ATAL

AICTE Training and Learning (ATAL)

Academy Sponsored

Faculty Development Programme

on

Data Analysis using SPSS

January 03-07, 2022

Organized by

Department of Commerce
C.M.P. Degree College
(University of Allahabad)
Prayagraj

About the College

The college was established in the year 1950 with a vision to contribute to the national development by providing quality education. The college is a co-educational institute and it has been associated to the University of Allahabad since its establishment and it became Constituent of the University of Allahabad in 2005 when the central status of the university was restored.

About the Department

Department of Commerce was established in 1977 with the sole aim of providing commercial education to all students. Commerce department arranges various activities for improving students' practical knowledge with confidence such like Industrial visits, seminars, workshop, FDPs, wallpaper presentation, Group discussion, Guest lectures, etc.

About the AICTE Training and Learning (ATAL) Academy

ATAL Academy, established by The Ministry of Education (MoE), formerly the Ministry of Human Resource Development, Government of India, holds the vision to empower faculty to achieve goals of higher education such as access, equity and quality.

Course Contents

Introduction to Research and SPSS, Correlation & Regression Analysis, Testing of Hypothesis, ANOVA, MANOVA models, Factor Analysis and Discriminant Analysis using SPSS.

Session wise time schedule

Day	9:00 – 11:00 AM	11:00 – 01:00 PM	1:00 – 2:00 PM	2:00 – 4:00 PM
Day 1	Inaugural & Introduction to Research and Research Design	Introduction to SPSS, Defining Variables, Cases, etc.	Lunch	Handling Missing, Importing Data into SPSS from Excel & Text
Day 2	Cleaning of Data Cross Tabulation, Date and Time Transformations, Replace Missing Values	Identifying Duplicate cases, Merge variable & append cases, Data Validation, Select cases, Split file	Lunch	Basic Operation of SPSS; Preparation of Charts & Graphs
Day 3	Descriptive Analysis, Testing of Normality & Homogeneity	Correlation & Regression-I	Lunch	Correlation & Regression-II
Day 4	Parametric Tests	Non Parametric Tests	Lunch	Factor Analysis
Day 5	Discriminant Analysis	Meditation, health & happiness etc.	Lunch	Valedictory Session and Test

Chief Patron
Ch. Jitendra Nath Singh
Chairperson, Governing Body
C.M.P. Degree College, Prayagraj

Patron
Dr. Brijesh Kumar
Principal
C.M.P. Degree College, Prayagraj

Convener
Dr. Manish Kumar Sinha

Organizing Secretaries
Sh. Bhupendra Kumar
Dr. RBL Srivastava

Coordinator
Dr. Bireshwar Pandey

Co-Coordinators
Dr. Sarika Sushil
Dr. Anjani Kumar
Dr. A.K. Tiwari
Dr. Raj Kumar Singh
Dr. Tejbahadur Kannaujiya

Mode of Conduct of FDP

FDP shall be conducted in **online** mode.

Eligibility for Participation

The faculty members of AICTE approved institutions/ Research scholars/PG Scholars/ Participants from Government and Industry/ Staff of host Institution.

No. of Seats: 200

Eligible participants will be selected on first come first serve basis. Coordinator's decision will be final regarding the selection of participants.

Certification

A test shall be conducted at the end of the program. The certificate shall be awarded to those with minimum 80% attendance and a score of minimum 60% marks in the test.

Resource Persons

Eminent resource persons will be drawn from reputed organizations from academia and industry.

Registration

There is no registration fee.

The participants are requested to sign up and register for the programme at ATAL website link:

https://atalacademy.aicte-india.org/signup

Contact

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Department of Commerce
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Prayagraj.-211002
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Summary Report

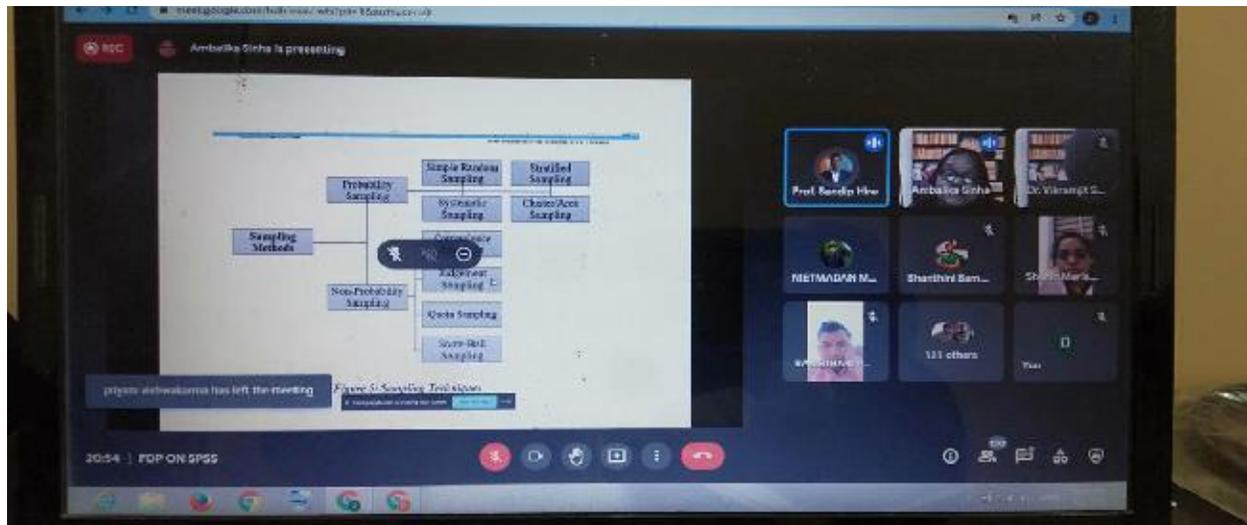**Day- 1: 03/01/2022**

Session – I

Dr. Ambalika Sinha

Professor

Department of Humanities and Social Sciences

Motilal Nehru National Institute of Technology, Prayagraj

Dr. Ambalika Sinha explained that stages of research process, The Process of Determining a Research Idea/Problem, Reading Published Articles explained the world of investigators and their work should also be studied briefly to get a better understanding of them, this information gap can be generated by the people who study them. Reading Literature Reviews, these reviews can generate many research ideas that can be used in different ways. The research might be justified because "this particular research issue has not been explored previously or was faulty in application. Replicating Previous Studies, a researcher may replicate the previous studies with modifications in the variables, methodology, use of tools for analysis, statistical methods etc. and may bring out newer insights from the research. Research generally starts with problem identification followed by research questions or objectives formulation. Proceeding from this the researcher determines how best to answer these inquiries and so chooses what data to collect, how to collect, and how it will be analyzed to answer the research question. Formulating a Hypothesis, A hypothesis is a premonition, supposition, doubt, proclamation or an impression about a phenomenon,

association or situation. Research Design, a research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems.

Session – II & III

Dr. Gyan Prakash Singh

Professor, BHU Varanasi
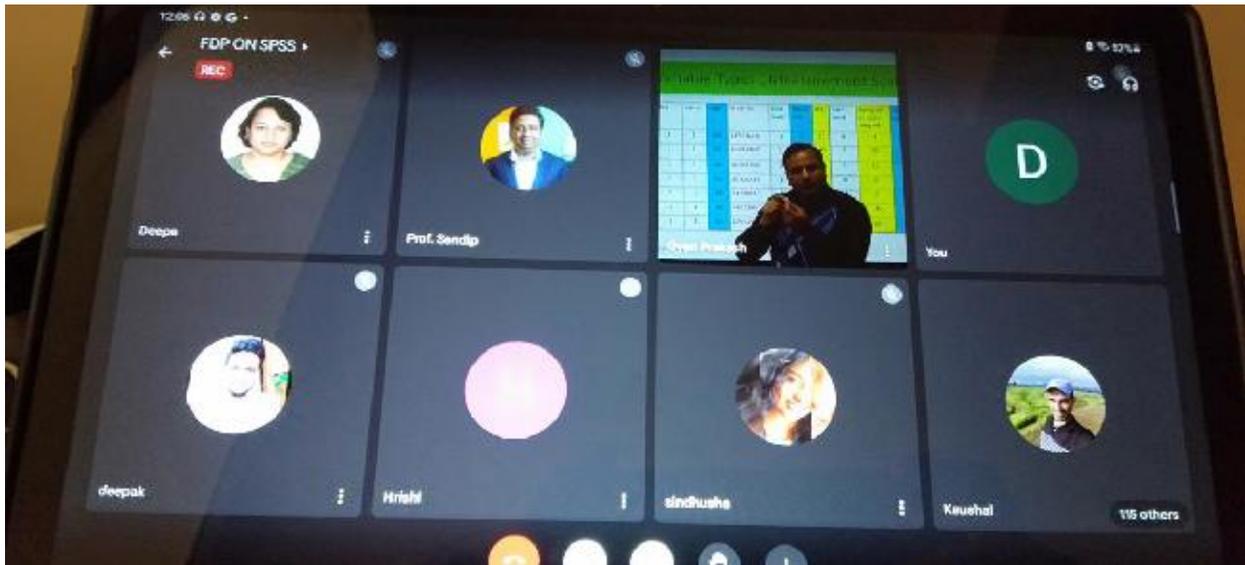
Dr. Gyan Prakash Singh discussed about Introduction of SPSS explained that SPSS stands for "Statistical Package for the Social Sciences". It is an IBM tool. This tool first launched in 1968. This is one software package. This package is mainly used for statistical analysis of the data. SPSS is mainly used in the following areas like healthcare, marketing, and educational research, market researchers, health researchers, survey companies, education researchers, government, marketing organizations, data miners, and many others. It provides data analysis for descriptive statistics, numeral outcome predictions, and identifying groups. This software also gives data transformation, graphing and direct marketing features to manage data smoothly. Dr. Gyan Prakash Singh discussed about number of files opened in SPSS, How to import data from excel to SPSS, How to Export data from SPSS to Excel; How to save SPSS output files; How to modify output of SPSS file; How to save SPSS files in MS-Word; What is easy method to format table etc.

Day- 2: 04/01/2022

Session – I & II

Mr. Anjesh Kumar

G.B. Pant Social Science Institute, Prayagraj

Mr. Anjesh Kumar discussed about Cleaning of Data Cross Tabulation, Date and Time Transformations, Replace Missing Values, explained that Data cleaning involves repeated cycles of screening, diagnosing, treatment and documentation of this process. As patterns of errors are identified, data collection and entry procedures should be adapted to correct those patterns and reduce future errors. Also discussed that Identifying Duplicate cases, Merge variable & append cases, Data Validation, Select cases, Split file explained that With your dataset open in the Data Editor Window, select Data>Indentify Duplicate Cases. Next, select the variable with duplicate values you wish to identify and move it to the 'Define matching cases by:' dialog box. Check all other parameters and change the defaults according to your preference.

**Session – III**

Prof. Saurabh Agarwal

HBTU Kanpur

Prof. Saurabh Agarwal discussed about Basic Operation of SPSS; Preparation of Charts & Graph SPSS utilizes multiple types of windows, or screens, in its basic operations. Each window is associated with specific tasks and types of SPSS files. The windows include the Data Editor, Output Viewer, Syntax Editor, Pivot Table Editor, Chart Editor, and Text Output Editor. Also discussed that how Prepare of Charts & Graph SPSS.

Day- 3: 05/01/2022

Session – I

**Prof. Saurabh Agarwal**

HBTU Kanpur
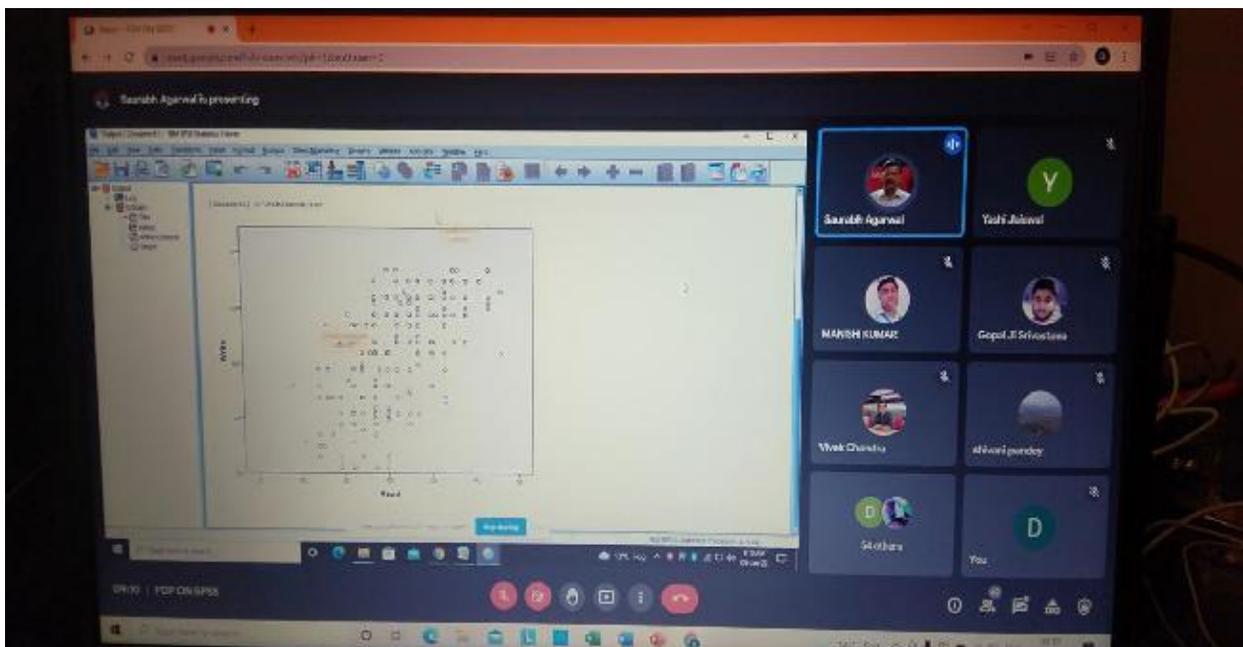
Prof. Saurabh Agarwal discussed about Descriptive Analysis, Testing of Normality & Homogeneity explained that the descriptive statistics feature of SPSS can also give summary statistics such as the mean, median and standard deviation. Also described How to do Normality Test using SPSS? Select "Analyse -> Descriptive Statistics -> Explore". A new window pops out. Then from the list on the left, select the variable "Data" to the "Dependent List". Click "Plots" on the right. The results now pop out in the "Output" window.

Session – II & III

Prof (Dr.) Prabhat Mittal

Professor, Department of Commerce & Management

Satyawati College (Eve.), University of Delhi
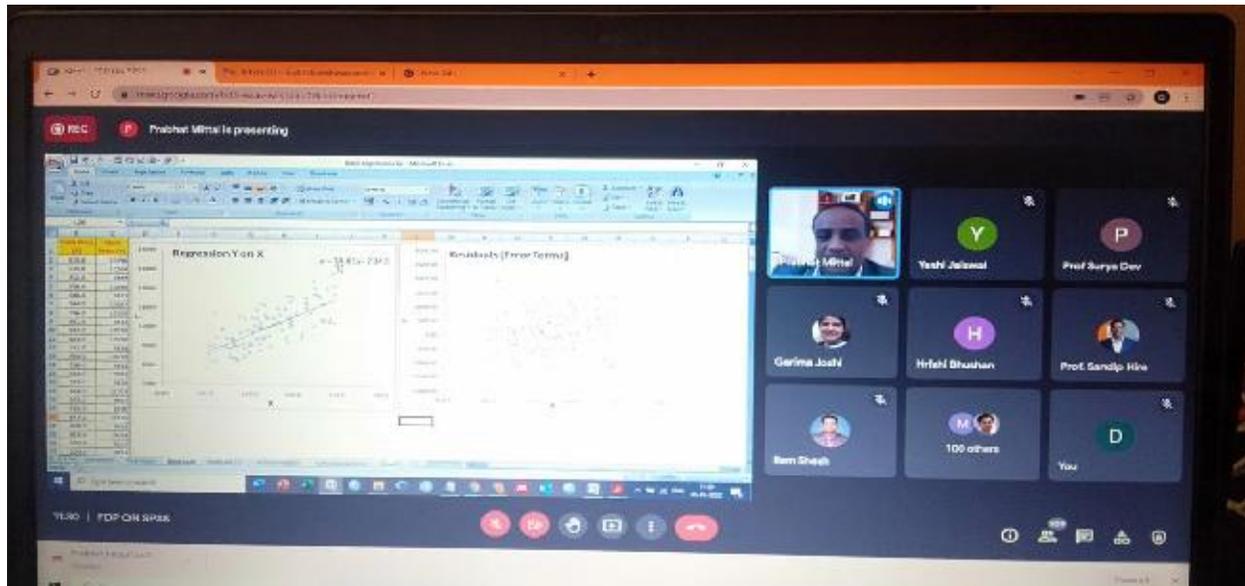
Prof. Prabhat Mittal discussed about Correlation is a statistical term describing the degree to which two variables move in coordination with one another. If the two variables move in the same direction, then those variables are said to have a positive correlation. If they move in opposite directions, then they have a negative correlation. Correlation in SPSS is a statistical technique that shows how strongly two variables are related to one another or the degree of association between them.

Prof. Prabhat Mittal also discussed Regression analysis is a well-known statistical learning technique useful to infer the relationship between a dependent variable **Y** and p independent variables **X=[**$X1$**|…|Xp]**. The dependent variable **Y** is also known as *response variable* or *outcome*, and the variables Xk ($k=1,...,p$) as predictors, explanatory, variables, *or* covariates. More precisely, regression analysis aims to estimate 00the mathematical relation $f()$ for explaining Y in terms of X as, Y=f(X), using the observations ($\mathbf{x}i,Yi$),$i=1,…,n$, collected on n observed statistical units. If Y describes a univariate random variable the regression is said to be univariate regression, otherwise it is referred as multivariate regression. If **Y** depends on only one variable **x** (i.e., $p=1$), the regression is said simple, otherwise (i.e., $p>1$), the regression is said multiple.

Day- 4: 06/01/2022

Session – I & II

Prof. Shailesh Kaushal

University of Lucknow
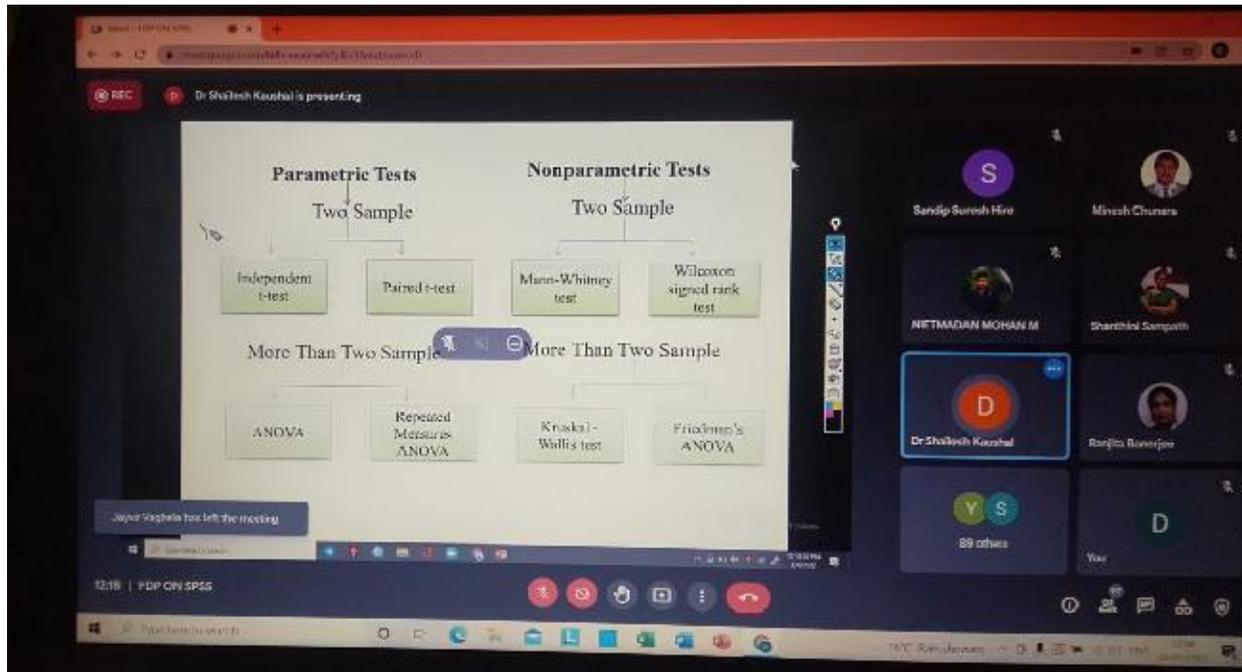
Prof. Shailesh Kaushal discussed that Parametric tests are those that make assumptions about the parameters of the population distribution from which the sample is drawn. This is often the assumption that the population data are normally distributed. Non-parametric tests are "distribution-free" and, as such, can be used for non-Normal variables. The t test in SPSS. A parameter in statistics refers to an aspect of a population, as opposed to a statistic, which refers to an aspect about a sample. For example, the population mean is a parameter, while the sample mean is a statistic.

Non-parametric tests are "distribution-free" and, as such, can be used for non-Normal variables. The Mann Whitney/Wilcoxson Rank Sum tests is a non-parametric alternative to the independent sample -test. So the data file will be organized the same way in SPSS: one independent variable with two qualitative levels and one independent variable. Prof. Shailesh Kaushal also discussed on Kruskal-Wallis Test etc.

Session – III

Dr. Parikshit Joshi

Indian Institute of Information Technology, Prayagraj
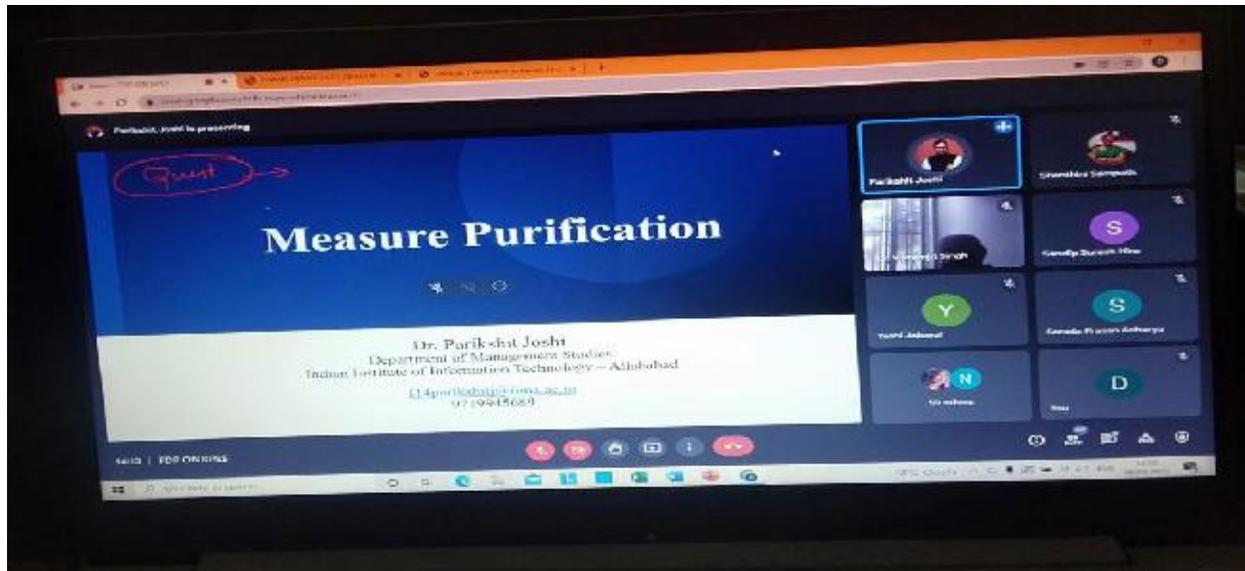
Dr. Parikshit Joshi described that factor analysis is a statistical technique for identifying which underlying factors are measured by a (much larger) number of observed variables. Such "underlying factors" are often variables that are difficult to measure such as IQ, depression or extraversion. For measuring these, we often try to write multiple questions that -at least partially- reflect such factors. Factor analysis is a statistical technique for identifying which underlying factors are measured by a (much larger) number of observed variables. Such "underlying factors" are often variables that are difficult to measure such as IQ, depression or extraversion. Factor Analysis in SPSS To conduct a Factor Analysis, start from the "Analyse" menu. This procedure is intended to reduce the complexity in a set of data, so we choose "Data Reduction" from the menu. And the choice in this category is "Factor," for factor analysis.

Day- 5: 07/01/2022

Session – I

Dr. Parikshit Joshi

Indian Institute of Information Technology, Prayagraj
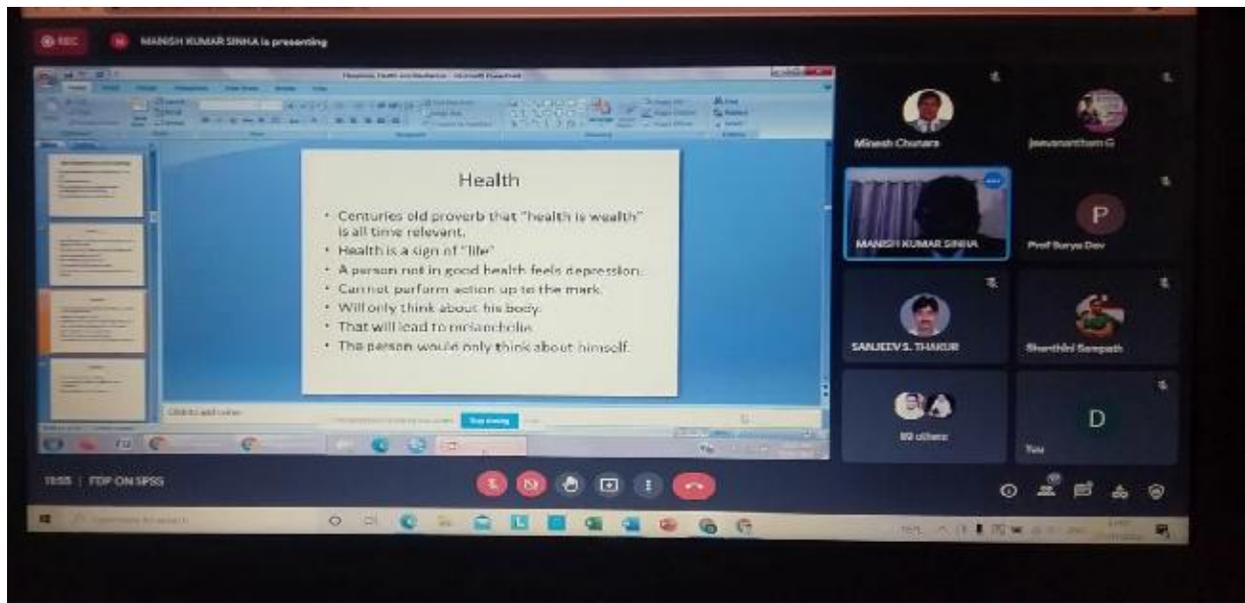
Dr. Parikshit Joshi described that discriminant analysis is a versatile statistical method often used by market researchers to classify observations into two or more groups or categories. In other words, discriminant analysis is used to assign objects to one group among a number of

known groups. On SPSS From the menu, click on Analyse -> Classify -> Discrimiant. In the appearance window, move DV (grouping variable) into Grouping Variable: -> hit Define Rang -> specify lowest and highest values of grouping -> Continue.

Session – II

Dr. Manish Kumar Sinha

CMP Degree College , Prayagraj
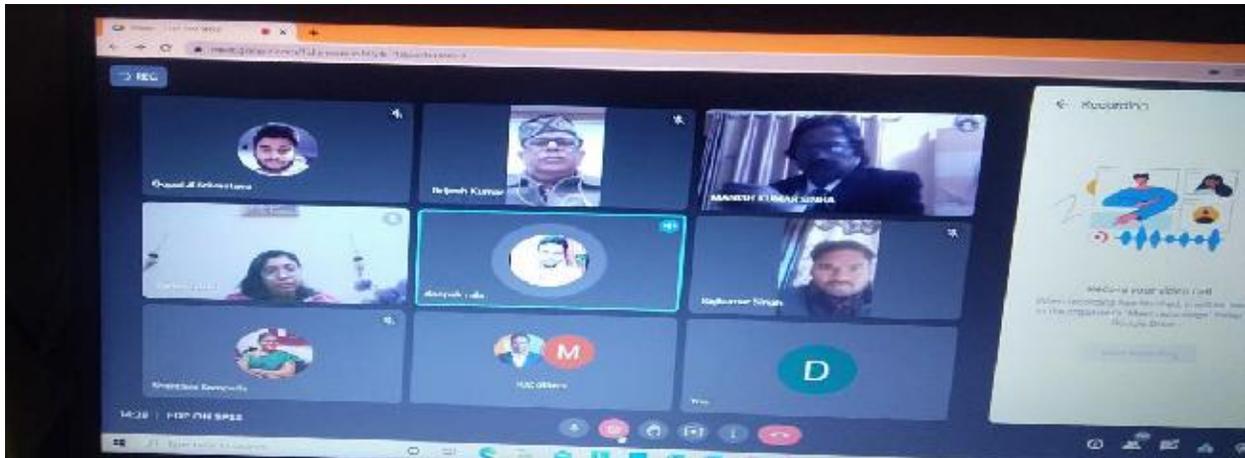
Dr. Manish Kumar Sinha discussed on Meditation, health & happiness etc. explained that the benefits of meditation are plentiful in ordinary times. And amid the coronavirus pandemic, being present and finding moments of peace has never been more important. As we struggle with uncertainty and an inability to grasp what the future will hold, practicing meditation and mindfulness can help get us find a little bit of much-needed calm.

Session – III

Valedictory Session and Test.