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SARVEKSHANA

109th Issue

**Journal of
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सत्यमेव जयते

**Government of India
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Foreword

Bringing out Sarvekshana has always been a pleasant and enlightening endeavor. First issue of Sarvekshana was released during July, 1977. Sarvekshana is 108th issues old now. The present, 109th, issue comes with three papers on the subjects of "C R Rao's contributions to official statistics", "Extent of contract work in unorganized manufacturing sector in India: Evidence from National Sample Surveys (NSS)" and "School drop-out in India: Pattern, Causes and Determinants". In addition, the highlights of the surveys on household social consumption on education and health in India for the period July, 2017- June, 2018 based on NSS 75th round and the highlights of Time Use Survey 2019 have been included in 109th issue.

This issue was scheduled to be released in September, 2020. But due to certain unforeseen situations, the releasing of the issue got delayed.

Since its inception Sarvekshana has been an important platform for sharing technical papers to encourage research and analysis among academia and officials in the Government on various socio-economic aspects using National Sample Survey data. From 106th issue onwards, Sarvekshana has started accepting papers on socio-economic issues using the data from other surveys and sources as well. This is proving to be good experience and is giving variety to the content.

Referees have been very kind in examining the papers in detail and offering their suggestions in a short span of time. So have been the Members of the Editorial Advisory Board. I offer my sincere gratitude to them and solicit continued support for the Journal. Authors of the papers too have been cooperative in acceding to the suggestions for revision of the papers. I congratulate them for their work. Officers of Survey Coordination Division of National Statistical Office have been meticulous at various stages of publication and their hard work deserves unqualified appreciation.

Sarvekshana is a known Journal among researchers, academicians and policy makers. I welcome students, researchers, government officials and all those working on data to contribute unpublished papers for this Journal. Suggestions for improvement of the Journal are welcome.

New Delhi
December, 2020

G. C. Hanna
Chairman
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PART-I

TECHNICAL PAPERS

C.R. Rao's Contributions to Official Statistics*

- T.J.Rao¹

Abstract

The living legend C.R. Rao has completed 100 years on 10 September 2020 and all his students, colleagues, admirers among others join to celebrate the Centennial of the Doyen of Statistics worldwide. C.R. Rao's contributions in a variety of fields have been discussed by the statistical community by way of seminars/webinars, research publications, news and television media etc. In this brief article we shall take a look at the role played by Rao in Official Statistics.

Key Words: Official statistics, Cross examination of data, Statistical education and training, Economic science,

JEL Codes: Z00

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*Based on a webinar talk given at the Special Session: "C.R. Rao 100: Birth Centenary Celebration" on 24 September 2020 held at Department of Statistics, Rajshahi University, Bangladesh.

¹ Retired Professor, Indian Statistical Institute, Calcutta.

1. Introduction

C.R. Rao joined the Indian Statistical Institute (ISI), by chance and obtained an M.A. degree in Statistics in 1942, the second M.A., the first being in Mathematics from Andhra University in 1941. He then joined the ISI as a technical apprentice and started working in the areas of Design of Experiments and Multivariate Analysis having been inspired by R.C. Bose, K.R. Nair and S.N. Roy. Around that time, Mahalanobis (PCM) was organizing cost efficient, time saving, reliable large scale sample surveys as opposed to complete enumeration for the government to help with its official food and export policies.

2. C.R. Rao's first encounter with Official Statistics

We quote Rao (2001):

"...When I joined the Indian Statistical Institute (ISI) in 1941, there was considerable activity in conducting sample surveys. Mahalanobis was designing a large scale sample survey for estimating the acreage under jute crop in Bengal".

It was but natural that C.R. Rao should get attracted to the survey operations. Subsequently Mahalanobis (PCM) established the National Sample Survey (NSS) in 1950 at the Indian Statistical Institute, Kolkata. C.R. Rao joined the team comprising D.B. Lahiri, S. Raja Rao, M. N. Murthy among others and took an active part in *"designing sample surveys, preparing schedules for recording data and collecting data as an investigator"*.

Post independence of India, a Standing Committee of Departmental Statisticians was appointed in 1948 for coordination of statistical work. Simultaneously in 1949, the National Income Committee with PCM as Chairman started to develop a methodology for computation of national income for independent India. Both committees found large gaps in the available statistical information and felt an urgent need to fill the gaps with good quality data. Mahalanobis with his vast experience on large scale sample survey operations initiated the seven decade old, country wide National Sample Survey in 1950. He also created the Central Statistical Organisation in 1951 to coordinate the data collected by various official channels of the states of India. To strengthen the Statistical System, PCM planned to create a sound base at the states and districts by establishing State Statistical Bureaus, (SSB) (now known as Directorates of Economics and Statistics (DES)) and the District Statistical Offices (DSO). In this context we quote C.R. Rao:

“... I remember Prof. Mahalanobis sending me to different states in India to help the local governments in setting up State Statistical Bureaus (SSB's) and district level statistical offices, and training the required staff”.

3. Cross Examination of Data (CED)

Along with Fisher and Mahalanobis C.R. Rao is a strong advocate for cross examining the data.

While analyzing anthropometric field data, Rao (Majumdar and Rao, 1958) notes that

“...Nothing is more frustrating to the investigator than to discover that the observations collected at a considerable expense of money and energy are worthless because of obvious inconsistencies or failure to furnish complete details...”

In his book *Statistics and Truth* (Rao, 1989), Rao discusses strategies for cross examination of data (CED) including detection of faking of data with several historical examples and some official statistics. Thus CED served as an important guide to many scientists working on secondary (or even primary) data as well as to applied and official statisticians.

4. Role in statistical education and training

Around 1947, Mahalanobis and Stuart Rice, both members of the UN Statistical Commission advocated for setting up an international programme for education in Statistics and this resulted in creation of the International Statistical Education Centre (ISEC) at the Indian Statistical Institute (ISI), Calcutta in 1950. This Centre is governed by a Board of Directors and Mahalanobis was the first Chairman of the Board and C.R. Rao, a member-Director. After PCM's death, C.R. Rao became the Chairman of the Board in 1973 and continued to act so till 2016.

ISEC used to be jointly operated by the Indian and International Statistical Institutes under the auspices of UNESCO and Government of India (GoI). Currently, the Centre is run by ISI and the GoI. It provides training to sponsored statistics personnel from countries of Middle East, South and South East Asia, the Far East and Commonwealth countries of Africa by way of a regular course of ten months duration.

With the growing need for modernizing the Official Statistics and training of the officers, especially in South East Asia, a UN Committee for development of Statistics was constituted by the Secretary-General, chaired by C.R. Rao. The committee recommended establishment of an institute for this purpose and the Asian Statistical Institute (ASI) was inaugurated in 1970 in Tokyo. This is now renamed as Statistical Institute for Asia and the Pacific (SIAP) and from 1999 shifted to Chiba. While the ISEC in Calcutta concentrates on a regular course, the Chiba institute organizes modules of short term training programmes, E-learning courses and long term training, presently in relation to indicators of Sustainable Development Goals (SDG).

At home, C.R. Rao chaired or acted as a member of several committees of the government namely Committee on Statistics, Committee on Demographic and Communication for Population Control, Committee on Science and Technology and also advised Reserve Bank of India, Atomic Energy Commission and the Indian Heart Association. He also acted as the Chairman of the Science and Health Allied Research and Education (SHARE), an organisation set up in Hyderabad and initiated Longitudinal Health Surveys on the lines of Framingham Surveys. Data from these surveys supplements NFHS data (Kusneniwaret al., 2016).

In spite of establishing National Statistical Systems in many countries, C.R. Rao notes that policy decisions based on official statistics get criticized for their deficiencies, timeliness and credibility and lack of well trained statistical professionals for planning and analyzing the data. He quotes R. A. Fisher's presidential address to the First Indian Statistical Congress held in Calcutta in January 1938:

“.....Statistics in England has suffered severely from the wide separation, due to our long political history, which has grown up between official and academic statistics; or, to speak functionally, between the duties of collection, enumeration, tabulation and publication, which absorb the duties of official statisticians, and the duty of study, analysis and interpretation which falls to the lot of mathematical or theoretical statisticians....”

Mahalanobis (1965) reiterates:

“....It is not difficult to see what is wrong with official statistics in India. There is a gap between theory and practice... ”.

C.R. Rao recollects that, to solve this problem, Indian Statistical (Economic) Service was introduced in 1961 at the suggestion of Mahalanobis to select qualified statisticians to work in government. He also arranged a module of training for the officers in advanced topics at ISI for a short term. It was recommended by both Roy-Iyer Committee in 1999 and Rangarajan Commission in 2001 that there is a need to set up a Methodological Studies Unit to ‘regularly undertake studies for improvements in survey methodology’. Exchange of government officers and university teachers and vice versa should be encouraged (T J Rao, 2010) which is popular in several countries now. It is interesting to note that C.R. Rao’s co-author K.R. Nair (of CSO) acted as the Director of, the then, Asian Statistical Institute in 1973 and Rao deputed seven of his students to visit the UN /Indian organisations or industry to help them with teaching and consultation. It may be recalled that way back in 1946, Pitamber Pant, who was the secretary to Jawaharlal Nehru and later, head of the Perspective Planning Division was sent to ISI to learn Statistics. In 1948 after his return from Cambridge, Rao himself got an attractive offer from ECAFE - UN office in Bangkok. However, since he was deputed by Mahalanobis to Cambridge, he told the Professor about his offers and expressed his desire to work at the ISI.

5. Role in Economic Science and influence on Official Statistics

Krishna Kumar et al. (2020) discuss in detail, Rao’s contributions to the advancement of economic science with a number of useful references. First, we quote from Rao:

In an interview (Bera, 2002), C.R. Rao said:

“.....I had some interest in econometrics and was instrumental in founding the Indian Econometric Society and developing its activities. I served as president and chairman of the society for a number of years. I had also organized a series of seminars on the database of the Indian Economy, to assess gaps and deficiencies in government statistics and suggest methods of utilizing the data for policy purposes. My early research on estimation and linear models is a part of econometrics literature and also, perhaps, the score test.....”

One of Rao’s ‘break through’ papers in Statistics termed as the ‘score test’ arose in the context of genetics while he was working with Fisher in his laboratory. It involved testing of the consistency of estimates derived from different data sets. On seeing the application of this test in genetics, Fisher accepted the paper in his new journal ‘*Heredity*’ as a note. Rao (1948) published the mathematical details in the *Proceedings of Cambridge Philosophical Society*. This is now an

oft-quoted paper in econometric data analysis. Rao (1972) also discussed data analysis and statistical thinking in economic and social development. Noticing the concept of weighted distributions first mentioned by Fisher, Rao (1965) formulated it in general terms for statistical data modeling, when the conventional distributional assumptions do not hold. This concept is found to be useful in certain sample survey situations, ecology, and medicine, reliability (see Patil and Rao (1978) and Patil (2002)). It is interesting to note that Vinod (1991) showed that Rao's weighted distributions are useful in treating asymmetric data bias problem in official statistics related to unemployment data. Krishna Kumar et al. (2020) remark that this topic '*has become more urgent in the current world economy*'. In the present situation, research in this direction with reference to official statistics data on unemployment seems to be very relevant for all countries.

After his early work (Rao and Nayak, 1985) in Cross Entropy (CE), Rao turned his attention to CE during the last couple of decades. CE has applications in importance sampling and several other areas in economics and finance such as input output analysis, pricing security derivatives among others. Vinod (2006) refers to Rao's work and presents an R package called 'ME boot' (Lopez-de-Lacalle and Vinod, 2008) for use in Time Series Analysis. When analyzing official statistics data on time series, use of this technique would be of further research interest.

Controversy relating to National Accounts Statistics versus National Sample Survey estimates of household consumption expenditure has been addressed many times and more recently by Maitiet *al.*(2016). It is interesting to note that CE and extensions studied by C.R. Rao have been used in the case of Official Statistics as well. Reconciliation of household survey data and national accounts data using CE was successfully attempted by Robilliard and Robinson (2003) using the General Algebraic Modeling System (GAMS) software for Madagascar data. Reweighting of data from two sources to create a consistent time series using CE method discussed by Branson (2009) and assessment of spatial distribution of crop areas by CE method by You and Wood (2005), to quote a few show a successful application of CE. The possibility of reconciliation in the Indian context using GAMS would perhaps be a good project.

6. Course development, Teaching and Training of Statistics to students and officers

Along with Mahalanobis and Haldane, C.R. Rao devised the syllabi for B. Stat. and M. Stat. degree courses of ISI in 1960. He included a field visit for the students to the ISI campus in

Giridih for first-hand experience in conducting crop cutting experiments and collecting data for a short socio economic survey. The syllabus also included a visit to the CSO for training in Official Statistics with a grade in a test at the end of the training. We have mentioned earlier that C.R. Rao was a member -Director of the ISEC at Calcutta since its inception in 1950 and acted as Chairman of the Board of Directors from 1973 till 2016. During the initial years, officers from the participating countries used to be sponsored by the respective governments. Some had difficulty with English and some had school level mathematics only. While teaching a course on Sample Surveys, Rao made it a point not to use complicated notations or theorems. He devised simple techniques to explain the concepts. He would rather show a sum in a full form than use sigma notation. For their level, he believed that *'the best way of teaching sample surveys is to choose some problem and let the students conduct a survey going through the various stages'* involved in a sample survey. True to his belief, during a course on sample surveys for international officers and senior graduate students, he made them participate in conducting the 'Radio listeners' preference survey' in the city of Calcutta and acted as a project director in 1965. Senior students acted as 'supervisors', a concept created by Mahalanobis in NSS or 'crew leaders', a concept of Hansen. (see, T.J.Rao,2020).

7. Epilogue

C.R. Rao was elected as President of the International Statistical Institute and served to improve the official statistical systems worldwide. He was a founder-member of the Third World Academy of Sciences. In recognition of pioneering work towards statistical systems of developing countries, he was awarded the first International Mahalanobis Prize in 2003 at the Berlin Session of the International Statistical Institute. He was also a recipient of Padma Vibhushan from the Government of India. Furthermore, the Government of India instituted a cash award in honour of C.R. Rao to a young statistician of India. An institute named in his honour as C.R. Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS) started functioning in University of Hyderabad Campus since 2009. It is not surprising that the local governments of cities in Telangana and Andhra Pradesh named streets in his honour.

C.R. Rao's contributions to Theoretical and Applied Statistics, achievements, honors and awards etc. are being discussed in detail in various forums during the Centennial Year and in this article,

we record some of his contributions to Official Statistics and his influence on official statisticians.

Acknowledgement

Thanks are due to Dr. G.C. Manna for his interest in this topic.

References

- Bera, A.(2002). The E.T. Interview: Prof. C.R. Rao, *Econometric Theory*, **19**, 2003, 331–400.
- Branson, N. (2009). Reweighting the OHS and LFS national household surveys data and to create a consistent series over time: A Cross Entropy estimation approach, *Working Paper Series # 38, SALDRU*.
- Kusneniwar, G.N. *et al.* Cohort Profile: The Longitudinal Indian Family health (LIFE) Pilot Study, Telangana State, India, *Int. Jour. Epidem.*, 46,788–789.
- Krishna Kumar,T., Vinod,H.D. and Suresh,D.(2020). Dr. C.R. Rao’s contributions to the advancement of economic science, *Proc. Ind. Acad. Sci. (Math. Sci.)*, 130: 45, 1-16.
- Mahalanobis, P.C.(1965). Statistics as a Key Technology, *Amer. Stat.*, 19, 43-46.
- Maiti,P., Rao,T.J. and Ghosh, J.K.(2016). The Indian Official Statistical System Revisited, *Sankhya*,B, 78, 215-237.
- Majumdar, D.N. and Rao, C.R.(1958). Bengal Anthropometric Survey, 1945: A statistical study, *Sankhya*, 19,201-408.
- Patil, G.P.(2002). Weighted distributions, *Encyclopedia of Environmetrics*, 4 (2002) 2369–2377.
- Patil,G.P. and Rao,C.R.(1978).Weighted distributions and size biased sampling with applications to wildlife populations and human families, *Biometrics*, 34, 179-189.
- Rao,C.R.(1950). Method of scoring linkage data giving simultaneous segregation of three factors, *Heredity* 4, 37–59.
- Rao, C.R. (1965). On discrete distributions arising out of methods of ascertainment,. *Sankhya*, A, 27, 311-324.

- Rao, C.R.(1972). Data, analysis and statistical thinking in economic and social development, *Essays in Honour of Dr. C. D. Deshmukh* , 383–392
- Rao, C.R. (1989). *Statistics and Truth*, Ramanujan Memorial Lectures, Council of Scientific and Industrial Research, India.
- Rao, C.R.(2001).Three Score Years of Research in Statistics:1941-2000,.In *Selected Papers of C.R. Rao* , Vol. 5,(eds.) S. Dasgupta, J.K. Ghosh, S.K. Mitra.
- Rao C.R. and Nayak T.K.(1985). Cross entropy, dissimilarity measures, and characterization of quadratic entropy, *IEEE Trans. on Inf. Theory*, -31, 589-593.
- Rao,T.J.(2010).Official Statistics in India: Past and Present, *Jour. Off. Stat.*, 26, 215-231.
- Rao, T.J. (2020). C.R. Rao’s Influence on Theory and Practice of Sample Surveys, *Jour.Ind. Soc. Prob. Stat.*, 21,123–134.
- Robilliard, A-S and Robinson,S. (2003). Reconciling household surveys and national accounts data using a Cross Entropy estimation method, *Rev. Income and wealth*, 49, 395-406.
- Vinod,H.D.(1991). Rao’s weighted distribution in econometrics: An application to unemployment statistics and Okun’s law, *J. Quantitative Economics* 7, 247–254.
- Vinod, H.D.(2006). Maximum entropy ensembles for time series inference in economic science, *Jour. Asian Economics*, 17, 955-978.
- Vinod,H.D. and Lopez-de-Lacalle(2009). Maximum entropy bootstrap for time series: the MEboot R package, *Jour. Statistical Software*, 29, 1-19.
- You L. and Wood S. (2005). Assessing the spatial distribution of crop areas using a Cross Entropy method, *Int. Jour.Appl. Earth Observations and Geo information*,7, 310-323.

Extent of Contract Work in Unorganised Manufacturing Sector in India: Evidence from National Sample Surveys (NSS)

Akshaya Kumar Panigrahi¹

Abstract

In this paper an attempt has been made to study the extent of contract work in unorganised manufacturing sector in India by using the latest available data from NSSO 73rd round (July 2015-June 2016), 62nd round (July 2005-June 2006) and 56th round (July 2000-June 2001). In these surveys information from enterprises undertaking any work on contract basis had also been collected. Based on this information an attempt has been made to examine the nature and extent of contract work in unorganized manufacturing sector. From the analysis it is observed that around 31 percent of the enterprises in the unorganized manufacturing sector had been engaged in contract work in India, contributing around 25 percent in its Gross Value Added and generating 30 percent of its employment in 2015-16. However, the level of efficiency and productivity of contract work in the unorganized manufacturing sector had been considerably diverse with respect to industrial activities as well as over the major states/UTs in India. Therefore, an attempt has been made to examine the nature and extent of contract work in the unorganized manufacturing sector in India with respect to three NSS survey periods. Labour productivity, value addition per enterprise, and wage rate has also been examined with respect to industrial activities among those units which worked on contract basis in the unorganized manufacturing sector. Apart from the productivity analysis an endeavor is also made to look into female participation among those enterprises which worked on contract basis in the unorganized manufacturing sector in India.

Key Words: Outsourcing, Employment, Manufacturing

JEL Codes: M55, J23, E24

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Introduction

In the present scenario, contract work has been widely spread across the economic activity. The major objective behind the contract work is to outsource the job and shift the responsibility of man and machine for doing the same job and speed up the work while maintaining the same quality. The parent organization assembles the outcomes of the outsourced job and supplies the final product to the market. In this way there is a strong linkage between organized and unorganized manufacturing sector or within the organized sector only or in unorganized sector only. Though it was notionally accepted that the contract work has been predominantly spreading across manufacturing sector in comparison to the other sectors, still there has been no complete information about the nature, structure, capacity of employment generation, contribution in value addition, labour productivity, wage rate etc. In India broadly manufacturing sector has been divided into two parts namely; organized and unorganized manufacturing sector. For the organized manufacturing sector, ASI (Annual Survey of Industries) is the main source of data, while, for the unorganized sector NSS's unorganized sector survey is the major source. Broadly, the units that are registered under section 2m(i) and 2m (ii) of the Factories Act 1948 is included in the sampling frame for ASI². The list of factories is made available by the Chief Inspector of Factories (CIF) of each state. The manufacturing units within the coverage of the NSS unorganised sector surveys is considered as unorganised manufacturing sector in this study. The manufacturing units that are not registered under the Factories Act or registered as a company are covered in the NSS unorganised sector surveys.

Literature review

There are many research studies available on subcontracting, outsourcing, job works in the manufacturing sector. Some of these studies attempted to workout subcontracting as a link between organized manufacturing sector and unorganized manufacturing sector. This study observed that “subcontracting has been taking place mainly in the highly unskilled part of the sector, presumably due to the lack of an appropriate channel for larger firms to outsource their activities to the better performing firms in the unorganised manufacturing”. Beldai *et. al.* (2016) tried to investigate the organisational link between formal and informal sectors from Indian manufacturing sector and observed that higher wage in the organised manufacturing sector is a factor for outsourcing of production to the informal unorganised manufacturing sector. Some of the studies observed that subcontracting and outsourcing are emerging as important developments that connect small and micro units with large units, to the benefit of both. Many studies have pointed out that the increased growth of the unorganized sector in recent years was a result of substantial increases in outsourcing by the organized sector (Ramaswamy 1999).

Some of the studies have tried to explain the nature of subcontracting with respect to specific types of activities, namely tobacco products activities, chemical and pharmaceutical products

²For details of ASI frame and coverage, the reader may refer to the instruction manual of ASI.

activities, textiles, wearing apparels etc. Nandi *et. al.* (2014) observed that *bidi* rolling work was outsourced to other companies which operate on behalf of the factory owners. Only about 10 percent of the *bidi* manufacturing took place within the organised system and the remaining 90 percent of work had been done by the household workers in unorganised manufacturing sector based on the evidence from NSS 62nd round 2005-06.

Nagraj (1984) observed that the nature and form of subcontracting in manufacturing sector, such as metal engineering industry, metal and mineral products activities, cotton and textile industry, electronic industry etc. are different. In metal engineering industry, the manufacture of relatively small and simple ‘turned’ components, fabricated items, castings and forgings could be outsourced to small firms and the parent unit could only concentrate on some of specialized capital intensive activities and finally assemble the products and sell the final product under its own brand name. Similarly, in cotton textile industry production of cloth consists of broadly three main activities, such as spinning of yarn, weaving it into cloth and finishing of the fabric. In these processes, the work done with the low level of technology can be outsourced to small firms and the final product can be sold under some brand name. In this study, it was argued that the subcontracting would be feasible in industries where the production process could be divisible and the final product would be constituted by a number of parts and sub-assemblies. Therefore, the fundamental basis of sub-contracting relationship in manufacturing industries is the principle of division of labour and specialization.

Similar studies observed that subcontracting widely varies across industry groups and the incidence of subcontracting is high for manufacturing activities such as tobacco products, textiles, paper and paper products, furniture, and chemical and chemical products, based on NSS 56th round (2000-01) data (Sahu, 2007; Kar and Bhaumik, 2015). In more detail a study by Kar and Bhaumik (2015) studied the job work at 5-digit sub-class level of activities and observed that some of the activities namely; “manufacture of all types of textile garments and clothing accessories, weaving, manufacture of cotton and cotton mixture fabrics, manufacturing match boxes and diamond cutting and polishing and other gem cutting and polishing had mostly been carried out as job work for other businesses” based on NSS 56th round (2000-01) data.

Some of the studies observed that with sub-contracting and outsourcing becoming so popular due to the stringent labour laws (Varshney and Ghosh, 2013), the labour intensive activities like motor winding, *biri* rolling, wearing apparel, tailoring etc. could be done by small, and even household, enterprises using very little capital (Nagraj, 1984; Nandi *et. al.* 2014; Krishna *et. al.* 2018). Another study by Varshney and Ghosh (2013) observed that “outsourcing and sub-contracting have not replaced labour but the nature of employment has changed and it has increased casualisation of labour”.

Kumar (2016) found that the unorganised sector firms that are capital intensive by nature are more likely to be operating under a contract from larger firms. This indicates that the unorganised manufacturing sector has the potential of having a strong linkage with larger firms through subcontracting. However, the general inability of the units of this sector to cope with

technology and other requirements limits this phenomenon in the unorganized manufacturing sector.

Some of the studies tried to link with economic reforms and the importance of subcontracting in unorganized manufacturing sector. Kathuria (2010) observed that the economic reforms have indirectly impacted the unorganized manufacturing sector “because of the growing importance of subcontracting and outsourcing of activities to this sector”.

With this theoretical background it is not clear about the nature and structure of industrial activities those are undertaking work on contract basis in the unorganized manufacturing sector. What is the level of efficiency and productivity of the enterprises undertaking work on contract basis in unorganized manufacturing sector? Whether any changes had taken place with respect to contract work in the industrial activities in unorganized manufacturing sector during recent years?

With this background an attempt has been made to study the following in this paper.

Objectives of the Study

- (i) To examine the number of enterprises, employment structure and value addition structure.
- (ii) To study the level of efficiency and productivity in the unorganized manufacturing sector.
- (iii) To study female participation with respect to unorganized manufacturing sector.

The structure of this paper is as follows. Following the above brief introduction, literature review and the objectives of the study, the section below presents the data source and the methodology used. The next section deals with the number of enterprises, employment and GVA structure and productivity analysis with respect to unorganized manufacturing sector. Subsequently, female participation rate in unorganized manufacturing sector is examined. The last section concludes the major findings.

Data Source and Methodology

For this study the latest and recent data from 73rd round (July 2015-June 2016) of NSS for unincorporated non-agricultural enterprises (excluding construction) are used. In this survey, information on enterprises undertaking any work on contract basis (item no. 237 of block 2 of the schedule) had been collected. The unit level data have been used to select only those enterprises undertaking any work on contract basis in unorganized manufacturing sector for the analysis. The variables used in this paper are number of enterprises, total employment, GVA, emoluments to hired employee, female and male workers. Apart from the 73rd round data, an attempt has also been made to look into the data of 62nd round (2005-06) and 56th round (2000-01) of NSS data for a comparative study. Though the NSS had collected information on unincorporated non-agricultural enterprises (excluding construction) in its 67th round (2010-11),

data on enterprises undertaking any work on contract basis were not available. Therefore, a comparative study of 73rd round, 62nd round and 56th round of NSS with respect to unit undertaking contract work in the unorganized manufacturing sector have been used in this paper. For monetary values such as GVA and emolument, WPI (Wholesale Price Index) deflator has been used with base 2000-01 and is given at Annexure I. Necessary concordance with respect to NIC 1998, NIC 2004 and NIC 2008 has been done at 2-digit industry division and enclosed in annexure II.

Findings of the study

Estimated Number of enterprises

Table 1 presents the estimated number of enterprises by broad economic activity category among those contract manufacturers based on 73rd round (2015-16) of NSS data. In this paper, broad economic activity categories are segregated into three categories, namely, manufacturing, trade and other services. It is observed that around 63.71 lakhs (10 percent) of enterprises undertook any work on contract basis out of all enterprises (633.92 lakhs) in India in the unorganized sector in 2015-16. It is interesting to see the highest number of enterprises i.e. 56.59 lakhs (89 percent) were own account enterprises (OAE³) and the remaining 7.12 lakhs (11 percent) were establishments⁴. It is also interesting to see the highest number of contract enterprises i.e. 39.28 lakhs (62 percent) were from rural India. Among the unorganised sector enterprises undertaking contract work, the share of manufacturing enterprises was the highest (96 percent). There were about 61.15 lakhs manufacturing enterprises undertaking contract work. These were followed by those engaged in providing other services (3 percent) and trade (1 percent) activities. Among those who were undertaking contract work in manufacturing sector (henceforth called “contract manufacturers”), around 90 percent were own account enterprises. Contract work among own account enterprises were drastically higher than the establishments irrespective of broad economic activity category. From this analysis it is concluded that the contract work was predominating among own account enterprises and unorganized manufacturing activity in 2015-16.

All-India									
Broad economic activity category	Estimated number of enterprises in lakhs								
	Rural			Urban			Total (Rural + Urban)		
	OAE	Establishment	Total	OAE	Establishment	Total	OAE	Establishment	Total
Manufacturing	36.78	1.47	38.25	18.13	4.77	22.90	54.91	6.24	61.15
Trade	0.10	0.03	0.12	0.19	0.10	0.28	0.28	0.13	0.41

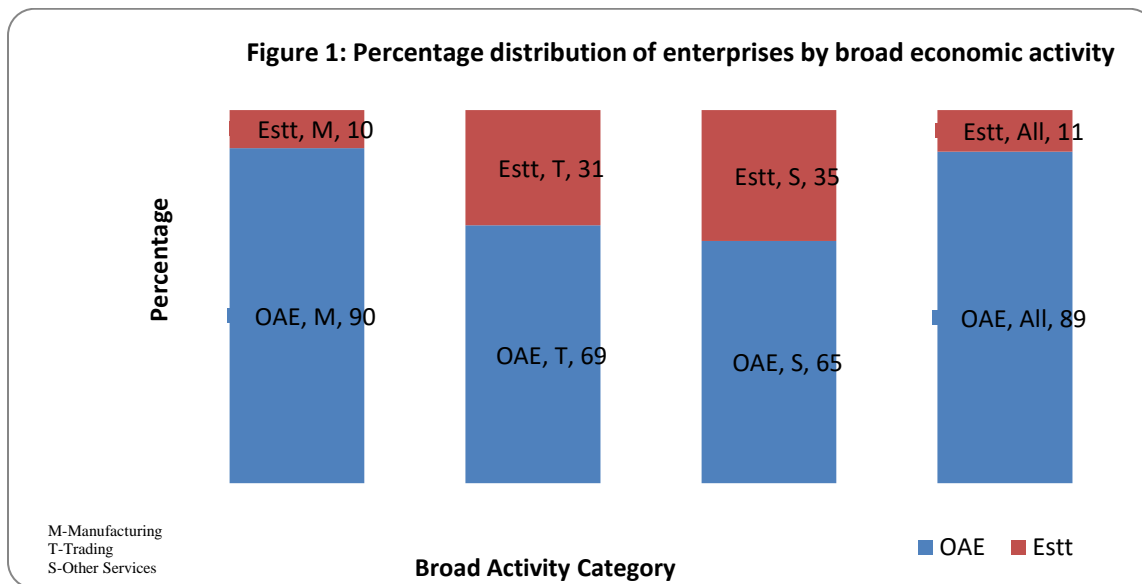
³ “An enterprise, which is run without any hired worker employed on a fairly regular basis, is termed as an own account enterprise”.

⁴ “An enterprise which is employing at least one hired worker on a fairly regular basis is termed as establishment. Paid or unpaid apprentices, paid household member/servant/resident worker in an enterprise are considered as hired workers”.

Other Services	0.63	0.27	0.91	0.76	0.48	1.24	1.39	0.75	2.15
Total	37.51	1.77	39.28	19.08	5.35	24.43	56.59	7.12	63.71

OAE: Own Account Enterprises

Figure 1 presents the percentage distribution of enterprises by broad economic activity. From the figure it is clearly understood that irrespective of broad economic activity, higher percentage of OAE (89 percent) enterprises had undertaken contract work in 2015-16 and the remaining 11 percent of contract work had been done by establishments. In manufacturing sector the OAE share was highest (90 percent) followed by trading (69 percent) and other services (65 percent) activities.



Based on the above analysis of 73rd round data on number of enterprises undertaking contract work the subsequent discussion would be confined to unorganized manufacturing sector only. Table 2 presents estimated number of enterprises and percentage of enterprises with respect to the rounds of NSS surveys i.e. 56th, 62nd and 73rd rounds of NSS in unorganized manufacturing sector. The table reveals that in 2000-01 the number of enterprises that undertook contract work was 52 lakhs and the number had increased to 54 lakhs in 2005-06 and further it had increased significantly to 61 lakhs in 2015-16. The growth rate of number of enterprises was 3.61 percent during 2005-06 over 2000-01 and 13.09 percent during 2015-16 over 2005-06.

However, the percentage share of number of enterprises among the contract manufacturers had remained more or less stable at around 31 percent during 2000-01 to 2015-16.

Undertake contract work	Estimated Number of enterprises (in lakhs)			Percentage of enterprises (%)			Growth rate (%)	
	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	62 nd over 56 th Round	73 rd over 62 nd Round

Enterprise undertook any work on contract basis	52.19	54.08	61.15	30.66	31.68	31.09	3.61	13.09
Enterprise did not undertake any work on contract basis	118.05	116.63	135.53	69.34	68.32	68.91	-1.20	16.20
Total	170.24	170.71	196.68	100.00	100.00	100.00	0.27	15.22

Now it will be interesting to see those economic activities at 2-digit NIC divisions among those contract manufacturers in unorganized manufacturing sector. Table 3 presents estimated number of enterprises and percentage of enterprises with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC division) in unorganized manufacturing sector, arranged in descending order of percentage share in 2015-16. From the table it is observed that significantly higher proportions of enterprises in tobacco products industries (44.92 percent) followed by textiles (25.05 percent) and wearing apparel (8.36 percent) had undertaken any work on contract basis in 2015-16. It is remarkable that these top three activities were identical in 2000-01, 2005-06 and 2015-16 and their percentage shares in total number of unorganized manufacturing enterprises had increased significantly from 71 percent in 2000-01 to 73 percent in 2005-06 and further to 78 percent in 2015-16.

It is also interesting to see that in some of the activities namely; Tobacco products, Textiles, Machinery equipment, and Rubber & plastic products, more than 50 percent of enterprises had undertaken work on contract basis. The table reveals that the share of contract work in tobacco products had declined to some extent in comparison to those enterprises which did not undertake any work on contract basis. The tobacco products industries had the highest percentage share of enterprises (89 percent) in 2000-01 and went down to 70 percent in 2005-06 and then increased to 84 percent in 2015-16. Similarly, for textile industries the percentage share of enterprises was 56 percent in 2000-01 and went up to 60 percent in 2005-06 and then declined to 56 percent in 2015-16. As for the other activities, mixed results were observed for Chemicals and Pharmaceuticals products, Rubber and plastics products, Wearing apparel, Basic metals, Electrical equipment, Computer, electronic and optical products, Motor vehicles, trailers and semi-trailers, and Other transport equipment. It also reveals that in general contract work had prevalence in most of the industrial activities (2-digitNIC) in unorganized manufacturing sector.

Industrial Activities (Major 2-digit NIC)	Number of enterprises (in '000)			Percentage of enterprises (%) with respect to total enterprises in a particular industrial activities			Percentage (%) share with respect to total industrial activities		
	56th Round (2000- 01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000- 01)	62nd Round (2005- 06)	73rd Round (2015- 16)	56th Round (2000- 01)	62nd Round (2005- 06)	73rd Round (2015- 16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Tobacco products	1877.99	1969.70	2747.31	89.26	69.89	83.88	35.98	36.42	44.92
Textiles	1339.86	1548.65	1531.87	55.52	60.31	58.84	25.67	28.64	25.05
Wearing apparel	489.99	425.23	511.13	17.44	13.23	9.11	9.39	7.86	8.36
Other non-metallic mineral products	45.53	48.44	150.16	5.55	7.55	24.51	0.87	0.90	2.46
Manufacture of furniture	472.38	345.20	121.43	35.42	29.97	13.94	9.05	6.38	1.99
Wood and products of wood and cork, except furniture	317.02	197.34	114.32	11.27	9.23	9.60	6.07	3.65	1.87
Food products and beverages	107.02	85.84	113.57	3.55	3.30	4.62	2.05	1.59	1.86
Fabricated metal products, except machinery and equipment	142.31	145.46	107.23	22.15	23.47	13.58	2.73	2.69	1.75
Chemicals and Pharmaceuticals products	147.14	315.63	66.21	66.81	75.47	36.98	2.82	5.84	1.08
Rubber and plastics products	40.63	25.11	64.04	42.62	34.73	51.31	0.78	0.46	1.05
Leather and related products	41.68	55.73	60.91	23.69	38.70	39.12	0.80	1.03	1.00
Paper and paper products	37.38	112.47	45.24	42.00	66.91	42.15	0.72	2.08	0.74
Machinery and equipment	36.67	45.51	43.63	22.04	26.11	54.18	0.70	0.84	0.71
Printing and reproduction of recorded media	56.99	38.79	36.27	39.58	32.90	22.50	1.09	0.72	0.59
Basic metals	14.22	14.70	14.87	36.54	41.84	28.86	0.27	0.27	0.24
Electrical equipment	20.97	14.26	11.71	32.03	12.87	31.14	0.40	0.26	0.19
Computer, electronic and optical products	6.58	5.49	6.73	41.96	33.84	47.26	0.13	0.10	0.11
Motor vehicles, trailers and semi-trailers	10.73	8.09	6.55	48.13	53.04	30.30	0.21	0.15	0.11
Other transport equipment	6.93	4.44	3.01	42.70	17.70	47.26	0.13	0.08	0.05
Coke and refined petroleum products	0.02	0.00	0.02	0.25	0.03	0.97	0.00	0.00	0.00
Cotton Ginning	0.54	0.98	0	8.34	10.73	0.00	0.01	0.02	0.00
Other industries	6.82	0.63	359.21	44.18	16.24	27.38	0.13	0.01	5.87
Total	5219.37	5407.70	6115.42	30.66	31.68	31.09	100	100	100

Table 4 presents estimated number of enterprises with respect to NSS rounds among the contract manufacturers by major states/UTs in unorganized sector arranged in descending order of percentage share in 2015-16. From the table it is observed that significantly higher proportions of enterprises in West Bengal (44.38 percent) had undertaken any work on contract basis followed by Andhra Pradesh (11.21 percent), Tamil Nadu (9.28 percent), Uttar Pradesh (8.44 percent) and Karnataka (5.43 percent) in 2015-16. The share of top five states in total number of unorganized manufacturing enterprises increased significantly from about 69 percent in 2000-01 to 71 percent in 2005-06 and further to 79 percent in 2015-16. West Bengal had the highest share of enterprises which had undertaken any work on contract basis in all the NSS rounds, although their magnitude varied during the period. Most significantly, these top five states had the shares of the same order in all the three rounds of NSS survey. The percentage share of Andhra Pradesh had increased significantly in 2015-16 in comparison to the earlier NSS rounds in 2000-01 and 2005-06. For the purpose of comparison NSS data of 2015-16 of the state Telangana had been combined with the erstwhile state of Andhra Pradesh. That might be one of the reasons of significantly higher proportions of contract manufacturers in Andhra Pradesh in 2015-16.

State Name	Number of enterprises (in '000)			Percentage of enterprises (%) with respect to total enterprises within a state			Percentage (%) share with respect to all India total enterprises		
	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
West Bengal	1582.88	1495.80	2713.81	57.12	54.34	64.95	30.33	27.66	44.38
Andhra Pradesh	327.45	345.58	685.39*	20.38	22.54	31.67	6.27	6.39	11.21
Tamil Nadu	643.57	775.78	567.29	42.11	52.35	32.52	12.33	14.35	9.28
Uttar Pradesh	680.96	833.13	516.36	29.74	35.31	23.37	13.05	15.41	8.44
Karnataka	382.11	374.19	332.07	36.94	38.91	26.59	7.32	6.92	5.43
Madhya Pradesh	304.38	84.05	221.25	41.06	9.84	26.56	5.83	1.55	3.62
Gujarat	134.93	159.51	198.31	24.88	24.38	15.98	2.59	2.95	3.24
Maharashtra	270.06	224.20	193.23	21.80	19.90	15.54	5.17	4.15	3.16
Jharkhand	90.34	273.61	153.75	20.09	46.69	31.12	1.73	5.06	2.51
Odisha	46.75	164.93	117.39	4.75	17.23	24.13	0.90	3.05	1.92
Kerala	128.21	176.50	115.01	25.18	26.80	21.07	2.46	3.26	1.88
Bihar	93.20	137.13	93.35	11.53	17.75	12.11	1.79	2.54	1.53
Delhi	136.93	50.43	67.01	59.43	51.65	36.99	2.62	0.93	1.10
Punjab	84.73	66.88	34.82	24.88	22.81	9.08	1.62	1.24	0.57
Assam	24.41	45.22	26.91	8.77	12.20	13.25	0.47	0.84	0.44
Jammu & Kashmir	99.53	44.34	24.69	47.83	25.57	10.53	1.91	0.82	0.40
Haryana	12.62	16.29	11.34	6.53	7.08	6.20	0.24	0.30	0.19
Chhattisgarh	62.11	10.48	11.24	25.29	5.05	5.77	1.19	0.19	0.18
Rajasthan	80.19	90.16	11.08	12.86	14.17	1.48	1.54	1.67	0.18
Tripura	1.67	7.73	9.00	4.69	17.04	17.94	0.03	0.14	0.15
Uttarakhand	11.83	3.21	6.80	9.66	4.64	9.43	0.23	0.06	0.11
Sub-Total	5198.83	5379.14	6110.12	-	-	-	99.61	99.47	99.91
Total	5219.37	5407.70	6115.416	30.66	31.68	31.09	100.00	100.00	100.00

* includes Telangana

Now it will be interesting to see the percentage of contract manufacturers in the total unorganized manufacturing sector with respect to major states in India. Column (5), (6), and (7) of Table 4 presents the percentage share of enterprises with respect to major states. From the table it is observed that West Bengal had the highest percentage share (57 percent) of contract manufacturers in 2000-01. However, the percentage share of contract manufacturers had declined to 54 percent in 2005-06 and further it had increased to 64 percent in 2015-16. It is interesting to note that West Bengal had the top position during 2000-01, 2005-06 and 2015-16. Delhi and Tamil Nadu were in the second and third position respectively during this period.

Estimated Number of Workers

In the three rounds of NSS survey detailed information on the workers engaged by the enterprise had been collected. As per the definition used for the survey, a worker is understood as persons working within the premises of the enterprise who were in the payroll of the enterprise as also the working owners and unpaid family workers. This includes working owners, persons who are in the payroll of the enterprise, unpaid family members who help in the entrepreneurial activities and other helpers and apprentices.

Undertake contract work	Estimated Number of workers (in lakhs)			Percentage share of workers (%)			Growth Rate (%)	
	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	62 nd over 56 th Round	73 rd over 62 nd Round
Enterprise undertook any work on contract basis	112.66	109.25	108.28	30.38	29.98	30.04	-3.03	-0.89
Enterprise did not undertake any work on contract basis	258.16	255.18	252.21	69.62	70.02	69.96	-1.16	-1.16
Total	370.82	364.43	360.49	100.00	100.00	100.00	-1.72	-1.08

Table 5 presents the estimated number of workers and percentage share of workers with respect to NSS rounds in unorganized manufacturing sector. It is observed that around 371 lakhs workers were engaged in unorganized manufacturing sector in 2000-01. But it is surprising to see the estimated number of workers had declined during the period 2000-01 to 2015-16 in unorganized manufacturing sector. The total number of workers had declined to 364 lakhs in 2005-06 and further it had declined to 360 lakhs in 2015-16. It is also seen that around 30 percent of the workers were engaged in contract manufacturing enterprises during three survey periods. This declining trend of workers in unorganized manufacturing sector had also direct impact on contract manufacturers. It is seen that around 113 lakhs of workers were engaged in the contract manufacturers in 2000-01. However, the number of workers had declined to 109 lakhs in 2005-06 and further it had declined to 108 lakhs in 2015-16 among those enterprises undertook any work on contract basis. Therefore, the growth rate of workers had been negative during 2005-06 and 2015-16.

It will be interesting to see what were the industrial activities in which these industrial workers were engaged? Table 6 presents the estimated number of workers and percentage share of workers with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC) in unorganized manufacturing sector, arranged in descending order of percentage share in 2015-16. It is seen that tobacco products activities had the highest share (30 percent) of workers engaged in contract manufacturing in unorganized manufacturing sector in 2015-16 followed by textiles activities (27 percent). About 75 percent of all workers were concentrated in five industrial activities viz. tobacco products (29.78 percent), textiles (26.72 percent), wearing apparel (11.05 percent), other non-metallic mineral products (4.45 percent) and machinery & equipments (3.72 percent) in 2015-16. But it is interesting to see the industrial activities viz. textiles which had the highest percentage share of workers in 2000-01 (32 percent) and 2005-06 (34 percent) went down to second position in 2015-16 (27 percent). In contrast, the tobacco products activities which had the second highest share (25 percent) in 2000-01 and 2005-06 (26 percent) moved to the top position in 2015-16 (30 percent). It is remarkable that top three industrial activities viz. tobacco products, textiles and wearing apparel were identical during the

three NSS rounds and their combined percentage share in total workers had remained almost same at 67 percent during the three NSS rounds.

An attempt has also been made to study the percentage share of workers within particular industrial activities among the contract manufacturers. It is interesting to see the industrial activities viz. tobacco products had the highest percentage share (84 percent) of total workers among contract manufacturers in 2000-01. The percentage share of total workers had declined to 67 percent in 2005-06 and further it had increased to 82 percent in 2015-16. However, the share of total workers in tobacco products activities was in the top position in all the three survey periods. The percentage share of total workers in textile activities had almost been stable at 58 percent and remained in the second position during all the three rounds of NSS survey.

Some of the other industrial activities viz. Leather products, Machinery & equipment, Rubber & plastics products, Printing, Chemicals & Pharmaceuticals products, Paper products, Basic metals, Motor vehicles, trailers & semi-trailers, Computer, electronic & optical products, and Other transport equipment had significant proportions of total workers engaged in enterprises undertaking any work on contract basis in unorganized manufacturing sector during all the three rounds of NSS survey.

Industrial Activities (Major 2-digit NIC)	Estimated Number of workers (in '000)			Percentage share of workers (%) in total workers in particular industrial activities			Percentage (%) share of industrial activity in total workers		
	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000- 01)	62nd Round (2005- 06)	73rd Round (2015- 16)	56th Round (2000- 01)	62nd Round (2005- 06)	73rd Round (2015- 16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tobacco products	2848.67	2812.29	3224.74	83.57	66.98	81.73	25.29	25.74	29.78
Textiles	3613.65	3715.82	2893.65	58.46	58.59	58.13	32.08	34.01	26.72
Wearing apparel	1029.57	838.11	1196.66	22.51	17.00	15.22	9.14	7.67	11.05
Other non-metallic mineral products	154.57	153.05	482.24	5.07	6.55	17.18	1.37	1.40	4.45
Machinery and equipment n.e.c.	134.30	200.82	402.42	27.30	34.61	73.64	1.19	1.84	3.72
Fabricated metal products, except machinery and equipment	423.40	510.04	381.23	26.69	30.76	18.87	3.76	4.67	3.52
Manufacture of furniture	1214.17	785.71	252.30	40.60	27.04	15.26	10.78	7.19	2.33
Food products and beverages	242.74	202.34	207.10	3.55	3.19	4.05	2.15	1.85	1.91
Leather and related products	139.35	247.05	201.71	34.92	52.16	43.90	1.24	2.26	1.86
Wood and products of wood and cork, except furniture	531.58	375.61	189.30	10.18	9.25	8.69	4.72	3.44	1.75
Rubber and plastics products	130.44	79.34	153.37	39.13	28.61	36.60	1.16	0.73	1.42

Printing and reproduction of recorded media	199.38	161.67	124.23	41.53	39.36	27.00	1.77	1.48	1.15
Chemicals and Pharmaceuticals products	254.89	442.75	115.71	44.88	51.25	29.35	2.26	4.05	1.07
Paper and paper products	91.03	207.64	87.08	36.14	58.62	35.77	0.81	1.90	0.80
Electrical equipment	74.73	52.76	70.12	29.42	19.60	39.07	0.66	0.48	0.65
Basic metals	45.20	42.09	67.02	34.19	37.29	37.94	0.40	0.39	0.62
Motor vehicles, trailers and semi-trailers	56.90	59.58	37.41	53.07	64.73	39.10	0.51	0.55	0.35
Computer, electronic and optical products	35.62	15.47	11.11	48.21	23.27	30.75	0.32	0.14	0.10
Other transport equipment	28.30	18.55	10.24	44.27	16.78	45.67	0.25	0.17	0.09
Coke and refined petroleum products	0.09	0.03	0.08	0.43	0.14	0.69	0.00	0.00	0.00
Cotton Ginning	2.68	1.76	0	20.28	8.93	0	0.02	0.02	0.00
Other industries	14.79	2.64	719.92	40.11	18.45	29.54	0.13	0.02	6.65
Total	11266.05	10925.12	10827.63	30.38	29.98	30.04	100.00	100.00	100.00

Some of the research studies observed that the industries that have labor-intensive production processes such as textiles, tobacco products, paper and its products had extensively worked on subcontracting (Sahu, 2007). This paper also revealed the similar results that labor-intensive industries such as tobacco products, textiles, wearing apparel etc. had considerably higher proportions of workers engaged among the contract manufacturers. Kar and Bhaumik (2015) found that about 26 percent of workers were engaged in job work in unorganised non-repairing manufacturing activities in 2000-01 and most of them were own account workers.

State/UTs Name	Estimated Number of workers (in '000)			Percentage share of workers (%) within the total workers of the state			Percentage (%) share of the state in total workers		
	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
West Bengal	2872.47	2676.64	4096.05	48.94	48.72	58.85	25.50	24.50	37.83
Uttar Pradesh	1593.86	1917.58	1216.80	29.50	36.26	25.84	14.15	17.55	11.24
Tamil Nadu	1506.12	1592.16	1128.13	43.74	47.25	33.15	13.37	14.57	10.42
Andhra Pradesh	660.11	569.33	829.10*	20.01	19.37	24.08	5.86	5.21	7.66
Gujarat	495.30	421.82	828.32	33.28	22.77	31.31	4.40	3.86	7.65
Maharashtra	831.28	721.78	584.82	27.97	24.88	23.46	7.38	6.61	5.40
Karnataka	529.35	527.66	440.27	26.05	26.73	20.23	4.70	4.83	4.07
Madhya Pradesh	577.07	158.64	382.25	39.95	9.11	26.29	5.12	1.45	3.53
Delhi	578.42	276.94	292.78	62.75	60.57	41.13	5.13	2.53	2.70
Odisha	113.71	358.07	184.94	5.17	17.70	21.82	1.01	3.28	1.71
Jharkhand	198.22	384.02	183.74	21.58	40.45	24.37	1.76	3.52	1.70
Bihar	189.49	298.02	179.27	12.64	20.51	14.69	1.68	2.73	1.66
Kerala	276.36	353.31	177.20	25.81	25.40	17.52	2.45	3.23	1.64
Punjab	168.05	119.13	75.48	22.57	19.83	10.99	1.49	1.09	0.70
Assam	47.45	78.43	48.96	9.51	12.40	12.69	0.42	0.72	0.45
Chhattisgarh	113.47	21.81	38.08	23.06	4.76	9.04	1.01	0.20	0.35
Rajasthan	173.68	243.44	35.36	15.15	18.79	2.64	1.54	2.23	0.33
Jammu & Kashmir	237.56	79.22	32.31	50.27	24.84	9.55	2.11	0.73	0.30

Haryana	27.77	45.47	31.14	6.61	8.36	7.44	0.25	0.42	0.29
Uttarakhand	28.09	12.18	13.40	12.79	8.24	10.52	0.25	0.11	0.12
Sub-Total	11217.80	10855.62	10798.40	-	-	-	99.57	99.36	99.73
Total	11266.05	10925.12	10827.63	30.38	29.98	30.04	100.00	100.00	100.00

* includes Telangana

Table 7 presents estimated number of workers and percentage share of workers with respect to NSS rounds among the contract manufacturers by major State/UTs in unorganized manufacturing sector. It is revealed that West Bengal had the highest share (38 percent) of workers engaged among the contract manufacturers in 2015-16. During the three rounds of survey, West Bengal had the top position in percentage share of workers engaged among those enterprises which undertook any work on contract basis. Five states namely; West Bengal (37.83 percent), Uttar Pradesh (11.24 percent), Tamil Nadu (10.42 percent), Andhra Pradesh (7.66 percent) and Gujarat (7.65 percent) combined together which constitute around 75 percent of workers had been engaged in those enterprises which undertook any work on contract basis in 2015-16. Three states viz. West Bengal, Uttar Pradesh and Tamil Nadu had top three positions during all the three survey periods and their combined share was 53 percent of total workers in 2000-01, 56 percent in 2005-06 and 59 percent in 2015-16 in those undertaking any work on contract basis in unorganized manufacturing sector.

Gross Value Added (GVA)

Gross Value Added (GVA) is an important economic indicator that measures the contribution of a particular sector to the economy. It gives the value of goods and services produced less the cost of all intermediate consumption that are directly attributable to that production. In this paper only those enterprises engaged in market production are considered for the estimation of GVA.

Undertake contract work	Estimated Gross Value Added (in Rs. Crore)			Percentage Contribution of GVA (%)			Growth Rate (%)	
	56th Round (2000-01)	62nd Round (2005-06) (at Constant price)	73rd Round (2015-16) (at Constant price)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	62 nd over 56 th Round	73 rd over 62 nd Round
Enterprise undertook any work on contract basis	17919.36	16917.61	38657.10	29.77	24.08	25.77	-5.59	128.50
Enterprise did not undertake any work on contract basis	42275.44	53333.96	111323.27	70.23	75.92	74.23	26.16	108.73
Total	60194.80	70251.57	149980.37	100.00	100.00	100.00	16.71	113.49

Table 8 presents the estimated annual GVA and percentage of GVA with respect to NSS rounds in unorganized manufacturing sector. For comparing estimated GVA during 2000-01, 2005-06 and 2015-16 deflator factor based on WPI (wholesale price index) for manufacturing items has been used with base 2000-01. It is observed that the growth rate of estimated GVA had increased

significantly (113.49 percent) during 2005-06 to 2015-16 in unorganized manufacturing sector. It is seen that the growth rate of estimated GVA had increased significantly (128.5 percent) among the contract manufacturers during 2005-06 to 2015-16 in unorganized manufacturing sector. The percentage share of GVA was around 30 percent in 2000-01 among the contract manufacturers. However, it had declined to 24 percent in 2005-06 and then slightly increased to 26 percent in 2015-16.

Industrial Activities (Major 2-digit NIC)	Estimated Gross Value Added (in Rs. Crore)			Percentage Contribution of GVA (%) in total GVA in concerned activities			Percentage (%) share in total GVA		
	56th Round (2000-01)	62nd Round (2005-06) (at Constant price)	73rd Round (2015-16) (at Constant price)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)
Textiles	5047.35	4680.99	8933.41	58.42	46.15	53.54	28.17	27.67	23.11
Wearing apparel	2141.47	1639.57	6144.02	28.09	21.14	21.24	11.95	9.69	15.89
Machinery and equipment n.e.c.	541.67	1116.87	5859.66	29.62	34.10	72.91	3.02	6.60	15.16
Tobacco products	1819.22	1475.11	3736.23	76.30	62.03	73.86	10.15	8.72	9.67
Fabricated metal products, except machinery and equipment	1257.57	1827.51	2782.43	32.91	32.96	20.16	7.02	10.80	7.20
Manufacture of furniture	2882.89	2022.76	1384.47	43.44	21.60	14.62	16.09	11.96	3.58
Leather and related products	357.45	535.10	1081.44	37.82	47.50	45.06	1.99	3.16	2.80
Printing and reproduction of recorded media	661.92	717.60	1039.47	40.68	42.10	31.21	3.69	4.24	2.69
Rubber and plastics products	377.58	235.20	807.50	29.06	20.18	22.85	2.11	1.39	2.09
Food products and beverages	432.63	356.44	754.12	4.07	2.81	3.48	2.41	2.11	1.95
Wood and products of wood and cork, except furniture	913.07	746.67	664.34	16.52	16.46	9.64	5.10	4.41	1.72
Other non-metallic mineral products	343.34	277.51	590.89	7.00	5.49	5.97	1.92	1.64	1.53
Electrical equipment	191.00	136.06	528.20	18.41	12.36	31.78	1.07	0.80	1.37
Basic metals	131.37	216.63	461.97	21.51	22.35	38.28	0.73	1.28	1.20
Motor vehicles, trailers and semi-trailers	237.21	311.53	372.20	50.97	68.80	44.10	1.32	1.84	0.96
Paper and paper products	153.83	242.66	322.42	29.39	41.29	29.31	0.86	1.43	0.83
Chemicals and Pharmaceuticals products	178.31	237.44	203.64	19.27	17.44	13.98	1.00	1.40	0.53
Other transport equipment	94.49	75.73	117.85	31.36	17.88	48.16	0.53	0.45	0.30
Computer, electronic and optical products	124.53	51.95	113.89	39.19	12.49	31.59	0.69	0.31	0.29
Coke and refined petroleum products	0.52	0.53	0.76	0.98	0.79	1.41	0.00	0.00	0.00
Cotton Ginning	5.89	3.59	0	32.63	4.74	0	0.03	0.02	0.00
Other industries	26.07	10.13	2758.21	31.66	21.29	20.68	0.15	0.06	7.14
Total	17919.36	16917.61	38657.10	29.77	24.08	25.77	100.00	100.00	100.00

Table 9 presents estimated Annual Gross Value Added (GVA) and percentage of GVA with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC) in

unorganized manufacturing sector arranged in descending order of percentage share of GVA during 2015-16. It is revealed that the GVA contribution of textiles activities was maximum (23.11 percent) followed by wearing apparel (15.89 percent) and machinery equipment (15.16 percent) in 2015-16. Top five economic activities namely textiles, wearing apparel, machinery equipment, tobacco products and fabricated metal products combined together contributes around 71 percent in the total aggregate GVA in 2015-16. The percentage share of GVA contribution of textile activities was in top position during three survey periods. The percentage share of GVA contribution of machinery equipment had increased significantly from 6th rank both in 2000-01 and 2005-06 to 3rd rank in 2015-16. The percentage share of GVA of manufacture of furniture was in 2nd position both in 2000-01 and 2005-06, however, it had declined to 6th position in 2015-16. But it is seen that textiles, wearing apparel, machinery equipment, tobacco products, fabricated metal products and manufacture of furniture were the top six industrial activities in terms of GVA in all the three survey periods though not in the same sequence.

But it is interesting to see that in some of the industrial activities namely; textiles (53.54 percent), machinery & equipment (72.91 percent), and tobacco products (73.86 percent) the percentage contribution of GVA was more than 50 percent in 2015-16 among the contract manufacturers. For some of the industrial activities viz., Machinery & equipment, Leather products, Electrical equipment, and Basic metals, the percentage contribution in total GVA in concerned activities had consistently increased among those enterprises undertaking any work on contract basis during the three NSS survey periods. However, in the industrial activities viz. textiles, tobacco products, fabricated metal products, manufacture of furniture, printing, rubber & plastic products, and motor vehicles, the percentage contribution in total GVA in the concerned activities had declined during 2005-06 and 2015-16 in comparison to 2000-01 among the contract manufacturers in unorganized manufacturing sector.

Table 10 presents estimated GVA and percentage share of GVA with respect to NSS rounds among the contract manufacturers by major State/UTs in unorganized manufacturing sector arranged in descending order of percentage share of GVA in 2015-16. It is seen that Gujarat had the highest GVA in 2015-16 but had the 6th and 5th highest GVA in 2000-01 and 2005-06 respectively. West Bengal had the highest GVA during both 2000-01 and 2005-06 but had the second highest GVA in 2015-16. Top Five states namely; Gujarat (21.55 percent), West Bengal (20.52 percent), Tamil Nadu (13.21 percent), Maharashtra (12.19 percent) and Uttar Pradesh (8.35 percent) combined together had constituted around 76 percent of GVA among the contract manufacturers in 2015-16. It is interesting to see the share of GVA contribution in Gujarat. In 2000-01 Gujarat was in the 6th rank with 8.35 percent contribution and in 2005-06 it became 5th in ranking with 7.26 percent contribution and in 2015-16 Gujarat became the top ranked state superseding West Bengal, Maharashtra, Tamil Nadu, Uttar Pradesh and Delhi. In general, Gujarat, West Bengal, Tamil Nadu, Maharashtra, Uttar Pradesh and Delhi were the top six states in terms of aggregate GVA in all the three NSS survey periods though not in the same sequence

and combined together the contribution share of GVA was around 76 percent in 2000-01, 73 percent in 2005-06 and 83 percent in 2015-16 among the contract manufacturers.

It is interesting to see that some of the states namely; West Bengal, Gujarat, Delhi, Tamil Nadu and Maharashtra have significant contribution of GVA among the contract manufacturers. In West Bengal around 51 percent of GVA had been contributed by the contract manufacturers. The percentage contribution of GVA in total GVA of Gujarat was 36 percent in 2000-01 and that declined to 24 percent in 2005-06 and increased to 43 percent in 2015-16 among the contract manufacturers. Similarly, in Delhi the percentage contribution of GVA in total GVA of Delhi was 57 percent in 2000-01 and declined to 46 percent in 2005-06 and also further it had declined to 37 percent in 2015-16 among the contract manufacturers.

Table 10: Estimated Annual Gross Value Added (GVA) and percentage of GVA with respect to NSS rounds among the contract manufacturers by major State/UTs in unorganized manufacturing sector

State/UTs Name	Estimated Gross Value Added (in Rs. Crore)			Percentage Contribution of GVA (%) in total GVA of the concerned State			Percentage (%) share in total GVA		
	56th Round (2000-01)	62nd Round (2005-06)(at Constant price)	73rd Round (2015-16)(at Constant price)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)
Gujarat	1495.51	1228.66	8331.02	35.94	23.59	43.14	8.35	7.26	21.55
West Bengal	3372.02	3177.92	7932.85	45.88	45.63	50.61	18.82	18.78	20.52
Tamil Nadu	2152.65	2447.79	5108.08	35.64	35.82	31.35	12.01	14.47	13.21
Maharashtra	2418.36	2460.64	4712.17	31.84	21.58	31.16	13.50	14.54	12.19
Uttar Pradesh	1928.91	2053.84	3229.03	27.67	25.87	21.80	10.76	12.14	8.35
Delhi	2238.66	900.78	2700.49	56.73	45.50	37.35	12.49	5.32	6.99
Andhra Pradesh	682.40	583.45	1476.69*	17.37	14.92	13.61	3.81	3.45	3.82
Karnataka	503.20	698.17	1256.72	17.23	15.30	11.62	2.81	4.13	3.25
Kerala	485.75	588.07	800.67	23.92	20.78	13.85	2.71	3.48	2.07
Madhya Pradesh	528.47	211.42	526.94	32.73	10.08	13.34	2.95	1.25	1.36
Bihar	293.25	265.55	441.85	13.97	15.68	8.46	1.64	1.57	1.14
Punjab	311.83	233.12	378.46	13.99	12.37	9.40	1.74	1.38	0.98
Jharkhand	161.93	315.64	336.24	16.98	27.63	19.04	0.90	1.87	0.87
Assam	95.46	168.18	294.32	11.67	14.82	16.93	0.53	0.99	0.76
Odisha	90.55	308.12	254.23	7.54	19.06	14.30	0.51	1.82	0.66
Rajasthan	377.45	602.64	240.10	16.17	19.18	3.53	2.11	3.56	0.62
Haryana	89.40	199.36	191.78	7.92	8.80	6.93	0.50	1.18	0.50
Chhattisgarh	106.43	40.61	113.18	23.90	5.83	9.50	0.59	0.24	0.29
Jammu & Kashmir	439.27	162.62	104.46	44.90	16.06	6.11	2.45	0.96	0.27
Uttarakhand	34.20	42.60	55.87	10.70	14.66	7.90	0.19	0.25	0.14
Sub-Total	17805.69	16689.20	38485.15				99.37	98.65	99.56
Total	17919.36	16917.61	38657.10	29.77	24.08	25.77	100.00	100.00	100.00

* includes Telangana

Productivity

The following paragraphs consist of an attempt to look at the changing patterns of labour productivity, productivity at enterprise level, and wage rate during 2000-01 to 2015-16 of the

enterprises who had undertaken any work on contract basis in the unorganized manufacturing sector.

Labour Productivity

Labour productivity is measured as estimated GVA per worker. Table 11 presents labour productivity with respect to NSS rounds in unorganized manufacturing sector. It is observed that labour productivity was Rs. 16,233 per worker in 2000-01 and increased to Rs. 19,277 in 2005-06 and further to Rs. 41,605 in 2015-16 in unorganized manufacturing sector. From the table it is clearly seen that the labour productivity was consistently lower among the contract manufacturers in comparison with those enterprises which did not undertake any work on contract basis during 2000-01 to 2015-16. The labour productivity was Rs. 15,906 in 2000-01 and slightly declined to Rs. 15,485 in 2005-06 and further it had increased to Rs. 35,702 in 2015-16 among those enterprises undertaking any work on contract basis. Some of the studies had also observed that the subcontracting intensities were pronounced in very few product lines and these enterprises were operating at a lower productivity level as compared to non-subcontracting enterprises (Sahu, 2010; Kar and Dutta, 2018).

Table 11: Labour productivity with respect to NSS rounds in unorganized manufacturing sector						
Undertake contract work	Labour Productivity (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06) (at Constant price)	73rd Round (2015-16)(at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Enterprise undertook any work on contract basis	15906	15485	35702	-2.64	130.56	124.46
Enterprise did not undertake any work on contract basis	16376	20901	44139	27.63	111.18	169.54
Total	16233	19277	41605	18.75	115.82	156.30

An attempt is also made to study the labour productivity with respect to different economic activities among the contract manufacturers. Table 12 presents labour productivity with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC) in unorganized manufacturing sector arranged in descending order of GVA per worker in 2015-16. It is seen that 'Machinery & equipment' had the highest GVA per worker (Rs. 1,45,612) in 2015-16 and increased consistently during 2000-01 to 2015-16. The GVA per worker was Rs. 40,333 in 2000-01 and increased to Rs. 55,614 in 2005-06 and further it had increased to Rs. 1,45,612 in 2015-16. Similarly, 'Other transport equipment' had the second highest GVA per worker and also increased during the three NSS survey periods. The GVA per worker was Rs. 33,395 in 2000-01 and increased to Rs. 40,835 in 2005-06 and further it had increased to Rs. 1,15,087 in 2015-16. 'Computer, electronic & optical products' had the third highest GVA per worker (Rs. 1,02,537) in 2015-16. It is also seen that GVA per worker varies with respect to different industrial activities during the survey periods. From the table it is observed that six industrial activities namely; machinery & equipment, other transport equipment, computer, electronic &

optical products, motor vehicles, trailers & semi-trailers, coke & refined petroleum products, and printing & reproduction of recorded media, the labour productivity was significantly higher than the national average. In some other industrial activities namely; tobacco products, other non-metallic mineral products, chemicals & pharmaceuticals products, textiles, and wood products labour productivity had been drastically low. But it is interesting to see drastically higher growth rate of GVA per worker during 2015-16 over 2000-01 except in the case of ‘Other non-metallic mineral products’ activities. Even higher growth rate of GVA per worker had been observed during 2015-16 over 2005-06 except for ‘Coke & refined petroleum products’ and ‘other non-metallic mineral products’ activities.

Industrial Activities (Major 2-digit NIC)	Labour Productivity (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06) (at Constant price)	73rd Round (2015-16)(at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Machinery and equipment n.e.c.	40333	55614	145612	37.89	161.83	261.02
Other transport equipment	33395	40835	115087	22.28	181.84	244.62
Computer, electronic and optical products	34958	33571	102537	-3.97	205.43	193.32
Motor vehicles, trailers and semi-trailers	41692	52285	99481	25.41	90.27	138.61
Coke and refined petroleum products	55498	177099	90986	219.11	-48.62	63.94
Printing and reproduction of recorded media	33198	44388	83677	33.71	88.51	152.05
Electrical equipment	25558	25790	75330	0.91	192.09	194.75
Fabricated metal products, except machinery and equipment	29701	35830	72986	20.64	103.70	145.73
Basic metals	29062	51467	68926	77.10	33.92	137.17
Manufacture of furniture	23744	25744	54875	8.43	113.15	131.11
Leather and related products	25652	21660	53614	-15.56	147.53	109.00
Rubber and plastics products	28946	29644	52650	2.41	77.61	81.89
Wearing apparel	20800	19563	51343	-5.95	162.45	146.85
Paper and paper products	16898	11686	37025	-30.84	216.82	119.11
Food products and beverages	17822	17616	36414	-1.16	106.71	104.31
Wood and products of wood and cork, except furniture	17177	19879	35095	15.73	76.54	104.32
Textiles	13967	12597	30872	-9.81	145.07	121.03
Chemicals and Pharmaceuticals products	6996	5363	17600	-23.34	228.18	151.59
Other non-metallic mineral products	22213	18132	12253	-18.37	-32.42	-44.84
Tobacco products	6386	5245	11586	-17.87	120.89	81.42
Other industries	17631	38375	38313	117.66	-0.16	117.31
Total	15906	15485	35702	-2.64	130.56	124.46

Value addition per enterprise

Value addition per enterprise has been derived by dividing total GVA by number of enterprises. Table 13 presents value addition per enterprise with respect to NSS rounds in unorganized manufacturing sector. It is observed that value addition per enterprise was Rs.35,358 per enterprise in 2000-01 and it had increased to Rs. 41,153 in 2005-06 and Rs. 76,255 in 2015-16

with a growth rate of 16.39 percent and 85.30 percent respectively. However, it is also revealed that the value addition per enterprise was reasonably low among the contract manufacturers in comparison to those enterprises which did not undertake any work on contract basis. The value addition per enterprise was Rs. 63,213 among the contract manufacturers whereas Rs. 82,140 was the value addition per enterprise among those enterprises which did not undertake any work on contract basis in 2015-16. Similarly, the value addition per enterprise was Rs. 34,332 in 2000-01 and Rs. 31,284 in 2005-06 among the contract manufacturers which was lower than those enterprises not undertaking any work on contract basis in the respective period.

Undertake contract work	Value Addition per Enterprise (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06) (at Constant price)	73rd Round (2015-16) (at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Enterprise undertook any work on contract basis	34332	31284	63213	-8.88	102.06	84.12
Enterprise did not undertake any work on contract basis	35811	45729	82140	27.69	79.62	129.37
Total	35358	41153	76255	16.39	85.30	115.67

Table 14 presents value addition per enterprise with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC) in unorganized manufacturing sector, arranged in descending order of value addition per enterprise in 2015-16. It is seen that 'Machinery & equipment' had the highest GVA per enterprise (Rs. 13,43,004) in 2015-16. This was followed by 'Motor vehicles, trailers & semi-trailers' (Rs. 5,68,328) and 'Electrical equipment' (Rs. 4,51,030) in the 2nd and 3rd position in 2015-16. From the table it is seen that the value addition per enterprise was varying with respect to industrial activities. It is observed that in some of the activities namely, Machinery & equipment, Motor vehicles, trailers & semi-trailers, Electrical equipment, other transport equipment, Coke & refined petroleum products, and Basic metals value addition per enterprise had been drastically high in 2015-16. However, for industrial activities namely; Tobacco products, Chemicals & Pharmaceuticals products, other non-metallic mineral products, Wood products, and Textiles value addition per enterprise was considerably low in 2015-16. Similar trend had also been observed in 2000-01 and 2005-06. However, it is interesting to see the growth rate of value addition per enterprise during the three survey periods. The growth rate of GVA per enterprise was remarkably high almost in all the industrial activities during 2015-16 over 2000-01, except 'Computer, electronic & optical products' and 'Other non-metallic mineral products'. Similarly, the growth rate of GVA per enterprise was considerably high in almost all the industrial activities during 2015-16 over 2005-06, except 'Coke & refined petroleum products' and 'Other non-metallic mineral products'.

Industrial Activities (Major 2-digit NIC)	Value Addition per Enterprise (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06)(at Constant price)	73rd Round (2015-16)(at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Machinery and equipment n.e.c.	147728	245423	1343004	66.13	447.22	809.11
Motor vehicles, trailers and semi-trailers	221156	384892	568328	74.04	47.66	156.98
Electrical equipment	91072	95396	451030	4.75	372.80	395.25
Other transport equipment	136392	170453	391005	24.97	129.39	186.68
Coke and refined petroleum products	306873	2656484	359610	765.66	-86.46	17.19
Basic metals	92407	147388	310754	59.50	110.84	236.29
Printing and reproduction of recorded media	116156	184997	286601	59.27	54.92	146.74
Fabricated metal products, except machinery and equipment	88366	125637	259477	42.18	106.53	193.64
Leather and related products	85768	96014	177559	11.95	84.93	107.02
Computer, electronic and optical products	189335	94710	169250	-49.98	78.70	-10.61
Rubber and plastics products	92927	93662	126098	0.79	34.63	35.70
Wearing apparel	43705	38557	120204	-11.78	211.75	175.04
Manufacture of furniture	61028	58597	114012	-3.98	94.57	86.82
Paper and paper products	41154	21576	71264	-47.57	230.29	73.17
Food products and beverages	40425	41525	66404	2.72	59.92	64.26
Textiles	37671	30226	58317	-19.76	92.94	54.81
Wood and products of wood and cork, except furniture	28802	37836	58112	31.37	53.59	101.76
Other non-metallic mineral products	75416	57290	39351	-24.03	-31.31	-47.82
Chemicals and Pharmaceuticals products	12119	7523	30755	-37.92	308.83	153.79
Tobacco products	9687	7489	13600	-22.69	81.59	40.39
Other industries	38243	160362	76785	319.33	-52.12	100.78
Total	34332	31284	63213	-8.88	102.06	84.12

Average Wage rate

Wage rate has been derived as total wages divided by total number of hired workers. Table 15 presents average wage rate per hired worker deflated to 2000-01 prices in the unorganized manufacturing sector. From the table it is observed that wage per hired worker was around Rs. 18,307 per annum during 2000-01 and it had increased to Rs. 20,995 in 2005-06 and more than doubled to Rs. 43,938 per annum in 2015-16, with a growth rate of 14.68 percent and 109.27 percent in the respective inter-survey periods. Average wage rate had also varied with respect to type of contract work. Most significantly, the table reveals that the wage rate per hired worker was higher among those employed in contract manufacturers than those in other enterprises in all the three survey periods. From the table it is observed that the wage rate per hired worker for the former group of enterprises was Rs. 20,760 in 2000-01. It had increased to Rs. 22,799 in 2005-06 and further to Rs. 47,299 in 2015-16. Whereas, for the latter group of enterprises, the wage rate

per hired worker was Rs. 17,140 in 2000-01. It had increased to Rs. 20,323 in 2005-06 and further to Rs. 42,638 in 2015-16.

Undertake contract work	Wage rate per hired worker (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06)(at Constant price)	73rd Round (2015-16) (at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Enterprise undertook any work on contract basis	20760	22799	47299	9.82	107.46	127.84
Enterprise did not undertake any work on contract basis	17140	20323	42638	18.57	109.80	148.76
Total	18307	20995	43938	14.68	109.27	140.00

Industrial Activities (Major 2-digit NIC)	Wage per Hired worker (Rs.)			Growth Rate (%)		
	56th Round (2000-01)	62nd Round (2005-06)(at Constant price)	73rd Round (2015-16)(at Constant price)	62 nd over 56 th Round	73 rd over 62 nd Round	73 rd over 56 th Round
Coke and refined petroleum products	25067	50196	78511	100.24	56.41	213.20
Motor vehicles, trailers and semi-trailers	26356	27660	68430	4.95	147.39	159.64
Other transport equipment	24525	31188	65673	27.17	110.57	167.78
Printing and reproduction of recorded media	23322	30689	58190	31.59	89.61	149.51
Computer, electronic and optical products	22486	19980	56759	-11.14	184.07	152.42
Machinery and equipment n.e.c.	26651	43832	55653	64.47	26.97	108.82
Wood and products of wood and cork, except furniture	20232	20014	54422	-1.08	171.91	168.99
Fabricated metal products, except machinery and equipment	22470	25020	53928	11.35	115.54	140.00
Wearing apparel	22408	24426	50425	9.01	106.44	125.03
Leather and related products	19421	18304	49269	-5.75	169.18	153.69
Rubber and plastics products	21638	21726	45539	0.40	109.61	110.45
Manufacture of furniture	21228	22735	42648	7.10	87.59	100.91
Electrical equipment	19053	38241	42611	100.70	11.43	123.64
Textiles	19750	18421	42568	-6.73	131.08	115.54
Paper and paper products	20214	15809	39580	-21.79	150.37	95.81
Basic metals	19562	27457	37468	40.36	36.46	91.53
Tobacco products	7002	8050	36876	14.97	358.06	426.61
Food products and beverages	15067	14338	36470	-4.84	154.35	142.05
Other non-metallic mineral products	23731	18448	30889	-22.26	67.44	30.16
Chemicals and Pharmaceuticals products	7297	13455	26181	84.40	94.58	258.81
Other industries	17600	18353	41074	4.28	123.80	133.37
Total	20760	22799	47299	9.82	107.46	127.84

Table 16 presents wage rate per hired worker with respect to NSS rounds among those enterprises which undertook any work on contract basis by industrial activities (2-digit NIC) in

the unorganized manufacturing sector, arranged in descending order of wage rate in 2015-16. From the table it is revealed that wage rate per hired worker had varied with respect to different industrial activities. It is observed that for the industrial activities namely, Coke & refined petroleum products, Motor vehicles, trailers & semi-trailers, Other transport equipment, Printing & reproduction of recorded media and Computer, electronic & optical products, wage rate per hired worker was comparatively higher than the other activities among the contract manufacturers. Whereas for the other industrial activities namely; Chemicals & Pharmaceuticals products, Other non-metallic mineral products, Food products & beverages, Tobacco products and Basic metals, wage rate per hired worker was notably lower. It is also revealed that the growth rate of wage per hired worker with respect to different industrial activities had also increased considerably during 2015-16 over 2005-06 and 2000-01. One similar study on tobacco products industrial activities had observed that *bidi* workers were among the lowest paid employees in India (Nandi et. al., 2014). This study has also revealed that wage per hired worker in tobacco products industries was significantly low during the three NSS survey periods.

Female Participation

An attempt has been made to examine the gender difference in participation in unorganized manufacturing sector among those enterprises which undertook any work on contract basis. Table 17 presents estimates on female participation from the three NSS rounds in unorganized manufacturing sector. In this paper female participation rate is measured as percentage of female workers in all workers. The table also provides percentage share of female workers in the total female workers and female-male ratio among workers. If the female & male ratio is greater than 1, then the number of female workers is more than the male workers. If the ratio is around 1, then there is no gender difference. If the ratio is significantly less than 1, then the male workers are more than the female workers. It is also revealed that female-male ratio was 0.70 in 2000-01 which implies considerably less female participation in unorganized manufacturing sector among the contract manufacturers. The female male ratio, however, increased to 1.06 during the period 2005-06 and slightly, further it had also increased to 1.08 during the period 2015-16 among the contract manufacturers. Therefore, it is revealed that there was no substantial gender difference in female participation during 2005-06 and 2015-16 among those enterprises undertaking any work on contract basis in unorganized manufacturing sector.

However, significant gender difference had been observed among those enterprises which did not undertake any work on contract basis. No significant change had been observed during the three survey periods in female participation among those enterprises which did not undertake any work on contract basis in unorganized manufacturing sector. Female & male ratio was 0.44 in 2000-01 and it had slightly increased to 0.47 in 2005-06 and further it had increased to 0.50 in 2015-16 which clearly indicates the gender difference among those enterprises which did not undertake any work on contract basis in unorganized manufacturing sector.

Type of Contract Work	56th Round (2000-01)			62nd Round (2005-06)			73rd Round (2015-16)		
	Percentage	%	Female:	Percentage	%	Femal	Percentage	%	Femal

	of female workers (%) in all workers	share of female worker	Male Ratio	of female workers (%) in all workers	share of female worker	e: Male Ratio	of female workers (%) in all workers	share of female worker	e: Male Ratio
Enterprise undertook any work on contract basis	41.01	36.97	0.70	51.57	40.70	1.06	51.87	40.08	1.08
Enterprise did not undertake any work on contract basis	30.52	63.03	0.44	32.17	59.30	0.47	33.28	59.92	0.50
Total	33.71	100.00	0.51	37.98	100.00	0.61	38.87	100.00	0.64

An attempt has also been made to look into female participation with respect to different industrial activities among those enterprises which undertook any work on contract basis in unorganized manufacturing sector. Table 18 presents female participation with respect to NSS rounds among the contract manufacturers by industrial activities (2-digit NIC) in unorganized manufacturing sector, arranged in descending order of percentage share of female workers in 2015-16. From the table it is revealed that in ‘tobacco products’ activities more than 51 percent of female workers had participated in 2015-16 which was followed by ‘textiles’ (25 percent) and ‘wearing apparel’ (7 percent) activities. These three industrial activities combined together constitute around 83 percent of female workers among those enterprises which undertook any work on contract basis. In some of the activities namely; tobacco products, textiles, chemicals & pharmaceuticals products, and paper & paper products, female workers had been drastically more than the male workers. In these activities female-male workers ratio had been significantly high during all the three survey periods. In these four activities female workers participation had increased significantly during the three survey periods. It is seen that for tobacco and chemicals & pharmaceuticals products activities, percentage share of female workers over male workers was around 90 percent in 2015-16. It implies that the remaining 10 percent of workers are male in these two activities. In tobacco products activities the female workers had increased consistently from 72 percent in 2000-01 to 81 percent in 2005-06 and further it had increased to 89 percent in 2015-16. Whereas, in chemicals & pharmaceuticals products activities, percentage share of female workers was 81 percent in 2000-01 and the same increased to 95 percent in 2005-06 and further it had declined to 90 percent in 2015-16. From these analyses it is clearly revealed that the female workers participation had confined to some of the selected industrial activities only among those enterprises which undertook any work on contract basis in unorganized manufacturing sector. Other than these four activities as discussed above, female participation had been drastically low in other industrial activities among the contract manufacturers in unorganized manufacturing sector.

Industrial Activities (Major 2-digit NIC)	56th Round (2000-01)			62nd Round (2005-06)			73rd Round (2015-16)		
	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio
Tobacco products	72.23	44.53	2.60	81.28	40.57	4.34	89.00	51.11	8.09
Textiles	39.66	31.02	0.66	51.10	33.70	1.04	48.64	25.06	0.95
Wearing apparel	27.05	6.03	0.37	38.21	5.68	0.62	32.62	6.95	0.49
Other non-metallic mineral	30.39	1.02	0.44	32.95	0.90	0.49	43.36	3.72	0.77

products									
Chemicals and Pharmaceuticals products	81.48	4.49	4.40	95.19	7.48	19.78	90.05	1.86	9.05
Food products and beverages	37.62	1.98	0.60	47.56	1.71	0.91	43.06	1.59	0.76
Wood and products of wood and cork, except furniture	18.94	2.18	0.23	17.83	1.19	0.22	42.28	1.43	0.73
Rubber and plastics products	23.59	0.67	0.31	27.76	0.39	0.38	37.77	1.03	0.61
Paper and paper products	45.74	0.90	0.84	78.17	2.88	3.58	51.13	0.79	1.05
Leather and related products	14.69	0.44	0.17	12.52	0.55	0.14	17.84	0.64	0.22
Printing and reproduction of recorded media	9.05	0.39	0.10	17.39	0.50	0.21	12.94	0.29	0.15
Fabricated metal products, except machinery and equipment	4.68	0.43	0.05	4.09	0.37	0.04	3.29	0.22	0.03
Electrical equipment	24.82	0.40	0.33	31.38	0.29	0.46	11.01	0.14	0.12
Machinery and equipment	3.98	0.12	0.04	4.16	0.15	0.04	1.16	0.08	0.01
Manufacture of furniture	19.59	5.15	0.24	24.88	3.47	0.33	1.06	0.05	0.01
Other transport equipment	1.66	0.01	0.02	21.22	0.07	0.27	12.29	0.02	0.14
Motor vehicles, trailers and semi-trailers	2.42	0.03	0.02	1.60	0.02	0.02	2.31	0.02	0.02
Basic metals	4.87	0.05	0.05	2.93	0.02	0.03	0.38	0.00	0.00
Coke and refined petroleum products	0.00	0.00	0.00	23.33	0.00	0.32	0.00	0.00	0.00
Computer, electronic and optical products	12.34	0.10	0.14	9.34	0.03	0.10	0.00	0.00	0.00
Other industries	16.43	0.05	0.20	59.37	0.03	1.46	38.99	5.00	0.64
Total	41.01	100.00	0.70	51.57	100.00	1.06	51.87	100.00	1.08

Table 19 presents female participation with respect to NSS rounds among those enterprises which undertook any work on contract basis by major States/UTs in unorganized manufacturing sector arranged in descending order of percentage share of female workers in 2015-16. The table reveals that higher proportions of female workers in West Bengal (44 percent) had participated in 2015-16 among those enterprises which undertook any work on contract basis followed by Andhra Pradesh (12 percent) and Tamil Nadu (11 percent). By examining percentage share of female workers over male workers, it is observed that states namely; Jharkhand (86 percent), Andhra Pradesh (83 percent), Karnataka (77 percent), Odisha (69 percent), Kerala (65 percent), West Bengal (60 percent), Uttarakhand (55 percent), Tamil Nadu (53 percent), and Madhya Pradesh (52 percent) had comparatively higher proportions of female workers over male workers in unorganized manufacturing sector among the contract manufacturers in 2015-16. Therefore, the female male ratio in these states had been considerably higher than the same in the other states in 2015-16. Female workers participation among these states as mentioned above had also been remarkably high during 2000-01 and 2005-06.

However, it is also seen that female workers participation had been drastically low among these seven states viz. Haryana, Assam, Rajasthan, Delhi, Gujarat, Maharashtra and Punjab among the contract manufacturers in unorganized manufacturing sector in three survey periods.

Table 19: Female participation with respect to NSS rounds among the contract manufacturers by major States/UTs in unorganized manufacturing sector			
State/UTs Name	56th Round (2000-01)	62nd Round (2005-06)	73rd Round (2015-16)

	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio	Percentage of female workers (%) over male workers	% share of female worker	Female: Male Ratio
West Bengal	45.75	28.44	0.84	56.16	26.68	1.28	60.43	44.07	1.53
Andhra Pradesh	52.27	7.47	1.10	65.07	6.57	1.86	83.29*	12.30	4.98
Tamil Nadu	50.44	16.44	1.02	58.04	16.40	1.38	53.09	10.66	1.13
Uttar Pradesh	36.51	12.59	0.58	51.36	17.48	1.06	41.23	8.93	0.70
Karnataka	78.23	8.96	3.59	81.12	7.60	4.30	77.16	6.05	3.38
Madhya Pradesh	46.54	5.81	0.87	56.19	1.58	1.28	51.87	3.53	1.08
Jharkhand	51.93	2.23	1.08	62.79	4.28	1.69	86.26	2.82	6.28
Gujarat	14.90	1.60	0.18	29.15	2.18	0.41	16.61	2.45	0.20
Odisha	40.01	0.98	0.67	56.21	3.57	1.28	68.97	2.27	2.22
Kerala	57.56	3.44	1.36	60.32	3.78	1.52	65.76	2.08	1.92
Maharashtra	17.99	3.24	0.22	21.16	2.71	0.27	19.23	2.00	0.24
Bihar	39.16	1.61	0.64	52.48	2.78	1.10	33.99	1.09	0.51
Punjab	46.84	1.70	0.88	51.41	1.09	1.06	30.17	0.41	0.43
Delhi	3.35	0.42	0.03	3.15	0.15	0.03	6.76	0.35	0.07
Chattisgarh	44.61	1.10	0.81	23.55	0.09	0.31	45.44	0.31	0.83
Jammu & Kashmir	26.46	1.36	0.36	32.70	0.46	0.49	45.86	0.26	0.85
Uttarakhand	39.06	0.24	0.64	0.25	0.00	0.00	54.87	0.13	1.22
Rajasthan	41.42	1.56	0.71	35.45	1.53	0.55	13.05	0.08	0.15
Assam	28.01	0.29	0.39	30.79	0.43	0.44	6.02	0.05	0.06
Haryana	15.35	0.09	0.18	22.38	0.18	0.29	4.95	0.03	0.05
Sub-Total	41.01	99.57	0.70	51.67	99.56	1.07	51.94	99.88	1.08
Total	41.01	100.00	0.70	51.57	100.00	1.06	51.87	100.00	1.08

* includes Telangana

Conclusion

From the above analysis it is clearly revealed that contract work is predominated in unorganized manufacturing sector. Around 31 percent of enterprises were engaged in contract work during the three NSS survey periods. Within the manufacturing sector, manufacture of tobacco products had considerably higher proportions of contract manufacturers followed by manufacture of textiles and manufacture of wearing apparel. The proportion of such units in these top industrial activities were identical and of the same order during the three survey periods. These three manufacturing activities combined together had contributed around 71 percent in 2000-01, 73 percent in 2005-06 and 78 percent in 2015-16 of the total enterprises in unorganised manufacturing sector among the contract manufacturers.

It is also observed that the top five states viz. West Bengal, Tamil Nadu, Andhra Pradesh, Uttar Pradesh and Karnataka had the highest number of contract manufacturers in the unorganised sector. These five states were identical and in the top five position in terms of total number of contract manufacturers in the unorganised sector in all the three survey periods though not in the same sequence. These five states combined together had contributed around 69 percent in 2000-01, 71 percent in 2005-06 and 79 percent in 2015-16 of the total contract manufacturers in the unorganised sector.

From this study it is seen that total number of workers in unorganized manufacturing sector had declined during the survey period which had direct impact on the number of workers engaged in contract manufacturing. It is also seen that the labour intensive industries viz. tobacco products,

textiles, wearing apparel etc. had comparatively higher proportions of workers engaged in contract manufacturing. On the basis of state wise analysis it is found that three states viz. West Bengal, Uttar Pradesh and Tamil Nadu had top three positions during the three survey periods and in the same sequence and combined together had engaged around 53 percent of total workers in 2000-01, 56 percent in 2005-06 and 59 percent in 2015-16 among contract manufacturers in the unorganised sector.

It is seen that the tobacco products activities was in the top position not only in number of enterprises but also in employment generation during the three survey periods. However, the GVA contribution of tobacco products activities was in the 4th position in three rounds of the survey periods. But it is interesting to note that the GVA contribution of textiles activities was at the top position in GVA contribution during all the three survey periods. The GVA contribution of wearing apparel activities was in the second position in 2015-16 but it was in the 3rd position in 2000-01 and 4th position in 2005-06.

From the productivity analysis it is observed that labour productivity was reasonably low among contract manufacturers in comparison to those enterprises which did not undertake any work on contract basis during 2000-01 to 2015-16. It is also seen that the labour productivity had varied drastically with respect to different industrial activities. The labour productivity had been considerably low among the labour intensive industries such as tobacco products, other non-metallic mineral products, chemicals & pharmaceuticals products, textiles, and wood products among the contract manufacturers in unorganised manufacturing sector. Whereas, labour productivity was found to be extremely high among the capital intensive industries viz. machinery & equipment, other transport equipment, computer, electronic & optical products, motor vehicles, trailers & semi-trailers, coke & refined petroleum products, and printing activities.

Value addition per enterprise was notably low among contract manufacturers in comparison to those enterprises which did not undertake any work on contract basis during 2000-01 to 2015-16. Even value addition per enterprise had varied drastically with respect to different industrial activities. Value addition per enterprise was reasonably low among the labour intensive industries viz. tobacco products, chemicals & pharmaceuticals products, other non-metallic mineral products, wood products, and textiles, whereas among capital intensive industries such as, machinery & equipment, motor vehicles, trailers & semi-trailers, electrical equipment, other transport equipment, coke & refined petroleum products, and basic metals, value addition per enterprise was considerably high.

Though the productivity was comparatively low among contract manufacturers over those enterprises which did not undertake any work on contract basis in unorganized manufacturing sector, but the wage rate per hired worker was noticeably different. It is seen that the wage rate per hired worker was reasonably high among those enterprises which undertook any work on contract basis in comparison to those enterprises which did not undertake any work on contract basis during the three survey periods. However, the wage rate was comparatively high among the capital intensive industries in comparison to labour intensive industries among the contract manufacturers.

It is seen that female participation rate was comparatively low in 2000-01 and it had increased considerably during 2005-06 and 2015-16 among the contract manufacturers in unorganized

manufacturing sector. No substantial gender difference in female participation had been observed during 2005-06 and 2015-16 among contract manufacturers in the unorganised sector. However, gender difference has been observed with respect to different industrial activities among contract manufacturers in the unorganised sector. Female participation was confined to only four industrial activities viz. tobacco products, textiles, chemicals & pharmaceuticals products, and paper & paper products, in comparison to other industrial activities among the contract manufacturers in unorganized manufacturing sector.

Female participation rate was comparatively high in some of the states viz. Jharkhand, Andhra Pradesh, Karnataka, Odisha, Kerala, West Bengal, Uttarakhand, Tamil Nadu and Madhya Pradesh during the three survey periods among contract manufacturers in the unorganised sector. Whereas, in some of the states viz. Haryana, Assam, Rajasthan, Delhi, Gujarat, Maharashtra and Punjab female participation has been remarkably low during the three survey periods.

References

- Beladi, Hamid et. al (2016). FDI and Business Internationalization of the Unorganized Sector: Evidence from Indian Manufacturing. Working Paper Series, WP No. 2016/01/EC. Goa Institute of Management, Sattari, Goa.
- Kar, Alope and MrinalBhaumik, 2015. Measuring Outsourced Manufacturing Process in India – its Relevance in National Accounts Compilation. *The Journal of Industrial Statistics*, Volume 4, No. 2, Pp. 128-153.
- Kar, Saibal and Meghna Dutta, 2018. Outsourcing and Productivity During Economic Crisis: Evidence from Indian Manufacturing Firms. *Arthaniti: Journal of Economic Theory and Practice*, Volume 17, No. 2, Pp. 168-182.
- Kathuria, Vinishet. al. 2010. Organised versus unorganised Manufacturing Performance in India in the Post-Reform Period. MPRA Paper No. 20317, posted 30 Jan 2010 15:13 UTC (Online at <https://mpra.ub.uni-muenchen.de/20317/>).
- Krishna, K. L. et. al. 2018. Productivity Growth and Levels - A comparison of Formal and Informal Manufacturing in India. Working Paper No. 291, Centre for Development Economics, Delhi School of Economics, Delhi. (<http://www.cdedse.org/pdf/work291.pdf>).
- Kumar, RamaaArun, 2016. Subcontracting and Industrial Agglomeration: Related Phenomena in India's Unorganised Manufacturing Sector. *The Journal of Industrial Statistics*, Volume 5, No. 2 Pp. 99-121.
- Nagaraj, R., 1984. Subcontracting in Indian Manufacturing Industries: Analysis, Evidence and Issues. *Economic and Political Weekly*, Volume. 19, No. 31/33. Pp. 1435-1453.
- Nandi A, et al. 2014. Estimates of the economic contributions of the bidimufacturing industry in India. Published on line (Tob Control 2014;0:1–8. doi:10.1136/tobaccocontrol-2013-051404).
- Ramaswamy, K. V. (1999). The Search for Flexibility in Indian Manufacturing: New Evidence on Outsourcing Activities. *Economic and Political Weekly*, 6 February, pp. 363-68.
- Sahu, ParthaPratim, 2010. Subcontracting in India's Unorganised Manufacturing Sector: A Mode of Adoption or Exploitation? *Journal of South Asian Development*, Volume 5, No. 1 Pp. 53-83.
- Sahu, ParthaPratim, 2007. Subcontracting in India's Small Manufacturing Enterprises: Problems and Prospects. Working Paper No. 2007/01, Institute for Studies in Industrial Development, New Delhi.
- Varshney, H.K. and Deboshree Ghosh, 2013. Employment Intensity of Output: An Analysis of Non-Agriculture Sectors Food Processing Sector, Institute of Applied Manpower Research, Planning Commission, Government of India, IAMR Report No. 10/2013.

WPI Deflator

Financial Year	WPI	WPI deflator
(1)	(2)	(3)
2000-01	141.70	1.000000
2001-02	144.30	0.981982
2002-03	148.10	0.956786
2003-04	156.50	0.905431
2004-05	166.30	0.852075
2005-06	170.32	0.831963
2006-07	179.97	0.787353
2007-08	188.57	0.751445
2008-09	200.19	0.707828
2009-10	204.63	0.692469
2010-11	216.31	0.655078
2011-12	231.99	0.610806
2012-13	244.28	0.580063
2013-14	251.71	0.562955
2014-15	257.97	0.549286
2015-16	253.33	0.559346

Concordance of 2-digit of NIC 1998, NIC 2004 and NIC 2008

2-digit			Description
NIC 1998	NIC 2004	NIC 2008	
01	01	01	Cotton Ginning
15	15	10+11	Food products and beverages
16	16	12	Tobacco products
17	17	13	Textiles
18	18	14	Wearing apparel
19	19	15	Leather and related products
20	20	16	Wood and products of wood and cork, except furniture
21	21	17	Paper and paper products
22	22	18	Printing and reproduction of recorded media
23	23	19	Coke and refined petroleum products
24	24	20+21	Chemicals and Pharmaceuticals products
25	25	22	Rubber and plastics products
26	26	23	Other non-metallic mineral products
27	27	24	Basic metals
28	28	25	Fabricated metal products, except machinery and equipment
30+32+33	30+32+33	26	Computer, electronic and optical products
31	31	27	Electrical equipment
29	29	28	Machinery and equipment n.e.c.
34	34	29	Motor vehicles, trailers and semi-trailers
35	35	30	Other transport equipment
36	36	31	Manufacture of furniture
>36	>36	>31	Other industries

School Drop-out in India: Pattern, Causes and Determinants

P. Geetha Rani¹ and Mukesh²

Abstract

Improving learning levels and arresting drop-outs are the twin challenges for India's education system. Despite remarkable progress in enrollment rates, India is less successful at preventing drop-outs during the critical learning phase. The present paper examines the issue of drop-out and its size, nature, distribution, causes and determinants by looking into the unit level data of NSSO on Participation in Education collected during the first half of 2014. We find that educational attainment of the head of the family is a contributing factor in reducing drop-out rates. Also students enrolled in general education more likely drop-out than those enrolled in professional education. The students belonging to casual labour households face a higher likelihood of dropping-out of school to work for either economic activities or to attend domestic chores including looking after younger siblings. We find family size has a negative impact on drop-out of the children. This negative impact is more pronounced for households which are poor and belong to socially disadvantaged groups. Further, a child living in a household with more number of children is more likely to drop-out. The inverse relationship between family size and number of children with higher probability of drop-out indicates the expected trade-offs between quantity and quality of children. Region specific factors such as culture and social norms do play an important role that North and Eastern India reports considerably more likelihood of drop-out than other regions. The paper concludes by stressing the importance of both educational and economic opportunities for schooling with financial assistance, context specific curriculum, part-time work for children, flexible timings and encouraging girls to continue schooling after marriage.

Key Words: Drop-out, financial constraints, not interested in studies, Logistics Regression

JEL Codes: I210, J240

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1. Introduction

India with its highest share of young population aspiring to reap the benefits of this demographic dividend needs to skill the majority if not all of her young population. During the last two to three decades, the programs and policies like District Primary Education Project, *Sarva Shiksha Abhiyan* and the Right To Education Act (RTE) have led to tremendous enhancement in physical infrastructure of schools. Despite building such physical school spaces and infrastructure however could not persuade the retention of students till they complete the school cycle. In an appealing paper titled, if you build it (school), will they come, Filmer, (2007) finds that the association between physical infrastructure and enrolment is found to be negligible in a cross-country study. It is because successful completion of schooling and the actual learning is influenced by numerous factors viz., quality of schooling, school and teacher related factors and socio-economic background including income and education of parents, besides whether the schools are able to attract and retain the enrolled children till they complete the school cycle.

Given the current state of the educational status of children, there are apprehensions that India will highly unlikely be able to reap demographic dividends. The leading impediment is preventing drop-out during the critical learning phase, as the cumulative drop-out rate in school education from grade I to X was 50 per cent by 2011-12, a monstrous problem¹. Every child in school is an opportunity for not only that child but also a chance for growth into full potential and thus contributing to the economy. On the contrary, if children drop-out from schools engages in unskilled labour would lead way to vicious cycle of poverty and its malice. Hence, it is vital to understand ‘why children drop-out from school?’ The causes of drop-out are multi-dimensional. They are poverty, accessibility, affordability and availability of good quality education. These conditions lead to a low-development trap with very poor quality of education combined with household poverty and its various coordinates. Though, there is a huge literature on child schooling and poverty, hardly studies examine the drop-out problem and its size, nature, distribution, causes and determinants. This paper is an attempt towards this direction using the unit level data on the currently not enrolled children of NSSO collected during first half of 2014.

The rest of the paper is organized as follows: The next section presents a brief review of select earlier studies. Section three outlines the data and methodology. Section four provides the trend pattern of drop-out and descriptive statistics from NSSO unit level data. Results of the logistic regression are discussed in section five. The last section concludes with recommendations.

2. Review of Earlier Studies

The present review covers studies on drop-out from economics and education perspectives. On Economics point of view and in developed country context, studies examine how compulsory schooling and additional years of schooling result in additional returns to education. These studies adopt neoclassical approach that treats education as an investment. That, students invest

¹Unfortunately the similar cumulative drop-out estimates is not available and is replaced by annual average drop-out rates since 2012-13.

time, forgo earnings, and undergo stress to attend school, with a calculation that expected earnings would outweigh these costs. On the other hand, those who drop-out leave school because they dislike school, lack motivation, and or unaware of or expect little reward from graduation. It is basically the quality-quantity trade-off between family size and child schooling, (Becker and Lewis, 1973). On these lines, Oreopoulos, (2003) examine high school drop-out behavior by estimating the long-run consequences to leaving school early and compare results across the United States, Canada, and the United Kingdom. Students who are compelled to stay in school experience substantial gains to lifetime wealth, health, and other labor market activities in these countries. On the contrary, households can decide not to invest in children's education, when the comparative return of child work is higher with respect to the returns to education (Cigno, 2004; Chamarbagwala, 2008).

The link between child labour and parental poverty is mutually reinforcing to a large extent, primarily on account of the low adult wages, called subsistence wages. For families in poverty, children's education can result in as a luxury good, unaffordable within the resource envelop (Basu and Van, 1998). Using the survey data from Nepal and Pakistan, Ray (2002) finds a sharp trade-off between child labour and child schooling tilted towards favouring boys' schooling. Although child labour does not always compete with schooling, yet some children manage to combine work and study activities. Studies show that the time children dedicate to work has negative effects on their education (Psacharopoulos, 1997; Patrinos and Psacharopoulos, 1997). These results as well indicate the inverse relationship between child work and schooling.

Combining data from National Sample Survey (50th round, in 1993) and state level data, Kambhampati and Rajan (2006) find that market work participation was higher (and school enrollment lower) in those states that experienced a higher regional GDP growth during the preceding decade. They argue that relatively lower labor market participation rates in poorer Indian states might reflect missing opportunities for children. Later Kambhampati (2010), analyses two rounds of the Employment and Unemployment surveys of NSSO dataset to see whether the patterns of schooling and child work have changed over this period or not. Focusing on rural India, she finds that the proportion of children in work has increased between 1993 and 2004. She interprets that as in a growing economy with more employment opportunities, larger number of children are likely to combine work and schooling.

Applying maximum likelihood method, Kis-Katos (2007) estimate the choice of decisions on market work, household chores, and school attendance, allowing for groupings of these activities. The paper uses the Survey of Living Conditions (1998) in Bihar and Uttar Pradesh. They find as one would expect, significant difference between the choice of market and domestic work between boys and girls. Using the National Family Health Survey of 2005–06, Rammohan (2012) estimates the likelihood of a school-age child working, combining work with schooling or being idle. She finds that with the inclusion of household chores in the child labour definition, boys are more likely than girls to be full-time students and less likely to be working, being idle or combining school and work. She finds significant differences across regions, older children, children with pre-school age siblings, urban children, Muslims and children from socially

deprived sections. The study further finds that parental education, household wealth and land ownership are negatively correlated with the likelihood that the child is working, but land ownership does increase the risk of a child combining work and schooling.

With a time use data, Narayanan and Dhanaraj (2018) find that there seems to be no trade-off between time spent at school and at work unlike Psacharapoulos, and others. But find a trade-off between leisure time and home study for work. The data corresponds to 1998-99 and cover a sample for 1,244 children in the age group 6-12 years in eight states in rural north India. From a field survey of children in rural Andhra Pradesh, Ota and Moffat (2007) attempt to find the key factors in the school versus out-of-school dichotomy. By treating each child in the sample as an individual decision making unit, they find that schooling decision for an individual child is clearly complicated, with demographic, social, cultural and economic factors influencing the decision-making process. The present paper follows this approach using the nationally representative NSSO data on currently not attending children.

Another stream of studies reviewed here includes the drop-out examined from education perspective. A study by Indian Institute of Education (2004) finds that lack of access to proper road can be one of the major causes for children's drop-out and non-attendance in Maharashtra. Teacher motivation is lacking and finds that lack of supervision, lack of interaction with the community due to the centralized nature of administration seems to be the major reasons for the teachers' disinclination to work in unfamiliar communities where they are posted. It also finds that one of the main reasons for non-attendance and drop-out is the ill-health of the children caused by ignorance of hygiene and inadequate availability of health services. A large number of rural and tribal students suffer from worms, scabies, malnutrition, weak eyesight, dental cavities and so on.

In an extensive review article, Lyche (2010) assess international research on drop-out from upper secondary education and training in OECD countries. The paper defines drop-out as a cumulative process of disengagement that begins much earlier than the actual drop-out. It also lists out the various causes of drop-out and suggests that successful measures needs to address several risk factors and involve action both within school, outside school and at systemic level simultaneously. The paper suggests set of solutions according to educational level and emphasizes on preventive measures to reduce drop-out should start early. Early identification enables broader and less costly measures. It clearly identifies overcoming the completion challenge requires a close cooperation between educational authorities along with many other parts of government such as social and labour services, health services and justice system in some countries.

Reddy and Sinha (2010) attempt to review the evidence on the commonly cited reasons for drop-out, including poverty, limited access to credit, child labour, and children's and parents' lack of interest in education. The paper argues that the literature rarely looks at the role of procedures and rules in schools and the wider education system in terms of pushing children out of school. They stress the claim that the reason for persistent drop-out rate is reflected in the lack of

systemic support available for children at risk of dropping out. The same is being illustrated with an experiment initiated by MV Foundation in Shankarpalle Mandal, Ranga Reddy district, Andhra Pradesh, where procedures, rules and practices relating to various aspects of school were adapted to ensure that every child stayed in school and completed elementary level.

Using the NSSO unit data of 64th round, Mukesh and Srivastava (2015) make an attempt to study the factors of caste, religion and occupation of the head of the family on the probability of dropping out of school in rural India. They find that the odds of dropping out of school are higher for students belonging to ST, SC, agricultural and other labour households and for students who belong to Buddhist and Muslim. The present paper is an extended version of this paper using the 71st round unit data on drop-outs.

The Present Study

Combining the economics and education perspectives, the present study attempts to examine the determinants of drop-out. In other words, we try to understand why some children drop-out from school. The framework of this determinant analysis covers four broad aspects: (i) student related factors (gender, enrolled in type of education and institution at the time of drop-out); (ii) family related factors with the information related to the head of the household (gender, educational attainment and occupation of head of family); (iii) family related factors (social group, family size, number of children, religion, and level of living of family); (iv) location factors like rural or urban, and regions. The paper estimates the determinants of drop-out by fitting a logistic regression, wherein students drop-out has been taken as the response variable and above factors as predictors.

Another aspect of analysis carried-out in this paper is the descriptive analysis on the causes of dropping out as NSSO collected detailed information by different reasons from children who dropped out of schooling. The initial information of drop-out was collected on 19 reasons. But in these paper reasons of drop-out is grouped into 9 reasons. The rationale for regrouping of these 19 reasons are based on: (i) these reasons which are kept as the same as in the survey indicate both the hidden and unhidden economic cost, “Financial constraint”, “engaged in domestic activities”, and “engaged in economic activities”, (ii) indirect capturing of poor quality of education reflected through the reasons like “Not interested in education” and “unable to cope up with studies/failure in studies”, (iii) the value placed by households on education is reflected via these reasons like “completed desired level/class” and “marriage”. It can be noted from table 3 more than 90 per cent of reasons are covered in this category and hence the rest of the 11 reasons are grouped as “other reasons”.

3. Data and Methods

The present paper uses 71st round data of the National Sample Survey office (NSSO) of Social Consumption on ‘Education’. The reference period was during the period January–June 2014. The sample selection process adopted by NSSO is a stratified multi-stage design. The present paper uses the data primarily from block 7 of schedule 25.2, relating to the particulars of

currently not attending persons of age 5-29. This block covers information on the age of the child, the status of ever enrolment. If enrolled the information further collected are age at first enrolled, level of education at which enrolled, type of education (general or professional), whether completed, grade completed before discontinuation or dropping out, type of institution last attended, and major reasons for never enrolling / discontinuing / dropping out. This relates to a total sample of 42,250 students consisting of 58 % (24,501) rural and 42 % (17,749) urban children.

3.1. Methodology

We use multivariate logistic regression by taking students drop-out as a dependent variable and gender of students, enrollment by type of education at the time of drop-out, enrollment by type of institution at the time of drop-out, gender of head of family, education of head of family, occupation of head of family, social group, family size, religion, level of living of family, number of children in the family, and geographical regions as independent variables. The probability of drop-out of students ‘P’ can be expressed in the following equation:

$$P = \frac{1}{1 + \exp\{-(b_0 + b_1X_1 + b_2X_2 + \dots + b_{12}X_{12})\}} \text{----- (1)}$$

In the above equation, X_1, X_2, \dots, X_{12} are independent variable and reported in Table 1. The equation can also be expressed in the following form:

$$1 - P = \frac{\exp\{-(b_0 + b_1X_1 + b_2X_2 + \dots + b_{12}X_{12})\}}{1 + \exp\{-(b_0 + b_1X_1 + b_2X_2 + \dots + b_{12}X_{12})\}} \text{-(2)}$$

$$\frac{P}{1 - P} = \frac{1}{\exp\{-(b_0 + b_1X_1 + b_2X_2 + \dots + b_{12}X_{12})\}} \text{-(3)}$$

$$\log\left(\frac{P}{1 - P}\right) = b_0 + b_1X_1 + b_2X_2 + \dots + b_{12}X_{12} \text{-(4)}$$

L.H.S. of equation (4) is log odds of drop-out of students and is known as logit of P. This equation is estimated using the maximum likelihood method. In order to test the significance of each independent variable Wald statistic² is computed at 95% level of significance. The independent variables are categorical in nature and for each independent variable, one category is selected as a reference category and comparisons are made between other categories of independent variable with respect to the reference category (see table 1).

Table 1: Explanatory Variables and their Categorization

Groups	Determinants	Type of Var.	Categories
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² Wald Statistics is the square of ratio of the Logistic Regression Coefficient to its Standard error.

Student Related	Gender of Students	Dummy Var.	Male =1 , Female =0
	Enrollment in Edun. type	Dummy Var.	General =1, Professional =0
	Enrollment in type of institution	Dummy Var.	Government =1 , Non-Government =0
Head of the Family Related	Gender of head of family	Dummy Var.	Male =1 , Female =0
	Education level of Head	Categorical	Illiterate =1, Just Literate=2, Primary/Upper Primary level=3, Secondary/Higher secondary level=4, Higher education=5
	Occupation of Head	Categorical	Self-employed =1 , Salaried occupation=2, Casual worker=3, Others Occupation =4
Family Related	Social Group	Categorical	Scheduled Tribes=1,Scheduled Castes =2, Other Backward Castes =3, Others Caste =4
	Religion	Categorical	Hindu=1 , Islam=2, Christianity=3, Sikhism=4, Others =5
	Family size [^]	Categorical	Marginal =1 , Small =2, Medium =3, Large =4
	No. of children in family	Categorical	No child=1 , One child=2, Two children=3, Three children=4, More than three children=5
Location	Level of living #	Categorical	Poorest=1, Second Quintile class=2, Third Quintile class=3, Fourth Quintile class =4, Richest=5
	Sector(Geographical location)	Dummy Var.	Rural=1 , Urban =0
	Regions*	Categorical	South=1, West=2, East= 3, North-East=4, North=5

Note: Reference category in bold letters. [^]Family Size is defined with four categories, viz, Marginal = 1-2 persons; Small = 3-4; Medium = 5-6 & Large = >6;

Level of Living for India defined as five categories grouped as Poorest = MPCE (0-840 Rs.); Second Quintile Class = MPCE (840-1167 Rs.); Third Quintile Class = MPCE (1167-1500 Rs.); Fourth Quintile Class = MPCE (1500-2000 Rs.) and Richest = MPCE (> 2000 Rs.).

Level of Living for Rural defined as five categories grouped as Poorest = MPCE (0-800 Rs.); Second Quintile Class = MPCE (800-1000 Rs.); Third Quintile Class = MPCE (1000-1286 Rs.); Fourth Quintile Class = MPCE (1286-1667 Rs.) and Richest = MPCE (> 1667 Rs.)

Level of Living for Urban defined as five categories grouped as Poorest = MPCE (0-1180 Rs.); Second Quintile Class = MPCE (1180- 1600 Rs.); Third Quintile Class = MPCE (1600-2100 Rs.); Fourth Quintile Class = MPCE (2100-3000 Rs.) and Richest = MPCE (> 3000 Rs.)

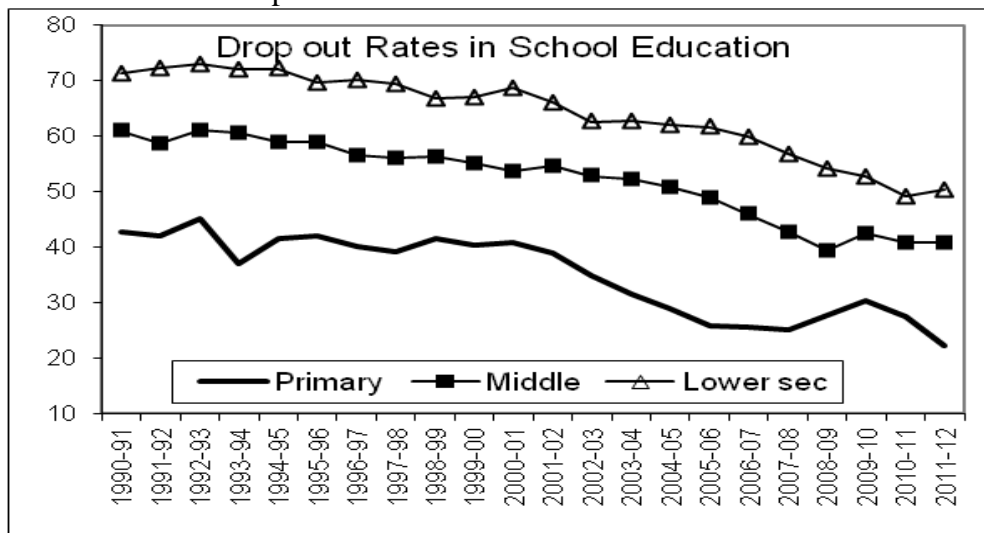
*The regions are defined as follows: **South:** Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Pondicherry, and Telengana; **West:** Rajasthan, Gujarat, Daman and Diu, Dadra and Nagar Haveli, Maharashtra, Goa and Lakshadweep; **East:** West Bengal, Jharkhand, Orissa, and Andaman and Nikobar Islands; **North East(NES):** Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Sikkim, and Assam; **North:** Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Haryana, Delhi, Uttarakhand, Uttar Pradesh, Chhattisgarh, Bihar and Madhya Pradesh.

4. Trends and Pattern of Drop-outs in India

This section presents the size, nature and pattern of drop-out in school education using the administrative and NSSO data. The cumulative drop-out rates in school education from grade I

to X was 70 per cent in the year 1990-91 and declined marginally to 60 per cent by 2011-12³ (Figure 1). The cumulative drop-out rates at the primary level have declined relatively faster than at the upper primary and lower secondary levels. Even in the beginning of the new millennium, the gap in drop-out rates between these two levels of education remained stagnant, indicating lack of serious initiatives to reduce the gap within elementary education. With drop-out rates ranging to around 50 per cent even in upper primary level, enrolment, by itself, loses its meaning, except as a frame of reference (see Figure 1). As noted in the introductory section of the paper, the number of programs like DPEP, SSA and RTE led to enrolment explosion in basic education. Unfortunately, the enrolment boom could not be sustained in completion of the basic school cycle.

Figure 1: Cumulative Drop-out Rates in School Education in India: 1990-91 to 2011-12



Note: Drop-out rates is estimated as the percentage of pupils who drop-out from a given grade or cycle or level of education in a given cycle / school year. The formula for estimating the drop-out is given as: Gross Drop-out rate for Grades I to V = { 1 - (Enrolment in class V during 2001 - 2002/enrolment in Grade I during 1997-1998)*100.

Source: Selected Educational Statistics, various issues

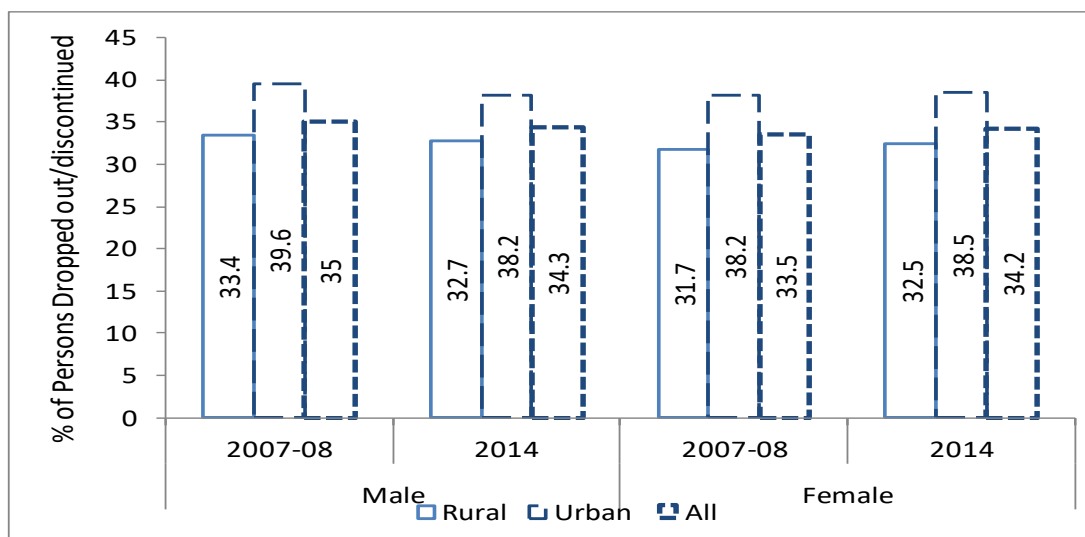
Smaller gap between upper primary and high school suggests that if children are able to complete elementary levels of education, the chances for them to enter into secondary education is marginally better than in the case of movement from primary to upper primary levels. Rising enrolments are accompanied by high rates of drop-out. On an average, almost two-thirds of pupils drop-out, this wastes valuable human, physical and financial resources. Further, these many millions of children adjoin to the unskilled army of labour force every year add more strain than gain to the economy.

The scenario is no different when we examine the National sample survey data. NSSO (2016) defines drop-outs/ discontinuance as an ever-enrolled person currently not attending any educational institution may be due to either: (i) he/ she has discontinued after completing the last level of education for which he/ she was enrolled or (ii) he/ she has discontinued education

³Since 2012-13, the available drop-out estimates is annual average drop-out rates, hence not comparable.

before attaining a specific level. For the first category, for example, if a person had completed the middle level but did not enroll for the next higher level of education, he/ she was not considered as a drop-out. It was considered as a case of discontinuation. However, if the person enrolled for the secondary level but did not complete it, then he/ she was considered a drop-out. For the purpose of this survey, both the types were treated alike for recording information. Even with such conservative definition of drop-out and discontinuance, it is reported that 38 per cent in urban and above 30 per cent in rural areas dropped out and or discontinued. The situation between 2007-08 and 2014 remained almost similar and do not show any improvement (see Figure 2).

Figure 2: Percent of persons (age group 5-29) dropped out /discontinued in 2007-08 and 2014



Source: Based on Table 55, Appendix A and NSS Report no. 532 for 64th round figures

With this backdrop, the present paper estimates drop-outs by adopting a comprehensive definition. It is defined here as a person who is currently not attending any educational institution but had attended in past and discontinued before completing the specific level of education. The specific level of education may be primary level, middle level, upper middle level, secondary/Higher secondary level or graduation or above level. It is important to note that *there is a significant difference between drop-out and discontinuation*. An ever-enrolled person currently not attending any educational institution may be due to either: (i) he/ she has discontinued after completing the last level of education for which he/ she was enrolled or (ii) he/ she has discontinued education before attaining a specific level. For the first category, for example, if a person had completed the middle level but did not enroll for the next higher level of education, he/ she was **not** considered as a drop-out. It was considered as a case of discontinuation. However, if the person enrolled for the secondary level but did not complete it, then he/ she was considered a drop-out.

Adopting this definition, the estimates on drop-out is reported in Table 2. This corroborates with the official statistics as reported in Figure 1 as it is almost similar to cumulative drop-out rates.

Drop-out rates are the highest among the primary level, followed by lower secondary level of education. The next highest level of drop-out rates is reported among the upper primary levels. It can be noted that drop-out here refers to those who left school without completing the number of years needed to obtain that particular level of education. Looking at Figure 1 and Table 2 together, it can be said that the drop-out rates of 50 per cent in 2011-12 has improved to 40 per cent by 2014. Yet, it is a huge challenge for the government to address this issue.

Table 2: Drop-out by Level of Education and Location among the age group 5-29 (in %)

<i>Level of enrollment when dropping out</i>	<i>Rural</i>			<i>Urban</i>		
	<i>Male</i>	<i>Female</i>	<i>All</i>	<i>Male</i>	<i>Female</i>	<i>All</i>
Primary	46.5	43.5	45	41.2	40.3	40.8
Upper Primary	37.9	38.7	38.2	41.1	37.1	39.3
Secondary	43.5	40.6	42.1	41.9	33.7	37.9
Higher Secondary	25.5	24.3	24.9	25.3	18.1	21.5
Diploma	12.7	10.2	11.7	10.2	13.1	11.2
Graduate	11.8	11.6	11.7	10.1	8.4	9.3
Post Graduate	7.1	7.1	7.1	3.4	6.8	5.4
All level of Education	36.6	35.8	36.2	30.1	25.6	27.9

Source: Estimated by authors using the unit data

Drop-out problem is severe in rural areas and among rural male children at primary level. But at upper primary level, the pattern and size of drop-out varies that the problem is acute among urban male children. The trade-off between work and school is at play in urban areas perceptibly. At lower and senior secondary levels, drop-out rate is similar across the board except for urban female students. However, as one would expect, drop-out rates at the higher education including diploma levels are comparatively lesser as the filtering has already happened at the school level.

4.2. Causes of Drop-outs

It is critical to understand that drop-out is a cumulative process of disengagement or withdrawal that occurs over time. Though such process based information is not available, NSSO lists out as many as nineteen different causes of drop-out. As noted earlier, those causes are regrouped under eight categories and analysed here. Percentage distribution of reasons of school drop-out among male and female students is given in table 3 for both rural and urban India.

Table3: Percentage distribution of reasons of schools drop-out in both Rural and Urban India

Reasons of drop-out	Rural			Urban		
	Male	Female	All	Male	Female	All
Not Interested in education	32.6	23.4	28.3	30.7	22.9	27.3
Financial Constraints	23.6	16.3	20.2	25.9	19.4	23.1
Engaged in domestic activities	3.9	28.7	15.5	2.4	22	11
Engaged in economic activities	23.8	3.9	14.5	20.6	2.5	12.7
School is far off	0.4	2.1	1.2	0.2	1.9	0.9
Unable to cope up with studies/failure	11.5	11.3	11.4	15.3	10.1	13
Completed desire level/class	0.2	0.2	0.2	0.3	0.3	0.3

Marriage *	0	9.4	4.4	0	14.4	6.3
Other reasons	4.1	4.7	4.4	4.6	6.5	5.4
All	100	100	100	100	100	100

Note: *Only for female students. Source: Estimated based on the unit data

It may be observed that most of the male students are dropping out from school because of not interested in education in both rural and urban. The reported reason '*not interested in studies*' could lead to different interpretations. For instance, it can indicate that dropped out children and their parents are not aware of the long term benefits of education. And / or, they may find that it is not worth spending their time in schools, indicating the opportunity cost of their time. It can also indicate that the schools are unable to retain the enrolled children in completing their studies. This results in dropping out a majority of the children. This reduces poor students' chances to continue their studies further, while the better off obtain relatively better quality educational services from either paying for better private schools or private tuition and enhancing their chances to continue their studies. It is well recognized that quality of education affects the labour market outcomes and the future productivity of students. School quality is associated with higher returns to education (Hanushek and Woessmann, 2008) and a higher probability of finishing school. In other words, the loaded reason not interested in studies is a push factor for enrolled children for quitting schools. 'Not interested in studies' is a very tricky term to interpret and implicate. This could refer to a possible poor quality of schooling. Both National Achievement Surveys of NCERT and Annual Survey of Education Report repeatedly exhibit the learning crisis.

Second major reason of drop-out is engagement in economic activities in rural India and financial constraints in urban areas. Third major reason of school drop-out is financial constraints in rural and engagement in economic activities in urban. These two reasons jointly associate the cost of schooling including the opportunity cost. Invariably the most common way of rationing scarce educational places of good quality is by examination; those with the highest scores are allowed to enter the better higher educational institutions. As argued by Jimenez (1987), however efficient this approach may be, it is not equitable. Even if it is assumed that innate ability is randomly distributed throughout the population, children from richer households can be expected to do better on examinations than those from poorer groups. It is because these children from the better off families exit the government schools for a better training in good quality private unaided schools to gain access in highly selective government provided educational services. These discrepancies are greater by the time students reach higher education, where selectively is more stringent. One of the major reasons being the dismal quality of schooling and the direct and indirect cost of education as evidenced from this analysis.

Unable to cope up with studies or failure in studies is also a one of the major reasons of school drop-out among male students. On the other hand, major reason for drop-out among female students is engagement in domestic activities in both rural and urban India. It was found that by including domestic work, the trade-offs between work and school of girls is explained better. The second major reason of dropping out is not interested in education and the third major reason of drop-out is financial constraints. It is important to note that throughout India, marriage is one of the prominent reasons of drop-out among the female students. It may be observed that the drop-out due to engagement in domestic activities is seven times higher among the female students than the male students in both rural and urban India. Similarly drop-out due to engagement in economic activities is six times higher among male students than female students. In nutshell

engagement in domestic activities for female and engagement in economic activities for male is the major reason for drop-out.

In a companion paper, Geetha Rani and Mukesh (2019) examine the pattern of enrolment and drop-out in school education. Their analysis chisels down to financial constraints from the human capital perspective by estimating the private rate of returns to education at elementary level. They find that household cost of education is high. Their extended analysis on the household burden of elementary education also confirms the burden is substantial for poor families. Neither the other side is greener for them as there exist very low wage rates resulting in poor private rates of return to elementary education. Combined with high cost, low returns and not interested in education (sic poor quality of schooling) leads to the industrial reserve army of unskilled workforce, waiting for a job in the 92 per cent share of informal labour market in India. They lament that deep into the development trap; the youth is being forced into live with inadequate skills to compete in the robotic techno savvy globalised labour market.

4. Descriptive Statistics

Drop-out among the poorest expenditure quintiles is the highest across the primary and upper primary levels of education across boys and girls (Table 4). Direct and positive relationship between higher drop-out and poorer households are quite clear across gender and at different levels of education except at secondary and higher secondary levels. It can be noted that more than 50 per cent of the enrolled dropped out before completing primary or upper primary levels among the poorest sections of the population across gender.

Table 4: Distribution of the Drop-out across School Levels by Expenditure Quintiles and Gender

HH Expr.	Primary	Up. Primary	Secondary	Hr. Secon	Above HSC	Drop-out [^]	Proportion*
MPCE				Male			
Q1	26.6	29.9	21.9	9.3	12.3	87.7	22.0
Q2	20.9	25.8	24.9	12.9	15.6	84.4	19.8
Q3	15.6	23.6	25.7	14.7	20.4	79.6	18.3
Q4	12.4	19.8	23.3	17.0	27.5	72.5	19.9
Q5	6.0	13.0	18.9	17.2	44.9	55.1	19.9
Total	16.5	22.6	22.9	14.1	24.0	76.0	51.4
MPCE				Female			
Q1	27.7	29.5	22.1	10.0	10.7	89.3	20.4
Q2	21.7	27.2	25.2	12.4	13.5	86.5	20.3
Q3	18.4	24.8	25.2	14.2	17.5	82.5	18.8
Q4	14.8	19.8	24.1	16.0	25.2	74.8	20.9
Q5	8.0	13.9	19.9	17.0	41.2	58.8	19.7
Total	18.2	23.0	23.3	13.9	21.6	78.4	48.6

Note: * proportion of each quintile; ^ drop-out at the school level.

Source: Based on unit data

As we move up on the expenditure quintiles, the drop-out rates decline steeply up to secondary levels of education. This pattern is visible across both boys and girls. Yet another economic indicator is the occupation of the head of the household. The sample of dropped out children predominantly (51 %) consists of self-employed as the occupation of the head of the household. The rest of the sample population is either salaried or casual workers (Table 5).

Table 5: Distribution of the Drop-out across School Levels by Occupation and Gender

Occupation	Primary	Up. Primary	Secondary	Hr. Secon	Above HSC	Drop-out [^]	Proportion*
Male							
Self Employed	15.4	22.7	24.3	15.8	21.7	78.3	51.2
Salaried	9.7	15.2	20.1	15.8	39.2	60.8	23.3
Casual Workers	26.8	31.0	23.1	8.2	10.9	89.1	22.9
Others	8.6	10.4	17.4	16.5	47.0	53.0	2.6
Total	16.5	22.6	22.9	14.1	24.0	76.0	51.4
Female							
Self Employed	18.3	23.8	24.6	14.5	18.8	81.2	52.1
Salaried	10.0	16.8	21.2	16.5	35.6	64.4	23.6
Casual Workers	28.8	29.8	22.8	9.1	9.5	90.5	20.5
Others	9.5	14.9	20.9	15.5	39.2	60.8	3.7
Total	18.2	23.0	23.3	13.9	21.6	78.4	48.6

Note: *proportion of each occupation type; ^ drop-out at school level.

Source: Based on unit data

The information reported in Table 5 clearly brings out that the overall drop-out is the highest among the casual workers followed by self-employed among both male and female dropped out children. The type of occupation matters a lot in terms of the level at which the drop-out happens. Among the casual workers, most of the drop-out happens at the upper primary level among male and female children. In the case of self-employed and salaried, the highest drop-out occurs at lower secondary levels of education.

India is a vast country. The socio cultural practices vary at a great deal across regions of India. An attempt is made here and we have categorized the states into five major regions as reported in Table 1. It can be noted the minimal drop-out percentage at the primary and upper primary levels in south while it is the highest on the northern regions of India (Table 6). But the pattern varies as we move up to the secondary levels of education. The drop-out is the highest at the lower secondary level in South, East and NES and the lowest in Northern regions of India. The gender distribution in drop-out was found to be more or less the same across income groups and occupation category. But the gender inequality is visible in the regional distribution of drop-outs.

Table 6: Distribution of the Drop-out across School Levels by Regions and Gender

Regions	Primary	Up. Primary	Secondary	Hr. Secon	Above HSC	Drop-out [^]	Proportion*
Male							
South	11.5	16.8	26.9	14.4	30.4	69.6	15.3
West	14.9	23.1	23.8	16.1	22.2	77.8	19.5

East	19.9	24.6	26.1	10.1	19.2	80.8	13.9
NES	14.5	24.0	25.2	14.4	21.8	78.2	11.8
North	18.7	23.3	19.0	14.3	24.6	75.4	39.4
India	16.5	22.6	22.9	14.1	24.0	76.0	51.4
Female							
South	12.1	16.9	28.9	16.9	25.3	74.7	17.8
West	20.6	24.3	24.6	13.3	17.2	82.8	19.9
East	18.7	24.9	30.4	9.7	16.3	83.7	13.8
NES	16.6	25.6	25.0	13.3	19.5	80.5	13.2
North	20.2	23.8	16.4	14.6	25.0	75.0	35.4
India	18.2	23.0	23.3	13.9	21.6	78.4	48.6

Note: * proportion of each region; ^ total drop-out at the school level.

Source: Based on unit data

5. Determinants of drop-out

To understand the determinants of drop-out, a binary Logistic Regression technique is used separately for rural, urban and for the full sample pertaining to India. The results are reported in Table 7, in which different categories of all predictors are specified in columns one and two. The third column depicts the odds ratio, i.e. the magnitude of odds of drop-out of the students belonging to any category as compared to the reference category for a given individual independent variable. Its ‘p’ values are reported in column 4 for rural India. The estimated results for urban India is reported from columns 5 to 6; and columns 7 to 8 correspond to full sample with corresponding estimated statistics in Table 7. A positive estimate of logistic regression coefficients indicates an increase in odds of drop-out, while a negative estimate indicates a decrease in odds of drop-out with respect to the reference category for a given independent variable when all other independent factors are controlled. The results indicate the probability of child dropping from schools under different circumstances, which range from wide spectrum such as the socio-cultural factors, economic, demographic, school based to policy related variables. These factors at the cost of simplicity are grouped within the framework of the determinant analysis under four broad aspects mainly student related, head of the family, family related and regional or location factors.

5. 1. Students related factors

What are the specific child-related variables that influence the enrolled children to drop-out from the schools is attempted here. Although a noteworthy change in the attitude and perception towards girls’ education in the recent decades in India, still the boy child in households get the top most priority for attending schools. Such a disparity widens, when the resources are constrained. It is because of the low-value attached to female education in major parts of India, which connects with few deep-rooted gender relations. One such important feature is the perceived low benefits of investing on girls’ education. The perception is popularly put as ‘bringing up a daughter is like watering a plant in another’s courtyard’ (Sen and Dreze, 2013,). Such choices of family’s favouring boys’ educational investment is detrimental to girls’

schooling. Hence, gender of the child plays a significant role in determining the likelihood of drop-out. Gender of students are found to be statistically significant in urban and all India. Gender of students indicates the decline by 17% (11% in all India) in the odds of drop-out among the female students than the male students in urban India. This is similar to the results of earlier studies like Kis-Katos (2007) and Rammohan (2012).

Yet another child-centered but education specific variable is the type of education enrolled whether general or professional education type. The estimates reveal that the odds of dropping out is more than 400% in rural, 200 % in urban and 142 % for all India for those students who are enrolled in general type of education as compared to the professional education at the time of drop-out. It could be because the professional education provides the skill formation required in the labour market. Another significant cost and quality related child-centric variables if the enrolled type of management of educational institution at the time of drop-out whether government or non-government educational institutions. When the children are enrolled in government schools, the cost of schooling may be minimal but the overall perceived quality of government schools is not satisfactory especially at the school level. However there may be exceptions. It is found that the odds of dropping out is less than 20% for those students who are enrolled in non-government type of institution than the government institution at the time of drop-out in both rural and urban areas, while it was 23 % for all India.

5.2. Head of the family related factors

The bread winner or head of the family plays a significant role in the schooling of his/her off springs. In the analysis here, we consider gender, level of educational attainment and occupational categories of head of family. It can be noted both gender and educational attainment of the head of the family is statistically significant across urban, rural and all India. Gender of head of family has a negative impact on school drop-out across all India, urban and rural, which indicates the higher likelihood of drop-out among those students whose head is male rather than female. Educational attainment of head of family plays a catalyst role in arresting drop-outs. With regard to the levels of education of head of family, as education level of head of family goes up, odds of drop-out of students goes down with very high magnitudes. Odds of dropping out of students are higher by more than 300% in rural, 350 % in urban and 155 % in all India where head of family is highly educated than the family where head of family is illiterate or having education only up to primary or upper level. Another economic parameter which has an impact on drop-out is occupation of head of family, in which drop-out is high in the family where head of family is casual worker and not having regular source of income than the counterpart in rural, urban and all India. Under occupation category, the coefficients of salaried occupation and other occupation is not statistically significant across the board.

5.3. Family or Household related factors

The family related factors, like social group, religion, family size, number of children, and level of living of family are considered in understanding further the determinants of school drop-out.

Among social groups, drop-out of STs (45 %) and SCs (14 %) students is more compared to 'Others' (general category) in rural areas. While in urban areas, odds of drop-out of students belong to STs (57%) and SCs (36%), in all India the odds of drop-out among STs (41 %) and SCs (20%) are more compared to 'Others'. Other backward caste category is found to be statistically not significant in rural, urban and all India. Family size has a negative impact on school drop-out that as family size increases, the odds of school drop-out decreases across rural, urban and all India. Using District Level Household Survey of 2007-08, Kugler and Kumar (2016), show that family size has a negative impact on schooling as reported in the present study. The high fertility rate within households may therefore have caused the low level of human capital accumulation. It can be noted that children from larger families have less education as parents are financially constrained. For such families, it is difficult to send children to school since children are substitutable to adult labor and often contribute to the family's income. In economic terms, the cost of school attendance, both direct and indirect (foregone earning or opportunity cost), increases as the size of the family increases. Hence, this result in lower educational attainment for children in larger families has been found in many earlier studies.

The same aspect is reinforced when we examine number of children. This variable has a positive impact which suggest the odds of school drop-out of students is 29% more in the family of students with one child as compared to no child⁴. The same is 56%, 74% and 107% in the family with two children, three children and more than three children respectively in rural India. The quantity – quality tradeoff is quite visible in urban and all India too. The Odds of school drop-out of students is 27% (24 % for India) more in the family of students with one child as compared to no child. The same is 59%, 84% and 46% for urban (45 %, 56 %, and 60 % for all India) in the family with two children, three children and more than three children respectively in urban areas. As explained in section 2, this negative relationship between family size and children's education is known as the quantity-quality trade-off on the number of children the couples would like to have.

Like socially deprived, the religiously deprived group of population is the Muslims. This became clear with the publication of the Sachar Committee report. Odds of dropping out of Muslim students are more (38%) than the Hindu students in rural India. The drop-out declines in rural areas and all India when the family belongs to Christianity. In urban India, religion's impact on school drop-out indicates that odds of dropping out of Muslim students are more (28%) than the Hindu students, while the same is 28 % for all India. It can be noted that other religion type are statistically insignificant in urban areas.

Yet another important economic wellbeing variable considered is the expenditure quintiles referred to as the level of living expressed in five consumption expenditure quintiles. Level of living of rural households has an impact on school drop-out as it is observed that the poorest households has highest school drop-out in rural India. As the level of living goes up, odds of

⁴ No child = 1 child as reported in Table 1. The idea behind such categorical variable is no competing demands for this only child and hence treated as reference category.

school drop-out goes down. This indicates very strong relationship between the drop-out and level of living. Odds of drop-out of students belong to poorest level of living is 33% more compared to the students with richest level of living. Similarly, the odds of drop-out of the students belongs to second and third quintile classes to level of living is 16% more than the students with richest level of living. As reported in rural areas, the school drop-out in urban India is directly related to level of living of the family that odds of drop-out in poorer family are higher by around 66% (48 % for all India) than the students of rich family. However, if the poor are to benefit from economic growth, then they need the skills that are in growing demand, and the capacity to raise their productivity. Educating poor people spreads the benefits of growth, aside from raising human development directly. And investment in the human capital of the poor raises growth itself. Yet, as aptly lamented by Addison and Rahman (2001), the poor rarely receive satisfactory education. Too few poor children enter primary school, too many fail to complete their education, and the quality of their schooling is often dismal.

5.4. Regional factors

Another important finding of the analysis is the prevalence of drop-out exhibits significant regional variations. It is correlated with the economic and educational development levels of regions: the north and eastern regions have the highest percentage of drop-outs compared to south. It can be seen that the odds of students drop-out on southern India is 165% higher than the north India. The same for west is 150%, for east is 174% and for north east is 174% in rural parts. The intensity of the regional factors is relatively less in urban areas. Location impact of residing in urban India is evident that the odds of students dropping-out in southern India are 125% higher than the north India. The same for west is 90%, for east is 118% and for north east is 122%. Odds of students drop-out on Southern India are 91 % higher than the north India. The same for west is 80%, for east is 92% and for north east is 93% in the full sample of India. The regional variation in drop-out is quite clear across regions.

6. Concluding Remarks and Recommendations

The historical trends from both administrative and NSSO data indicate that the size of drop-out is high and not reduced over decades. The vital causes of drop-out are found to be financial problems or engagement of children in work especially among the students of socially and economically weaker sections. Yet another major cause of drop-out is related to the willingness of students or lack of interest in studies across gender, regions and sectors. Thus, indicating poor quality of schooling leading to poor quality of labour force. Drop-out in government schools is significantly higher compared to the non-government schools. The students enrolled in general education more significantly drop-out than their counterparts enrolled in professional education.

On the family endowments, educational attainment of the head of the family is a contributing factor in reducing drop-out rates. Similarly, the students belonging to casual labour households generally drop-out of school to work for wage and participate in other economic activities. Students belonging to the socially backward classes (SC & ST), economically weaker sections

(casual workers and lower level of living) and Muslim are found to be more prone to drop-out of school. The socially and religiously deprived along with household poverty is yet another group of children and their families adding to the vicious cycle of poverty. The number of children in the family has been identified as one of the significant determinants of drop-out. The larger the family, the lower the probability that a child is in school. The quantity-quality trade off on the number of children is quite obvious. Region specific factors such as culture and social norms do play an important role that North and Eastern India reports significantly more drop-out rates than other regions of India.

India with its highest share of young population aspiring to reap the benefits of this demographic dividend needs to skill all the young population. Hence, it is important to prioritize education of every child. Based on the findings of the analysis, the following recommendations⁵ are suggested to reduce school drop-out:

1. Providing financial incentives to students of socially and economically weaker sections for attending the schools can facilitate retention of children till they complete school cycle. Means-based conditional cash transfers have been found to be one of the best options to arrest drop-out in many countries. One such example is the role played by Indonesia's Social Safety Net Scholarships Program in reducing school drop-out rates during the Asian financial crisis. Given its success, the program can be viewed as a model to be followed by other countries (Cameron, 2009). Yet another example is the program on PROGRESA in Mexico (Tarodo and Smith, 2012). Both the Indonesian and Mexico's experiences suggest that the cash payments should be targeted at the school level where children are most likely to drop-out. Further, the results suggest that giving responsibility for the selection of participants to the local people (and so bypassing government officials) can be successful. The social pressure from the local stakeholders can enhance the program's benefits. Other financial incentives to the students could be part time job. Hence, a combination of above factors can result in better retention if implemented successfully and effectively monitored.

2. Introducing Innovative course design, class rooms and teaching methods so that the interest of students in education may be enhanced which may help in better retention. The analysis reveals that the significant proportion of students studying in government schools drop-out. They drop-out due to their lack of interest in education. The reasons of lack of interest in education could be anything. But an attempt can be made to make innovative course design, class rooms and teaching methods which may be helpful in reeducating the school drop-out. In fact debate on huge course size is not new and overburden teaching method has been criticized at many forums.

3. Flexible school timings may help in curbing drop-out in India

The analysis reveals that the significant proration male students are dropping out due to their engagement in economic activities and female students are dropping out due to their engagement in domestic activities. Schools with flexible school timings may help in curbing drop-out of such

⁵ Recommendations 2 and 3 emanate from the analysis on causes of drop-out rates.

students. Schools with flexible timings operating in evening shifts can also encourage enrolment of parents who are illiterate or less educated. This will help in creating awareness amongst parents and making them understand the importance of education and different schemes of the GoI.

4. Girls can be encouraged to attend educational institutions after marriage

Domestic activities and early marriage are central causes for girls to drop-out from schools. Hence, it is suggested that schools can attach a day care centre or Anganwadi or Balwadi through Integrated Child Development programs. Recently, this initiative has been incorporated in the Samagra Shiksha program.

It may be noted that these are suggestive measures to arrest drop-outs. They can be experimented with all being implemented simultaneously or combinations can be in place as the local context may demand. 'One size fits for all' may not be the appropriate remedy in arresting drop-outs in a highly diverse country like India.

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References

- Addison Tony and Aminur Rahman (2001), why is so Little Spent on Educating the Poor? UNU WIDER Discussion Paper, No. 2001/29.
- Basu K. and Pham Hoang Van, (1998), The Economics of Child Labour, American Economic Review, Vol. 88, No. 3, pp. 412-427.
- Becker, G S and H G Lewis (1973), "On the Interaction between the Quantity and Quality of Children", Journal of Political Economy, 81(2), S279- S288.
- Cameron Lisa, (2009) Can a public scholarship program successfully reduce school drop-outs in a time of economic crisis? Evidence from Indonesia, Economics of Education Review 28 (2009) 308–317
- Cigno, A. (2004), The Supply of Child Labour, IZA Discussion Paper Series No.1114, Institute for Study of Labour, Bonn.
- Chamarbagwala, R. (2008), Regional Returns to Education, Child Labour and Schooling in India, The Journal of Development Studies, 10.1080/00220380701789935.
- Filmer Deon (2007), If You Build It, Will They Come? School Availability and School Enrolment in 21 Poor Countries, Journal of Development Studies, Vol. 43, No. 5, 901–928.
- Geetha Rani, P and Mukesh (2019), Pattern of Enrolment and Drop-out in School Education in India: Possible Inferences on Inclusive Quality Education, Journal of Educational Planning and Administration, Vol.33 (3), 219-247.
- Indian Institute of Education (2004), A Study Of The Extent And Causes Of Drop-outs In Primary Schools In Rural Maharashtra With Special Reference To Girl Drop-Outs, Indian Institute of Education, Pune.
- Kambhampati Uma, (2010). "Is Rural Child Labour Declining in India?," Economics & Management Discussion Papers em-dp2009-06, Henley Business School, Reading University.
- Kambhampati, U.and R. Rajan (2006): "Economic Growth: A Panacea for child labor," World Development, 34(3), 426–445.
- Kis–Katos Krisztina (2007), The work–schooling trade–off revisited: Market and domestic work of Indian children, available at http://legacy.iza.org/conference_files/SUMS2007/kis-katos_k3325.pdf
- Kugler, Adriana, Debora and Kumar, Santosh, (2016), The Fewer the Merrier: Family Size and Education in India, VOX CEPR Policy Portal. Available at SSRN: <https://ssrn.com/abstract=3448302>
- Lyche Cecilia S. (2010), Taking on the Completion Challenge: A Literature Review on Policies to Prevent Drop-out and Early School Leaving, OECD Education Working Paper No. 53.
- Hanushek, Eric A., and Ludger Woessmann. 2008. "The Role of Cognitive Skills in Economic Development", Journal of Economic Literature, vol. 46, no. 3,pp.607-668.

Jimenez, E.(1987), The Public Subsidisation of Education and Health in Developing Countries: A Review of Equity and Efficiency, *World Bank Research Observer*, No.1, pp. 111-29.

Mukesh and Srivastava Neha (2015), Impact of Socio-economic background on school drop-out rates in rural India, *Journal of Educational Planning and Administration*, Volume XXIX, No.1, January 2015, pp.29-36.

Narayanan, Sudha and Dhanaraj, Sowmya (2018), Child Work and Schooling in Rural India: What Do Time Use Data Say about Trade-offs and Drivers of Human Capital Investment?, *Indian Journal of Human Development*, 12 (3), pp, 378-400.

NSSO (2016), Education in India, Report No.575, NSSO 71st Round, January-June, 2014, Ministry of Statistics and Program implementation, Government of India, New Delhi.

Oreopoulos Philip (2003), Do Drop-outs Drop-out Too Soon? International Evidence From Changes in School-Leaving Laws, NBER Working Paper No. 10155, December 2003.

Ota Masako and Peter G, Moffat (2007), The within-Household Schooling Decision: A Study of Children in Rural Andhra Pradesh, *Journal of Population Economics*, 20(1), pp. 223-239.

Patrinos HA and Psacharopoulos G.(1997), Family size, schooling and child labor in Peru:An Empirical Analysis, *Journal of Population Economics*, vol.10(4), pp.387-405.

Rammohan, Anu. (2012). The Trade-off between Child Labour and Schooling in India, *Education Economics*, 22, 10.1080/09645292

Ray Ranjan (2002), Simultaneous Analysis of Child Labour and Child Schooling: Comparative Evidence from Nepal and Pakistan, Source: *Economic and Political Weekly*, Vol. 37, No. 52 (Dec. 28, 2002 - Jan. 3, 2003), pp.5215-5224

Reddy A. N. and Shantha Sinha (2010), School Drop-outs or Pushouts? Overcoming Barriers for the Right to Education, Consortium for Research on Educational Access, Transitions and Equity (CREATE) Pathways to Access, Research Monograph No 40.

Sen A and J Dreze (2013), *An Uncertain Glory: India and its Contradictions*, Allen Lane, Penguin.

Todaro Michael P. and Stephen C. Smith, (2012), *Economic Development*, Eleventh Edition, Addison-Wesley, Boston.

Table 7: Results of the Logistic Regression with a Binary Dependent Variable with dropped out =1 and completed =0

Groups	Predictors	Factors	Rural		Urban		India (Full Sample)	
			Exp(B) (OR)^	Sig.	Exp(B) (OR)^	Sig.	Exp(B) (OR)^	Sig.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Student Related	(® Male)	Gender_students	0.945	0.051	0.826	0.000	0.897	0.000
	Edu_Type(® Professional)	Edu_Type when dropped	5.041	0.000	3.475	0.000	4.128	0.000
	(® Govt.)	Mgt_Type when dropped	0.802	0.000	0.796	0.000	0.792	0.000
Head of the Family Related	(® Male)	Gender_Head	0.832	0.000	0.940	0.263	0.879	0.000
	Education of head of family (® Higher Education)	Illiterate	4.375	0.000	4.577	0.000	4.709	0.000
		Just Literate	5.028	0.000	5.185	0.000	5.415	0.000
		Primary/Upper Pri. level	4.029	0.000	4.655	0.000	4.505	0.000
		Secondary/Hr. seco. level	1.911	0.000	2.108	0.000	2.075	0.000
	Occupation of head of family (® Self Employed)	Salaried occupation	1.021	0.665	1.043	0.337	1.036	0.259
		Casual worker	1.317	0.000	1.332	0.000	1.318	0.000
Others Occupation		1.021	0.843	0.802	0.041	0.899	0.154	
Family Related	Social Group (® Others)	Schedule Tribe	1.449	0.000	1.570	0.000	1.506	0.000
		Schedule Caste	1.142	0.006	1.360	0.000	1.224	0.000
		Others Backwards Caste	0.960	0.309	1.030	0.516	0.997	0.928
	Religion (® Hindu)	Islam	1.380	0.000	1.278	0.000	1.33	0.000
		Christianity	0.813	0.003	0.851	0.125	0.819	0.001
		Sikhism	1.284	0.030	0.862	0.414	1.124	0.226
		Others #	1.144	0.233	1.037	0.802	1.093	0.315
	Family Size(® Marginal)	Small	0.702	0.000	0.711	0.000	0.72	0.000
		Medium	0.542	0.000	0.547	0.000	0.557	0.000
		Large	0.410	0.000	0.429	0.000	0.429	0.000
	Number of children (® No child)	One child	1.287	0.000	1.273	0.000	1.275	0.000
		Two children	1.562	0.000	1.585	0.000	1.569	0.000
		Three children	1.735	0.000	1.838	0.000	1.759	0.000
		More than three children	2.072	0.000	1.463	0.000	1.831	0.000
	Level of Living of family (® Richest)	Poorest	1.330	0.000	1.657	0.000	1.461	0.000
Second Quintile class		1.155	0.004	1.438	0.000	1.31	0.000	
Third Quintile class		1.160	0.002	1.368	0.000	1.26	0.000	
Fourth Quintile class		1.117	0.016	1.112	0.155	1.164	0.000	
(® Rural)	Sector	-0.016	0.025					
Location	Geographical location of students (® North)	South	2.647	0.000	2.249	0.000	2.483	0.000
		West	2.503	0.000	1.896	0.000	2.233	0.000
		East	2.735	0.000	2.175	0.000	2.508	0.000
		North-East	2.739	0.000	2.215	0.000	2.548	0.000
	Constant		0.017	0.000	0.020	0.000	0.018	0.000

Note: (R) refer to reference category; ^OR – odds ratio; * regression coefficients are statistically significant at 95 % level.

PART-II

**Highlights of Report Released by National Statistical Office (NSO)
(The 'Highlights' are reproduced from related report prepared by Survey
Design and Research Division (SDRD) of NSO. For details, the reader may
refer to the related Main Report)**

Highlights of Recent Survey Report Released by NSO

1. In this part of the Journal, Highlights of the report based on NSS 75th Round (July 2017- June 2018): Household Social Consumption on Education and Health, released after publication of 108th issue of “SARVEKSHANA” are presented.
2. The highlights also included in this issue are Time Use in India, 2019 (January – December, 2019)".

Highlights - Household Social Consumption: Education' NSS 75th round (July 2017-June 2018) (Report No. 585)

A survey on 'Household Social Consumption: Education' was conducted in NSS 75th round (July 2017-June 2018). A sample of 64,519 rural households from 8,097 villages and 49,238 urban households from 6,188 blocks was surveyed all over India.

Highlights of the findings of the survey are given below:

I. Household profile

- At all-India level average household size was 4.3 with 4.5 in rural areas and 3.8 in urban areas.
- Average no. of persons aged 3-35 years per household was 2.42 (2.58 in rural and 2.09 in urban areas).

[Table 4, Appendix A]

II. Literacy rates

- Literacy rate among persons (aged 7 years and above) in India was about 77.7%. In rural areas, literacy rate was 73.5% compared to 87.7% in urban areas.
- Difference in literacy rate among males and females (aged 7 years and above) was observed with male literacy rate higher (84.7%) than female literacy rate (70.3%).

[Statement 3.3]

III. Completed educational level of population for different age-groups

- Percentage distribution of rural persons of ages 15 years & above by highest completed levels of education: 31.5% were not literate, 20.9% were literates up to primary, 17.2% were of level upper primary/middle, 24.9% were of levels secondary and higher secondary and 5.7% were graduate & above.
- Percentage distribution of urban persons of age 15 years & above by highest completed level of education: 13.9% were not literate, 14.7% were literates up to primary, 14.0% were of level upper primary/middle, 35.8% were of level secondary and higher secondary and 21.7% were graduate & above.

[Statement 3.4]

IV. Distance to nearest primary, upper primary and secondary school

- In rural areas 92.7% of households and in urban areas, 87.2% of households reported availability of primary school within 1 km from the house.
- Nearly 68% of rural households and 80% of urban households reported upper primary schools within 1 km from the house while only about 38% of rural households compared to around 70% of urban households reported secondary schools within such a distance.

[Statement 3.2]

V. Attendance status of persons in age-group 3-35 years

- In rural areas 46.1% of males and 40.7% of females in the 3-35 years age-group were currently attending educational institution.
- In urban areas these percentages were 46.7% and 42.6% respectively for males and females.

[Statement 3.9]

VI. Attendance ratios

- Gross Attendance Ratio (GAR) at primary level was nearly 100% for both males and females in rural and urban areas.
- GARs at upper primary level were 94.7% for males (94.8% in rural and 94.3% in urban) and 94.1% for females (94.2% in rural and 93.8% in urban).
- At secondary level, GAR were 87.4% for males (85.2% in rural and 93.8% in urban areas) and 85.1% for females (82.3% in rural areas compared to 93.7% in urban areas).
- Net Attendance Ratios (NAR) in India at primary level were 86.8% for males (86.6% in rural and 87.7% in urban) and 85.1% for females (84.8% in rural and 86.2% in urban).
- NARs at upper primary level for males were 72.5% (72.1.5% in rural areas compared to 73.5% in urban areas and 71.8% for females (70.7% in rural areas compared to 75.0% in urban areas).
- At secondary level NARs were 57.9% for males (56.6% in rural and 61.5% in urban) and 57.3% for females (55.2% in rural compared to 63.7% in urban areas).
- Age-specific Attendance Ratios in the age-group 18-23 years for males and females were respectively 32.6% and 24.6%.

[Statements 4.3, 4.5 and 3.12]

VII. Current attendance of students¹ by type of education

- 96.1% of students were in general education and remaining were in technical/professional education.
- Percentages of female students pursuing general education was 96.9% (98.3% in rural and 93.7% in urban areas), slightly more than corresponding male percentages of 95.5% (97.1% in rural and 91.7% in urban).

[Statement 4.9]

VIII. Attendance by type of courses

- Among the male students pursuing general education above class X, 46.4% were pursuing humanities compared to 53.9% of the female students, 34.4% of the male

¹ Students are persons in the age-group 3-35 years and currently attending any course at primary & above levels

students were pursuing science compared to 28.2% female students and 19.2% of the male students were pursuing commerce compared to 17.8% of female students.

[Statement 4.10]

- Among the male students pursuing technical/professional education, 41.6% were pursuing engineering compared to 28.2% among the female students and 4.9% of the male students were pursuing medicine (which includes nursing) compared to 13.8% of the female students.

[Statement 4.11]

IX. Type of institution

- In rural areas, 44.2% of the students at pre-primary level, 73.7% at primary level, 76.1% at upper primary/middle level, 68.0% at secondary & higher secondary level and 49.7% at graduate and above level attended Government institutions, while in urban areas, 13.9% at pre-primary level, 30.9% at primary level, 38.0% at upper primary level, 38.9% at secondary & higher secondary levels and 41.0% at graduate and above levels attended Government institutions.

[Statements 4.14(R) and 4.14(U)]

X. Students receiving free education

- At pre-primary level nearly 33% students (around 44% in rural areas and 14% in urban areas) were getting free education in India.
- At primary level, the proportion of students receiving free education was 62% (nearly 72% in rural areas and 31% in urban areas).
- At upper primary/middle level, 72% of students from rural areas and 36% from urban areas were getting free education.
- In secondary level, the proportion of students receiving free education was 46% in rural areas and 25% in urban areas. The proportion was 26% and 14% at higher secondary level respectively in rural and urban areas.
- 77% of the students studying in Government institutions were receiving free education (nearly 81% in rural areas and 62% in urban areas).
- Percentage of students studying in private unaided institutions and receiving free education was nearly 2% in rural areas and 1% in urban areas.

[Statements 4.19 and 4.20]

XI. Students received various Incentives

- At all-India level nearly 14% students attending formal education received scholarship/stipend/reimbursement for different level of current attendance. The proportion was about 16% in rural areas and 9% in urban areas.

[Statement 4.21]

- Percentage of students who received scholarship /stipend /reimbursement was about 19% among the students attending formal education in Government institutions,

nearly 11% among those attending private aided institutions and, about 5% for students in private unaided institutions.

[Statement 4.22]

- At all-India level nearly 45% students attending pre-primary and above level received free/subsidised text books (54% in rural areas and 24% in urban areas).

[Statement 4.23]

- The percentage of students attending pre-primary and above level received free/subsidised stationery was nearly 10% in rural areas and 7% in urban areas.

[Statement 4.25]

- At primary level nearly 96% of students attending government institutions received free mid-day meal/tiffin/nutrition. The share was nearly 17% among students attending private aided institutions and 2% for students attending private unaided institutions.

[Statement 4.27(RU)]

XII. Private coaching

- Nearly 20% of students attending pre-primary and above level (21% of males and 19% of females) were taking private coaching in India.

[Statement 4.30]

- Incidence of taking private coaching was maximum at secondary level. (31% of male students and 29% of female students)

[Statement 4.30]

XIII. Household expenditure on education

- Average expenditure (Rs.) per student incurred during the *current academic session* for basic course was nearly Rs.8,331 for general courses, Rs.50,307 for technical/professional courses.

[Statement 4.32]

• General Courses:	pre-primary	- Rs.8,997 (rural- Rs.5,655, urban- Rs.14,509)
	primary	Rs.6,024 (rural- Rs.3,545, urban- Rs.13,516)
	upper primary	- Rs.6,866 (rural- Rs.3,953, urban- Rs.15,337)
	secondary	- Rs.9,013 (rural- Rs.5,856, urban- Rs.17,518)
	higher secondary	- Rs.13,845 (rural- Rs.9,148, urban- Rs.23,832)
	graduate	- Rs.14,264 (rural- Rs.11,845, urban- Rs.18,485)
	post graduate & above	- Rs.18,110 (rural- Rs.15,827, urban- Rs.20,443)

[Statement 4.36]

• Technical /professional	below graduate (excluding diploma/ certificate	Rs.12,274 (rural- Rs.8,071, urban- Rs.21,799)
	diploma/ certificate	Rs.26,540 (rural- Rs.22,598, urban- Rs.32,880)

Courses: (below graduate level)	
diploma/ certificate	Rs.64,379 (rural- Rs.39,701, urban- Rs.81,300)
(graduate and above level)	
graduate	Rs.63,495 (rural- Rs.43,872, urban- Rs.72,992)
post graduate & above	Rs.66,824 (rural- Rs.50,512, urban- Rs.74,068)

[Statement 4.37]

- Average expenditure per student in current academic session, pursuing general courses
 - at pre-primary level was Rs.1,030 in government institutions compared to Rs.12,834 in private unaided institutions.
 - at primary level was Rs.1,253 in government institutions compared to Rs.14,485 in private unaided institutions.
 - at upper primary level, average expenditure varied from Rs.2,181 in government to Rs.17,360 in private unaided institutions.
 - at secondary level, average expenditure in government institutions was Rs.4,078 against Rs.20,804 in private unaided institutions.
 - for level higher secondary expenditure in government institutions was Rs.7,001 against Rs.25,852 in private unaided institutions.

[Statement 4.38]

- Average expenditure in the current academic session for studying medicine in was Rs.31,309 in government institutions, Rs.1,01,154 in private aided and 94,658 in private unaided institutions. For engineering course, the expenditures were Rs. 39,165, Rs. 66,272 and Rs.69,155 in government, private aided and private unaided institutions respectively.

[Statement 4.41]

- Nearly 51% of the expenditure for general education and 76% of the expenditure for technical education were on course fees.

[Statements 4.33 and 4.34]

- For students pursuing general education, 12% was spent on private coaching as against 2% for students pursuing technical/professional education (including vocational).

[Statements 4.33 and 4.34]

XIV. Persons currently not attending education

- Among the ever enrolled persons of age 3-35 years, nearly 41% of males and 40% of females were not currently attending education in rural areas. The proportion was nearly 46% for male and 48% for female in urban areas.

[Statement 5.1]

- In India, percentages of persons in the age group of 3-35 years dropping out of studies were nearly 14% in rural areas and 10% in urban areas.

[Statement 5.6]

- In India, nearly 13% of male and 19% females of aged 3-35 years in rural areas and 7% among males and 10% among females of aged 3-35 years in urban areas never enrolled in any educational institution.

[Statement 5.3]

- For the males of age 3-35 years who ever enrolled but currently not attending education, engagement in economic activities was the most common major reason for currently not attending education (35% in rural areas and 42% in urban areas), whereas for the females in the same age-group, the major reason was engagement in domestic activities (32% in rural areas and 27% in urban areas).

[Statement 5.4]

- In rural areas the major reason for never-enrolment for persons of ages 3-35 years was 'not interested in education' (20% male and 21% female) while in urban areas, nearly 19% males and 17% females in the age group of 3-35 years never enrolled because of 'financial constraints'.

[Statement 5.5]

XV. Erstwhile members of the households who are currently attending education

- At all-India level, 1.7% of the households reported having erstwhile members in the age group of 3-35 years currently attending education. The proportion was 1.9% in rural areas and 1.2% in urban areas.

[Statement 6.1]

- Nearly 88% of rural households and 90% of the urban households that reported having erstwhile members in the age group of 3-35 years currently attending education reported incurring expenditure on the erstwhile member(s).

[Statement 6.1]

- Average expenditure (Rs.) incurred/to be incurred (on education as well as any other expenditure) on erstwhile member per household reporting expenditure on erstwhile member was Rs.41,079 in rural areas and Rs.1,00,693 was in urban areas.

[Statement 6.1]

XVI. Access to computer and internet

- Nearly 4% of rural households and 23% of urban household possessed computer.

[Statement 7.1]

- Nearly 24% of the households in the country had internet access in the survey year, 2017-18. The proportions were 15% among rural households and 42% among urban households.

[Statement 7.1]

- Among persons of age 15-29 years, nearly 24% in rural areas and 56% in urban areas were able to operate a computer.

[Statement 7.4]

- Nearly 35% of persons of age 15-29 years reported use of internet during the 30 days prior to the date of survey. The proportions were, nearly 25% in rural areas and 58% in urban areas.

[Statement 7.6]

Highlights – Household Social Consumption on Health NSS 75th round (July 2017-June 2018)-(Report No. 586)

The latest survey on household social consumption related to health was conducted by the National Statistical Office during the period July 2017 to June 2018, as a part of 75th round of National Sample Survey (NSS).

The main objective of this survey was to gather basic quantitative information on the health sector: morbidity, profile of ailments including their treatment, role of government and private facilities in providing healthcare, expenditure on medicines, expenditure on medical consultation and investigation, hospitalisation and expenditure thereon, maternity and childbirth, the condition of the aged, etc.

The report is based on information collected through NSS Schedule 25.0 (Household Social Consumption: Health) spread over the entire Indian Union and data were collected from 1,13,823 households (64,552 in rural areas and 49,271 in urban areas), covering 5,55,115 persons (3,25,883 in rural areas and 2,29,232 in urban areas).

Some of the key findings at all-India level obtained from this survey are stated below:

I. Morbidity and Hospitalisation

Proportion of persons that responded as ailing (PPRA) in a 15-day period:

- About 7% of rural population (6% for rural males and 8% for rural females) and 9% of urban population (8% for urban males and 10% for urban females) reported as ailing during a 15 day reference period.

[Statement 2]

Proportion of persons that responded as ailing in a 15-day period for specific age-groups:

- Proportion of persons (%) that responded as ailing (PPRA) was highest for the age group of 60 & above followed by that among in the age-group 45-59.
- About 28% in the age-group 60+ (28% both among males and females) and 11% in the age-group 45-59 (9% among males and 14% among females) were reported as ailing during a 15 day reference period.

[Statement 3]

Estimated number of cases of Anaemia and Tuberculosis:

- Decline in estimated number of cases of Anaemia has been observed in NSS 75th round (5,96,200 cases) from the level of NSS 71st round (8,80,700 cases).
- Proportion of persons suffering from Tuberculosis has become half in NSS 75th round (38 per 1,00,000 persons) from the level of NSS 71st round (76 per 1,00,000 persons).

Percentage of persons treated as in-patient any time during a 365-day period:

- About 2.6% in rural population (2.6 % rural males and 2.7 % rural females), 3.4 % in urban population (3.4 % urban males and 3.5 % urban females) and 2.9 % at all-India level (2.8 % rural males and 2.9 % urban females) were treated as in-patient at any time during last 365 days.

[Statement 6]

- Among persons aged 60 & above, 7.7 % in rural India (8.6 % rural males and 6.8 % rural females), 10.2 % in urban India (11.6 % urban males and 8.8% urban females) and 8.5 % at all- India level (9.6 % males and 7.5 % females) were treated as in-patient at any time during last 365 days.

[Statement 7]

In-patient hospitalization (excluding childbirth) by type of hospital for availing treatment:

- About 42% (46% in rural areas, 35% in urban areas) of population availed treatment in Public hospitals, 55% (52% in rural areas, 61% in urban areas) of population availed treatment in Private hospitals (excl. charitable, NGO-run) and 2.7% (2.4% in rural areas, 3.3% in urban areas) of population availed treatment in Charitable/trust/NGO-run hospitals.

[Statement 8]

Healthcare service provider for treatment of ailments:

- In case of ailments, about 33% ailments in rural areas and 26% ailments in urban areas were treated in Government hospitals while, in Private hospitals, 21% ailments in rural areas and 27% ailments in urban areas were treated. 41% ailments in rural areas and 44% ailments in urban areas were treated by Private doctors/clinics and remaining 5.2% ailments in rural areas and 2.2% ailments in urban areas were treated in Informal health care provider and Charitable/trust/NGO-run hospitals.

[Statement 4]

Treatment seeking behaviour:

- Higher preference towards allopathy treatment was prevalent (around 95%) in both the sectors.

[Statement 5]

Population with health expenditure coverage:

- About 14% of the rural population and 19% of the urban population had health expenditure coverage.
- Among them, about 13% of rural and 9% of urban population were covered by Government sponsored health insurance (Pradhan Mantri Jan Aarogya Yojana or AYUSHMAN BHARAT Scheme launched on 23rd September, 2018 was not covered under this survey to estimate the population under health expenditure coverage).

[Statement 11]

Receipt of free medical services:

- In rural India, percentage of cases of treatments receiving free ‘medicines’, ‘X-ray/ECG’, and ‘other diagnostic test’ have gone up from 12.0%, to 13.8%, 10.9% to 12.6% and 15.6% to 18.1% respectively in NSS 75th round compared to NSS 71st round for in-patient treatments.
- In urban India, percentage of cases of treatments receiving free ‘medicines’, ‘X-ray’ and ‘other diagnostic test’ have gone up from 12.3% to 14.4%, 12.6% to 12.9% and 15.6% to 17.2% respectively in NSS 75th round compared to NSS 71st round for in-patient treatments.

Average medical expenditure per hospitalisation case (excluding childbirth):

- On an average, about Rs. 16,676 in rural India and Rs. 26,475 in urban India were spent on medical expenditure for hospitalisation.
- In Government/Public hospitals, on an average, about Rs. 4,290 in rural and Rs. 4,837 in urban areas and in Private hospitals about Rs. 27,347 in rural and Rs. 38,822 in urban areas were spent.

[Statement 13]

Average out-of-pocket medical expenditure (OOPME) per hospitalisation case (excluding childbirth):

- On an average, about Rs. 15,937 in rural India and Rs. 22,031 in urban India were spent as out-of-pocket medical expenditure for hospitalisation.
- In Government/Public hospitals, on an average, about Rs. 4,072 in rural and Rs. 4,408 in urban areas and in Private hospitals about Rs. 26,157 in rural and Rs. 32,047 in urban areas were spent.

[Statement 15]

Population by major source of finance for expenditure:

- Rural households primarily depended on their 'household income/savings' (80%) and on 'borrowings' (13%) for financing expenditure on hospitalisation. Dependence of the urban households on their 'income/savings' was slightly more (84%) for financing expenditure on hospitalisation, than on 'borrowings' (about 9%).

[Statement 12]

II. Childbirth and Maternity Care Services

Among women in the age-group 15-49 years, about 7.4% in the rural areas and 5.3% in the urban areas were reported as pregnant during the 365 days preceding the date of survey.

Place of childbirth:

- In rural areas, about 90% childbirths were institutional (in Government/private hospitals) and in urban areas it was about 96%.
- Among institutional childbirths, in rural areas, about 69% cases were in Government hospitals and about 21% in private hospitals and, in urban areas, about 48% cases were in each of Government hospitals and private hospitals.
- Among non-institutional childbirths, about 10% cases were in rural areas and in urban areas it was about 4%.

[Statement 20]

Pre-natal and post-natal care:

- Among women in the age-group 15-49 years, about 97% (97% in rural areas and 98% in urban areas) of women took pre-natal care and about 88% (87% in rural areas and 90% in urban areas) of women took post-natal care.
- On an average, about Rs. 2,786 (Rs. 2,271 in rural areas and Rs. 4,405 in urban areas) was spent on pre-natal care and about Rs. 1,306 (Rs. 1,137 in rural areas and Rs. 1,832 in urban areas) was spent on post-natal care.

[Statement 26]

Hospital childbirth (including normal, caesarean and other type of delivery) and surgery:

- Surgery was done in about 28% of hospital childbirths in India (in rural India: about 24%; in urban India: about 41%).
- In Government hospitals only about 17% of childbirths were surgery cases (in rural India: about 14%; in urban India: about 26%) and, in Private hospitals about 55% of childbirths were surgery cases (in rural India: about 54%; in urban India: about 56%).

[Statement 23]

Average expenditure per hospital childbirth:

- About Rs. 2,404 in rural India and Rs. 3,106 in urban India were spent on an average for childbirth at Government hospitals and about Rs. 20,788 in rural and Rs. 29,105 in urban were spent for childbirth at private hospitals.
- For a normal delivery:
Average expenditure per childbirth in a Government hospital was about Rs. 2,084 in rural India and Rs. 2,459 in urban India and average expenditure per childbirth in a private hospital was about Rs. 12,931 in rural India and Rs. 17,960 in urban India.
- For a caesarean delivery:
Average expenditure in a Government hospital was around Rs. 5,423 in rural India and Rs. 5,504 in urban India and average expenditure in a private hospital was around Rs. 29,406 in rural India and Rs. 37,508 in urban India.

[Statement 24]

Average out-of-pocket medical expenditure (OOPME) per hospital childbirth:

- On an average, about Rs. 5,357 in rural India and Rs. 13,292 in urban India were spent as out-of-pocket medical expenditure for hospital childbirth.

- In Government/Public hospitals, on an average, about Rs. 1,410 (about Rs. 1,305 in rural and Rs. 1,874 in urban areas) and in Private hospitals about Rs. 21,231 (about Rs. 18,501 in rural and Rs. 25,096 in urban areas) were spent.
[Statement 25]

III. Status of the Aged Persons (60 & above)

The percentage of aged persons was 6.6% in rural India and 7.8% in urban India.

[Statement 1]

Economic Independence of aged persons:

- In rural India, about 28% (48% male and 10% female) aged persons and in urban India 33% (57% male and 11% female) aged persons were economically independent.
- In rural India, about 72% (52% male and 90% female) aged persons and in urban India 67% (43% male and 87% female) aged persons were economically dependent on others.

[Statement 27]

Economically dependent aged persons financially supported by:

- In rural India, about 79% (92% males and 72% females) economically dependent aged persons and in urban India, about 76% (91% male and 70% female) economically dependent aged persons were financially supported by their own children.
- In rural India, about 15% (4% males and 21% females) and in urban India, about 18% (4% males and 24% females) economically dependent aged persons were financially supported by their spouse.

[Statement 28]

Living arrangement of aged persons:

- In rural India, about 81% males and 48% females were living with their spouses and in urban India, about 83% males and 46% females were living with their spouses.

[Statement 29]

Physical mobility of aged persons:

- In rural India, about 92% (93% males and 91% females) aged persons were physically mobile and in urban India, about 92% (94% male and 91% female) aged persons were physically mobile.
- In rural India, about 7% (6% males and 8% females) aged persons were physically immobile (confined to bed /confined to home /wheelchair bound) and in urban India, about 8% (5% male and 10% female) aged persons were physically immobile.

[Statement 30]

IV. Immunisation of Children (0-5 years)

Rate of immunisation and the related indicators have been computed on the basis of the responses received from the informants.

The percentage of children of age 0-5 years was 8.6% in rural India and 7.0% in urban India.

[Statement 1]

Immunisation among children aged 0-5 years:

- Among rural India, about 97% of both boys and girls had received any vaccination and in urban India, about 98% of boys and 97% of girls had received any vaccination.
- About 59% of boys and 60% of girls at all-India level had been fully immunised (i.e., received all 8 prescribed vaccinations).
- About 58% (57% boys and 60% girls) children in rural India and about 62% (62% boys and 61% girls) children in urban India had been fully immunised (i.e., received all 8 prescribed vaccinations).

[Statement 31]

[Statement 32]

Source of Immunisation among children aged 0-5 years:

- About 95% of children in rural India and 86% of children in urban India had received any vaccination from Government/ Public hospital (including HSC/PHC/CHC/Aganwari centre/mobile medical unit).
- About 5% of children in rural India and 14% of children in urban India had received any vaccination from other sources (including Private hospital/Private doctors/clinics/Charitable/NGO run hospital).

[Statement 33]

Time use survey (January 2019 to December 2019)

Survey Period

- ✦ The “Time Use Survey” (TUS) is the first survey of its kind conducted by the National Statistical Office (NSO).
- ✦ The survey has been conducted during the period January 2019 to December 2019.

Coverage Of Survey

- ✦ This survey was spread over 9,945 First Stage Units (5,947 villages and 3,998 urban blocks)
- ✦ It covered 1,38,799 households (rural: 82,897 and urban: 55,902)
- ✦ Information on time use was collected from each member of age 6 years and above of the selected households
- ✦ 4,47,250 persons of age 6 years and above (rural: 2,73,195 and urban:1,74,055) were surveyed.
- ✦ The survey covered the whole of the Indian Union except the villages in Andaman and Nicobar Islands which are difficult to access

Data Reference

- ✦ Data on time use was collected through personal interview method
- ✦ Information on time use was collected covering a period of 24 hours starting from 4:00 A.M. on the day before the date of interview to 4:00 A.M. on the day of interview

Presentation of Results

- ✦ The results presented on time use are for persons of age 6 years and above
- ✦ Estimates of time use per day in different activities are presented considering the participants in different activities
- ✦ Some estimates of time use per day are also presented considering all persons irrespective of their participation in activities to understand the distribution of total time of 1440 minutes available for each person in a day in different activities.
- ✦ In the Highlights, the results have been presented considering all the activities in the time slots instead of the major activity only

Definition of some of the estimates

Participation rate

- ✚ Participation rate in a day in any activity is defined as the percentage of persons performing that activity during the 24 hours of the reference period.
- ✚ Participation rate in activity 'A' = $\frac{\text{number of persons participating in activity 'A'}}{\text{total number of persons}} * 100$

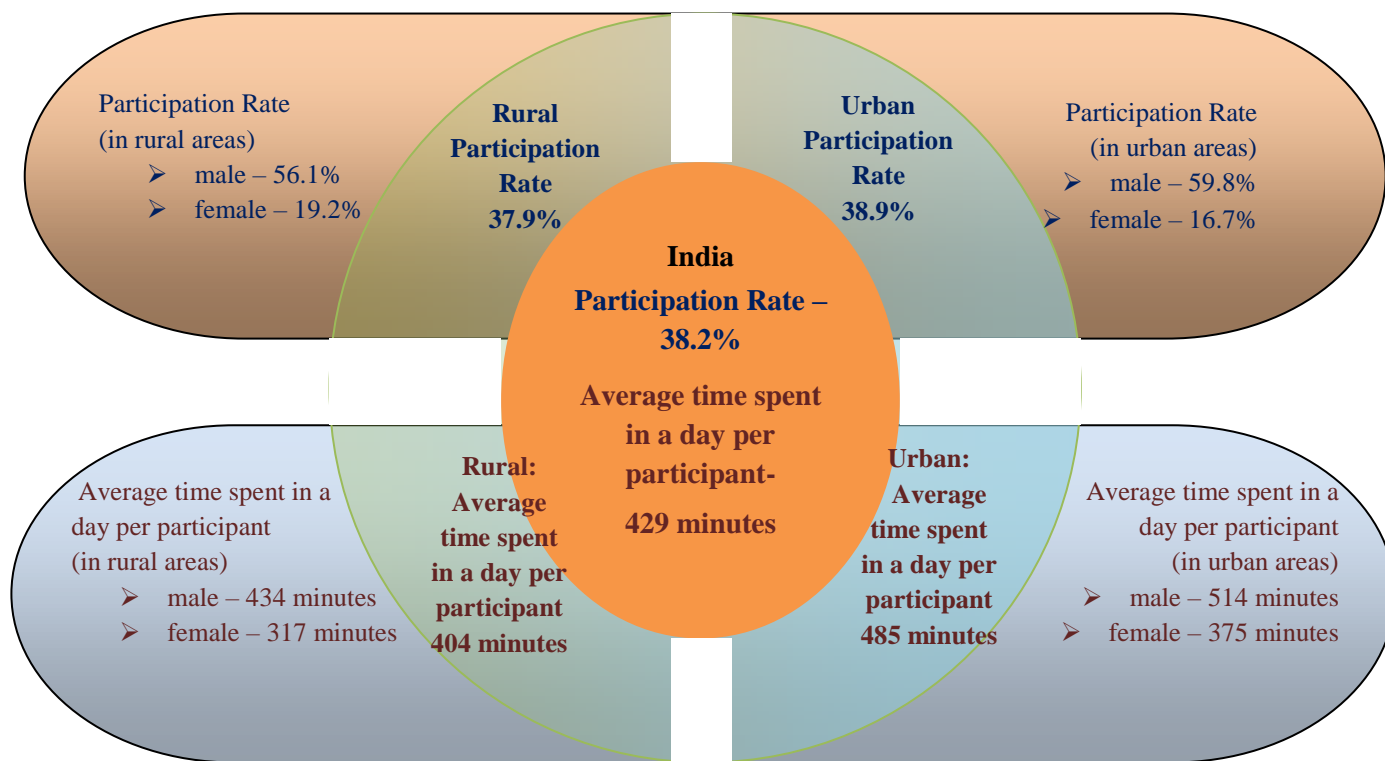
Estimates of average time spent in a day per participant

- ✚ Estimates of average time spent in a day for any activity per participant is calculated by considering those who participated in the activity
- ✚ Estimates of average time spent in a day in different activities derived by considering only the participants in the activities will not add up to 1440 minutes of the day.
- ✚ These estimates are referred to as **average time spent in a day per participant**.
- ✚ Average time spent per participant in activity 'A' = $\frac{\text{total time spent by the participants in activity 'A'}}{\text{total number of persons participating in activity 'A'}}$

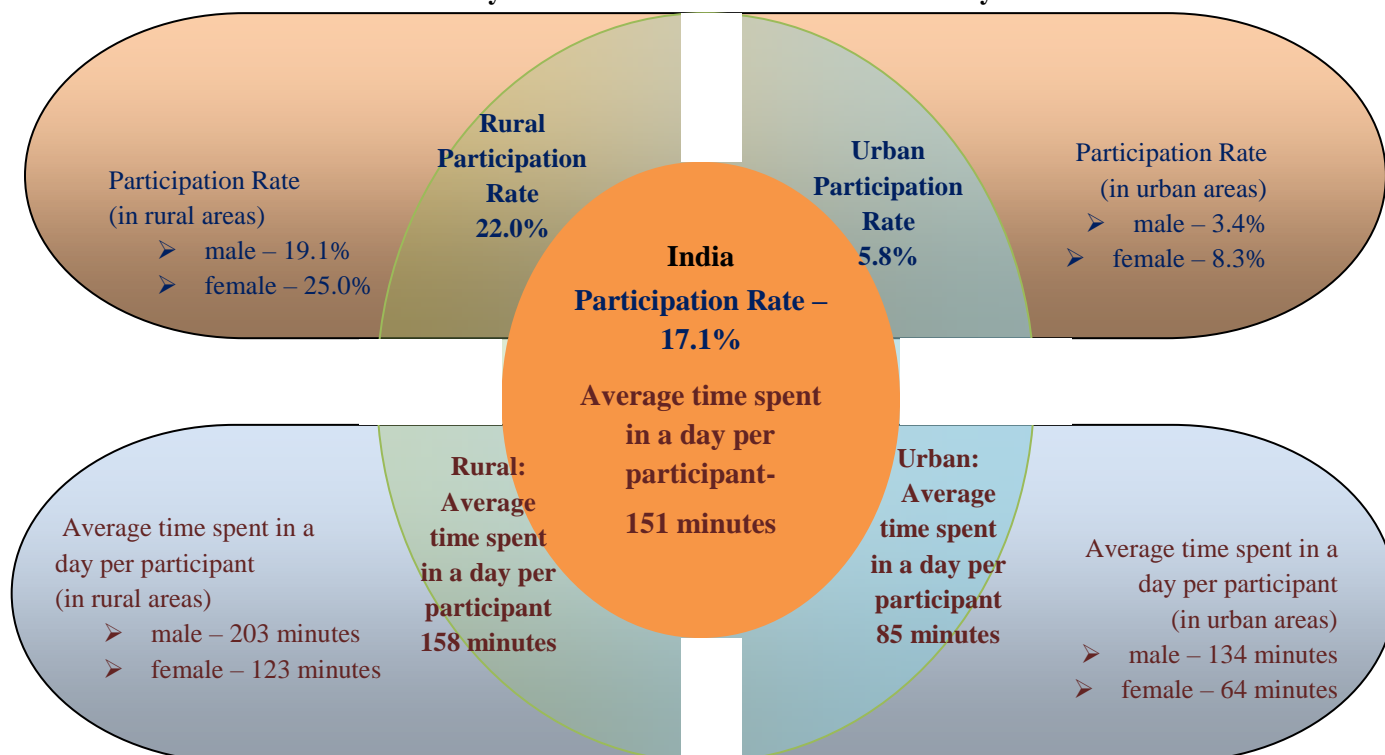
Estimates of average time spent in a day per person

- ✚ Estimates of average time spent in a day for any activity per person is calculated by considering all the persons irrespective of whether they participated in the activity or not
- ✚ By this approach, distribution of total time of 1440 minutes of a day per person in different activities can be derived and percentage share of the different activities in total time of 1440 minutes of a day can be calculated.
- ✚ These estimates are referred to as **average time spent in a day per person**.
- ✚ Average time spent per person in activity 'A' = $\frac{\text{total time spent by the participants in activity 'A'}}{\text{total number of persons}}$

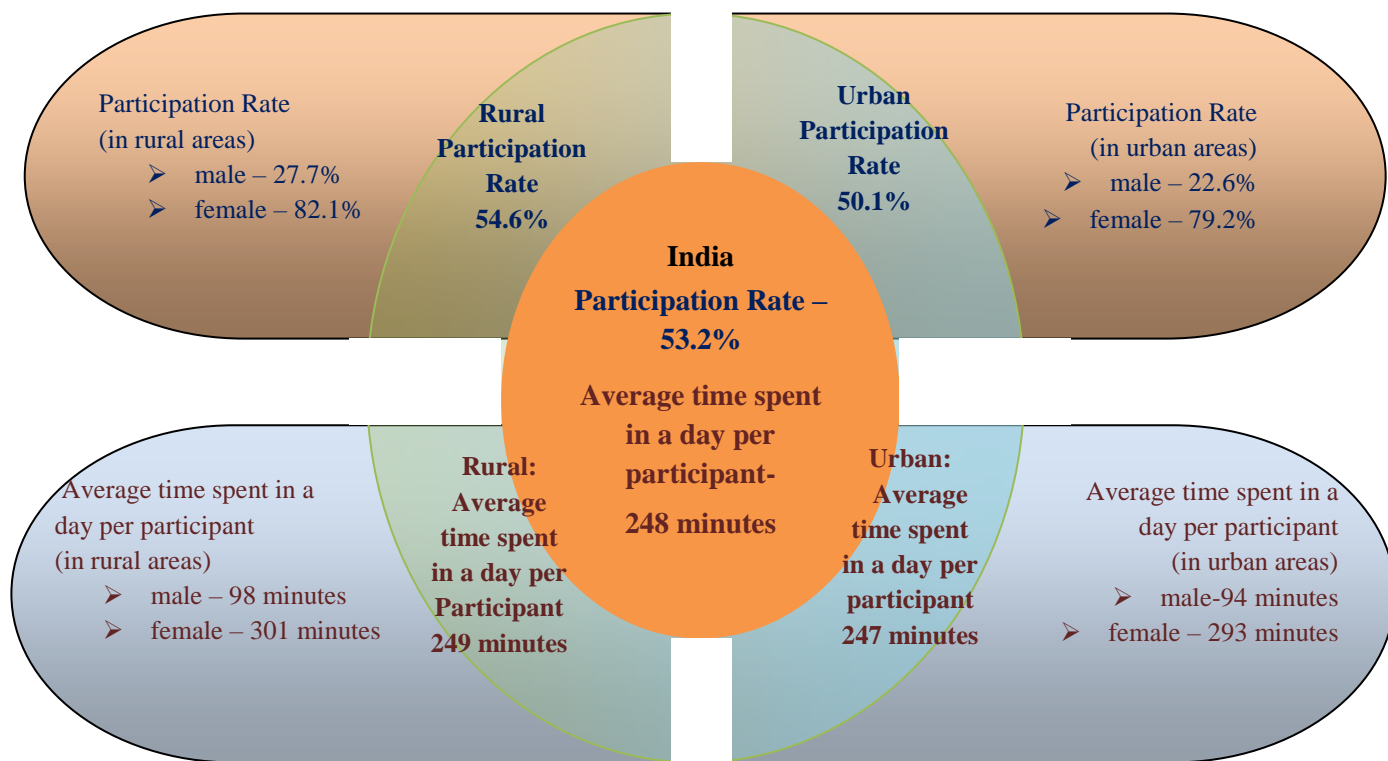
A. Participation in employment and related activities and time spent per participant of age 6 years and above in these activities in a day



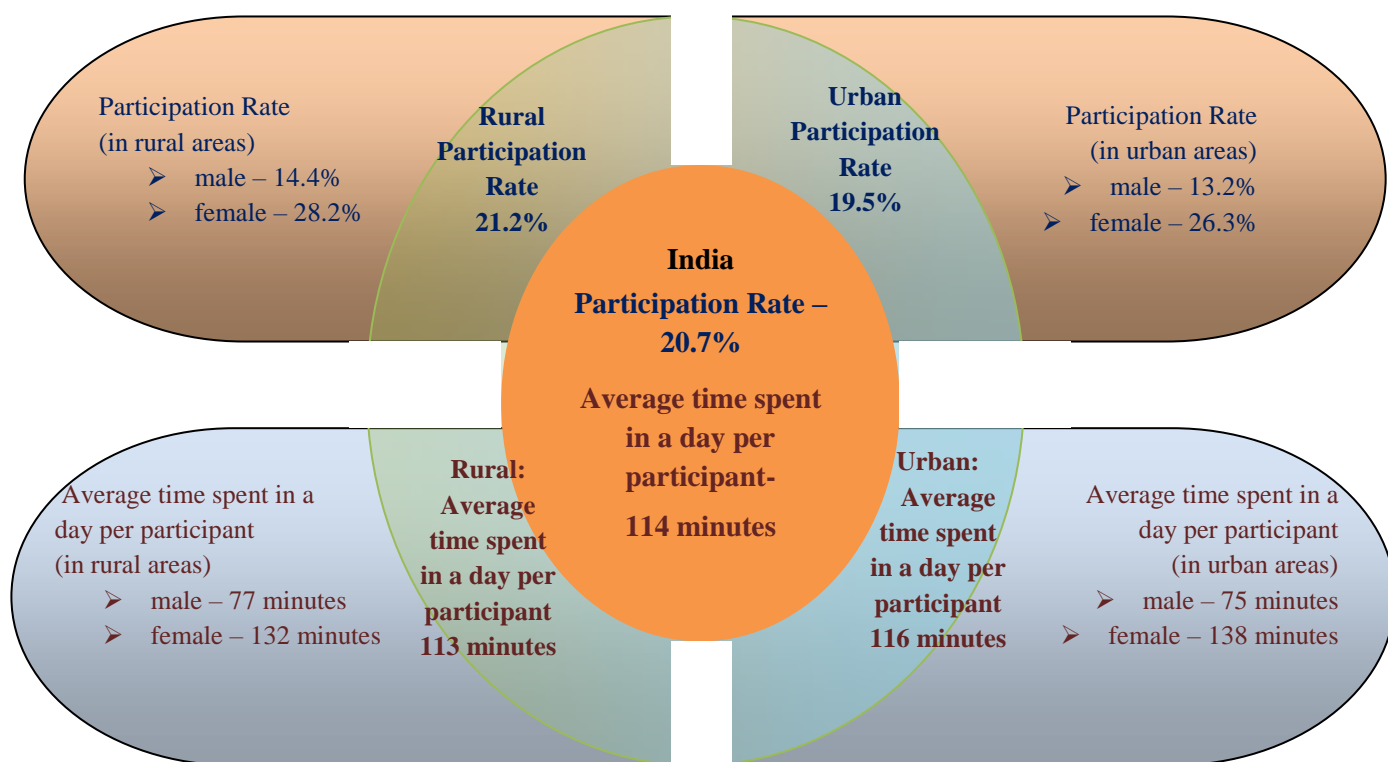
B. Participation in production of goods for own final use and time spent per participant of age 6 years and above in these activities in a day



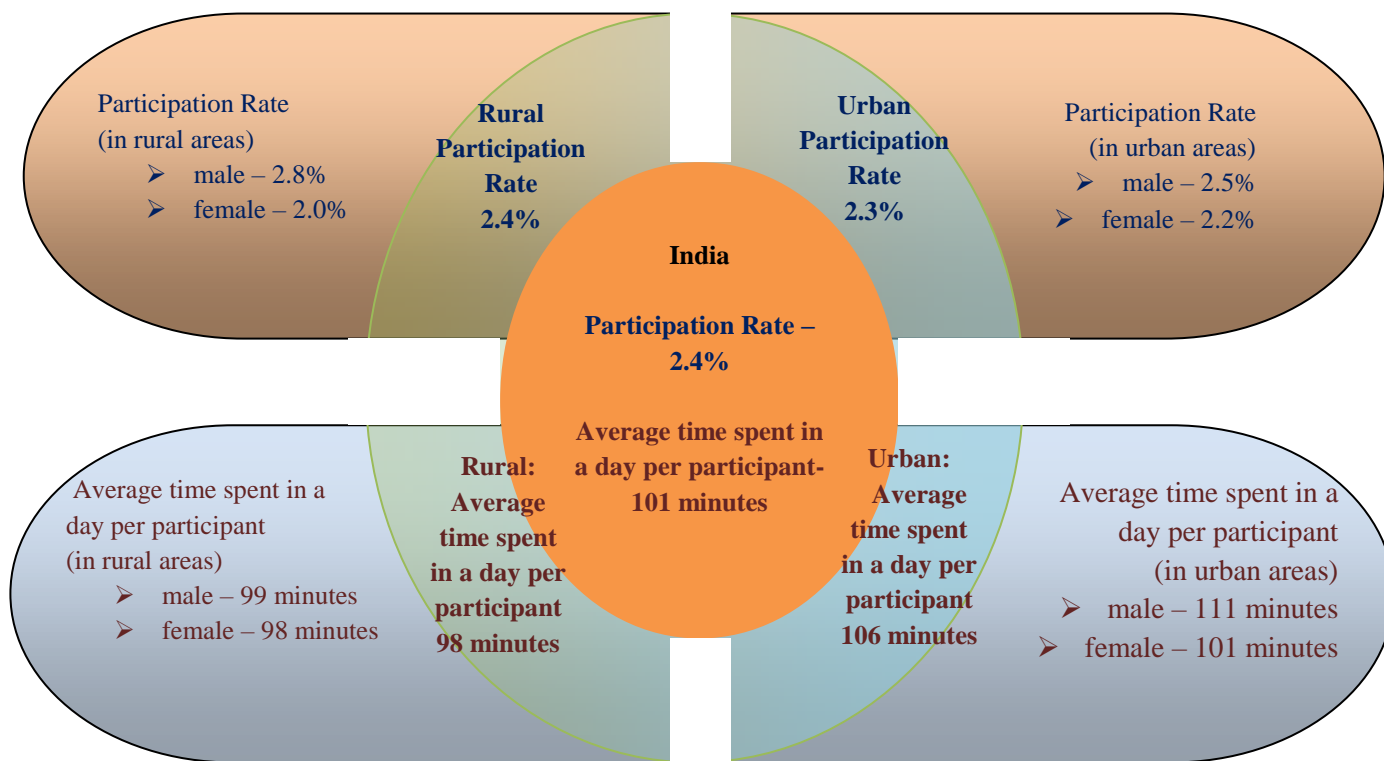
C. Participation in unpaid domestic services for household members and time spent per participant of age 6 years and above in these activities in a day



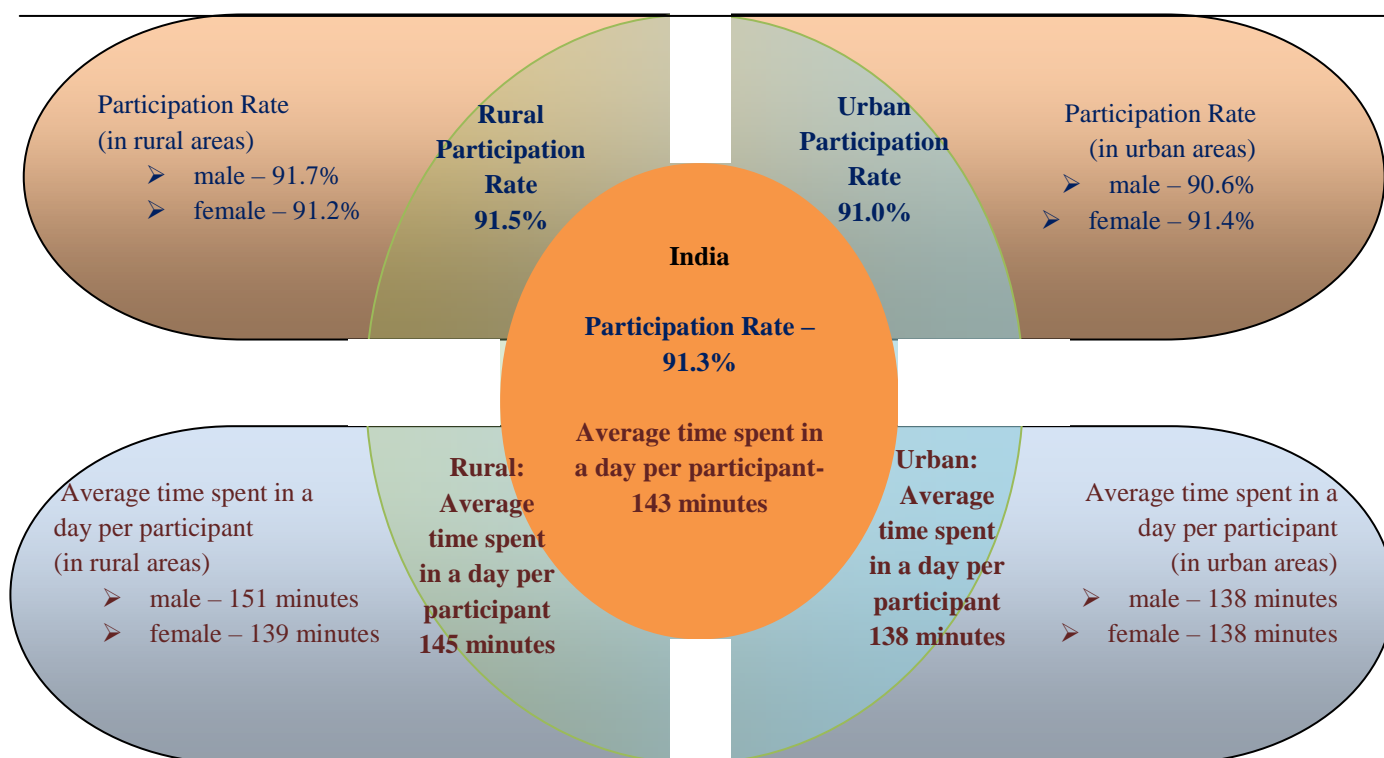
D. Participation in unpaid caregiving services for household members and time spent per participant of age 6 years and above in these activities in a day



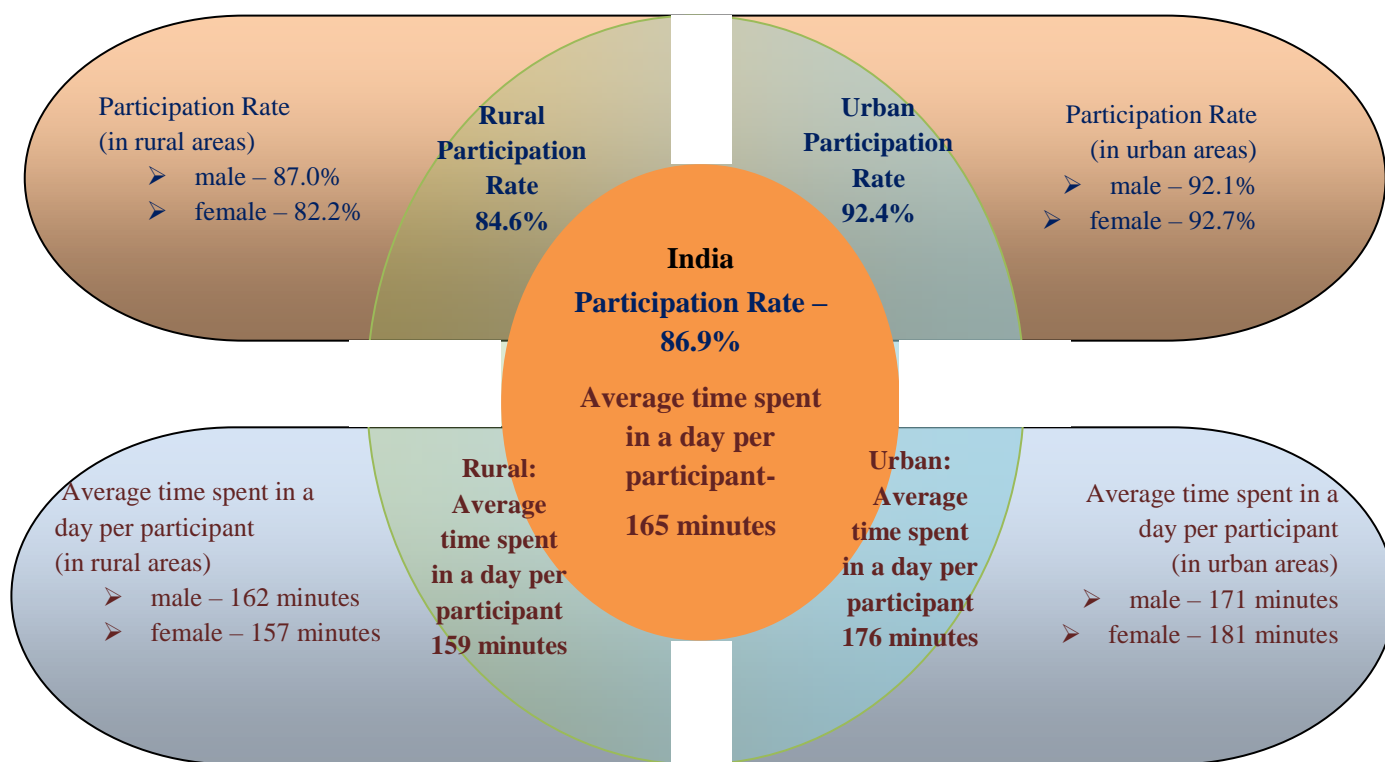
E. Participation in unpaid volunteer, trainee and other unpaid work and time spent per participant of age 6 years and above in these activities in a day



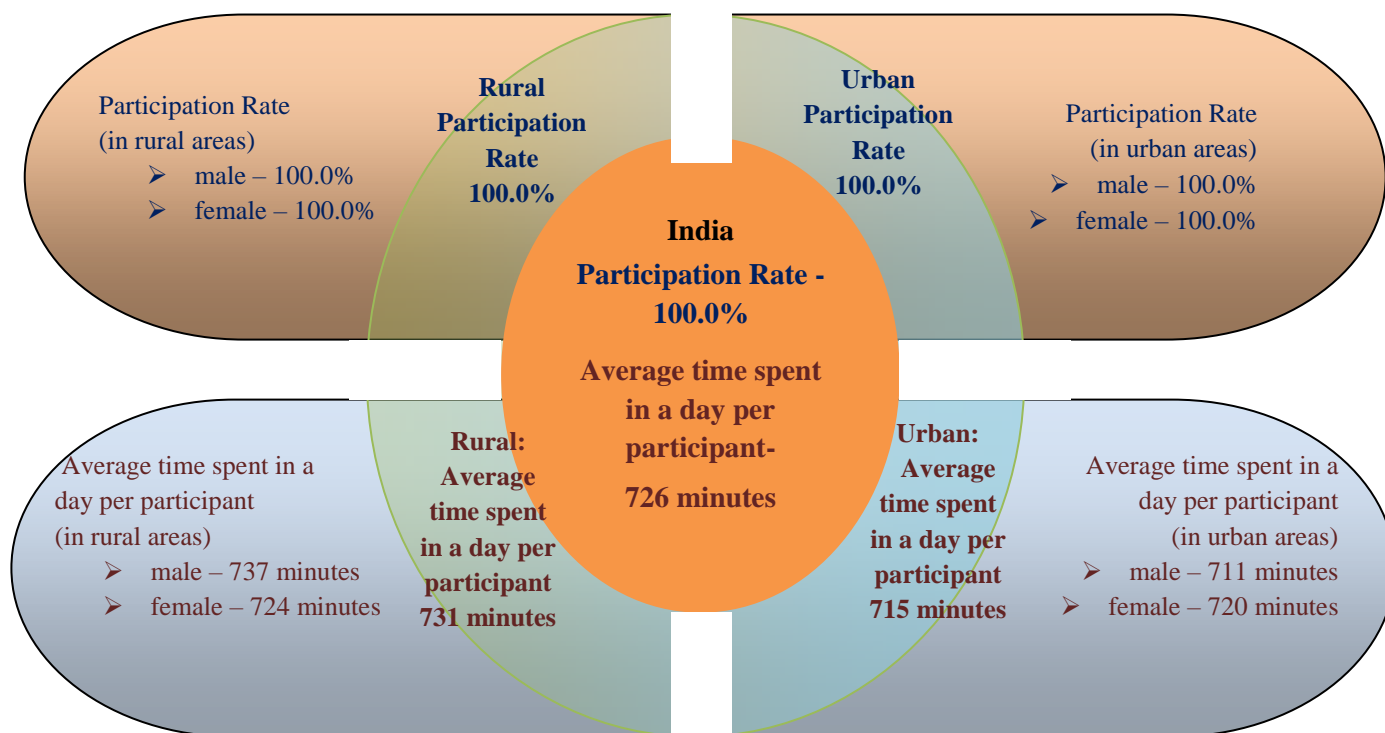
F. Participation in socializing and communication, community participation and religious practice and time spent per participant of age 6 years and above in these activities in a day



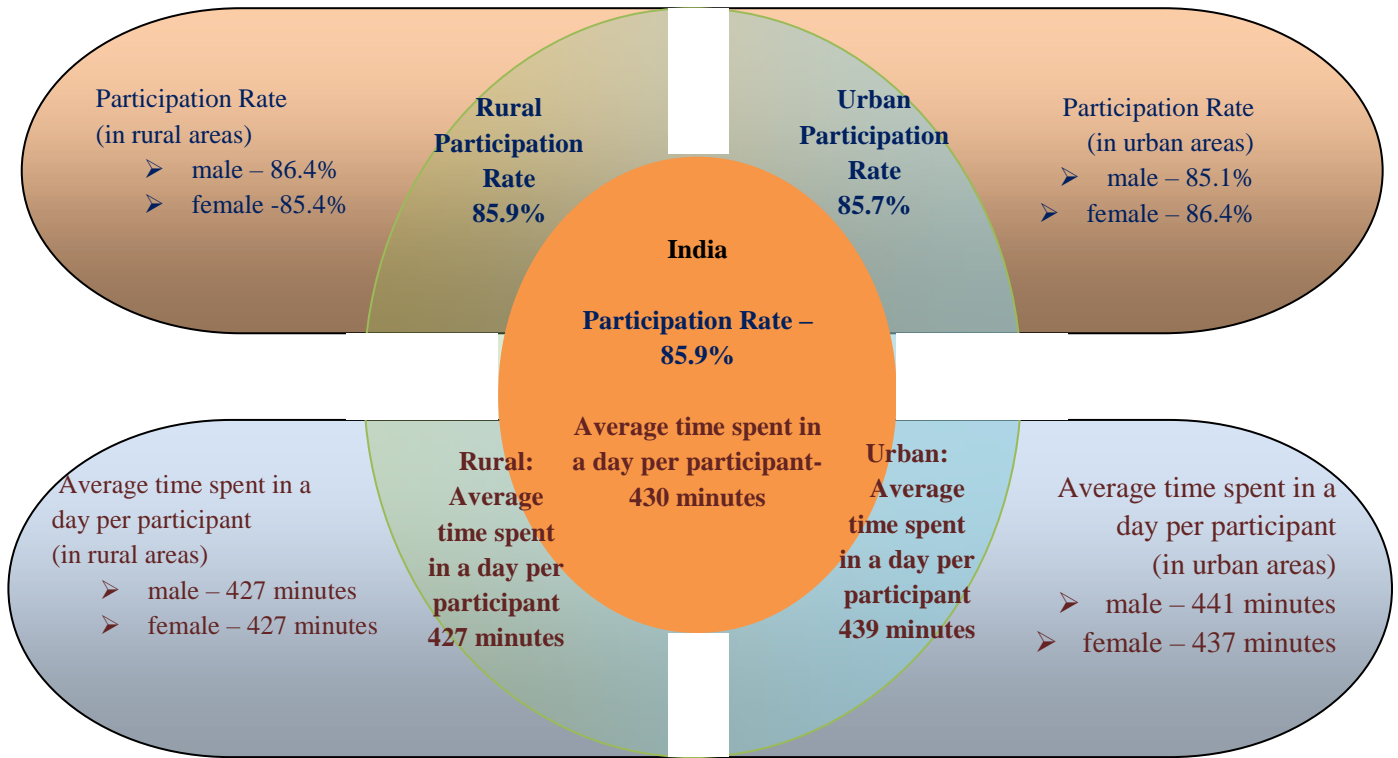
G. Participation in culture, leisure, mass-media and sports practices and time spent per participant of age 6 years and above in these activities in a day



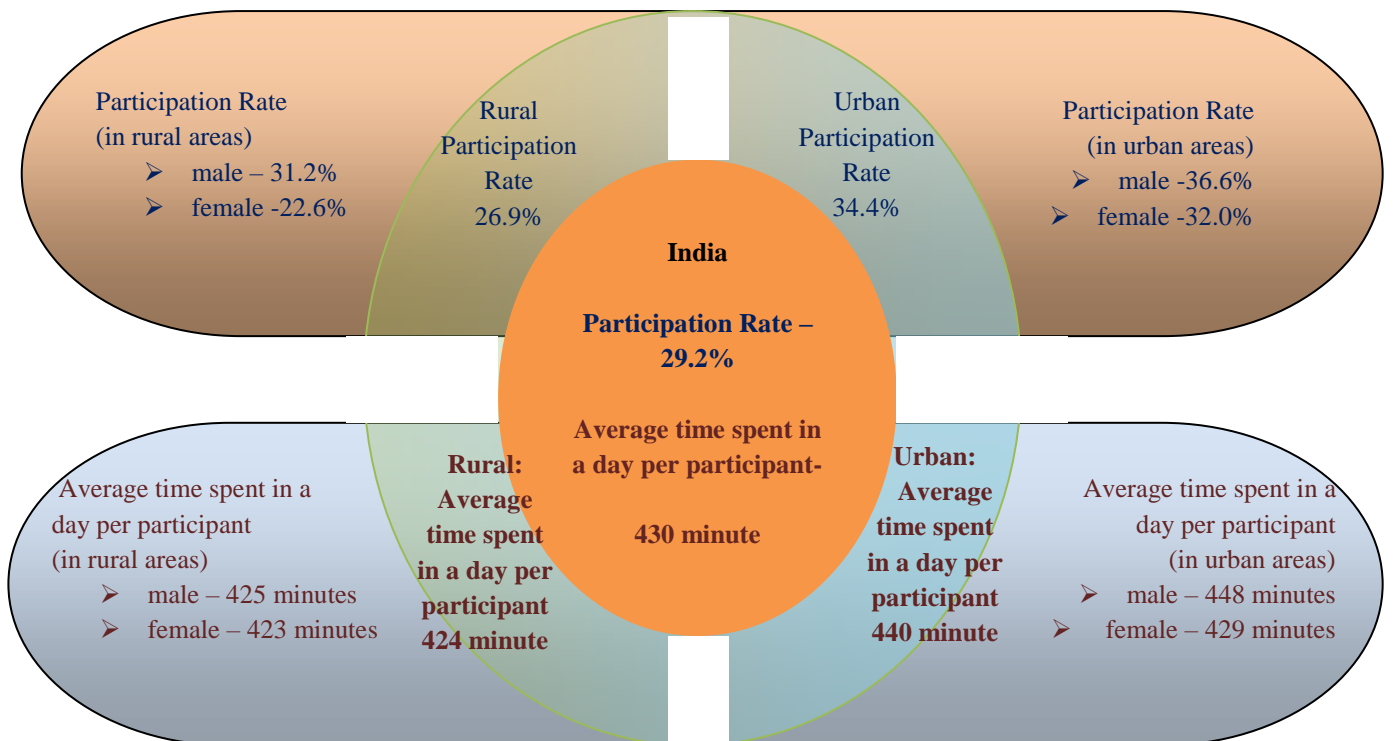
H. Participation in self-care and maintenance and time spent per participant of age 6 years and above in these activities in a day



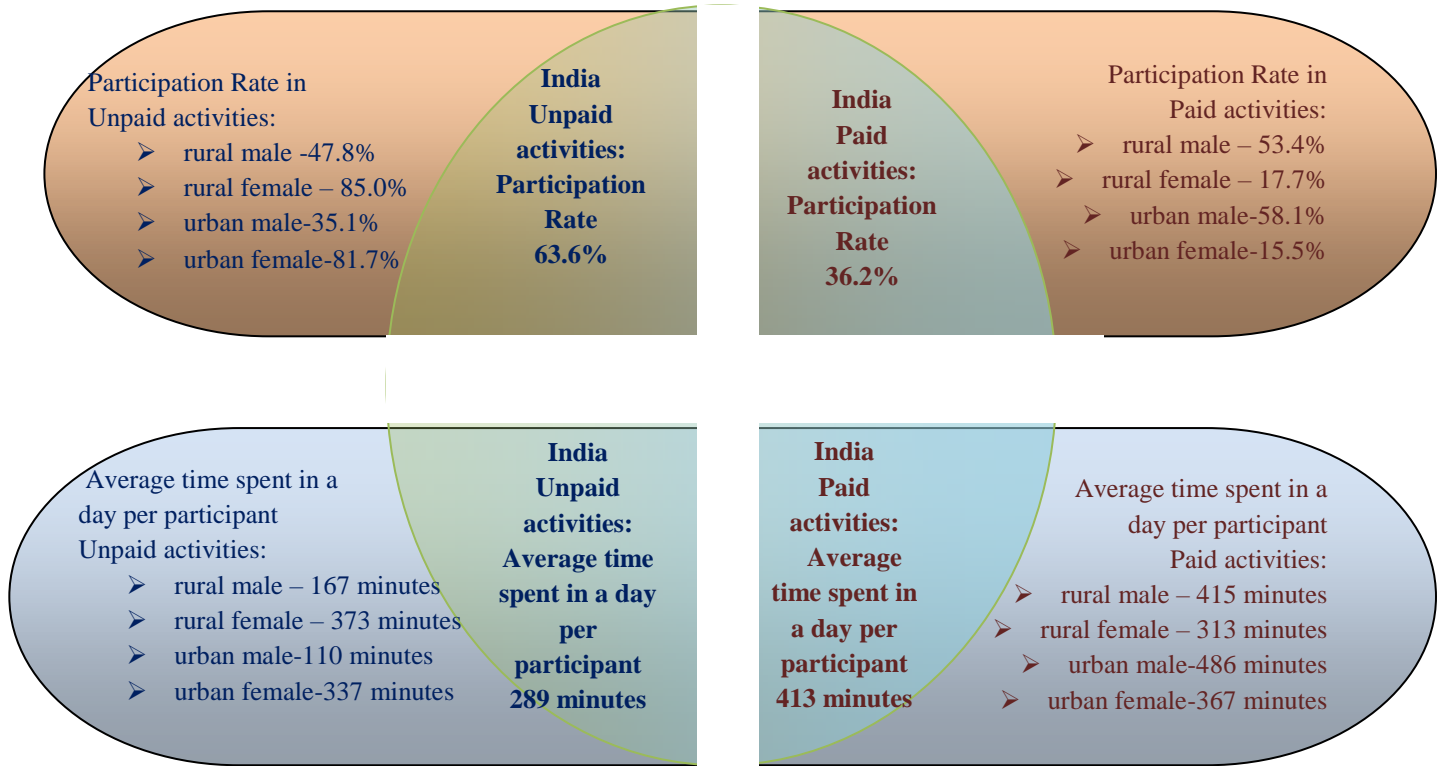
I. Participation in learning and time spent per participant of age 6-14 years in learning activities in a day



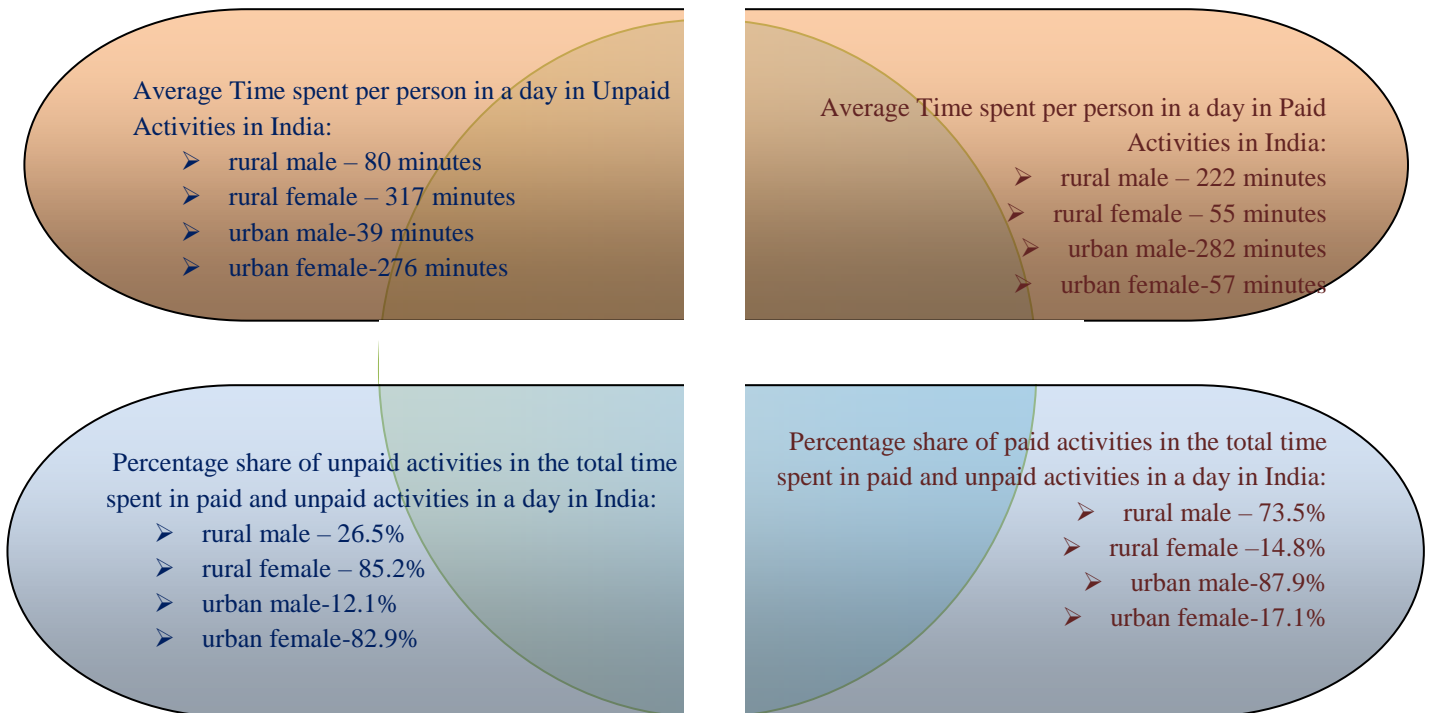
J. Participation in learning and time spent per participant of age 15-29 years in learning activities in a day



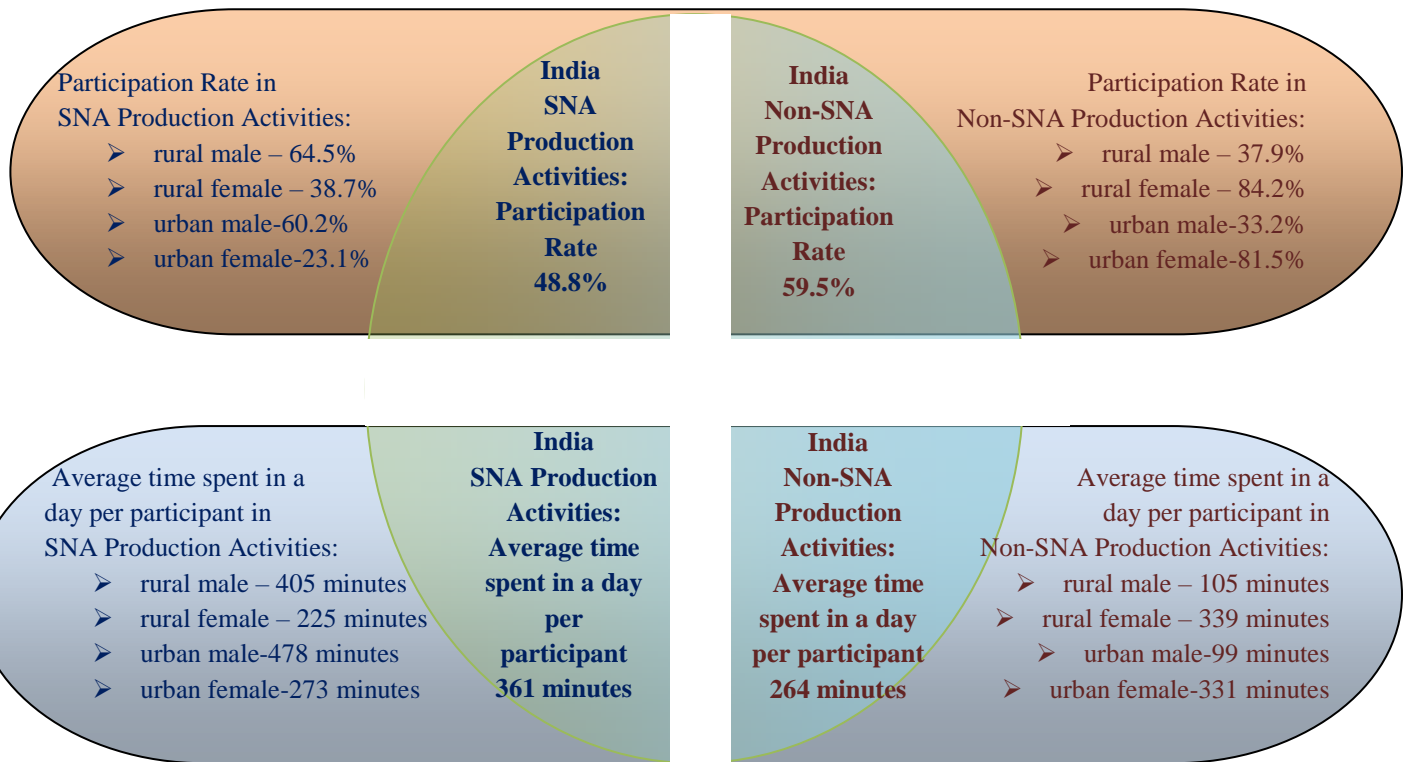
K. Participation in unpaid and paid activities and time spent per participant of age 6 years and above in these activities in a day



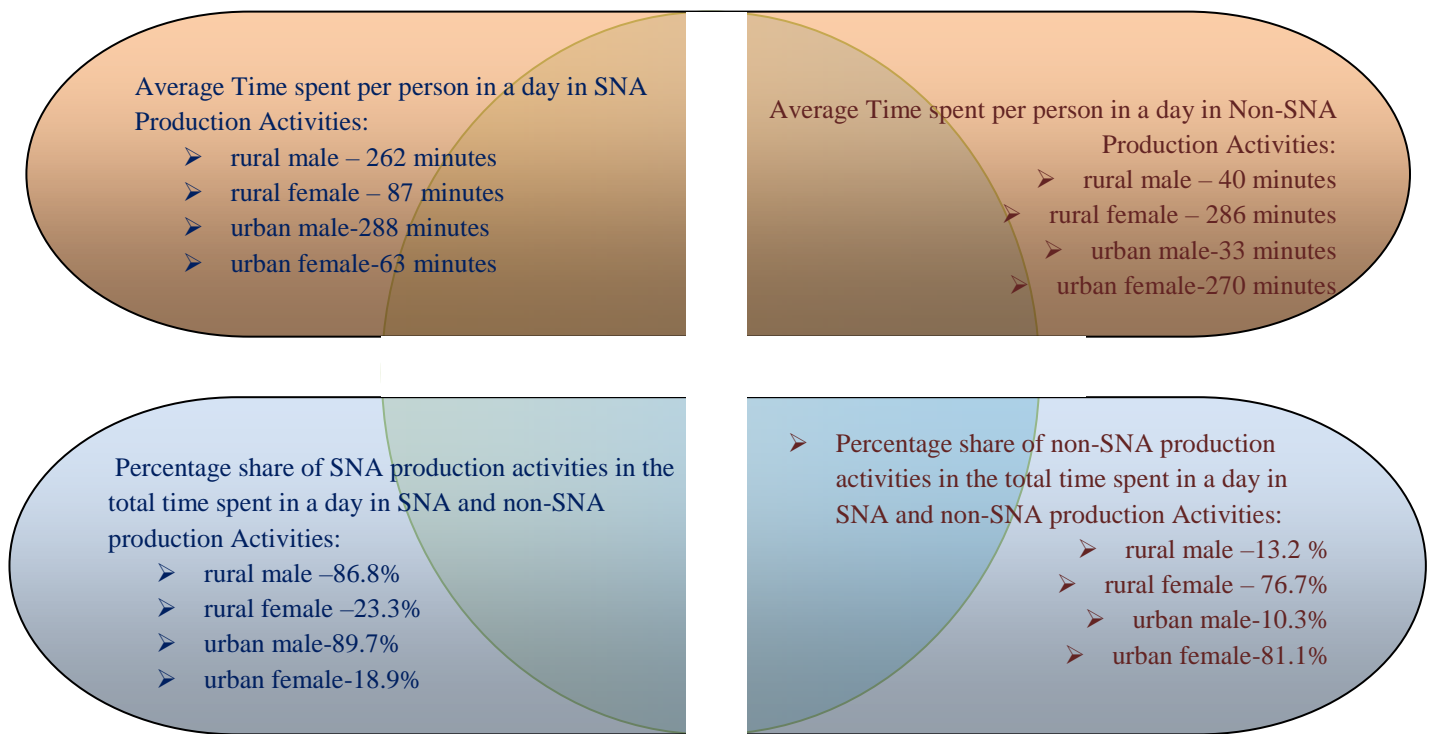
L. Time spent in unpaid and paid activities per person age 6 years and above in a day irrespective of whether they participated in these activities or not



M. Participation in SNA production and non-SNA production activities and time spent per participant of age 6 years and above in these activities in a day



N. Time spent in SNA production and non-SNA production activities per person age 6 years and above in a day irrespective of whether they participated in these activities or not



O. Percentage share of total time in different activities in a day per person

Table 1: Percentage share of total time in different activities in a day per person of age 6 years and above									
Description of the activity	all-India								
	rural			urban			Rural + urban		
	male	female	person	male	female	person	male	female	person
Employment and related activities	16.9	4.2	10.6	21.3	4.3	13.1	18.3	4.2	11.4
Production of goods for own final use	2.7	2.2	2.4	0.3	0.3	0.3	1.9	1.6	1.8
Unpaid domestic services for household members	1.9	17.2	9.4	1.5	16.1	8.6	1.7	16.9	9.2
Unpaid caregiving services for household members	0.8	2.6	1.7	0.7	2.5	1.6	0.8	2.6	1.7
Unpaid volunteer, trainee and other unpaid work	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
Learning	7.1	5.7	6.4	7.0	6.1	6.6	7.1	5.8	6.5
Socializing and communication, community participation and religious practice	9.6	8.8	9.2	8.7	8.8	8.8	9.3	8.8	9.0
Culture, leisure, mass-media and sports practices	9.7	9.0	9.4	10.9	11.7	11.3	10.1	9.8	9.9
Self-care and maintenance	51.2	50.3	50.8	49.4	50.0	49.7	50.6	50.2	50.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Figures may not add up to 100 due to rounding</i>									
<i>Note: The estimates have been calculated considering all the activities in a time slot</i>									

खण्ड-III हिंदी

सर्वेक्षण

राष्ट्रीय सांख्यिकी कार्यालय की पत्रिका

भाग- PDOS 57 XXXVI सं० 1 और 2

अंक संख्या 109वां

सितम्बर, 2020



सत्यमेव जयते

राष्ट्रीय सांख्यिकी कार्यालय
सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय
भारत सरकार
नई दिल्ली

सम्पादकीय सलाहकार बोर्ड

1. डॉ. जी. सी. मन्ना, अध्यक्ष, पूर्व-महानिदेशक, एनएसओ, नई दिल्ली
 2. डॉ. मनोज पांडा, पूर्व-निदेशक, आई.ई.जी., नई दिल्ली
 3. श्री अलोक कर, पूर्व उप महानिदेशक, कोलकाता
 4. प्रो. टी. जे. राव., प्रोफेसर (सेवानिवृत्त), भारतीय सांख्यिकी संस्थान, कोलकाता
 5. महानिदेशक, नेशनल काउंसिल ऑफ एप्लाइड इकोनॉमिक रिसर्च (एन.सी.ए.ई.आर), नई दिल्ली
 6. अपर महानिदेशक, एनएसओ (एफ.ओ.डी.), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, नई दिल्ली
 7. अपर महानिदेशक, एनएसओ (एस.डी.आर.डी.), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, कोलकाता
 8. अपर महानिदेशक, एनएसओ (डी.क्यू.ए.डी.), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, कोलकाता
 9. अपर महानिदेशक, एनएसओ (एस.सी.डी.), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, प्रबंध संपादक, नई दिल्ली
 10. अपर महानिदेशक, एनएसओ (ई.एस.डी.), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, नई दिल्ली
 11. उप महानिदेशक, डी.क्यू.ए.डी. (आई.एस.विंग), कोलकाता
 12. निदेशक, अंतर्राष्ट्रीय जनसंख्या विज्ञान संस्थान (आई.आई.पी.एस.), मुंबई
 13. निदेशक, इंदिरा गांधी इंस्टीट्यूट ऑफ डेवलपमेंट रिसर्च (आई.जी.आई.डी.आर.), मुंबई
 14. प्रो. के. नारायणन, आईआईटी बॉम्बे, मुंबई
 15. ओ.आर.जी.आई., नई दिल्ली से प्रतिनिधि
 16. डॉ. फरजाना अफरीदी, आईएसआई दिल्ली, नई दिल्ली
 17. निदेशक, एनएसओ(एस.सी.डी), सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय, नई दिल्ली
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सम्पादकीय सचिवालय - सर्वेक्षण समन्वय प्रभाग, राष्ट्रीय सांख्यिकी कार्यालय, सांख्यिकी एवं कार्यक्रम कार्यान्वयन मंत्रालय, सांख्यिकी भवन, महर्षि वाल्मीकि मार्ग, नईदिल्ली-110032

1. श्रीमती संध्या कृष्णामूर्ति, अपर महानिदेशक, एनएसओ (एस.सी.डी)
2. सुश्री नौशीदा एन.ए., निदेशक, एनएसओ (एस.सी.डी)
3. श्री चेतन यंगजोर, उप निदेशक, एनएसओ (एस.सी.डी)
4. श्री जितेंदर कुमार, वरिष्ठ सांख्यिकी अधिकारी, एनएसओ (एस.सी.डी)

सर्वेक्षण

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एनएसओ द्वारा जारी की गई रिपोर्ट की मुख्य बातें
(मुख्य बातें एनएसओ के एस.डी.आर.डी. प्रभाग द्वारा तैयार की गई सम्बंधित रिपोर्ट से
उद्धृतकी गई हैं। विवरण के लिए पाठक सम्बंधित मुख्य रिपोर्ट देख सकते हैं)

75वें दौर (जुलाई 2017 - जून 2018) "घरेलु सामाजिक उपभोग: शिक्षा" विषय पर सर्वेक्षण संबंधी वार्षिक रिपोर्ट संख्या 585

रा.प्र.स. के 75वें दौर (जुलाई 2017 - जून 2018) "घरेलु सामाजिक उपभोग: शिक्षा" विषय पर सर्वेक्षण किया गया। सम्पूर्ण भारत में 8,097 ग्रामों से 64,519 ग्रामीण परिवारों एवं 6,188 नगरीय खंडों से 49,238 नगरीय परिवारों को प्रतिदर्श के रूप में सर्वेक्षित किया गया।

सर्वेक्षण से प्राप्त मुख्यबातों को नीचे दर्शाया गया है।

I परिवारिक रूपरेखा

- अखिल भारतीय स्तर पर औसत परिवार आकार 4.3 था। (ग्रामीण क्षेत्रों में 4.5 एवं नगरीय क्षेत्रों में 3.8 था)
- प्रति परिवार 3-35 वर्षीय व्यक्तियों की औसत संख्या 2.42 थी। (2.58 ग्रामीण क्षेत्रों में एवं 2.09 नगरीय क्षेत्रों)

(सारणी 4, परिशिष्ट ए)

II साक्षरता दर

- भारत में (7 वर्ष एवं उससे अधिक उम्र के व्यक्तियों के लिए) साक्षरता दर 77.7% थी। ग्रामीण क्षेत्रों में साक्षरता दर 73.5% तथा नगरीय क्षेत्रों में 87.7% थी।
- पुरुषों एवं महिलाओं में साक्षरता दर में अन्तर (7 वर्ष एवं उससे अधिक उम्र), महिला साक्षरता दर (70.3%) के तुलना पुरुष साक्षरता दर अधिक (84.7%) के रूप में देखा गया।

(कथन 3.3)

III विभिन्न आयु वर्गों के लिए जनसंख्या का पूर्ण शैक्षणिक स्तर

- शिक्षा के सर्वेच्च पूर्ण स्तर द्वारा 15 वर्षों एवं उससे अधिक उम्र के ग्रामीण व्यक्तियों का वितरण प्रतिशत : 31.5% साक्षर नहीं थे, 20.9% प्राथमिक स्तर तक साक्षर थे, 17.2% उच्च प्राथमिक/मध्य, 24.9% माध्यमिक एवं उच्च माध्यमिक एवं 5.7% स्नातक एवं उससे अधिक स्तर तक साक्षर थे।
- शिक्षा के सर्वेच्च पूर्ण स्तर द्वारा 15 वर्षों एवं उससे अधिक उम्र के ग्रामीण व्यक्तियों का वितरण प्रतिशत : 13.9% साक्षर नहीं थे, 14.7% प्राथमिक तक साक्षर थे, 14.0% उच्च प्राथमिक/ मध्य स्तर के थे, 35.8% माध्यमिक एवं उच्च माध्यमिक स्तर के एवं 21.7% स्नातक एवं उसके उच्च स्तर के थे।

(कथन 3.4)

IV निकटतम प्राथमिक, उच्च प्राथमिक एवं माध्यमिक विद्यालय तक की दूरी

- ग्रामीण क्षेत्रों में 92.7% परिवार एवं नगरीय क्षेत्रों में 87.2% परिवारों ने घर से 1 कि.मी. की सीमा के अन्दर प्राथमिक विद्यालय की उपलब्धता दर्ज करवायी ।
- करीब 68% ग्रामीण परिवारों एवं 80% नगरीय परिवारों ने अपने घर से 1 कि.मी. की सीमा के अन्दर उच्च प्राथमिक विद्यालयों की उपलब्धता दर्ज करवायी, जबकि करीब 38% ग्रामीण परिवारों ने करीब 70% नगरीय परिवारों के तुलना में इतनी ही दूरी पर स्थित माध्यमिक विद्यालयों की उपलब्धता दर्ज करवायी ।

(कथन 3.2)

V 3-35 वर्षीय आयु वर्ग में व्यक्तियों का उपस्थिति स्तर

- 3-35 वर्ष के आयु- वर्ग में ग्रामीण क्षेत्रों में 46.1% पुरुषों एवं 40.7% महिलाएं वर्तमान में शैक्षणिक संस्थानों में उपस्थित थे।
- नगरीय क्षेत्रों में ये प्रतिशत पुरुषों एवं महिलाओं के लिए क्रमशः 46.7% एवं 42.6% थे।

(कथन 3.9)

VI उपस्थिति अनुपात

- ग्रामीण एवं नगरीय क्षेत्रों में पुरुषों एवं महिलाओं, दोनों के लिए प्राथमिक स्तर पर सकल उपस्थिति अनुपात (जी.ए.आर.) करीब 100% था ।
- जी.ए.आर उच्च प्राथमिक स्तर पर पुरुषों के लिए 94.7% (94.8% ग्रामीण एवं 94.3% नगरीय में) एवं महिलाओं के लिए 94.1% (ग्रामीण में 94.2% एवं 93.8% नगरीय में) था।
- माध्यमिक स्तर पर जी.ए.आर पुरुषों के लिए 87.4% (85.2% ग्रामीण में एवं 93.8% नगरीय क्षेत्रों में) एवं 85.1% महिलाओं के लिए था (93.7% नगरीय क्षेत्रों की तुलना में ग्रामीण क्षेत्रों में 82.3%) ।
- भारत में प्राथमिक स्तर पर कुल उपस्थिति अनुपात (एन.ए.आर) पुरुषों के लिए 86.8% था (86.6% ग्रामीण में एवं 87.7% नगरीय में) एवं महिलाओं के लिए 85.1% था (84.8% ग्रामीण में एवं 86.2% नगरीय में) था ।
- उच्च प्राथमिक स्तर एन.ए.आर पुरुषों के लिए 72.5% था। (72.1.5% ग्रामीण क्षेत्रों में नगरीय क्षेत्रों के 73.5%) और 71.8% महिलाओं के लिए, (75.0% नगरीय क्षेत्रों की तुलना में ग्रामीण क्षेत्रों में 70.7%) था ।
- माध्यमिक स्तर पर एन.ए.आर पुरुषों के लिए 57.9% (56.6% ग्रामीण में एवं 61.5% नगरीय में) एवं महिलाओं के लिए 57.3% था । (नगरीय क्षेत्रों के 63.7% की तुलना में ग्रामीण में 55.2%)
- 18-23 वर्ष के आयु वर्ग के लिए आयु-विशिष्ट उपस्थिति अनुपात पुरुषों एवं महिलाओं के लिए क्रमशः 32.6% एवं 24.6% था ।

(कथन 4.3, 4.5 एवं 3.12)

VII शिक्षा के प्रकार के अनुसार छात्रों की वर्तमान उपस्थिति

- 96.1% छात्र सामान्य शिक्षा में थे एवं शेष तकनीकी/व्यवसायिक शिक्षा ग्रहण कर रहे थे ।
- महिला छात्राओं के प्रतिशत जो कि सामान्य शिक्षा के अनुसरण में थी 96.9% (98.3% ग्रामीण में एवं 93.7% नगरीय में), जो कि समतर पुरुष प्रतिशत से कुछ अधिक 95.5% थी (97.1% ग्रामीण एवं 91.7% नगरीय में)।

(कथन 4.9)

VIII पाठ्यक्रम के प्रकार के अनुसार उपस्थिति

- कक्षा X के उपर सामान्य शिक्षा प्राप्त कर रही 53.9% महिला छात्राओं के तुलना में, 46.4% पुरुष छात्र मानवशास्त्र का अनुसरण कर रहे थे, 28.2% महिला छात्राओं की तुलना में 34.4% पुरुष छात्र विज्ञान की पढ़ाई कर रहे थे, 17.8% महिला छात्राओं की तुलना में 19.2% पुरुष छात्र वाणिज्य की पढ़ाई कर रहे थे।
- पुरुष छात्रों में जो कि तकनीकी/व्यवसायिक शिक्षा का अनुसरण कर रहे थे, उनमें से 28.2% महिला छात्राओं की तुलना में 41.6% इंजीनियरिंग का अनुसरण कर रहे थे एवं 4.9% पुरुष छात्र 13.8% महिला छात्राओं की तुलना में चिकित्सा शास्त्र (जिसमें नर्सिंग भी सामिल थी) की शिक्षा ग्रहण कर रहे थे ।

(कथन 4.10)

(कथन 4.11)

IX संस्था के प्रकार

- ग्रामीण क्षेत्रों में 44.2% छात्र पूर्व-प्राथमिक स्तर पर, 73.7% प्राथमिक स्तर पर, 76.1% उच्च प्राथमिक/मध्य स्तर पर, 68.0% माध्यमिक एवं उच्च माध्यमिक स्तर पर एवं 49.7% स्नातक एवं उच्च स्तर के सरकारी संस्थानों में शिक्षा ग्रहण कर रहे थे, जबकि नगरीय क्षेत्रों में, 13.9% पूर्व-प्राथमिक स्तर पर, 30.9% प्राथमिक स्तर पर, 38.0% उच्च प्राथमिक स्तर पर, एवं 38.9% माध्यमिक एवं उच्च माध्यमिक स्तर पर एवं 41.0% स्नातक एवं उससे उच्च स्तरों के सरकारी संस्थानों में भाग ले रहे थे ।

(कथन 4.14 (R) और 4.14 (U))

X मुफ्त शिक्षा प्राप्त करने वाले छात्र

- पूर्व-प्राथमिक स्तर पर करीब 33% छात्र (करीब 44% ग्रामीण क्षेत्रों में एवं 14% नगरीय क्षेत्रों में) भारत में मुफ्त की शिक्षा प्राप्त कर रहे थे ।

¹ 3-35 वर्षों के उम्र समूह के विद्यार्थी व्यक्ति हैं और वर्तमान में प्राथमिक एवं उससे उच्च स्तरों के पाठ्यक्रम में उपस्थित हो रहे हैं

- प्राथमिक स्तर पर, छात्र जो मुफ्त की शिक्षा प्राप्त कर रहे थे का अनुपात 62% या (करीब 72% छात्र ग्रामीण क्षेत्रों में एवं 31% नगरीय क्षेत्रों में) ।
- उच्च प्राथमिक/मध्य स्तर पर, 72% छात्र ग्रामीण क्षेत्रों से एवं 36% नगरीय क्षेत्रों से मुफ्त की शिक्षा प्राप्त कर रहे थे ।
- माध्यमिक स्तर पर, उन छात्रों का अनुपात जो कि मुफ्त की शिक्षा प्राप्त कर रहे थे 46% ग्रामीण क्षेत्रों में एवं 25% नगरीय क्षेत्रों में था। अनुपात उच्च-माध्यमिक स्तर पर ग्रामीण एवं नगरीय दोनों क्षेत्रों में क्रमशः 26% एवं 14% था ।
- 77% छात्र जो कि सरकारी संस्थानों में पढ़ रहे थे मुफ्त शिक्षा प्राप्त कर रहे थे (करीब 81% ग्रामीण क्षेत्रों में एवं 62% नगरीय क्षेत्रों में) ।
- उन छात्रों का प्रतिशत जो गैर सहायता प्राप्त निजी संस्थानों में पढ़ रहे थे एवं मुफ्त शिक्षा ग्रहण कर रहे थे करीब 2% ग्रामीण क्षेत्रों में एवं नगरीय क्षेत्रों में 1% था ।

(कथन 4.19 और 4.20)

XI विविध प्रोत्साहन प्राप्त छात्र

- अखिल भारतीय स्तर पर करीब 14% छात्र औपचारिक शिक्षा में उपस्थित हुए और वर्तमान उपस्थिति के विभिन्न स्तर के लिए छात्र-वृत्ति/स्टाईपेंड/प्रतिपूर्ति प्राप्त की । ये अनुपात करीब 16% ग्रामीण क्षेत्रों में एवं 9% नगरीय क्षेत्रों में था ।

(कथन 4.21)

- करीब 19% सरकारी संस्थानों में औपचारिक शिक्षा प्राप्त कर रहे छात्रों थे जिन्होंने छात्र-वृत्ति/स्टाईपेंड/प्रतिपूर्ति प्राप्त की, विद्यार्थियों में करीब 11% निजी सहायता प्राप्त संस्थानों में एवं 5% निजी गैर सहायता प्राप्त संस्थानों में शिक्षा प्राप्त कर रहे थे ।

(कथन 4.22)

- अखिल भारतीय स्तर पर करीब 45% छात्रों पूर्व-प्राथमिक एवं उसके उच्च स्तर की शिक्षा प्राप्त कर रहे थे, को मुफ्त सहायता प्राप्त पाठ्य पुस्तके प्राप्त हुई । (54% ग्रामीण क्षेत्रों में एवं 24% नगरीय क्षेत्रों में)

(कथन 4.23)

- पूर्व-प्राथमिक एवं उससे उच्च स्तर की शिक्षा जो छात्र प्राप्त कर रहे थे उनको मुफ्त सहायता प्राप्त पढ़ने-लिखने का सामान मिल रहा था, जिसकी संख्या ग्रामीण क्षेत्रों में 10% एवं नगरीय क्षेत्रों में 7% थी ।

(कथन 4.25)

- सरकारी संस्थानों में पढ़ रहे प्राथमिक स्तर पर करीब 96% विद्यार्थियों को मुफ्त मिड-डे मील/टिफिन/पोषण आदि प्राप्त हुआ । यह भाग करीब 17% उन छात्रों में जो निजी सहायता प्राप्त संस्थानों में थे एवं 2% उन छात्रों का था जो निजी गैर सहायता प्राप्त संस्थाओं में पढ़ रहे थे ।

(कथन 4.27(RU))

XII निजी कोचिंग

- भारत में पूर्व-प्राथमिक एवं उससे उच्च स्तर की शिक्षा प्राप्त कर रहे करीब 20% छात्र (21% पुरुष एवं 19% महिलाएं) निजी कोचिंग ले रहे थे।

(कथन 4.30)

- माध्यमिक स्तर पर निजी कोचिंग लेने की घटना अधिकतम थी। (31% पुरुष छात्र एवं 29% महिला छात्राएं)।

(कथन 4.30)

XIII शिक्षा पर निजी व्यय

- वर्तमान शैक्षणिक सत्र के दौरान मूल पाठ्यक्रम के लिए प्रति छात्र औसतन व्यय (रु.) करीब रु 8,331 सामान्य पाठ्यक्रम के लिए था, रु 50,307 तकनीकी/व्यवसायिक पाठ्यक्रम का था।

(कथन 4.32)

• सामान्य पाठ्यक्रम	पूर्व-प्राथमिक	-रु.8,997 (ग्रामीण-रु.5,655, नगरीय-रु.14,509)
	प्राथमिक	-रु.6,024 (ग्रामीण-रु.3,545, नगरीय-रु.13,516)
	उच्च प्राथमिक	-रु.6,866 (ग्रामीण-रु.3,953, नगरीय-रु.15,337)
	माध्यमिक	-रु.9,013 (ग्रामीण-रु.5,856, नगरीय-रु.17,518)
	उच्च माध्यमिक	-रु.13,847 (ग्रामीण-रु.9,148, नगरीय-रु.23,832)
	स्नातक	-रु.14,264 (ग्रामीण-रु.11,845, नगरीय-रु.18,485)
	स्नाकोत्तर	-रु.18,110 (ग्रामीण-रु.15,827, नगरीय-रु.20,443)

(कथन 4.36)

• तकनीकी/व्यवसायिक पाठ्यक्रम	स्नातक के नीचे (डिप्लोमा/प्रमाण पत्र)	-रु.12,274 (ग्रामीण-रु.8,071, नगरीय-रु.21,799)
	छोड़कर	
	डिप्लोमा/प्रमाण पत्र (स्नातक स्तर के नीचे)	-रु.26,540 (ग्रामीण-रु.22,598, नगरीय-रु.32,880)

डिप्लोमा/प्रमाण पत्र -रु.64,379 (ग्रामीण-रु.39,701, नगरीय-रु.81,300)

(स्नातक एवं उससे
उच्च स्नातक)

स्नातक -रु.63,495 (ग्रामीण-रु.43,872, नगरीय-रु.72,992)

स्नाकोत्तर एवं उच्च -रु.66,824 (ग्रामीण-रु.50,512, नगरीय-रु.74,068)

(कथन 4.37)

- वर्तमान शैक्षणिक सत्र में, सामान्य पाठ्यक्रम कर रहे प्रति विद्यार्थी औसत व्यय:
 - निजी गैर सहायता प्राप्त संस्थानों में रु.12,834 की तुलना में पूर्व-प्राथमिक स्तर पर सरकारी संस्थानों में रु.1,030 था ।
 - निजी सहायता प्राप्त संस्थानों में रु.14,485 की तुलना में प्राथमिक स्तर पर सरकारी संस्थानों में रु.1,253 था ।
 - उच्च प्राथमिक स्तर पर, औसतन व्यय रु.2,181 सरकारी में था जबकि निजी गैर सहायता प्राप्त में रु.17,360 था ।
 - माध्यमिक स्तर पर, औसतन व्यय सरकारी संस्थानों में रु.4,078 एवं निजी गैर सहायता प्राप्त संस्थानों में रु. 20,804 था ।
 - सरकारी संस्थानों में उच्च-माध्यमिक स्तर पर रु.7,001 था, निजी गैर सहायता प्राप्त संस्थानों में रु.25,852 था ।

(कथन 4.38)

- चिकित्सा शास्त्र अध्ययन के लिए, वर्तमान शैक्षणिक सत्र में औसतन व्यय सरकारी संस्थानों में रु.31,309 था, रु.1,01,154 निजी सहायता प्राप्त एवं 94,658 निजी गैर सहायता प्राप्त संस्थानों में था । इंजीनियरिंग पाठ्यक्रम के लिए, सरकारी, निजी सहायता प्राप्त एवं निजी गैर सहायता प्राप्त संस्थानों के लिए क्रमशः यह व्यय रु.39,165, रु.66,272 एवं रु.69,155 था।

(कथन 4.41)

- पाठ्यक्रम शुल्क पर व्यय का करीब 51% सामान्य शिक्षा के लिये और व्यय का 76% तकनीकी शिक्षा के लिए था।

(कथन 4.33 और 4.34)

- उन छात्रों के लिए जो सामान्य शिक्षा का अनुसरण कर रहे थे, 12% निजी कोचिंग पर खर्च हुआ जबकि 2% छात्र तकनीकी/वृत्तिक शिक्षा प्राप्त कर रहे (व्यवसायिक भी) छात्रों के लिए खर्च हुआ।

(कथन 4.33 और 4.34)

XIV व्यक्ति जो वर्तमान में शिक्षा में भाग नहीं ले रहे हैं

- हमेशा नामांकित 3-35 वर्ष उम्र के व्यक्तियों में करीब 41% पुरुष एवं 40% महिलाएं ग्रामीण क्षेत्रों में वर्तमान में शिक्षा का लाभ नहीं पा रहे थे। यह अनुपात नगरीय क्षेत्र में करीब 46% पुरुषों के लिए एवं 48% महिलाओं के लिए था।

(कथन 5.1)

- भारत में 3-35 वर्ष के आयु वर्ग के व्यक्तियों के प्रतिशत जिन्होंने पढ़ाई छोड़ दिया, नगरीय क्षेत्रों में करीब 10% एवं ग्रामीण क्षेत्रों में करीब 14% था।

(कथन 5.6)

- भारत में, ग्रामीण क्षेत्रों में 3-35 वर्ष उम्र के करीब 13% पुरुष एवं 19% महिलाएं एवं 7% पुरुषों में एवं 10% महिलाओं में जिनकी आयु 3-35 वर्ष थी नगरीय क्षेत्रों में कभी भी किसी भी शैक्षणिक संस्थानों में अपना नामांकन नहीं करवाया।

(कथन 5.3)

- पुरुषों के लिए जो कि 3-35 आयु वर्ग के थे जो हमेशा नामांकित थे लेकिन वर्तमान में शिक्षा का लाभ नहीं ग्रहण कर रहे थे, आर्थिक क्रियाकलापों में व्यस्तता वर्तमान में शिक्षा में भाग नहीं लेने का सबसे सामान्य मुख्य कारण था, (35% ग्रामीण क्षेत्रों में एवं 42% नगरीय क्षेत्रों में) जबकि उसी आयु वर्ग के महिलाओं के लिए, मुख्य कारण घरेलू क्रिया कलापों में व्यस्तता थी (32% ग्रामीण क्षेत्रों में एवं 27% नगरीय क्षेत्रों में)।

(कथन 5.4)

- ग्रामीण क्षेत्रों में उन व्यक्तियों के लिए जिनकी आयु 3-35 वर्ष की थी कभी-भी नामांकन नहीं कराने का मुख्य कारण था कि वे 'शिक्षा में रुचि नहीं रखते थे' (20% पुरुष एवं 21% महिला) जबकि नगरीय क्षेत्रों में, करीब 19% पुरुष एवं 17% महिलाएं 3-35 वर्ष के आयु वर्ग में 'वित्तीय प्रतिबंध' के चलते नामांकन नहीं करवाया।

(कथन 5.5)

XV परिवार के भूतपूर्व सदस्य जो वर्तमान में शिक्षा का लाभ प्राप्त कर रहे हैं

- अखिल-भारतीय स्तर पर, 1.7% परिवारों ने 3-35 वर्ष के उम्र समूहों के भूतपूर्व सदस्यों के बारे में रिपोर्ट किया कि वर्तमान में वे शिक्षा प्राप्त कर रहे हैं। यह अनुपात ग्रामीण क्षेत्रों में 1.9% था एवं नगरीय क्षेत्रों में 1.2% था।

(कथन 6.1)

- करीब 88% ग्रामीण परिवारों एवं 90% नगरीय परिवारों ने 3-35 वर्षों के उम्र समूह के बारे में रिपोर्ट किया जो वर्तमान में शिक्षा प्राप्त कर रहे हैं, और उन भूतपूर्व सदस्यों पर खर्च हो रहा है।

(कथन 6.1)

- औसतन व्यय (रु.) जो कि खर्च हुआ/होने वाला है, (शिक्षा पर या फिर किसी अन्य व्यय पर) भूतपूर्व सदस्यों पर प्रति परिवार रिपोर्टिंग व्यय रु.41,079 ग्रामीण क्षेत्रों में एवं 1,00,693 नगरीय क्षेत्रों पर था ।

(कथन 6.1)

XVI कम्प्यूटर एवं इंटरनेट की उपलब्धता

- करीब 4% ग्रामीण परिवारों एवं 23% नगरीय परिवार के पास कम्प्यूटर था ।

(कथन 7.1)

- सर्वेक्षण वर्ष, 2017-18 में देश के करीब 24% परिवारों का इंटरनेट तक पहुंच थी । यह अनुपात 15% ग्रामीण परिवारों के बीच एवं 42% नगरीय परिवारों के बीच थी ।

(कथन 7.1)

- 15-29 वर्ष के व्यक्तियों में करीब 24% ग्रामीण क्षेत्रों में एवं 56% नगरीय क्षेत्रों में कम्प्यूटर चलाने में सक्षम थे ।

(कथन 7.4)

- करीब 35% व्यक्तियों की जिनकी आयु 15-29 वर्ष थी सर्वेक्षण की तारीख से पहले 30 दिनों के दौरान इंटरनेट के प्रयोग की रिपोर्ट दर्ज करवायी । यह अनुपात करीब 25% ग्रामीण क्षेत्रों में एवं 58% नगरीय क्षेत्रों में थी ।

(कथन 7.6)

75वें दौर (जुलाई 2017 - जून 2018) "पारिवारिक सामाजिक उपभोग: स्वास्थ्य" विषय पर सर्वेक्षण संबंधी वार्षिक रिपोर्ट संख्या 586

स्वास्थ्य से संबंधित पारिवारिक सामाजिक उपभोग पर अद्यतन सर्वेक्षण 75वें दौर के राष्ट्रीय प्रतिदर्श सर्वेक्षण (एनएसएस) के एक भाग के रूप में राष्ट्रीय सांख्यिकीय कार्यालय द्वारा जुलाई 2017 से जून 2018 के दौरान कराया गया।

इस सर्वेक्षण का मुख्य उद्देश्य, स्वास्थ्य सेक्टर: अस्वस्थता, रोग का उपचार सहित विवरण, स्वास्थ्य देखभाल के लिए सुविधाएँ उपलब्ध कराने में सरकार एवं निजी क्षेत्रों की भूमिका, दवा पर व्यय, स्वास्थ्य परामर्श एवं जाँच पर व्यय अस्पताल में भर्ती कराने पर व्यय, शिशु जन्म, एवं प्रसूति, वृद्ध व्यक्तियों की स्थिति इत्यादि से सम्बन्धित आधारभूत मात्रात्मक सूचना एकत्र करना था।

यह रिपोर्ट रा.प्र.स अनुसूची 25.0 (पारिवारिक सामाजिक उपभोग: स्वास्थ्य) के माध्यम से पूरे देश में फैले हुए, 1,13,823 परिवारों (64,552 ग्रामीण क्षेत्रों एवं 49,271 नगरीय क्षेत्रों में) 5,55,115 व्यक्तियों (3,25,883 ग्रामीण क्षेत्रों और 2,29,232 नगरीय क्षेत्रों) से प्राप्त ऑकड़ों द्वारा एकत्रित सूचना पर आधारित है।

अखिल भारतीय स्तर पर इस सर्वेक्षण से प्राप्त कुछ मुख्य निष्कर्ष निम्नलिखित हैं :-

I. अस्वस्थता एवं चिकित्सालय आश्रयण

• 15 दिनों की अवधि में अस्वस्थ हुए व्यक्तियों का अनुपात (पीपीआरए):

- ग्रामीण जनसंख्या का लगभग 7% (6% ग्रामीण पुरुष एवं 8% ग्रामीण महिलाएं) और नगरीय जनसंख्या के लगभग 9% (8% नगरीय पुरुष एवं 10% नगरीय महिलाएं) लोगों ने 15 दिन की सन्दर्भ अवधि के दौरान स्वयं को अस्वस्थ बताया।

(कथन 2)

• 15 दिनों की अवधि में विशिष्ट आयु-वर्ग के अस्वस्थ हुए व्यक्तियों का अनुपात:

- अस्वस्थ हुए व्यक्तियों का अनुपात 60+ आयु-वर्ग के व्यक्तियों में सर्वोच्च था जो कि 45-59 आयु-वर्ग के व्यक्तियों के द्वारा अनुसरित किया गया।
- 15 दिनों के सन्दर्भ अवधि के दौरान 60+ आयु-वर्ग में करीब 28% (28% पुरुष एवं महिलाओं दोनों में) और 45-59 आयु-वर्ग में 11% (9% पुरुष एवं 14% महिलाएं) व्यक्तियों ने स्वयं को अस्वस्थ बताया।

(कथन 3)

- **एनीमिया एवं ट्यूबरक्लोसिस का आकलन:**
 - एन एस एस 75वें दौर में (5,96,200) एनीमिया के आकलित संख्या में एन एस एस 71वें दौर से (8,80,700) कमी आयी है ।
 - ट्यूबरक्लोसिस से बीमार लोगों का अनुपात एन एस एस 75वें दौर (38 प्रति 1,00,000 व्यक्ति) में, एन एस एस 71वें दौर (76 प्रति 1,00,000 व्यक्ति) से आधा हो गया ।

- **365 दिनों की अवधि के दौरान किसी भी समय अस्पताल में भर्ती होकर इलाज कराने वाले व्यक्तियों का अनुपात :**
 - ग्रामीण जनसंख्या के करीब 2.6% (2.6% ग्रामीण पुरुष एवं 2.7% ग्रामीण महिलाएं), नगरीय जनसंख्या के 3.4% (3.4% नगरीय पुरुष और 3.5% नगरीय महिलाएं) और अखिल भारतीय स्तर पर 2.9% (2.8% ग्रामीण पुरुष और 2.9% नगरीय महिलाएं) व्यक्तियों ने पिछले 365 दिनों के दौरान किसी भी समय अस्पताल में भर्ती होकर इलाज कराया ।
(कथन 6)
 - 60 एवं उससे अधिक उम्र के व्यक्तियों में, ग्रामीण भारत के 7.7% (8.6% पुरुष और 6.8% महिलाएं), नगरीय भारत में 10.2% (11.6% पुरुष एवं 8.8% महिलाएं) और अखिल भारतीय स्तर पर 8.5% (9.6% पुरुष और 7.5% महिलाएं) व्यक्तियों ने पिछले 365 दिनों के दौरान किसी भी समय अस्पताल में भर्ती होकर इलाज कराया ।
(कथन 7)

- **इलाज कराने के लिए अस्पताल में भर्ती रोगी (शिशु जन्म को छोड़कर) का चिकित्सा संस्थान द्वारा विवरण:**
 - करीब 42% लोगो ने (46% ग्रामीण क्षेत्रों में, 35% नगरीय क्षेत्रों में) सार्वजनिक अस्पतालों में चिकित्सा प्राप्त की, 55% लोगो ने (52% ग्रामीण क्षेत्रों में, 61% नगरीय क्षेत्रों में) निजी अस्पतालों (धर्मार्थ, सक्रिय एनजीओ को छोड़कर) में चिकित्सा प्राप्त की

और करीब 2.7% लोगो ने (2.4% ग्रामीण क्षेत्रों में, 3.3% नगरीय क्षेत्रों में) धर्मार्थ/ट्रस्ट/एनजीओ द्वारा संचालित अस्पतालों में चिकित्सा प्राप्त की।

(कथन 8)

- **रोगों की चिकित्सा के लिए स्वास्थ्य सेवा प्रदाता :**

- रोगों के मामले में, ग्रामीण क्षेत्रों में 33% और नगरीय क्षेत्रों में करीब 26% रोगों की चिकित्सा सरकारी अस्पतालों में हुई, जबकि में, ग्रामीण क्षेत्रों में 21% एवं 27% नगरीय क्षेत्रों में रोगों की चिकित्सा निजी अस्पतालों में हुई। ग्रामीण क्षेत्रों में 41% एवं 44% नगरीय क्षेत्रों में रोगों की चिकित्सा निजी डाक्टरों/किलीनिक में हुई और शेष बचे ग्रामीण क्षेत्रों में 5.2% और नगरीय क्षेत्रों में 2.2% रोगों की चिकित्सा अनौपचारिक स्वास्थ्य सेवा प्रदाता और धर्मार्थ/ट्रस्ट/एनजीओ द्वारा संचालित अस्पतालों में हुई।

(कथन 4)

- **चिकित्सा संबंधी व्यवहार :**

- दोनों क्षेत्रों में (करीब 95%) एलोपैथिक चिकित्सा के प्रति सर्वाधिक रुझान था।

(कथन 5)

- **जनसंख्या की स्वास्थ्य व्यय प्रणाली:**

- करीब 14% ग्रामीण जनसंख्या और 19% नगरीय जनसंख्या किसी भी स्वास्थ्य व्यय प्रणाली के तहत थी।
- करीब 13% ग्रामीण और 9% नगरीय जनसंख्या सरकार द्वारा प्रायोजित स्वास्थ्य बीमा प्रणाली के तहत थी। (जनसंख्या की स्वास्थ्य व्यय प्रणाली को आकलित करने के लिये इस सर्वेक्षण में प्रधानमंत्री जन आरोग्य योजना अथवा आयुष्मान भारत योजना को सम्मिलित नहीं किया गया था।)

(कथन 11)

- **निशुल्क चिकित्सा सेवाएं:**

- ग्रामीण भारत में, अस्पताल में भर्ती होकर इलाज के दौरान निशुल्क दवाइयां, एक्स-रे /इसीजी और अन्य निदानकारी परीक्षण प्राप्त करने वालों का प्रतिशत एन एस एस 75वें दौर में एन एस एस 71वें दौर से बढ़कर 12.0% से 13.8%, 10.9% से 12.6% और 15.6% से 18.1% एन एस एस 71वें दौर से हो गया।

- नगरीय भारत में, अस्पताल में भर्ती होकर ईलाज के दौरान निशुल्क दवाइयां, एक्स-रे /इसीजी और अन्य निदानकारी परीक्षण प्राप्त करने वालों का प्रतिशत एन एस एस 75वें दौर में एन एस एस 71वें दौर से बढ़कर क्रमशः 12.3% से 14.4%, 12.6% से 12.9% और 15.6% से 17.2% हो गया ।

- **अस्पताल में प्रति चिकित्सालय आश्रयण औसत व्यय (शिशु जन्म को छोड़कर):**

- चिकित्सालय आश्रयण पर ग्रामीण भारत में औसतन करीब 16,676 रु. और नगरीय भारत में 26,475 रु. का व्यय चिकित्सा पर हुआ ।
- सरकारी/सार्वजनिक अस्पतालों में औसतन लगभग 4,290 रु. ग्रामीण क्षेत्रों में और 4,837 रु. नगरीय क्षेत्रों में और निजी अस्पतालों में करीब 27,347 रु. ग्रामीण क्षेत्रों में एवं 38,822 रु. नगरीय क्षेत्रों में खर्च हुआ ।

(कथन 13)

- **अस्पताल में प्रति चिकित्सालय आश्रयण आमदनी से अधिक औसत चिकित्सा व्यय (शिशु जन्म को छोड़कर) (ओओपीएमइ) :**

- चिकित्सालय आश्रयण पर औसतन 15,937 रु. ग्रामीण भारत में और 22,031 रु. नगरीय भारत में चिकित्सा व्यय के रूप में आमदनी से अधिक खर्च हुए ।
- सरकारी/सार्वजनिक अस्पतालों में, औसतन करीब 4,072 रु. ग्रामीण क्षेत्रों में और 4,408 रु. नगरीय क्षेत्रों में और निजी अस्पतालों में औसतन 26,157 रु. ग्रामीण क्षेत्रों में और 32,047 रु. नगरीय क्षेत्रों में व्यय हुए ।

(कथन 15)

- **जनसंख्या द्वारा व्यय के लिए वित्त का प्रमुख स्रोत :**

- ग्रामीण क्षेत्रों में अस्पताल में भर्ती होने पर किये जाने वाले वित्तीय खर्चों के लिये परिवार प्रथमतया अपने 'पारिवारिक आय/बचत' (80%) पर निर्भर करते हैं और उधार पर (13%) निर्भर होते हैं ।

- नगरीय क्षेत्रों में अस्पताल में भर्ती होने पर वित्तीय खर्च के लिए उधार की तुलना में (9%) परिवार अपने आमदनी/वचत पर अधिक (84%) निर्भर करते हैं ।

(कथन 12)

II. शिशु जन्म एवं प्रसूति देखभाल सेवारें:

15-49 वर्षीय आयु-वर्ग की महिलाओं में करीब 7.4% महिलाएं ग्रामीण क्षेत्रों में एवं 5.3% महिलाएं नगरीय क्षेत्रों में सर्वेक्षण की तारीख से 365 दिन पहले की अवधि के दौरान गर्भवती थी ।

• शिशु जन्म स्थान:

- ग्रामीण क्षेत्रों में करीब 90% शिशु जन्म संस्थागत (सरकारी/निजी अस्पतालों) हुआ और नगरीय क्षेत्रों में यह करीब 96% था ।
- संस्थागत शिशु जन्म में, ग्रामीण क्षेत्रों में करीब 69% मामले सरकारी अस्पतालों के और करीब 21% निजी अस्पतालों के थे, और नगरीय क्षेत्रों में करीब 48% मामले प्रत्येक सरकारी एवं निजी अस्पतालों में थे ।
- ग्रामीण क्षेत्रों में करीब 10% शिशु जन्म असंस्थागत हुए, और नगरीय क्षेत्रों में यह करीब 4% था ।

(कथन 20)

• प्रसवपूर्व एवं प्रसवोत्तर देखभाल :

- 15-49 वर्षीय आयु-वर्ग की महिलाओं में करीब 97% (97% ग्रामीण क्षेत्रों और 98% नगरीय क्षेत्रों में) महिलाओं ने प्रसव पूर्व देख-रेख प्राप्त की, और करीब 88% (87% ग्रामीण क्षेत्रों और 90% नगरीय क्षेत्रों में) महिलाओं ने प्रसवोत्तर देख-रेख प्राप्त की ।
- औसतन करीब 2,786 रु. (2,271 रु. ग्रामीण क्षेत्रों और 4,405 रु. नगरीय क्षेत्रों में) प्रसवपूर्व देख-रेख पर खर्च हुए और करीब 1,306 रु.(1,137 रु. ग्रामीण क्षेत्रों और 1,832 रु. नगरीय क्षेत्रों में) प्रसवोत्तर पर खर्च हुए ।

(कथना 26)

• अस्पताल में शिशुजन्म (सामान्य, सीजेरियन एवं अन्य तरह के प्रसव) एवं सर्जरी :

- भारत में अस्पताल में हुए करीब 28% शिशु जन्म, सर्जरी से हुए (ग्रामीण भारत में करीब 24% और नगरीय भारत में करीब 41%)।
- सरकारी अस्पतालों में करीब 17% शिशुजन्म के मामले सर्जरी के थे (ग्रामीण भारत में : करीब 14%, नगरीय भारत में : करीब 26%) और निजी अस्पतालों में करीब 55% शिशु जन्म के मामले सर्जरी के थे (ग्रामीण भारत में : करीब 54% और नगरीय भारत में : करीब 56%)

(कथन 23)

• **अस्पताल में प्रति शिशु जन्म पर औसत व्यय :**

- सरकारी अस्पतालों में शिशु जन्म के लिए ग्रामीण भारत में औसत व्यय 2,404 रु. और नगरीय भारत में औसतन 3,106 रु. खर्च हुए और निजी अस्पतालों में औसत व्यय 20,788 रु. ग्रामीण और 29,105 रु. नगरीय भारत में शिशु जन्म के लिए खर्च हुए ।

- सामान्य प्रसव के लिए:

एक सरकारी अस्पताल में प्रति शिशु जन्म औसत व्यय ग्रामीण भारत में करीब 2,084 रु. और नगरीय भारत में 2,459 रु. और एक निजी अस्पताल में प्रति शिशु जन्म औसत व्यय करीब 12,931 रु. ग्रामीण भारत में और 17,960रु. नगरीय भारत में हुआ ।

- सीजेरियन प्रसव :

एक सरकारी अस्पताल में प्रति शिशु जन्म औसत व्यय करीब 5,423 रु. ग्रामीण भारत में 5,504 रु. नगरीय भारत में था और एक निजी अस्पताल में औसत व्यय करीब 29,406 रु. ग्रामीण भारत में और 37,508 रु. नगरीय भारत में था ।

(कथन 24)

• **अस्पताल में प्रति शिशु जन्म पर आमदनी से अधिक औसत चिकित्सा व्यय (ओओपीएमई) :**

- अस्पताल में शिशु जन्म के लिए आमदनी से अधिक औसत चिकित्सा व्यय ग्रामीण भारत में करीब 5,357 रु. और नगरीय भारत में 13,292 रु. था ।
- सरकारी अस्पतालों में औसतन करीब 1,410 रु. (करीब 1,305 रु. ग्रामीण और 1,874 रु. नगरीय क्षेत्रों में) और निजी अस्पतालों में करीब 21,231 रु. (करीब 18,501 रु. ग्रामीण और 25,096 रु. नगरीय क्षेत्रों में) शिशु जन्म पर खर्च हुए ।

(कथन 25)

III. वृद्ध व्यक्तियों की स्थिति (60 एवं उससे अधिक)

वृद्ध व्यक्तियों का प्रतिशत ग्रामीण भारत में 6.6 % और नगरीय भारत में 7.8 % था ।

(कथन 1)

• वृद्ध व्यक्तियों की आर्थिक स्वतंत्रता :

- ग्रामीण भारत में करीब 28% वृद्ध व्यक्ति (48% पुरुष और 10% महिलाएं) आर्थिक रूप से स्वतंत्र थे और नगरीय भारत में 33% वृद्ध व्यक्ति (57% पुरुष और 11% महिलाएं) आर्थिक रूप से स्वतंत्र थे ।
- ग्रामीण भारत में करीब 72% (52% पुरुष एवं 90% महिलाएं) वृद्ध व्यक्ति वित्तीय सहायता के लिये दूसरो पर आश्रित थे और नगरीय भारत में 67% (43% पुरुष एवं 87% महिलाएं) वृद्ध व्यक्ति वित्तीय सहायता के लिये दूसरो पर आश्रित थे ।

(कथन 27)

• आर्थिक रूप से आश्रित वृद्ध व्यक्तियों की वित्तीय सहायता

- आर्थिक रूप से आश्रित वृद्ध व्यक्ति में, ग्रामीण भारत में करीब 79% (92% पुरुष एवं 72% महिलाएं) और नगरीय भारत में करीब 76% (91% पुरुष और 70% महिलाएं) व्यक्ति वित्तीय सहायता के लिये अपने बच्चो पर निर्भर थे ।)
- आर्थिक रूप से आश्रित वृद्ध व्यक्ति में, ग्रामीण भारत में करीब 15% (4% पुरुष एवं 21% महिलाएं) और नगरीय भारत में करीब 18% (4% पुरुष एवं 24% महिलाएं) व्यक्ति वित्तीय सहायता के लिये अपने पति/ पत्नी पर निर्भर थे ।

(कथन 28)

- **वृद्ध व्यक्तियों के रहन-सहन की व्यवस्था :**

- ग्रामीण भारत में करीब 81% पुरुष एवं 48% महिलाएँ अपने पति/ पत्नी) के साथ रह रहे थे, और नगरीय भारत में करीब 83% पुरुष एवं 46% महिलाएँ अपने पति/ पत्नी के साथ रह रहे थे ।

(कथन 29)

- **वृद्ध व्यक्तियों की शारीरिक गतिशीलता:**

- ग्रामीण भारत में करीब 92% (93% पुरुष और 91% महिलाएँ) वृद्ध व्यक्ति शारीरिक रूप से गतिशील थे, और नगरीय भारत में करीब 92% (94% पुरुष एवं 91% महिलाएँ) वृद्ध व्यक्ति शारीरिक रूप से गतिशील थे ।

- ग्रामीण भारत में करीब 7% (6% पुरुष और 8% महिलाएँ) वृद्ध व्यक्ति और नगरीय भारत में करीब 8% (5% पुरुष और 10% महिलाएं) वृद्ध व्यक्ति शारीरिक रूप से अगतिशील थे (बिछावन पर / घर में / व्हीलचेयर पर) ।

(कथन 30)

IV. 0-5 वर्ष के बच्चों में प्रतिरक्षीकरण:

प्रतिरक्षीकरण अनुपात एवं संगत सूचक का आकलन सूचना देने वाले व्यक्तियों से प्राप्त सूचना के अनुसार किया गया है ।

0-5 वर्षीय बच्चों का प्रतिशत ग्रामीण भारत में 8.6% था और नगरीय भारत में 7.0% था ।

(कथन 1)

- **0-5 वर्षीय बच्चों में प्रतिरक्षीकरण :**

- ग्रामीण भारत में करीब 97% लड़के और लड़कियाँ दोनों का और नगरीय भारत में करीब 98% लड़के एवं 97% लड़कियों का प्रतिरक्षीकरण हुआ ।

(कथन 31)

- अखिल भारतीय स्तर पर करीब 60% लड़कियाँ एवं 59% लड़को का पूर्णतः प्रतिरक्षीकरण हुआ (जैसे सभी 8 निर्धारित वेक्सीनेसन प्राप्त कर लेना)।

- करीब 58% (57% लड़के और 60% लड़कियाँ) बच्चें ग्रामीण भारत में और करीब 62% (62% लड़के और 61% लड़कियाँ) नगरीय भारत में पूर्णतः प्रतिरक्षित कर दिए गए (जैसे-सभी निर्धारित 8 वेक्सीनेसन प्राप्त कर लेना)।

(कथन 32)

- **0-5 वर्षीय बच्चों में प्रतिरक्षीकरण का स्रोत :**

- ग्रामीण भारत में करीब 95% और नगरीय भारत में करीब 86% बच्चों का टीकाकरण सरकार/सार्वजनिक अस्पताल (एचएससी/पीएचसी/सीएचसी/आँगनवाड़ी सेन्टर/मोबाईल युनिट सहित) में हुआ ।
- ग्रामीण भारत में करीब 5% और नगरीय भारत में करीब 14% बच्चों का टीकाकरण अन्य स्रोतों (नीजी अस्पतालों/नीजी डाक्टरों/क्लीनिक/चेरिटेबुल/एनजीओ संचालित अस्पतालों सहित) में हुआ ।

(कथन 33)

समय के उपयोग का सर्वेक्षण (जनवरी 2019 से दिसम्बर 2019)

सर्वेक्षण की व्याप्ति

- ✚ यह सर्वेक्षण प्रथम चरण इकाई (FSU) में 9,945 (5,947 ग्रामीण क्षेत्रों में एवं 3,998 नगरीय क्षेत्रों में) में फैला हुआ था।
- ✚ यह 1,38,799 परिवारों (ग्रामीण : 82,897 और नगरीय 55,902) में व्याप्त था।
- ✚ चयनित परिवारों के 6 वर्ष एवं उससे अधिक उम्र के प्रत्येक सदस्य की अन्तर्वीक्षा की गई।
- ✚ 6 वर्ष और उससे अधिक उम्र के 4,47,250 व्यक्तियों (ग्रामीण 2,73,195 एवं नगरीय 1,74,055) से सूचना संग्रहित की गई ।
- ✚ यह सर्वेक्षण अंडमान एवं निकोबार द्वीप समूहों के ग्रामीण क्षेत्रों, जहां पहुँचना कठिन था को छोड़कर संपूर्ण भारतीय संघ में व्याप्त था।

आँकड़ों का सन्दर्भ

- ✚ समय के उपयोग का आँकड़ा वैयक्तिक अन्तर्वीक्षा पद्धति के माध्यम से संग्रहित किया गया।
- ✚ समय के उपयोग पर संग्रहित सूचना, अन्तर्वीक्षा के एक दिन पहले के 4.00 बजे (पूर्वा०) से आरंभ करके अन्तर्वीक्षा के दिन 4.00 बजे (पूर्वा०) 24 घंटे की अवधि तक आच्छादित थी ।

परिणामों की प्रस्तुति

- ✚ समय का उपयोग पर प्रस्तुत परिणाम 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों पर आधारित है।
- ✚ विभिन्न गतिविधियों में व्यतीत समय के उपयोग का प्रतिदिन का आकलन, विभिन्न गतिविधियों में सहभागिता को ध्यान में रखकर किया गया।
- ✚ एक दिन में प्रति व्यक्ति का उपलब्ध कुल 1440 मिनट के समयका विभिन्न गतिविधियों में आवंटन को समझने के लिए, समय के उपयोग के कुछ आकलन सभी व्यक्तियों को संज्ञान में लेते हुए प्रस्तुत किया गया है चाहे वे इन गतिविधियों में भाग लिए हो या नहीं।
- ✚ मुख्य बातों में, निर्धारित समय में केवल प्रमुख गतिविधि के स्थान पर सभी गतिविधियों पर विचार करते हुए परिणाम प्रस्तुत किया गया है।

कुछ प्राक्कलन की परिभाषा

सहभागिता दर

✚ किसी भी गतिविधि में एक दिन में सहभागिता दर को संदर्भ अवधि के 24 घंटों के दौरान उस गतिविधि को करने वाले व्यक्तियों के प्रतिशत के रूप में परिभाषित किया गया है।

✚ गतिविधि 'A' में सहभागिता दर =

$$\frac{\text{गतिविधि 'A' में भाग लेने वाले व्यक्तियों की संख्या}}{\text{व्यक्तियों की कुल संख्या}} * 100$$

प्रति प्रतिभागी एक दिन में खर्च औसत समय का प्राक्कलन

✚ किसी भी गतिविधि के लिए एक दिन में प्रति प्रतिभागी द्वारा खर्च औसत समय के प्राक्कलन की गणना उन लोगों पर विचार करते हुए की गई जिन्होंने गतिविधि में भाग लिया।

✚ एक दिन में विभिन्न गतिविधियों में औसत समय का प्राक्कलन केवल गतिविधियों के प्रतिभागियों को देखते हुए दिन के 1440 मिनट में नहीं जुड़ेगा।

✚ इन प्राक्कलनों को प्रति प्रतिभागी एक दिन में खर्च औसत समय के रूप में संदर्भित किया जाता है

✚ प्रति प्रतिभागी गतिविधि 'A' में खर्च औसत समय =

$$\frac{\text{प्रतिभागियों द्वारा गतिविधि 'A' में खर्च कुल समय}}{\text{गतिविधि 'A' में भाग लेने वाले व्यक्तियों की कुल संख्या}}$$

प्रति व्यक्ति एक दिन में खर्च औसत समय का प्राक्कलन

✚ किसी भी गतिविधि के लिए एक दिन में प्रति व्यक्ति द्वारा खर्च औसत समय के प्राक्कलन की गणना उन सभी व्यक्तियों पर विचार करते हुए की गई चाहे वे गतिविधि में भाग लिए हों या नहीं

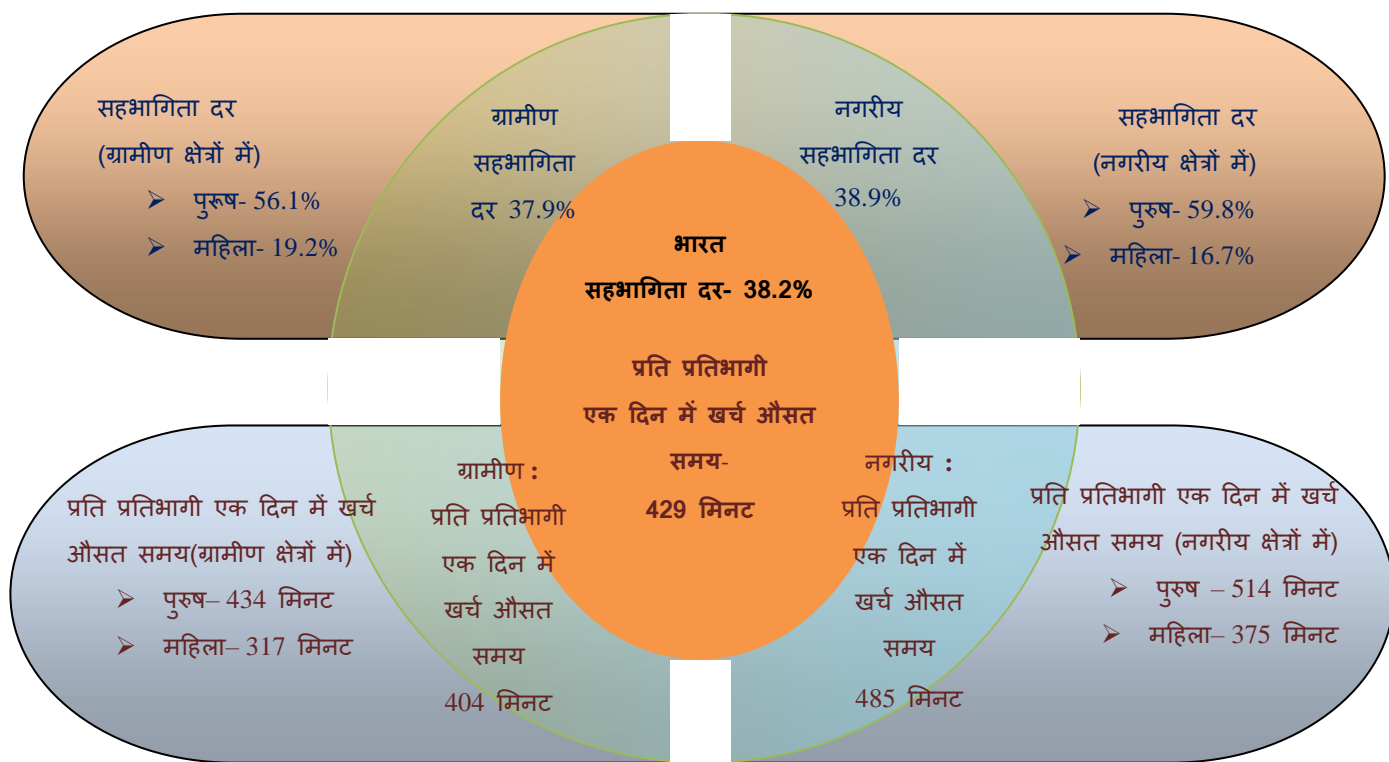
✚ इस दृष्टिकोण से विभिन्न गतिविधियों में प्रति व्यक्ति एक दिन के 1440 मिनट कुल समय का वितरण किया जा सकता है और एक दिन के 1440 मिनट के कुल समय में विभिन्न गतिविधियों के प्रतिशत शेयर की गणना की जा सकती है।

✚ इन प्राक्कलनों को प्रति व्यक्ति एक दिन में खर्च औसत समय के रूप में संदर्भित किया जा सकता है।

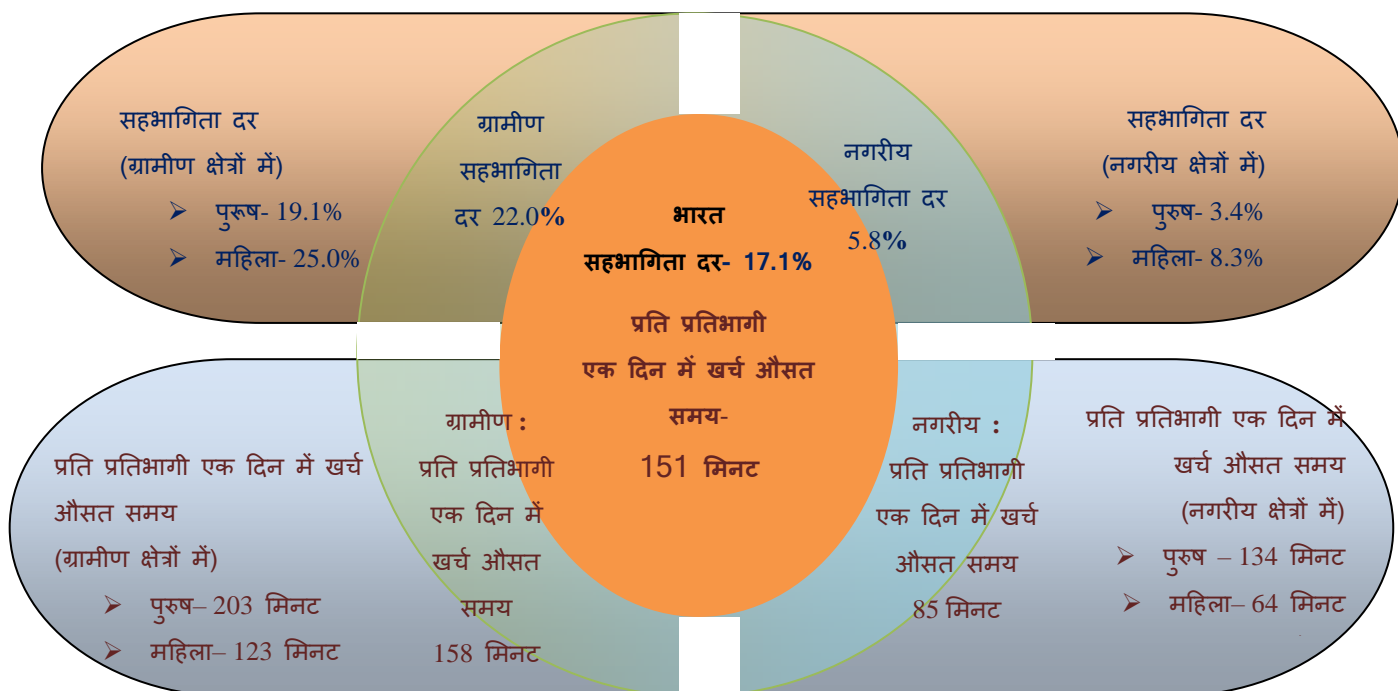
✚ प्रति व्यक्ति गतिविधि 'A' में खर्च औसत समय =

$$\frac{\text{प्रतिभागियों द्वारा गतिविधि 'A' में खर्च कुल समय}}{\text{व्यक्तियों की कुल संख्या}}$$

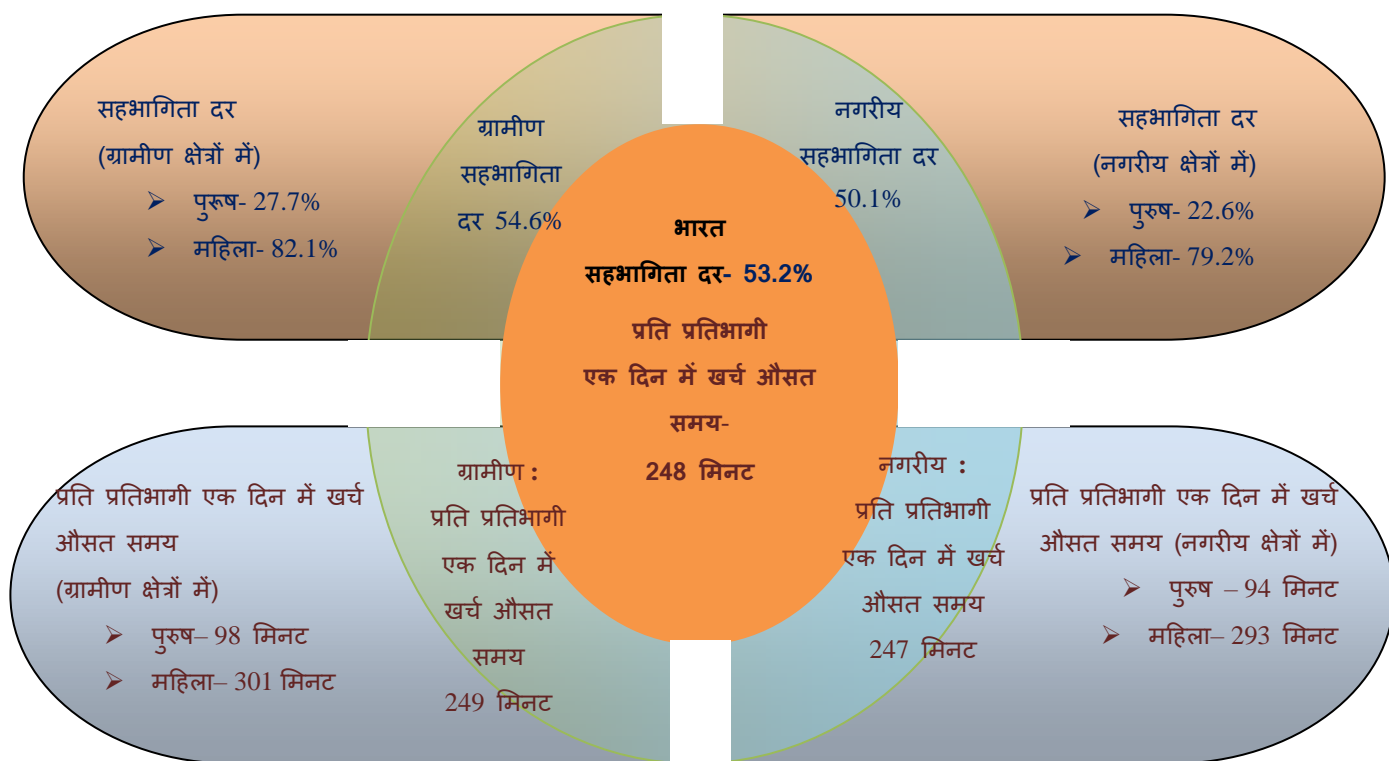
A. रोजगार और सम्बन्धित गतिविधियों में 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



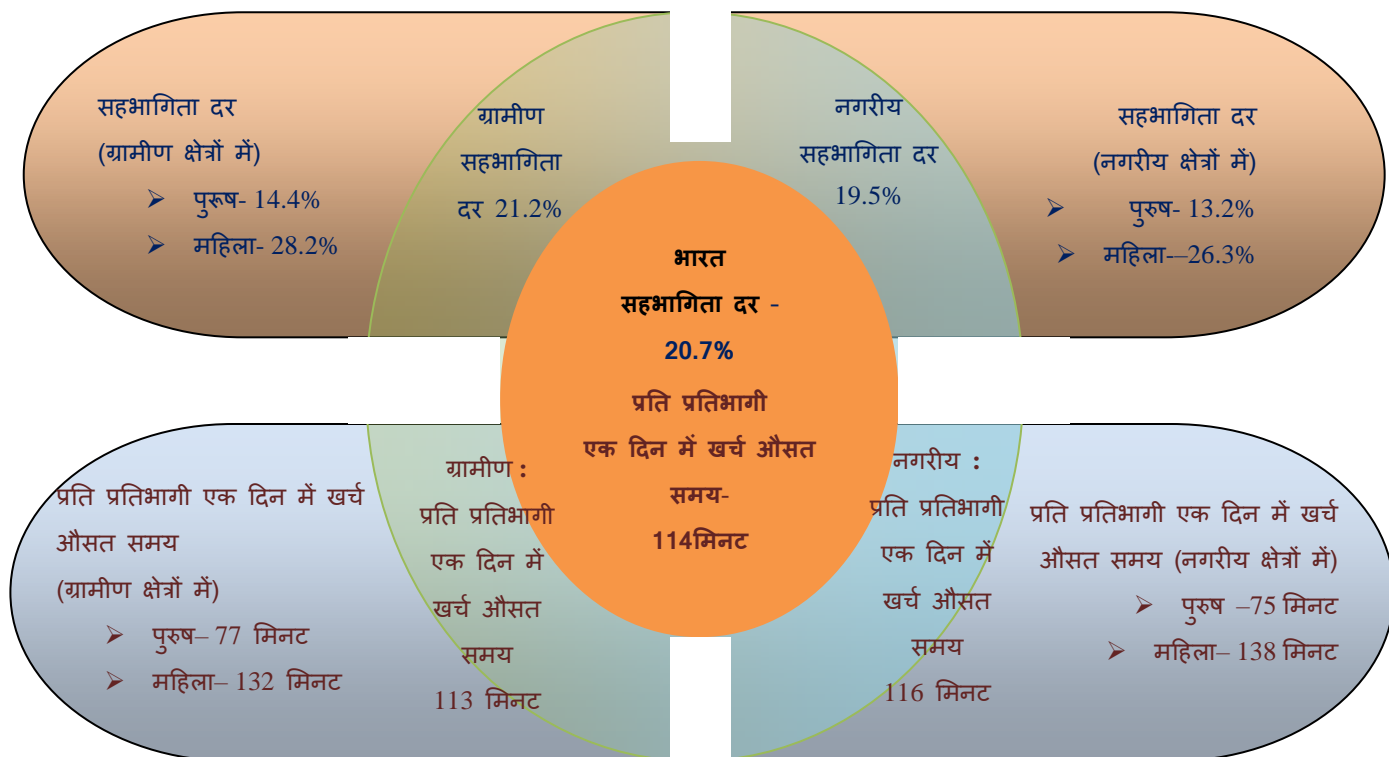
B. स्वयं के अंतिम उपयोग के लिए वस्तुओं के उत्पादन में 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



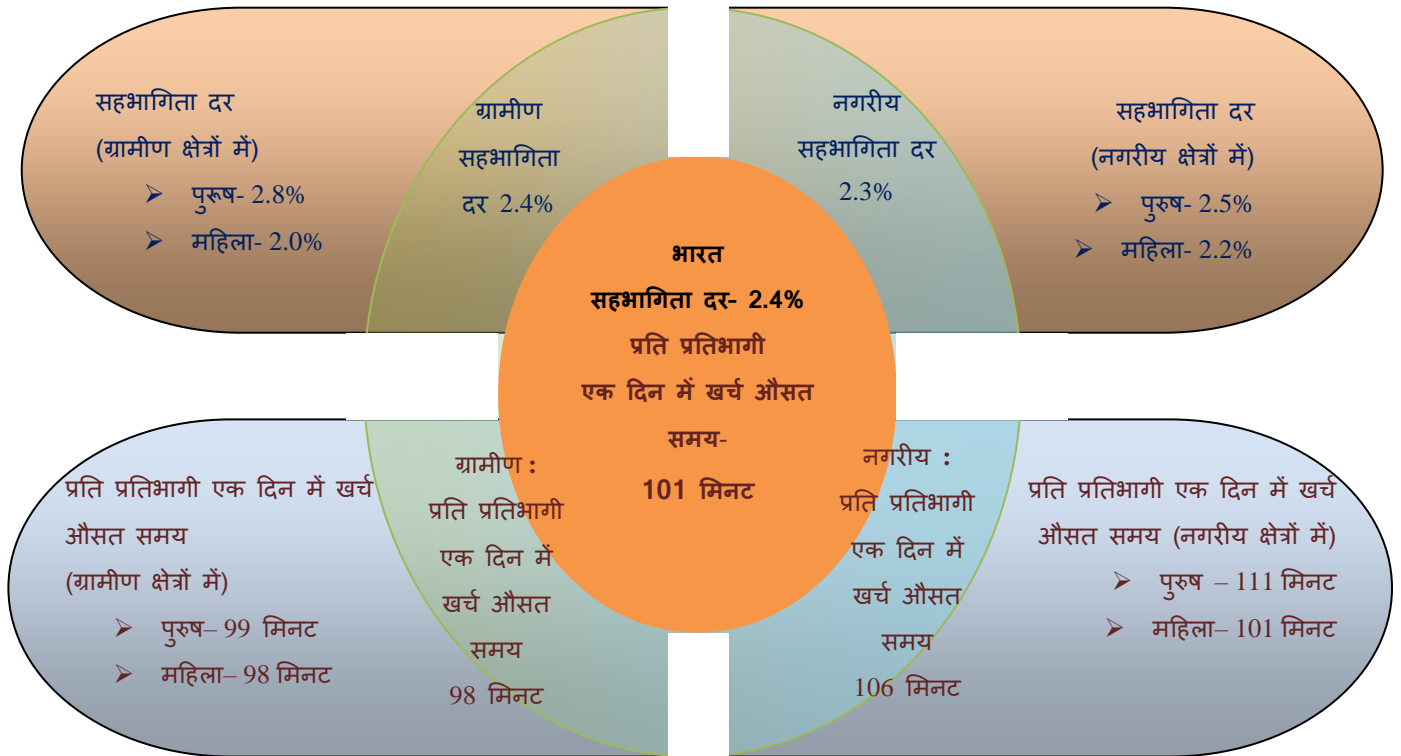
C. परिवार के सदस्यों के लिए अदत्त घरेलू सेवाएँ में 6 वर्ष एवं उससे अधिक उम्र के पारिवार के सदस्यों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



D. परिवार के सदस्यों के लिए देख रेख करने वाली अदत्त सेवाएँ में 6 वर्ष एवं उससे अधिक उम्र के पारिवार के सदस्यों की सहभागिता और इन गतिविधियों में प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



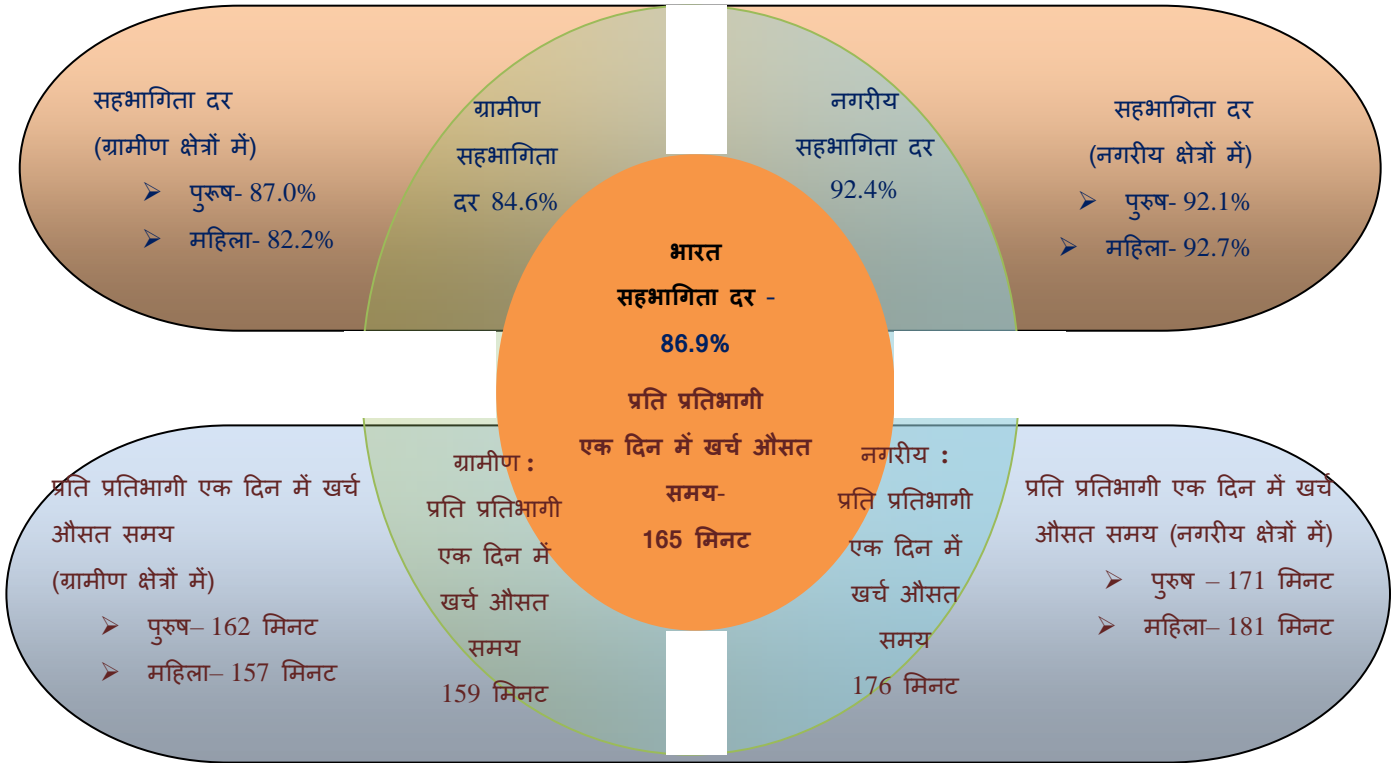
E. अदत्त स्वयं सेवक, प्रशिक्षु एवं अन्य अदत्त कार्य में 6 वर्ष एवं उससे अधिक उम्र के पारिवार के सदस्यों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



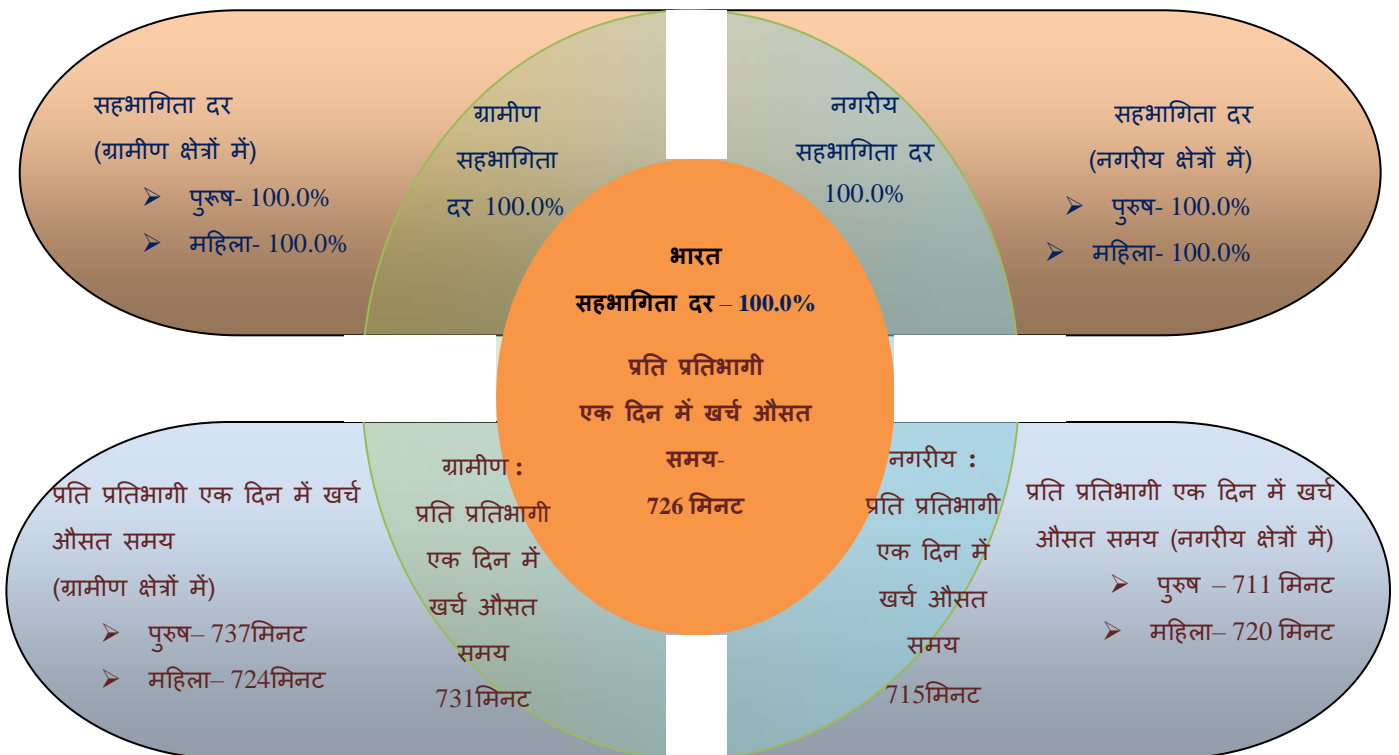
F. समाजीकरण और संचार, सामुदायिक भागीदारी और धार्मिक अभ्यास में 6 वर्ष एवं उससे अधिक उम्रके पारिवार के सदस्यों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



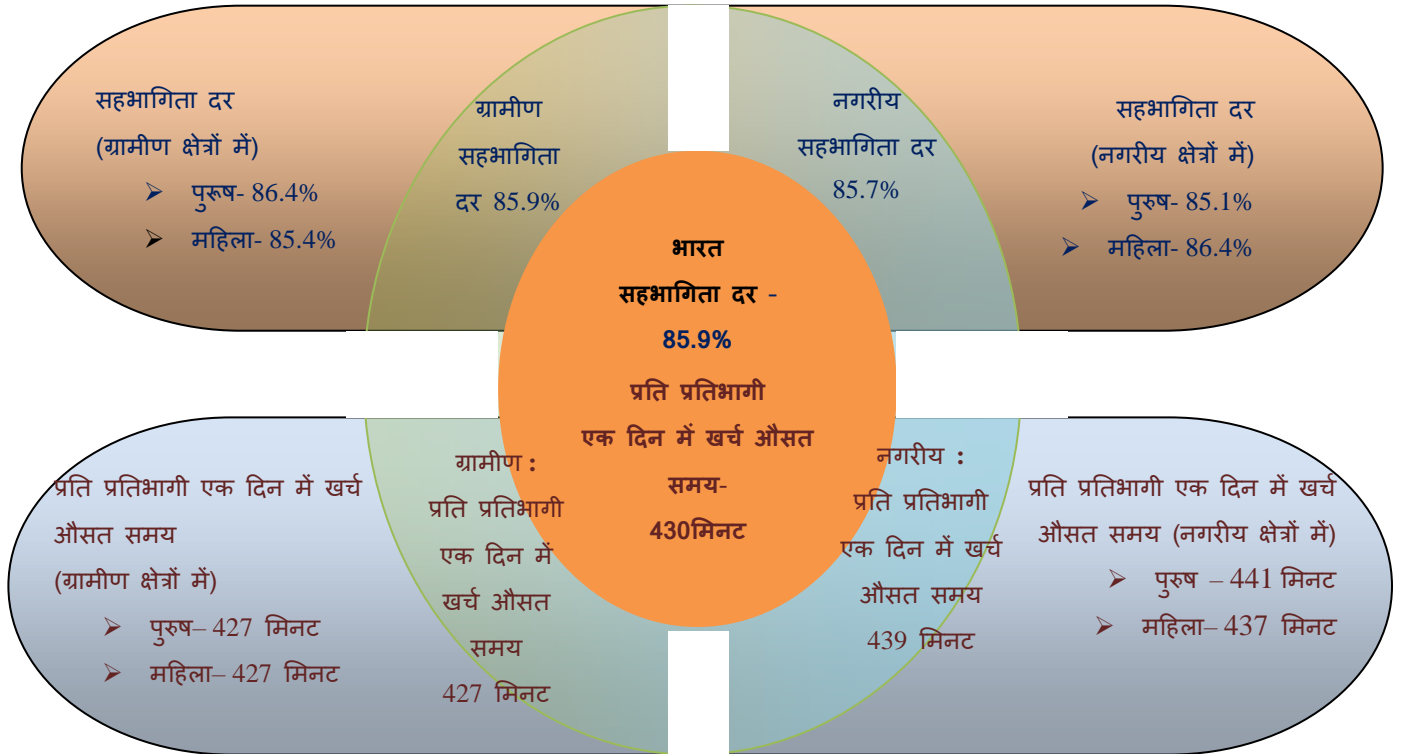
G. संस्कृति, अवकाश, जन-सम्पर्क एवं खेल अभ्यासों में 6 वर्ष एवं उससे अधिक उम्र के परिवार के सदस्यों की सहभागिता एवं इन गतिविधियों में प्रति प्रतिभागी का एक दिन द्वारा खर्च किया गया समय



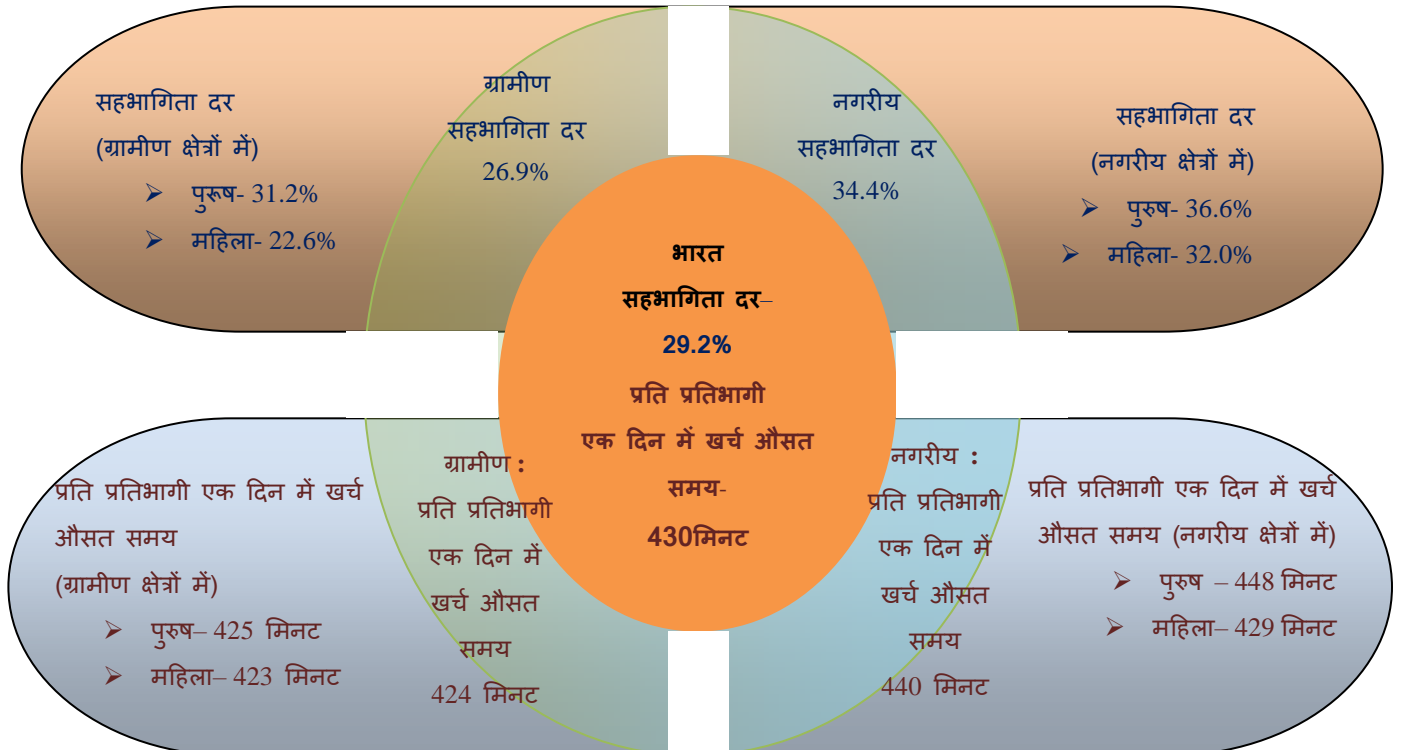
H. स्वयं की देखभाल एवं रख-रखाव में 6 वर्ष एवं उससे अधिक उम्र के परिवार के सदस्यों की सहभागिता एवं इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



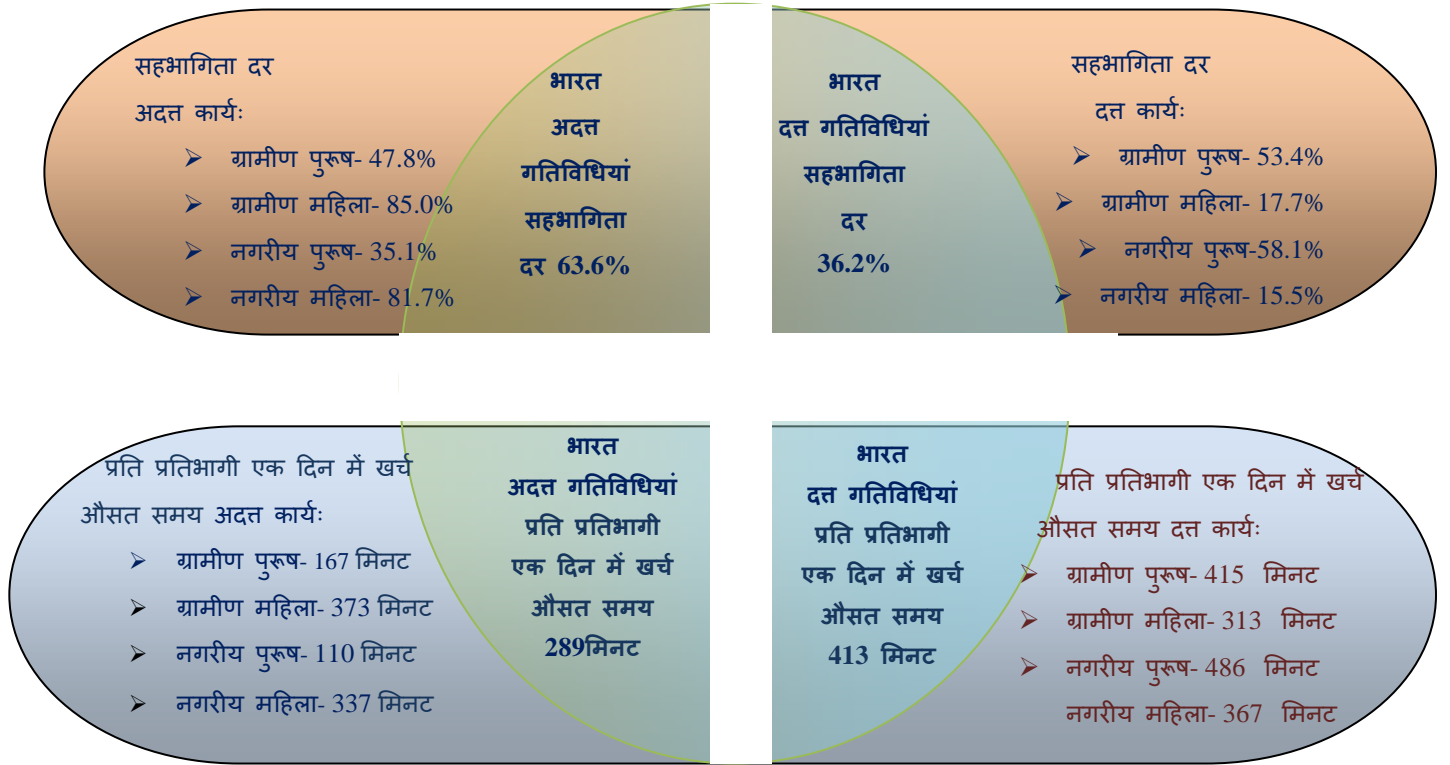
I. सीखने की गतिविधियों में 6 - 14 वर्ष के उम्र के व्यक्तियों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



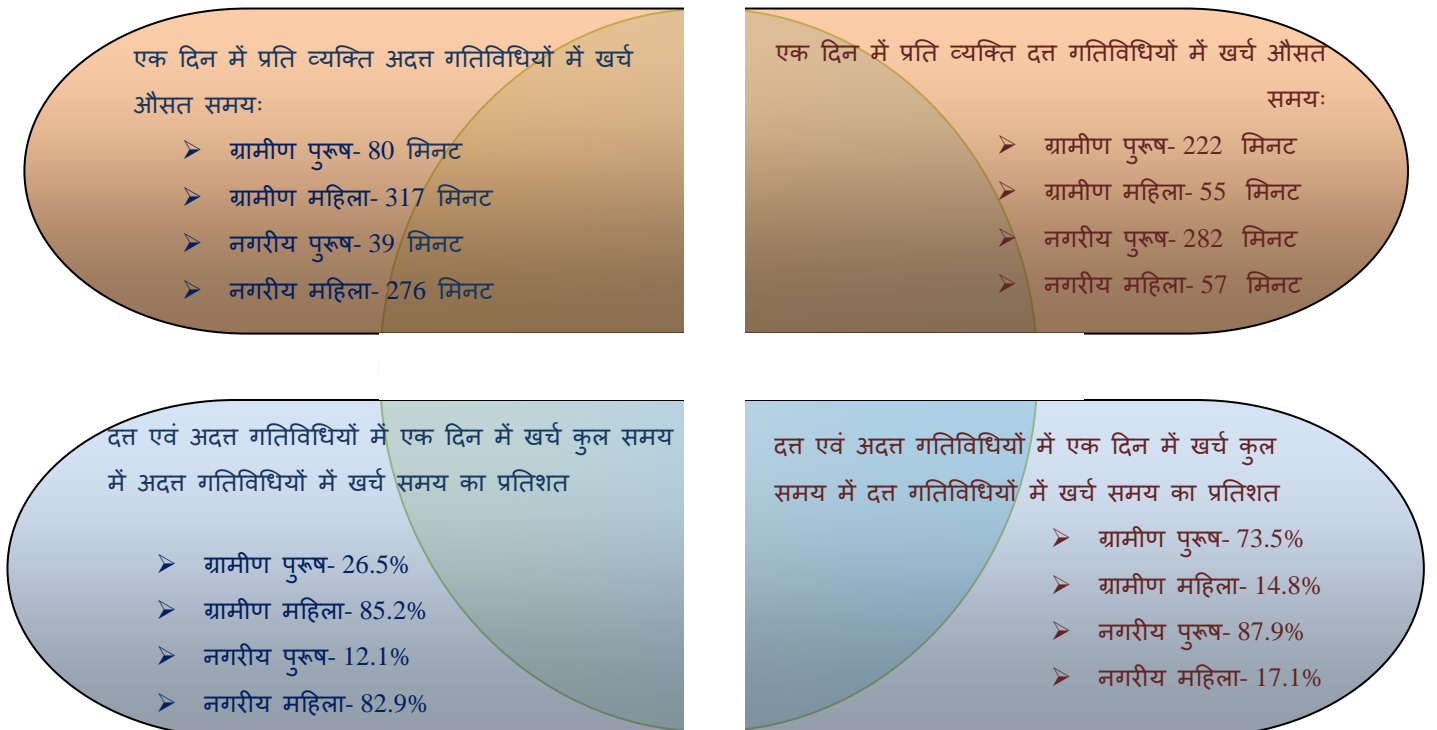
J. सीखने की गतिविधियों में 15-29 वर्ष के उम्र के व्यक्तियों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



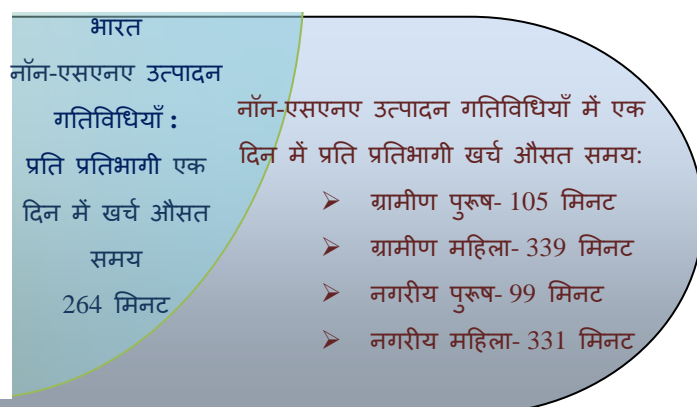
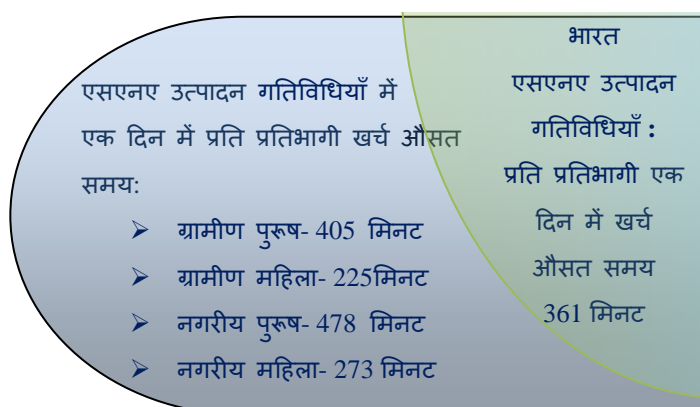
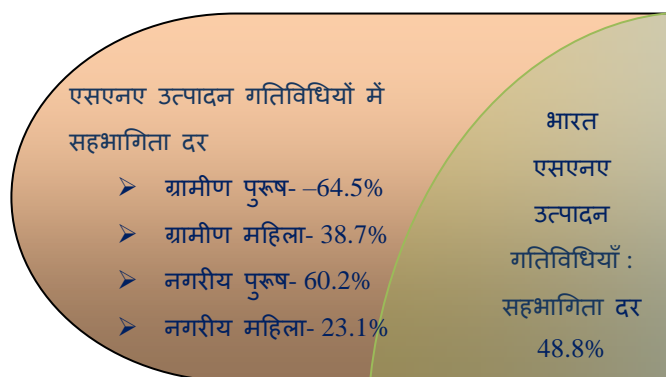
K. अदत्त एवं दत्त गतिविधियों में 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों की सहभागिता और इन गतिविधियों में प्रति प्रतिभागी द्वारा एक दिन में खर्च किया गया समय



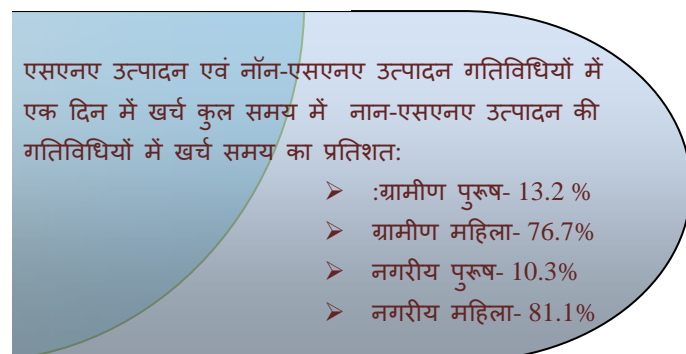
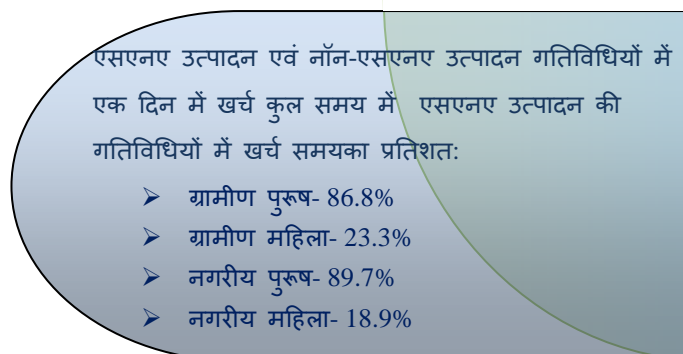
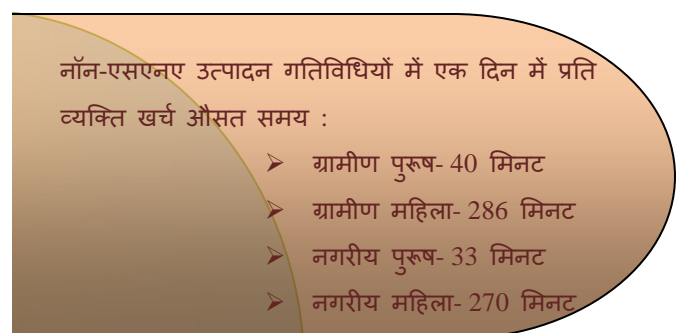
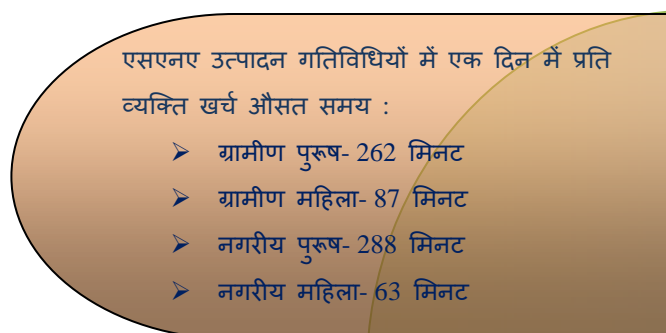
L. एक दिन में 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों का प्रति व्यक्ति अदत्त एवं दत्त गतिविधियों में खर्च समय, चाहे वे इन गतिविधियों में सहभागी रहे हो या नहीं



M. एसएनए उत्पादन एवं नॉन-एसएनए उत्पादन की गतिविधियों में सहभागिता और इन गतिविधियों में एक दिन में 6 वर्ष एवं उससे अधिक उम्र के परिवार के सदस्यों का प्रति प्रतिभागी द्वारा खर्च समय



N. एक दिन में 6 वर्ष एवं उससे अधिक उम्र के के व्यक्तियों का प्रति व्यक्ति एसएनए उत्पादन एवं नॉन-एसएनए उत्पादन की गतिविधियों में खर्च समय चाहे वे इन गतिविधियों में सहभागी रहे हो या नहीं



O. 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों का प्रति व्यक्ति एक दिन में विभिन्न गतिविधियों में कुल समय का प्रतिशत शेयर

सारणी 1: 6 वर्ष एवं उससे अधिक उम्र के व्यक्तियों का प्रति व्यक्ति एक दिन में विभिन्न गतिविधियों में कुल समय का प्रतिशत शेयर									
अखिल भारत									
गतिविधि का विवरण	ग्रामीण			नगरीय			ग्रामीण + नगरीय		
	पुरुष	महिला	व्यक्ति	पुरुष	महिला	व्यक्ति	पुरुष	महिला	व्यक्ति
रोजगार एवं सम्बन्धित गतिविधियाँ	16.9	4.2	10.6	21.3	4.3	13.1	18.3	4.2	11.4
स्वयं के अंतिम उपयोग के लिए वस्तुओं का उत्पादन	2.7	2.2	2.4	0.3	0.3	0.3	1.9	1.6	1.8
परिवार के सदस्यों के लिए अदत्त घरेलू सेवाएँ	1.9	17.2	9.4	1.5	16.1	8.6	1.7	16.9	9.2
परिवार के सदस्यों के लिए देख रेख करने वाली अदत्त सेवाएँ	0.8	2.6	1.7	0.7	2.5	1.6	0.8	2.6	1.7
अदत्त स्वयं सेवक, प्रशिक्षु एवं अन्य अदत्त कार्य	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
सीखना	7.1	5.7	6.4	7.0	6.1	6.6	7.1	5.8	6.5
समाजीकरण और संचार सामुदायिक भागीदारी और धार्मिक अभ्यास	9.6	8.8	9.2	8.7	8.8	8.8	9.3	8.8	9.0
संस्कृति, अवकाश, जन-सम्पर्क एवं खेल अभ्यासों	9.7	9.0	9.4	10.9	11.7	11.3	10.1	9.8	9.9
स्वयं की देखभाल एवं रखरखाव	51.2	50.3	50.8	49.4	50.0	49.7	50.6	50.2	50.4
कुल	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
राउन्डिंग के कारण 100 तक अंक नहीं जुड़ सकता									
नोट:- निर्धारित समय में सभी गतिविधियों पर बिचार करते हुए प्राक्कलन की गणना की गई है।									

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