Exploring Survey Data on Health Care Prof. Pratap C. Mohanty Department of Humanities and Social Sciences

Indian Institute of Technology, Roorkee

Lecture - 03

Understanding Healthcare Database: NSSO

In the NSS data set, we will be highlighting the Health Database only. Now, let us come to

explain the statistical system in India and how it is functioning, how they are providing a

database to the researcher for various planning, various policies and prescriptions.

So, the first one we usually refer to is the MOSPI that is called the Ministry of Statistics and

Programme Implementation. And MOSPI has two wings, the statistical wing and the

programme implementation wing. On the statistical wing that is in short called NSO,

National Statistical Organization; within that, we have two offices one is called Central

Statistics Office, CSO and the National Sample Survey Office that is called NSSO.

Now, coming to the Central Statistical Office, the main role of this is to coordinate statistical

activities and liaison with the central government departments, state governments and their

offices and international agencies as well.

This also provides information about the survey of industries, conduct survey on industries,

also it gives information about the economic survey or economic census and their follow up

enterprises surveys.

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□ Central Statistical Office (CSO): The main responsibility include coordinating statistical activities and liaison with the central government departments, state governments and international agencies.

➤ Conducting annual survey of industries

➤ Economic census and their follow-up enterprises surveys

➤ Constructing IIP

➤ Consumer price indices for urban non manual employees

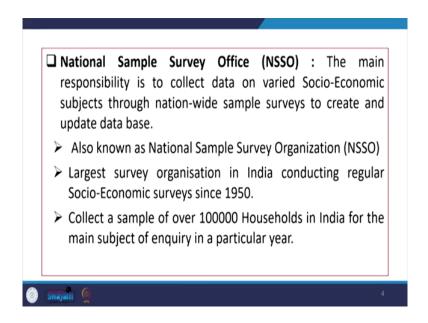
➤ Formulating a five year plan programme relating to development of statistics in the states and union territories.

The seventh economic census is going on as we all know sixth economics census was already made available to the public for research, that is on all forms of enterprises and those all enterprises were actually counted likewise census of population. So, economic census refers to the counting of all the enterprises in India for a particular period of time.

So, the recently seventh economic census is being conducted and might be available in another year or so. The CSO office is also responsible for constructing the index of industrial production, detailed consumer price indices for urban non-manual employees and formulating a five-year plan programme relating to the development of statistics in the states and union territories.

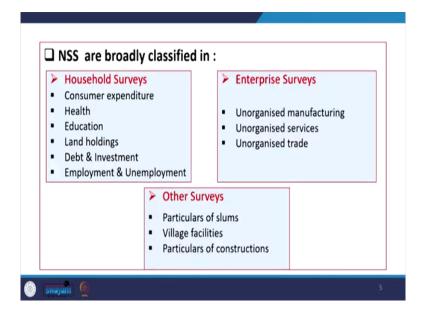
Now, we are not spending much time on CSO rather I will speak on the functioning of our health database. The NSS is responsible for collecting data on various socio-economic subjects throughout the nation and collects sample surveys to create an updated database in a periodic manner. NSS is also known as NSSO.

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The NSSO is the largest survey organization in India conducting regular Socio-Economic surveys since 1950 and it collect a sample of over 100000 households in India for the main subject of enquiry in a particular year of their survey.

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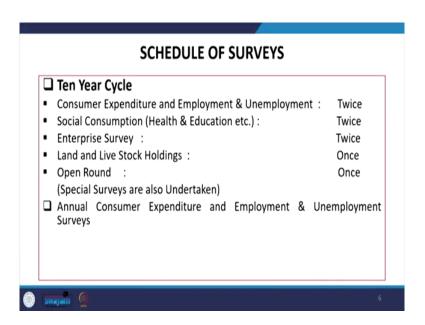
NSS is broadly classified into three categories; one is a household survey, then enterprise survey and other surveys. I think this is the one I have already discussed in my earlier module called handling large scale data set that has been very popular and researchers are getting benefited due to that.

And I am again explaining in this module as well how NSS covers household surveys; household surveys periodically on consumer expenditure, health, education, land holdings, debt and investment, employment and unemployment.

And on the enterprise context, there are surveys on unorganized manufacturing, unorganized services, unorganized trade and there are some other surveys like on slum dwellers, village facilities and particulars of constructions.

The schedule of the surveys which are made over time. There is some ten-year cycle and also there are five-year cycle quinquennial surveys as well. So, coming to the ten-year cycle; the consumer expenditure and employment or unemployment survey are separate surveys, but usually, they release in the same year.

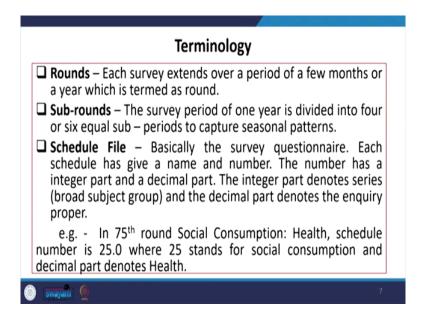
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The survey on employment & unemployment has been renamed or changed to Periodic Labour Force Survey (PLFS) and these surveys were conducted annually.

Social consumption survey on health and education conducted twice in a ten-year cycle. Enterprise survey is also done twice in a ten-year cycle. Land and livestock holdings once in a ten-year cycle, then there is some open round survey where special surveys are also undertaken; those were taken once, annual consumer expenditure and employment or unemployment survey also conducted by NSSO.

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Now, some terminology they use in the different surveys is called different rounds, sub-rounds, schedule files; we will also use all those things. So, this concept I suggest that also understand very carefully and understand correctly and then only you will proceed correctly.

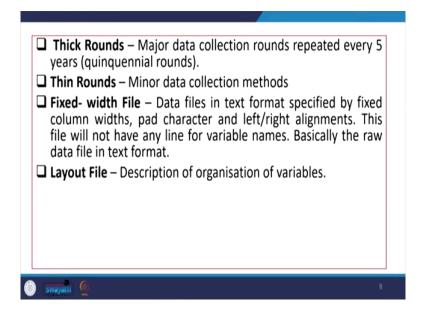
The terminology rounds mean each survey extends over a period of a few months or years, which is termed as round. Sub-round is the survey period of one year is divided into four or six equal sub-periods to capture seasonal patterns.

So, not just seasonal patterns, some time overlaps or time changes are also considered like in PLFS survey for rural or urban. They have taken other breakups quarter wise, and the entire one year of the survey is divided into four periods, and accordingly, the survey was conducted.

Similarly, the schedule file is the one which is the survey questionnaire, and each schedule has given a name and number. The number has an integer part and a decimal part. The integer part denotes series and the decimal part denotes the enquiry proper.

For example, in the 75th round, social consumption on health schedule number 25.0 where 25 stands for social consumption and decimal part denotes health.

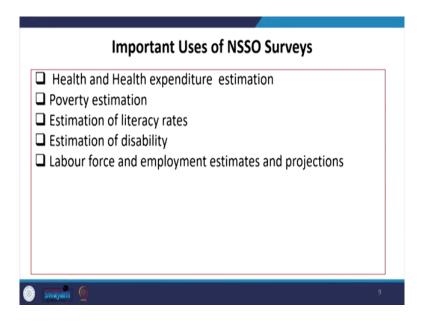
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So, other concepts like thick rounds; thick rounds are major data collection rounds repeated every 5 years those are called quinquennial rounds. Thin rounds are the minor data collection methods, fixed-width files are something that deals with the data files in text format specified by fixed column width, pad characters and left or right alignment. This file will not have any line for variable names. Basically, the raw data file in text format are actually fixed-width files.

Layout file, I will be also explaining those things in the time of dealing with these schedules and their data sets from the raw text data. Now, another one is called layout file; layout file is basically an organization of variables and their descriptions given in a format called layout we will show all those things to you.

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Now, some important uses of NSSO survey is health and health care expenditure estimation, poverty estimation, estimation of disabilities, estimation of literacy, estimation of labour force and employment estimates and projection etc.

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 NSS is one of the oldest household surveys in the world and has been collected since 1950. 78 rounds of data have been collected by MOSPI Unit level data and reports available till 76th round. 	Round No.	Period of Survey	Subjects of Enquiry		Schedule No.	
	78		l. Il.	Domestic Tourism Expenditure Multiple Indicator Survey	i. ii.	21.1 5.1
	77	Jan 2019 – Dec 2019	I.	Land and Livestock Holdings of Households and Situation Assessment of Agricultural Households Debt and Investment	i. ii.	33.1 18.2
	76	July 2018 - Dec 2018	I.	Drinking Water, Sanitation, Hygiene & Housing Condition Survey of Persons with Disabilities	i. ii.	1.2 26.0
	75	July 2017- June 2018	I. II. III.	Consumer Expenditure Social Consumption : Health Social Consumption : Education	i. ii. iii.	1.0 25.0 25.2
	74	July 2016- June 2017	l.	Survey of Services Sector	i.	2.35

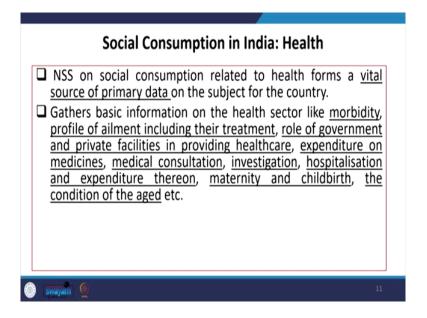
So, let us clarify some more details about the NSS rounds. NSS is in fact, the oldest and largest household survey in the world and collected since 1950. The 78th rounds of data have been collected by MOSPI. The unit-level data and reports are also available till the 76th round online and that is freely available for the researchers. So, what are those rounds?

We will be using the 75th round in our analysis that is on health the schedule is 25.0, 0 stands for health, in schedule 25.2, 2 stands for education and the first one is 1.0 consumer expenditure on the 75th round.

So, some more clarification I must give it on the 74th round. The 74th round survey was conducted from July 2016 to 2017 and the survey was made on the services sector. The 76th round survey is conducted from July to December 2018 on sanitation, hygiene, drinking water, housing condition etc.

Similarly, In the 76th round survey, you will also get an idea about persons with disabilities and their problems and their schedule number is also mentioned. The 77th round is on livestock holding of the households, situation assessment survey of agriculture households, debt and investment as well. The latest round that is available at this moment is 78th on domestic tourism expenditure and some multiple indicator survey as well.

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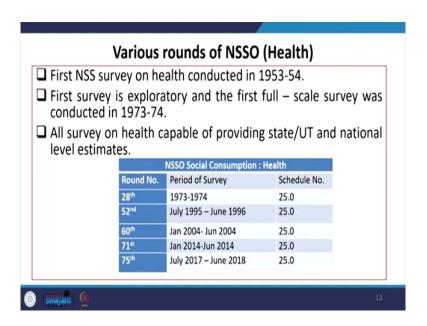
So, what about the social consumption of health care or on health in India? NSSO 75th round deals with this information and this is one of the vital source of primary data on the subject of the country for analysis.

This gathers basic information on health sector such as morbidity, and a profile of ailment including their treatment, role of government, the facilities in the private healthcare centres,

medicinal expenditure, their consultations, investigations and hospitalisation expenditure or in patient treatment and their expenditure.

And similarly, information about maternity, child birth, conditions of the aged etc. are available. The various rounds of NSS on health care are there I will also give you the genesis of the data set which are comparable which are not comparable, NSS survey on health conducted initially in 1953-54, that the first round on health care.

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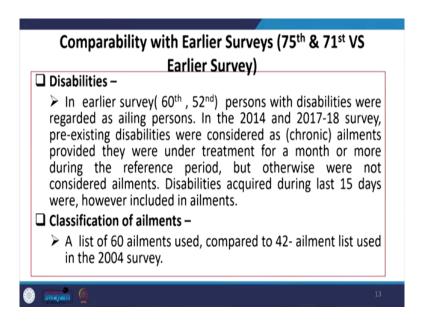


The first survey was exploratory, and the first full-scale survey was conducted in 1973-74. So, the full-fledged survey on health care was derived in 1973-74. All surveys on healthcare are capable of providing state and UT, and national-level estimates. Some health surveys are presented here; the 28th round survey was the full-fledged survey.

Schedule number 25.0 is the same for all health round surveys. The 52nd round survey was conducted in 1995-96; the 60th round survey was conducted from January to June in 2004 and the latest two rounds are 71st and 75th round. The 71st round was conducted in 2014, and 75th was in 2017 -18.

So, here we are presenting how you guys can compare different health round surveys. Here you can understand which rounds of data sets are required to be compared which are comparable. So, you have to follow the instructions given.

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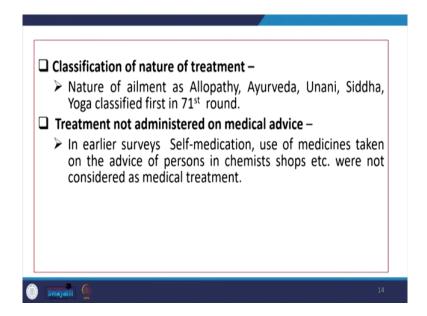


In earlier surveys like 60th round and 52nd round persons with disabilities were regarded as ailing persons. In the 2014 and 2017-18 surveys, pre-existing disabilities were considered as ailments provided they were under treatment for a month or during the reference period, but otherwise were not considered ailments.

So, it is very clearly mentioned specially during the survey, if the persons have pre-existing disabilities and if he or she is in consultation and that consultation carried forward for a month or more during the reference period of the survey those are considered as the unit of analysis as ailing persons. Disabilities acquired during the last 15 days were, however included in ailments.

So, if any sort of disabilities were there they are part of a persons with ailment and they are considered for the analysis in 60th and 52nd round. The classification of ailments are made very categorically a list of 60 ailments used, compared to 42 ailments list used in 2004 survey.

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Next, is the classification of the nature of the treatment, the nature of ailment as allopathy, Ayurveda, Unani, Siddha, Yoga classified first in the round 71st round. It was initially classified in the 71st round then in the 75th round also further clarification was given. So, whoever is working on the segment of the nature of treatment, especially the type of medicine can compare 71st and 75th round.

Treatment was not administered on medical advice in earlier surveys, there are lots of treatments taken, maybe home-based treatment or remedies was taken. In the earlier survey self-medication, use of medicines taken on the advice of persons in chemists shops etc. were not considered as medical treatment. So, they are not considered as medical treatment that is very clearly emphasized.

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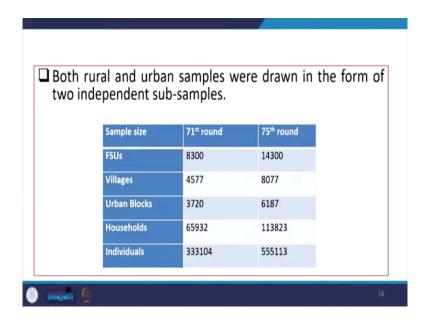
Sampling Design for NSSO Health Surveys (71st & 75th) Stratified multi-stage design was adopted. For rural samples, the list 2011 population census villages was taken as sampling frame. For urban samples, the list of UFS blocks (UFS 2007-12) was taken as sampling frame. Sub – stratification – If x was the sample size allocated for a rural and urban stratum, the number of sub- strata formed was x/4. Selection of FSUs – For the rural/ urban sector, from each stratum/sub-stratum, FSUs were selected by Probability Proportional to Size with Replacement (PPSWR).

What is the sampling design for NSS surveys of the 75th and 71st rounds? Sampling design is a multi-stage stratified one. For rural samples, the list of 2011 population census villages was taken as the sampling frame. For the urban samples, the list of UFS blocks 2007-12 was taken as the sampling frame.

Now regarding sub stratification, the clarification we are trying to give like if x was the sample size look at it for rural and urban stratum, the number of sub strata formed was x by 4. Selection of FSUs of first stage unit for the rural and urban sector from each stratum or sub stratum, FSUs were selected by probability proportionate to size with replacement.

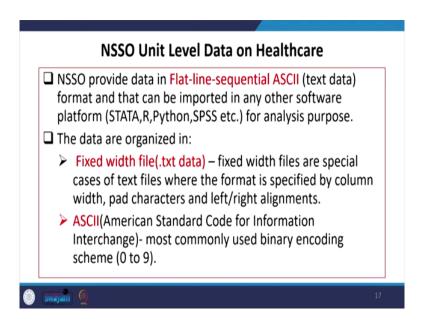
So, with and without replacement technique is important to understand in this context, with replacement sampling technique has been taken with PPS method. I have also explained this in my earlier module, but anyway, this is going to be clarified in due course of time to some extent. Other clarifications are that both rural and urban samples were drawn in the form of two independent sub-samples.

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The FSUs are more than double in the 75th round in comparison to the 71st round and Villages; similarly, 4577 in 71st and 8077 in 75th round. The individuals covered in the 75th round is 555113 but in 71st it was 333104.

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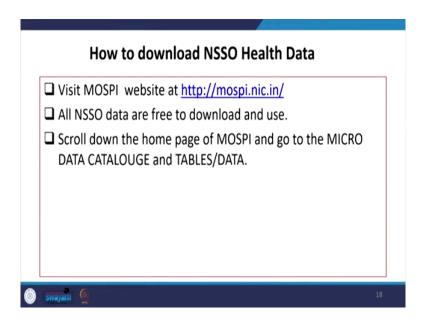


The NSS unit-level data on healthcare provides data in flat line sequential ASCII format and that can be imported in any other software platform like STATA, R, Python, SPSS etc. for the analysis purpose.

The flat line sequential ASCII data, I think I clarified this in my earlier model on large scale data and its handling. You may follow those lectures and you will get a better idea about it.

Now, the data are organized in various forms, one is called a fixed-width file as in dot txt data. Fixed width files are special cases of text files where the format is specified by column width, pad characters and the left or right alignment. Then in the ASCII format that is most commonly used binary encoding schemes with 0 to 9 digits.

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Now, how to download NSS health data? You can download it through this channel mospi dot nic dot in. If you type in Google or you have to copy-paste this link and put it on the Google search you will be guided otherwise simply search raw data or microdata of NSS healthcare on Google.

The all NSSO data are free to download and use, scroll down the home page of MOSPI a and go to the microdata catalogue and then data. I will show it here.

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Once you go through their website you will get these types of symbols. The 75th round data is available at download tables and data. For other health round data go to the microdata catalogue and register yourself to access data. This registration is free you may require an id proof for getting registered.

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Once you click on the micro data set you will be redirected to this particular page. Now here, it will instruct you to download the tables data, why they are saying tables data because once you click on these you will be given the tables within the table.

I will guide you how to download. We are here explaining 75th round data. We are trying to download data that is on social consumption healthcare.

Other data sets are also important like the 2019-20 PLFS data has already been released and those who are working on labour economics that is quite useful. Another important data is called time use research those calculate the role of time, the effective use of time, how this is useful in productivity or in value addition specially gender role and their time use that can also be calculated through the time use survey.

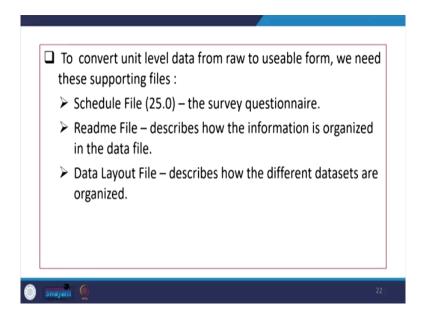
So, next one is on our page once you click on the this link here on the social consumption health where we have said that click on this link once you click it, it will open the page like this.

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And within this page most importantly the one which we want to highlight is our PDF file, here download the data and layout file, this one should be downloaded once you download it will redirect you to this page.

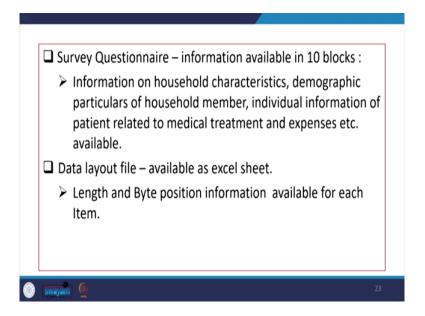
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Once you get this we also get other important files like schedule file, layout file and then readme file. Readme file contents unit level data and the layout file these are important things are required for our extraction and analysis.

To convert unit-level data from raw to usable form we need these supporting files as I already mentioned schedule file, readme file, data layout file and fourth one is those micro data or the raw data are important.

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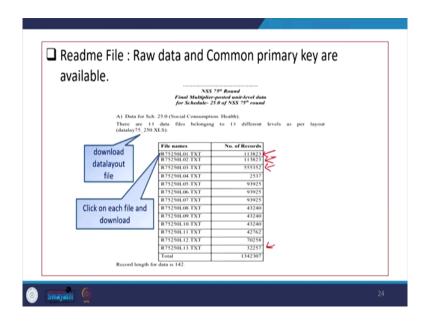


What do you mean by survey questionnaire? This gives information about the households and information available in different 10 blocks. They have categorized into 10 blocks the

information on household characteristics, demographic particulars of household members, individual information of patient related to medical treatment and expenses etc. are available on the survey questionnaire.

Data layout gives in an excel sheet. Data layouts are available in an excel sheet this gives information about length and byte position of the particular variable or the information which is required for the research work.

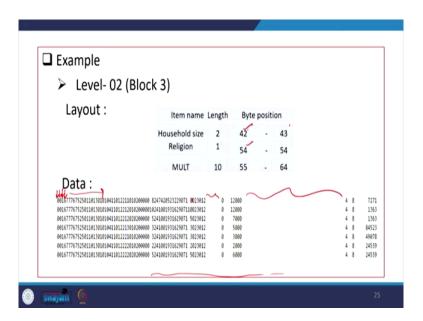
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The raw data and common primary key are available here. Once you open the readme file which I have already told you. You open that PDF and if you keep your cursor on here on this first or second line, all those 13 levels give you the options to download when once you click it or right-click on it save as it will automatically save in a TXT format.

But make sure that you open that TXT format and control alt or select all data inside it and once you select it try to count how many rows are there at the end it has to be matching with this number. This file has to be matching 100 percent if it is matching; that means, you download these TXT files correctly. Now, this is very important that the record length of data should be 140.

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Here in level 2, block number 3, we have given a sample layout that will open and experiment before you at the time of our analysis with the STATA software. By that time I suggest everyone to actually get the free copy and download it and in my last module on handling large scale data set I have mentioned about getting a free copy for 1 week or 15 days time to download and save it on your system. Once I start experimenting with the STATA you will be requiring the software for sure for better clarity.

The layout file it gives in excel format. So, only a sample we have kept it here and it gives household size its length is 2 position that is 42 to 43, religion length is 1 position only that is 54 to 54, multiplier variable that is basically useful in weighting of the particular variable and its length is 10 and position is from 55 to 64. This is very clearly given and it is useful to read like here.

You can count down this is position 1, this is position 2, this is position 3, this is position 4 and so on in a computer if you simply click here it will show on the bottom on the text file about its column number. So, accordingly you can understand its position correctly.

Why there are some free space given? what are the fixed width data? We have already clarified in our earlier module, but we will also explain at the time of extraction. So, these are all detail for today I think we should try to understand other health database like IHDS India's Human Development Survey, then LASI, Longitudinal Ageing Survey of India.

So, in another two lectures we will be clarifying other two data set and they are important variables for our analysis.

I think these are all and going to be useful for your work and be ready with the STATA software once we start operating with that one, with this let me stop here.

Thank you.