PERCENTAGE CONSUMPTION EXPENDITURE IN INDIA

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Abstract

Consumption is an important activity performed by the household sector. Post Globalisation has raised India's per capita income (expenditure) and that has significantly impacted its food consumption patterns by causing a change in the structure of food consumption baskets. The monthly per capita consumption expenditure (MPCE) on food items has declined from 72.83% to 52.76% and on non food items has increased from 27.15% to 47.24% in the rural India during 1972-73 to 2011-12. While in the urban India the expenditure on food items has decline from 64.45% to 42.46% whereas expenditure on non-food items has shown a steady increase from 35.55% to 57.54% during 1972-73 to 2011-12. The aim of this study is to predict the percentage consumption expenditure of household in India. National Sample Survey Organisation(NSSO) data of years 1993-94,1999-2000,2004-05,2009-10 and 2011-12 has been used. The data includes percentage consumption of households of India on 18 items of both rural and urban area including 16 non-durable goods, durable goods and miscellaneous goods and services. Time series analysis is then used for prediction of percentage consumption expenditure of households of India. This preliminary analysis shows that in future, changes in percentage consumption on non-durable and miscellaneous goods and services for both rural and urban are similar according to the trend. Percentage consumption on durable goods in rural has increased according to its trend but in the case of urban it has increased more. Consumption of durable goods in urban area is increasing more than proportionately and as a result there is a decrease in the consumption of non-durable goods and miscellaneous goods, which may affect the savings ratio of India. Further analysis in savings ratio is in process.

Keywords:

Percentage consumption expenditure, savings ratio, time series analysis

Introduction

The expenditure incurred by a household on domestic consumption during the reference period is the household's consumer expenditure. Expenditure incurred towards productive enterprises of households is excluded from household consumer expenditure. Also excluded are expenditure on purchase and construction of residential land and building, interest payments, insurance premium payments, payments of fines and penalties and expenditure on gambling including lottery tickets. Money given as remittance, charity, gift, etc. is not consumer expenditure. However self-consumed produce of own farm or other household enterprise is valued and included in household consumer expenditure. So are goods and services received as payment in free from employer, such as accommodation and medical care, and travelling allowance excluding allowance for business trips.

India is the second most populous country in the world with an estimated population of more than 1.2 billion. India's market potential is greater than that of many countries in Western Europe with more middleclass consumers and increasing local purchasing power. Since the liberalization bandwagon began to roll during the early nineties, India made a remarkable transition from being a supply controlled to a demand driven economy. With a large middle class population and their rising level of affluence, the country has one of the largest consumer markets across the world and is reckoned to be at par with the other Asian countries like China. India today offers tremendous market potential with a rapid growth rate in a wide range of products. It is one of the largest economies in the world in terms of purchasing power. India‟s faster economic growth since 1990s has raised per capita income (expenditure) and has significantly impacted its food consumption patterns by causing a change in the structure of food consumption patterns observed earlier during pre-reforms period. This raises the relevance of looking at the composition of India's food consumption basket.

Consumption is an important activity performed by the household sector. Whatever personal income obtained, from one source or the other, is spent either on consumption or is saved. Presently, consumption is exacerbating inequalities. The consumption pattern in India is defined with the reference to the consumer expenditure survey by the NSSO. These surveys divide rural and

urban population into different expenditure groups. The distribution of household/person and the percentage per capita monthly as well as annual expenditure on food and non food items is given for each group.

This paper deals with the analysis of percentage consumption expenditure pattern both in the level and type of commodities of consumption that happened in India during the recent years. It examines whether there is change in the pattern of consumption expenditure over a period of time. Large differences in the pattern of food and non-food consumption over the regions of the country is also analyzed.

Objectives

1. To analyze the commodity wise trends in yearly annual per capita consumption expenditure pattern in rural and urban area of India.
2. To predict the percentage consumption expenditure of household in India.

Methodology

For this study secondary data has been collected. From NSSO journal "NSS Report No.-555(68/1.0/1)", the data on percentage consumption expenditure of households in the years 1993-94,1999-2000,2004-05,2009-10 and 2001-12 has been obtained. The data is on percentage consumption expenditure of households on 16 non-durable (food products),durable and miscellaneous products. The 16 non-durable goods include cereal,grams,cereal substitutes,pulses and its products,milk and its products,edible oil,egg,fish and meat,vegetables,Fruits and nuts,sugar,salt and spices,beverages,pan,tobacco and intoxicants,fuel and light,etc.

First hypothesis testing is done. In a modern economy it is assumed that consumption pattern in both urban and rural economies are same. The null hypothesis is taken as the mean percentage consumption expenditure for each of 18 household items equal in rural and urban sectors. To test the hypothesis, the Stata software is used.

Data for the years 1993-94, 1999-2000, 2004-05, 2009-10 and 2011-12 has been used and have taken 2004-05 as the origin; hence it's corresponding "**t**" value is 0. And the "**t**" values for the years 1993-94, 1999-2000, 2004-05, 2009-10 and 2011-12 are given by:

Years	t
1993-94	-11
1999-2000	-5
2004-05	0
2009-10	5
2011-12	7

Analysis of this data is done using the **STATA** software.

In this case, a quadratic trend equation has been followed because trends in percentage consumption of consumer expenditure is nonlinear and is generally parabolic or quadratic in nature, because a change in consumption pattern of consumers both for food and non-food items.

The equation is $Y_t = a+bt+ct^2$

So, regress Y_t values for each of 18 household items on t and t^2

Result

The equations of the 18 items for both rural and urban are

1. **Cereals**

   Rural: $Y_{CRt} = 18.73976+(-.7318981)*t+(-0.0210289)*t^2$

   Urban: $Y_{CUt}=10.495+(-0.3737515)*t+(-0.0048637)*t^2$

2. **Grams**

   Rural: $Y_{GRt} = .1055101+(0.0066601)*t+(0.0013595)*t^2$

   Urban: $Y_{GUt} = .0876794+(-0.0020968)*t+(0.006964)*t^2$

3. **Cereal Substitutes**

Rural: Y_{CSRt}= .1+(0)*t+(0)*t^2

Urban: Y_{CSUt}= (-0.0146257)+(0.0038018)*t+(0.13106)*t^2

4. **Pulses & Products**

Rural: Y_{PPRt}= (3.442667)+(-0.0274305)*t+(0.0008043)*t^2

Urban: Y_{PPUt}= (2.418026)+(-0.0316232)*t+(0.00021972)*t^2

5. **Milk & Products**

Rural: Y_{MPRt}= (8.515141)+(0.0044666)*t+(0.008828)*t^2

Urban: Y_{MPUt}= (8.515141)+(-0.0827656)*t+(0.0075818)*t^2

6. **Edible Oil**

Rural: Y_{EORt}= (4.065736)+(-0.0302666)*t+(-0.0011352)*t^2

Urban: Y_{EOUt}= (3.050279)+(-0.074688)*t+(0.0034084)*t^2

7. **Egg, Fish & Meat**

Rural: Y_{EFMRt}= (3.333356)+(0.023411)*t+(0.0019403)*t^2

Urban: Y_{EFMUt}= (2.787506)+(-0.0258656)*t+(0.0029955)*t^2

8. **Vegetables**

Rural: Y_{VRt}= (6.206437)+(-0.0759929)*t+(-0.0092553)*t^2

Urban: Y_{VUt}= (4.625962)+(-0.1171933)*t+(-.0036299)*t^2

9. **Fruits & Nuts**

Rural: Y_{FNRt}= (1.776206)+(.0041622)*t+(-.0002926)*t^2

Urban: Y_{FNUt}= (2.203984)+(-.0159867)*t+(-.0028006)*t^2

10. **Sugar**

Rural: Y_{SRt}= 2.327587+(-.0500631)*t+(.0011901)*t^2

Urban: Y_{SUt}= 1.440044+(-.0408338)*t+(.003802)*t^2

11. **Salt & Spices**

Rural: Y_{SSRt}= 2.677597+(-.0343108)*t+(-.0023874)*t^2

Urban: Y_{SSUt}= 1.842836+(-.0333674)*t+(-.0011257)*t^2

12. **Beverages**

Rural: Y_{BRt}= 4.596447+(.1272234)*t+(.008303)*t^2

Urban: Y_{BUt}= 6.164212+(.0264332)*t+(.011294)*t^2

13. **Pan, Tobacco & Intoxicants:**

Rural: Y_{PTIRt}= 2.632661+(-0.510125)*t+(.0001484)*t^2

Urban: Y_{PTIUt}= 1.569865+(-.507211)*t+(.0015809)*t^2

14. **Fuel & Light**

Rural: Y_{FLRt}= 9.238704+(.0950608)*t+(.0091513)*t^2

Urban: Y_{FLUt}= 9.052727+(-.0310671)*t+(-.024945)*t^2

15. **Clothing & Bedding**

Rural: Y_{CBRt}= 5.484497+(-.0038035)*t+(.0025559)*t^2

Urban: Y_{CBUt}= 4.949029+(-.0077092)*t+(.0001092)*t^2

16. **Footwear**

Rural: Y_{FRt}= .9484667+(.0202939)*t+(.0019947)*t^2

Urban: Y_{FUt}= .9241737+(.009653)*t+(.0014443)*t^2

17. **Miscellaneous Goods & Services**

Rural: Y_{MGSRt}= 22.53761+(.4666244)*t+(.001916)*t^2

Urban: Y_{MGSUt}= 35.86147+(.6200155)*t+(.0151239)*t^2

18. **Durable Goods**

Rural: Y_{DGRt}= 3.353796+(.2481189)*t+(.0173795)*t^2

Urban: Y_{DGUt}= 4.451312+(.2422083)*t+(.0123285)*t^2

For the year 2004-05, t=0. So for the year 2016-17, t=12.

To find the percentage consumption expenditure for the items, in the year 2016-17, for both rural and urban sectors, put t=12 in the equations

table no.1: percentage consumption expenditure of households in 2016-17

ITEM GROUP	RURAL	URBAN
Cereals	6.9288212	5.3960092
Gram	0.3811993	0.1628057
Cereals substitutes	0.1	0.2197223
Pulses & products	3.2293202	2.3549444
Milk &products	9.839965	8.098781
Edible Oil	3.539068	2.598119
Egg, Fish & meat	3.8936912	2.9084708
Vegetables	3.961759	2.69699368
Fruits & nuts	1.784018	2.41543
Sugar	1.8982042	1.4975264
Salt & spices	1.9220818	1.2803264
Beverages	7.3187598	8.1077464
Pan, tobacco & intox.	2.0418806	1.1888614
Fuel & light	9.0616464	5.087842
Clothing & bedding	5.8069046	4.8722434
Footwear	1.4792303	1.2479889
Miscellaneous Goods & services	27.861199	41.123814
Durable goods	8.8338708	25.110852

From table no.1 it can be observed that changes in percentage consumption on non-durable and miscellaneous goods and services for both rural and urban are similar according to the trend. Percentage consumption on durable goods in rural has increased according to its trend but in the case of urban it has increased more. Consumption of durable goods in urban area is increasing more than proportionately and as a result there is a decrease in the consumption of non-durable goods and miscellaneous goods. Consumption of fuel and light is lower in urban area than in rural area. In rural mostly they have joint family including 12 to 13 members in a single household so it is not possible to maintain the standard of living because their income is low, when they are not able to provide food there is no chance pay electrical bill.

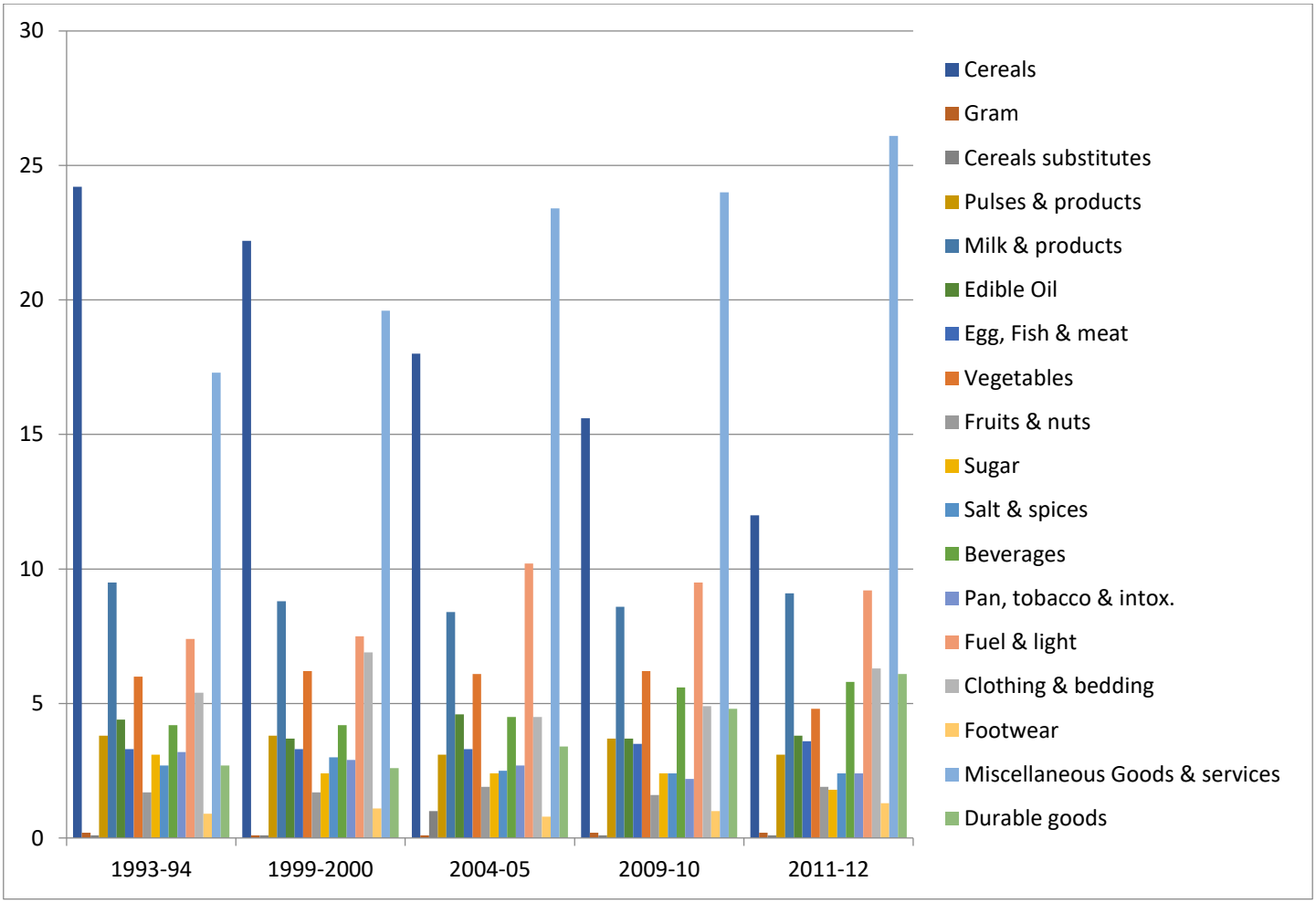

fig.1(a) percentage consumption of 18 items in rural India

From fig.1(a) it is evident that over the years, there is a decreasing trend in consumption of cereals. Major factors that affect trends around the world include demographics (age, household size, household income, women in the labor force, amount of education, geographic location, and ethnic background), diverse lifestyles, and consumer attitudes (toward food habits and food preferences). Consumer trends that affect movement of grain-based foods through the food system include food marketplace trends, food processing/manufacturing trends, and agricultural trends. Major trends in the food system include niche marketing, development of grocery stores to improve food shopping convenience, increased demand for and development of convenience foods, and the growing demand for food away from home. The trend is also similar for the urban population which can be seen from fig.1(b).

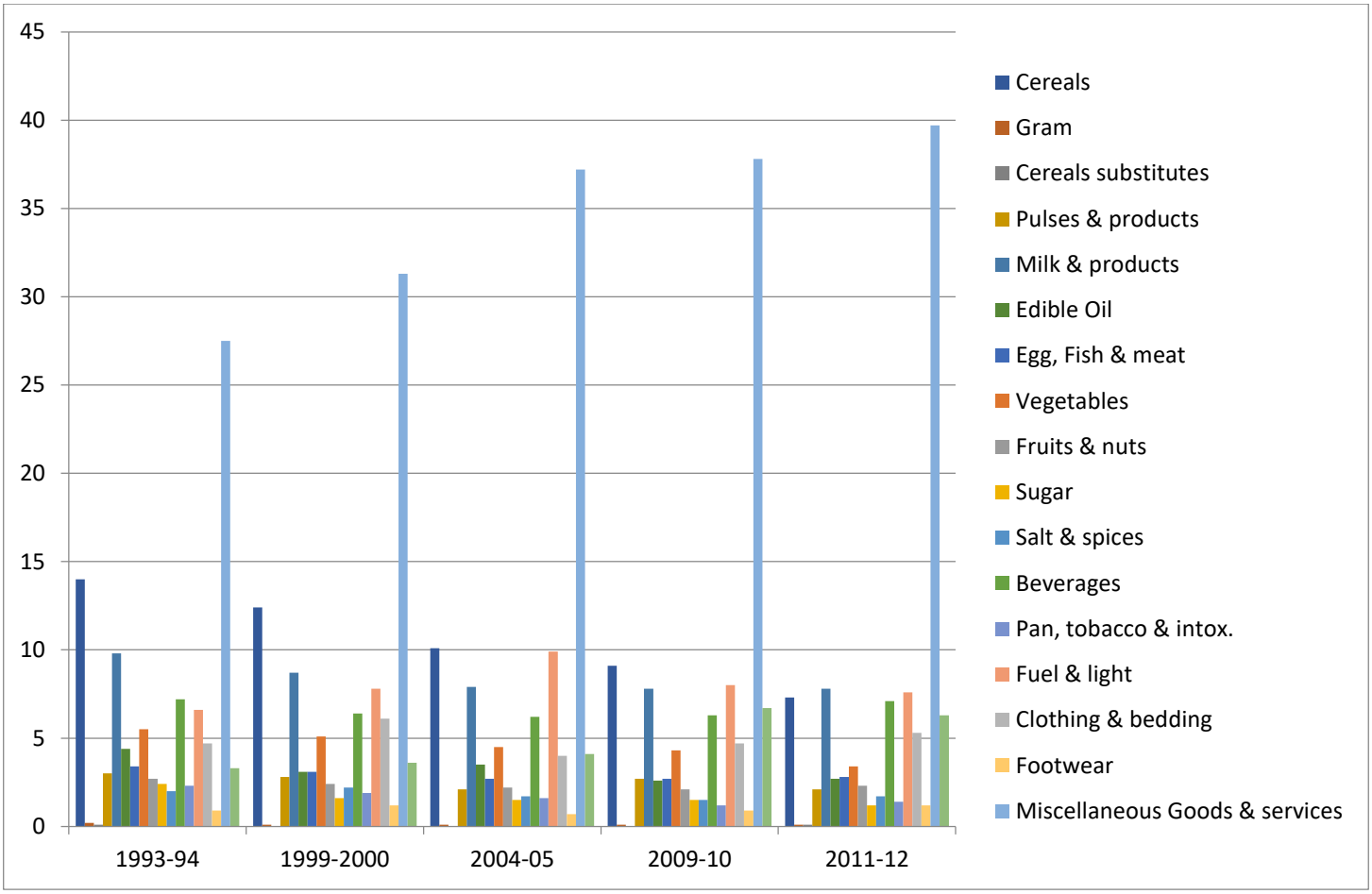

fig.1(b) percentage consumption of 18 items in urban India

The non-food groups have generally shown a rise in share over the 18-year period. The exception is "pan, tobacco and intoxicants," which exhibits a distinct downward trend. The share of durable goods has more than doubled in rural India and grown by 90% in urban India. The share of the much larger category called "miscellaneous goods and services" (including rent, education and medical care) has risen, though not very steeply in recent years, to 26% in rural India and to nearly 40% in urban India.

DISCUSSION

In future, changes in percentage consumption on non-durable and miscellaneous goods and services for both rural and urban are similar according to the trend. Percentage consumption on durable goods in rural has increased according to its trend but in the case of urban it has increased more. Consumption of durable goods in urban area is increasing more than proportionately and as a result there is a decrease in the consumption of non-durable goods and miscellaneous goods. Percentage consumption of cereals in both rural and urban sectors is decreasing. In the case of fuel and light, percentage consumption is increasing in rural sector whereas in urban sector it is decreasing.

SWOT ANALYSIS

Strength:-The paper considers data on per capita percentage consumption pattern which can be said is unaffected to any economic shocks between the study period.

Weakness:-The findings may be affected due to change in personal preferences which is not taken into account.

Opportunities:-Future consumption expenditure of these 18 items can be predicted by which the savings and consumption pattern of India can be estimated.

Threats:-Individual preferences if not taken into account may affect expected percentage consumption expenditure.

IDEAS FOR FURTHER RESEARCH

- If consumption of a specific item in these 18 items requires to be changed, this analysis may be used.
- If savings ratio of a country is to be balanced, this analysis will be of help.

ABBREVIATIONS

ITEM GROUP	RURAL SECTOR	URBAN SECTOR
Cereals	**CR**	**CU**
Gram	**GR**	**GU**
Cereals substitutes	**CSR**	**CSU**
Pulses & products	**PPR**	**PPU**
Milk &products	**MPR**	**MPU**
Edible Oil	**EOR**	**EOU**
Egg, Fish & meat	**EFMR**	**EFMU**
Vegetables	**VR**	**VU**
Fruits & nuts	**FNR**	**FNU**
Sugar	**SR**	**SU**
Salt & spices	**SSR**	**SSU**
Beverages	**BR**	**BU**
Pan, tobacco & intox.	**PTIR**	**PTIU**
Fuel & light	**FLR**	**FLU**
Clothing & bedding	**CBR**	**CBU**
Footwear	**FR**	**FU**
Miscellaneous Goods & services	**MGSR**	**MGSU**
Durable goods	**DGR**	**DGU**

REFERENCES

1. Deshmukh M. S. and Vyavahare S. S. (2018) “An Analysis of Consumption Expenditure in India”, EUROPEAN ACADEMIC RESEARCH Vol. V, Issue 10/ January 2018.
2. Sethi Narayan and Pradhan Hemanta Kumar (2012), “The Patterns of Consumption Expenditure in Rural Households of Western Odisha of India: An Engel Ratio Analysis”, OIDA International Journal of Sustainable Development 05:04(2012).
3. Joshi P.D. (1998), “Changing Pattern of Consumption Expenditure in India and Some Selected States”, Sarvekshana, Analytical Report, No. 2, National Sample Survey Organisation, New Delhi. Handbook of Statistics on the Indian Economy, RBI.
4. Acharya S (2004), “India’s Growth Prospects Revisited”, economic and political weekly October 9, 2004.
5. Sinha R.R (1996), “An analysis of food expenditure in India”, Journal of Farm Economics, Vol. 48, No. 1, pp 113-123.
6. Kumar, T Krishna, Mallick Sushanta and Jayarama Holla (2009), “Estimating Consumption Deprivation in India Using Survey Data: A State-Level Rural-Urban Analysis Before and During Reform Period”, Journal of Development Studies, 45: 4, 441-70.
7. Mittal Surabhi (2007): “What Affects Changes in Cereal Consumption?” Economic & Political Weekly, 3 February.
8. NSSO (2011-12), “Household Consumption of Various Goods and Services in India, 2011-12”, Report 558, National Sample Survey Organization, Government of India, New Delhi.
9. Rao, C. H. Hanumantha (2000), “Declining Demand for Food grains in Rural India: Causes and Implications”, Economic and Political Weekly, January 22, pp 201-06.
10. Khatkar B.S., Chaudhary N. and Dangi P. (2016) “Production and Consumption of Grains: India”, In: Wrigley, C., Corke, H., and Seetharaman, K., Faubion, J., (eds.) Encyclopedia of Food Grains, 2nd Edition, pp. 367-373. Oxford: Academic Press.