepreneurship correspond to higher probability of choosing a self-employment activity. (*Evans and Leighton, 1989*).

There are environmental factors also which facilitate the emergence of new firms. It is argued that presence of a small firm network can be an effective incubator for new entrepreneurs because of easier opportunities to acquire a general management capability within a small firm. According to *Brusco (1986)*, and *Garafoli (1990)*, the presence of an industrial district with its 'external economies', according to Marshall's terminology, may be an important push factor in stimulating the creation of new enterprises. According to econometric studies by *Gudgin (1978)*, and *Cathcart and Johnson (1979)*, the positive correlation between the birth of new firms and presence of small firms has been confirmed in cross sectional analyses. According to self-employment theory by *Oxenfeldt (1943)*, there are various push and pull factors with regard to the choice of the potential founder. He compares his present income and perspectives as employee and the expected income from the independent activity, if this difference is more than a given threshold, the new firm will be founded. *Storey and Jones (1987)*

discovered a positive relationship between job losses and creation of new enterprises, which turned out to be much more significant than the relationship between profits and entry rates. *Evans and Leighton* (1990) put forward estimated results where the choice of self-employment turns out to be more likely when previous job experience has been characterized by either low wages or frequent changes of job.

Research Methodology and Observation

The objective of the study “Death of firms” is to find out the reasons behind the closure of small firms. The study attempts to bring them out to decide whether they can be established as classic determinants. The study uses literature on firm death to identify determinants and incorporate the same in questionnaire for primary data survey. The author also reviewed literature on firm birth as closure of one firm leads to birth of another.

Sampling Design

Purposive sampling method was adopted for this study.

Sample unit

Sample unit consists of small shop owners and vendors circulating in Bodhgaya and Gaya.

Sample size

Total sample size in the present study is 16. It comprises 14 from Bodhgaya and 2 from Gaya.

Data collection method(s)

Primary Data: The data was collected through questionnaire and interview

Secondary Data: The data were collected through the following sources:

- (i) Internal sources
- (ii) Articles downloaded from JSTOR, EPW etc.

Limitations of the study

The major limitation of the study is that Government of India doesn't maintain official records regarding the closure of informal firms. So, primary data was used. Moreover, there is a crisis of Indian literature on the particular topic, as not much work has been done in the particular area. Another limitation is the small size of the sample. So, it could not be subjected to further analysis and interpretation

using statistical tools. Reason for small size can be the prevalence of job mobility and rarity of firm death. Time constraint is also another limitation.

Observations

This section contains a detailed discussion of the observations made during the survey. A detailed analysis of the various aspects of the survey has been made to bring out the details of the study.

Basic details

The survey on ‘Death of firms’ was conducted at Bodhgaya and Gaya. The age of most of the respondents was above 40 and it is justified because it suggests that earlier the proprietor was continuing some other business.

Table 2: Showing age of respondents.

Age Group	Frequency
21-40	8
41-60	7
61 and above	1

Some of the vibrant entrepreneurs are in their twenties and have also suffered business closures owing to different reasons. Majority of the respondents are married. They do not possess educational qualifications as they are street vendors characterized by poverty. So, they choose such occupations which require no educational qualification and minimal capital investment. However, some of the better off respondents possessed some basic education and rarely one or two were pursuing professional degrees.

Table 3: Showing educational qualification.

Educational Level	Frequency
Illiterate	3
Non-Matric	5
Matric	1
Inter	5
Graduate	2

Majority of the respondents are Hindus, some Muslims.

Table 4: Showing caste.

Religion	Frequency
Hindu	13
Muslim	3

One fact worth mentioning is that caste plays an important role in their choice of business. For example, respondent belonging to ‘Malakar caste’, sells flowers.

First Occupational/Business details

First basic occupation

As informal firms are run by proprietors who are poor and belong to the underprivileged groups, their first basic occupation is basically small, which require less of capital investment. For example, their first ventures were tea shops, rickshaw pulling, egg stalls etc. This is the case with the marginalized ones. However, those who are little better off have their initial business like hotel, clothing, dairy farm etc. They are those who have good initial capital and can start such businesses properly.

Age of the respondent during first occupation

First business obviously suggests that the proprietors are in their twenties. However, there are some exceptional cases where one starts business at a tender age to support their families. For example, a rickshaw puller started pulling rickshaw in his teens as he had no other option to support his family.

Reason for choice of that occupation

As informal firm owners are people belonging to poor background, their choice of occupation is characterized by tasks driven by the motive of supporting the livelihood of their families. For example, a rickshaw puller chose his occupation only because he had no other option to feed his family. Reasons for choice of first occupation however reflect diversity as far as the samples are concerned. Choice of occupation is also determined by family business. For example, for a respondent flower selling was a family business, so he chose the same. He may have gained the experience for running the same since he was a child. Another determinant affecting choice is the previous job experience of the person. For example, a person previously as a helper in a hotel chose to open his own hotel and run it using the experience he has gathered at his previous workplace. In the same manner, a person a medical store as his first occupation has previously worked as a compounder in a medical store. Choice of occupation is also determined by the profit-motive of the proprietor. If he thinks that this business will fetch him good profits, he goes for it. Such profit is however not guaranteed, it is just the personal discretion of the proprietor. His choice of business may also be the reason for the closure of his business. For example, a person opens a mobile accessories shop driven by profit motive, but later it fails because of lack of demand in the market. Some businesses are also

commenced because the proprietor analyses that there is no competition for it in the market. For example, a person opened a hotel near Bodhgaya 80 feet temple as there was no other hotel beside. However, his business closed because competition arose with passage of time. Another important reason is characterized by the place where the business is located. Many people open handicraft shop at Bodhgaya as it is a tourist place. Similar was the case with a tour and travel business owner. Some business choices are affected by the caste of the proprietor. For example, a person belonging to the barber community opened a hair cutting salon. However his choice was also supplemented by the less capital requirement factor, i.e. a mirror and a chair is enough. Some proprietors choose a business because it is a peaceful one and there are no complexities involved. For example, a hotelier opened a hotel as he thinks it is a peaceful business. Some business choices are determined just with the fact that he is unemployed and he had to do something. This response was recorded from a ring shop owner. Small ventures like egg stall and tea stalls are opened just because they require less of capital and there are no major manual efforts involved. A unique factor determining firm choice apart from conventional ones was that a person opened a dairy farm because of his love for animals.

Help for starting the business

Majority of the respondents were helped by their friends and family members. Close relatives provide necessary capital required for the establishment of business and that too without any rate of interest. However, many of the businesses are started without any external help and they come up with self-generated capital like savings. Some of them were helped by their father.

Time taken to start the business

On an average, it takes 2-3 months for a business to commence. The proprietor arranges for necessary capital and other fixed assets and equipments during the time interval. However, it takes minimal time to start petty businesses like tea stalls and vegetable shop or egg stalls.

Duration of that occupation

There is no uniformity regarding the duration of first occupation among the samples. For example, an egg stall owner had been selling eggs for past 20 years. Shops like footwear, mobile shops, hotel continued for 2-3 years. However, businesses involving bigger investment continue for long

because they have to recover the sunk costs. For example, a restaurant business continued for 10 years. Ultimately, the duration of occupations does not present a consistent picture.

Initial capital invested

As the proprietors do not maintain books of accounts, their responses on initial capital investment are based on approximations. Initial capital ranges from Rs 2000-3000 to even lakh. For example, initial investment for a barber was Rs 3000, small hotel was Rs 3000, a mobile accessories shop was Rs 20,000, a vegetable and fruit shop was started with Rs 20,000. Bigger shops involved bigger investments like a tour and travel shop involved a total investment of Rs 7 lakh (5.5 lakh for car & 1.5 lakh for license). A bigger hotel involved an investment of Rs 50,000. A flower shop was commenced with an initial investment of Rs 20,000. A footwear shop was opened with a total investment of Rs 2 lakh. A restaurant business was started with 2.5 lakh. A clothing business started with Rs 30,000. A dairy farm required a total initial capital of Rs 1, 20,000.

Fixed Assets

Fixed assets composition is different for different proprietors. For a hotelier, his fixed assets comprised chairs, tables, chairs, utensils, stove etc. Similarly, for a restaurateur, his fixed assets are his restaurant, furniture, utensils, etc. for a juice seller, his juice machine, for a tour and travel owner, his vehicles etc.

Source of such capital

As mentioned earlier, friends and relatives provide the necessary capital. More interestingly, some even use their dowry as initial capital for the business. For example, a dairy farm owner utilized his dowry as capital. Similarly, a hotel owner sold the jewellery of his wife for accumulating money. Donations were also a source of capital. For example, a tea stall owner started his tea stall using the Rs 15000 American donation he had received.

Rate of interest

As source of capital is limited to family and friends, no rate of interest is applicable.

Reason for closure of that business

This question is very crucial as it underlies the main purpose of the study. A very common reason stated and which is already accepted conventionally is

loss. And such loss can be attributed to a number of reasons. First and foremost, health and related causes. For example, a person who ran a hotel for 17 years chose to close the business because his body did not allow more hard labor. Similarly, health hazards, like a barber underwent a cervical operation, so he had to discontinue his business and opened a handicraft shop. In the same way, a rickshaw puller complained of chest pain and piles, therefore he discontinued the same and went for juice-selling. Such proprietors understand that they have to be secured in terms of health in order to support their families, so they switch to jobs involving less labor. Another important factor affecting closure or death is the lack of knowledge of business. A person opened a mobile accessories shop with a profit motive thinking that there is huge demand, but had to shut it down as he did not have proper knowledge of the business. Lack of earlier experience in that field is also another reason. For example, how to handle the customers, how to bargain, lack of other management skills disallows them to sustain in long run. The survey area, Bodhgaya is a tourist place, and that too determines the continuance of a business. For example, a proprietor opened a small hotel thinking it is a peaceful business, but it got closed as he didn't find many customers because tourists prefer big hotels and restaurants. Similarly, a respondent complained of off-season loss, i.e. during peak seasons, when tourists arrive, business runs well, but during other time of the year, business remains poor. Some businesses were closed because of government activities. For example, a flower shop located near Mahabodhi Temple in Bodhgaya was evacuated from the temple because the government wanted to enlarge the temple premises. So, the flower shop had to be shut down. In another government activity, a tour and travel business was closed because the government increased travel tax. Due to this, the savings of the proprietor decreased. All his savings went into paying taxes with minor savings left for him, and he found it difficult to make profits. So, he shut down the business. In a similar government induced factor, a medical shop was closed because the proprietor failed to secure license from the government.

Loss during that business

In a fashion similar with responses of initial capital investment, the responses to this question were also approximation based. No accounts are maintained regarding losses. Many respondents had no response regarding the same, however owner of a flower store quoted a loss of Rs 50,000, tour and

travel owner quoted 5 lakhs. A hotelier recorded 1 lakh loss, similarly a mobile accessories shop owner quoted 1 lakh and a footwear owner 2 lakhs.

Amount realized from sale of assets of the business

As proprietors belong to poor class, they try to utilize the assets of the previous business in their new ones, and as such they do not sell them. However, some bigger shop owners sell them off in some exceptional cases. For example, a medical shop owner who could not procure licenses sold it for 1 lakh and started a general store. Tour and travel realized 1.2 lakh from it before opening a general store. Some of them had no idea about the amount realization.

Second Occupational/Business details

Second basic occupation

The decision regarding second basic occupation is very crucial for the proprietor, as he has recently suffered a firm 'death' and he cannot afford another. Such decision is influenced by the fact that it should be less risky and would allow the owner to sustain in the long run. In Bodhgaya, majority of the respondents, who were earlier hotelier, tour and travel owner, footwear owner etc switched to general store shop as it is a much secured business and it is in much demand in a tourist place. It involves less of risk and no complexities are involved.

Reason for choice of that occupation

As mentioned earlier, the proprietor has to be very precautious during his second venture. This fact was inherent in the responses recorded during the survey. The choice of general store is supported by reasons like easy procurement of licenses, huge demand for such shops in a tourist place and of course meeting the livelihood of family. A restaurateur whose restaurant was shut down as his business was on leased land procured a government license for Sudha dairy from the Bihar government. Similarly, a person pursuing medical career, who had suffered death of a mobile shop business, opened a medical shop. This reveals a 'learning by doing' factor, as he learned from his previous mistake. A barber, who had closed his salon owing to health factor, opened a statue and handicraft shop, because it involved no manual labour. Similarly, a rickshaw puller started juice vending to escape manual labour. Other small vendors like vegetable started selling tea as less risk is involved. A dairy farm owner also started

tea stall to avoid risk. A hotel owner started an electronic shop as there was no competition nearby. He also had established good contacts with wholesaler. A ring shop owner ventured into cloth business as it is demanded more by tourists.

Source of such capital

Unlike their first business, where their source of capital is relatives/friends, during their second venture, source of capital for majority of the small vendors is local moneylenders like *mahajans*, because they are not capable of securing loans from banks, so they find it easier to approach the local moneylenders. However, they charge higher interest rates. Similarly, bigger proprietors also prefer fetching money from the market to loans from banks because according to them, banks involve much of formalities and takes much time to clear loans.

Rate of interest

As local money lenders are non-institutional form of credit-makers, they do not charge uniform rates. So, rates of interest vary across individuals. For example, 10-12%.

Decision regarding diversification

Diversification as a determinant of firm exit was identified in the literature, and so found a place in the questionnaire. Many wish to diversify in their own spheres. A paan shop owner wished to diversify only if he made losses. A tea shop owner wished to open a hotel and sweet shop. Juice seller didn't wish to diversify soon. A general store owner who was on a rented shop, wished to open his own shop. Some newly opened electronic and handicraft shop owners didn't wish to diversify owing to lack of funds and peacefully running business. A samosa shop owner wished to own a bigger shop. A medical shop owner wished to open a nursing home. A general store owner wanted to expand his store by incorporating a medical shop simultaneously.

Risks idiosyncratic to the business

Idiosyncratic risks were identified in one or two responses. For example, leakage of milk was a risk for Sudha Dairy, such wastage was very large and amounted to huge loss, but was not acknowledged by the Bihar government. To minimize those, the owner sells other private products at his store which is not allowed by the government. Owner of a handicraft shop responded that the wrong behavior of the owner and risk of being removed from the shop but the owner is an idiosyncratic risk for him.

Caste as an exit determining factor for the business

Caste was not an exit determining factor for any of the business.

Government policies as an exit determining factor

Government policies have had an impact on businesses. These may also include the activities of the local administration.

Conclusion

'Death of firms' is a constituent of labour economics, and this particular topic has not received the required attention in the research arena in India. This study approaches in its small way to find out the reason that causes 'Death' or closure of firms. As there are no official records maintained by the government of India regarding the same, the study relies on primary data. Initially, many determinants were identified from literature like profitability, firm's size, age, productivity, idiosyncratic risks etc. However, many of those were not applicable to the samples given their informal nature. The determinants identified from the study are as follows. Firstly age, Age (of the firms) as a determinant of death of firms is reflected in the literatures, and many suggest that with age, firms get stronger and are less likely to exit. But, as far as the survey is concerned, age of the proprietor and this is a major determinant of death of firm. With growing age, the proprietor's manpower declines, and he finds it difficult to continue the business as there is no helping hand for him. So, he chooses to shut the firm and start some other business which requires less of physical effort and continuous profits. Secondly, health, very close to the determinant age, is another one called health. Health of the proprietor also plays a major role in determining the continuance of business. Poor health and other health hazards turned out to be the reason for death of business. Many businesses shut down, because the proprietor continues as his body was rendered unfit owing to the excessive manpower required by his previous engagement. Proprietors of small business establishments are ignorant of the various health hazards and realize about it, only when they arise. Apart from health hazards, there are health issues which are not a result of the business, and determine his decision for closure of business as he cannot continue the same. Similarly, Managerial capabilities, the proprietors' managerial capabilities have a direct impact on the success of a business. The proprietors

in the sample do not possess any such professional managerial skills, but here the practical managerial skills are concerned. Many of the businesses start because the proprietors find a good scope for it but they fail because of lack of knowledge required for running the business efficiently. Moreover, some businesses are started just because the convener anticipates that there is demand for such shop, but fail to monitor further complexities involved in it. For example, a person starts hotel business in Bodhgaya thinking that it would work, but it fails as there is no demand for it in a tourist place, and he opens a general store which has more demand. His lack of managerial and analytical skills results in his closure of business. Loss is regarded as one of the major determinants causing death of business. Same is the case with many of the businesses in the samples collected where no profit/loss has been a major contributor to firm deaths. Many of the businesses are subsistence ones and are run only to secure food for the families and improve their standard of living. But if the basic motive itself is not fulfilled, they have no option but to close the business. This results in death of that particular firm. The proprietor then starts searching for some other business which would give him enough money for his livelihood. Loss, as a determinant is directly linked to managerial skills, as the proper/improper functioning of a business and subsequent profit/loss depends on the managerial skills of the proprietor. His initial decision of choosing the business affects his future prospects of profit/loss. Loss or profit is also dependent on competition. Competition, as a determinant of firm death, holds major significance. Competition may be of two types. First, one which exists beforehand, during the formation of the business. When the business fails to survive the existing competition in the market, it fails, another type of competition may be one which comes up after the establishment of the business. When the business starts, the proprietor hopes of good profits as there is no competition from other shops. But with passage of time, new businesses come up and those being more efficient than the one in question, causes the failure of the latter.

References

1. Austin John S and David I. Rosenbaum, "The Determinants of Entry and Exit Rates into US Manufacturing Industries" Review of Industrial Organization 1989;5(2): Papers-21, and American Economic Association's Hundred and Second Annual Meeting, Atlanta, Georgia, December 28-30, 1989 (Summer 1990), 211-23.

2. Doi N. "The Determinants of Firm Exit in Japanese Manufacturing Industries," *Small Business Economics* 2000;13(4):331-37.
3. Flynn Joseph E. "The Determinants of Exit in an Open Economy," *Small Business Economics* Sep., 1991;3(3):225-32.
4. Frazer Garth, "Which Firms Die? A Look at Manufacturing Firm Exit in Ghana," *Economic Development and Cultural Change*, (April 2005);53(3):585-617.
5. Greenwood Royston and Roy Suddaby, "The Case of Disappearing Firms: Death or Deliverance?" *Journal of Organizational Behavior* Feb., 2006;27(1):101-08
6. Harada Nobuyuki. "Which Firms Exit and Why? An Analysis of Small Firm Exits in Japan," *Small Business Economics* Dec., 2007; 29(4):401-14.
7. Hazra S. "Firm Size and Efficiency in Manufacturing Industries."
8. Mata Jose, "Firm entry and firm growth", *Review of Industrial Organization* (October 1993);8(5):567-78.
9. N Rajesh Raj S, Kunal Sen, "Some Puzzles about Firms-Analyses of India's Informal Manufacturing Sector." *EPW*.
10. Report of the committee on unorganized sector statistics, National Statistical Commission, Government of India, Feb 2012.
11. Vivarelli, Marco, "The Birth of New Enterprises," *Small Business Economics*, (Sep., 1991);3(3):215-23.

Appendix

Questionnaire

Basic details

Name of the respondent: _____
 Age of the respondent: _____
 Marital status: _____
 Educational qualification: _____
 Religion: _____
 Caste category: _____
 Sub-category: _____
 Name and address of the firm: _____

First Occupational/Business Details

1st Basic occupation: _____
 Age of the respondent during 1st occupation: ____
 Reason for choice of that occupation: _____
 Year of establishment of the 1st occupation: ____
 Who helped you start the business?
 How much time it took to start the business?: ____
 Duration of that occupation: _____
 Initial capital invested: _____
 Fixed assets: _____
 Source of such capital: _____
 Rate of interest: _____
 Reason for closure of that business: _____
 Loss during that business: _____
 Amount realised from sale of assets of the business: _____

Second Occupational/Business Details

2nd basic occupation: _____
 Year of establishment of the 2nd occupation: ____
 Reason for choice of that occupation: _____
 Duration of that occupation: _____
 Initial capital invested: _____
 Source of such capital: _____
 Rate of interest: _____
 Reason for closure of that business: _____
 Do you wish to diversify your business?
 Are there any risks idiosyncratic to your business?
 Is caste an exit determining factor for your business?
 Are government policies an exit determining factor?

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The title page should carry

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- 4) The name by which each contributor is known (Last name, First name and initials of middle name), with his or her highest academic degree(s) and institutional affiliation;
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The second page should carry the full title of the manuscript and an abstract (of no more than 150 words for case reports, brief reports and 250 words for original articles). The abstract should be structured and state the Context (Background), Aims, Settings and Design, Methods and Materials, Statistical analysis used, Results and Conclusions. Below the abstract should provide 3 to 10 keywords.

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Methods

The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

Reports of randomized clinical trials should be based on the CONSORT Statement (<http://www.consort-statement.org>). When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000 (available at http://www.wma.net/e/policy/17-c_e.html).

Results

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

Discussion

Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, What this study adds to the available evidence, effects on patient care and health policy, possible mechanisms)? Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying mechanisms, clinical

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References

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_requirements.html) for more examples.

Standard journal article

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. *J Oral Pathol Med* 2006; 35: 540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. *Acta Odontol Scand* 2003; 61: 347-55.

Article in supplement or special issue

[3] Fleischer W, Reimer K. Povidone-iodine antiseptics. State of the art. *Dermatology* 1997; 195 Suppl 2: 3-9.

Corporate (collective) author

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. *J Periodontol* 2000; 71: 1792-801.

Unpublished article

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. *Dent Mater* 2006.

Personal author(s)

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

Chapter in book

[7] Nauntofte B, Tenovou J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

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