

About the Department

The Department of Economics is one of the oldest department in the South Gujarat University. It offers the PG and Research degrees in Economics. The PG curriculum remains updated regularly with the inclusion of the intra – disciplinary papers like Agri-Business, Research Methodology, Computer Applications in Economic Analysis as part of the course. The department has completed more than 40 research paper projects till date. More than 125 research students have been awarded Ph.D. and M.Phil. Degrees. The faculty of the department is involved in the research related to the cross-section and time-series data. The department has also initiated the publications of working papers in the department. To now 7 working papers have been published. This apart, Capacity building workshops and seminars have been a regular feature for the department. Needless to say, that the beneficiaries have been the students belonging to the first generation and also the teachers in the affiliated colleges. In April 2023, the Department of Economics has invited “Workstation for Research on Sample Micro Data from Census” based on MOU between Government of India, Ministry of Home Affairs, Directorate of Census Operations, Gujarat and Veer Narmad South Gujarat University, Surat.

About the University

Veer Narmad South Gujarat University is a state government university established on May 23, 1967, in Surat – the diamond city of India. University is accredited Grade ‘B++’ by NAAC in 2022. The University has 25 PG Departments and offers 36 PG, 4 UG, 3 Integrated, 9 PG Diploma and 5 certificates programmers along with Ph.D. in various subjects. More than 4000 students on the university campus and around 2.5 lac students in affiliated institutes, are enrolled every year. The university is equipped with modern infrastructure facilities and student centric amenities including library, central instrument facility, startup and innovation Centre, indoor and outdoor sports amenities. In the last five years, the university has completed more than 45 research projects funded by agencies of National and International repute and more than 50 foreign students have been enrolled in various programmes in the University Departments.

Important dates

- Last date for the registration: **19, September, 2025**
- Shortlisted candidates will be intimated by: **20 September, 2025**
- Registration fees : No registration fees



Veer Narmad South Gujarat University

One Week National Workshop on “Data – Driven Discovery : A Hands-on Workshop” (Offline Mode)

23rd – 27th September, 2025



Organized by
Department of Economics
Veer Narmad South Gujarat University
Surat – 395007, Gujarat

Contact Details

Email: pmushaecows@gmail.com
Contact No.: 0261-2203162, 2255478
Mo. No : 6354882366

About the Workshop

Department of Economics is organizing one week national workshop on “Data – Driven Discovery: A Hands-on Workshop” for students, scholars and teachers pursuing Ph.D. or PDF or working on project in social sciences at various universities as well as research institution. The basic objectives of this course are to 1). Orient the participants about the use of quantitative methods in social science research; 2). Demonstrate which statistical technique is required for what type of data and why. participants from various discipline like Economics, Sociology, Social work, Political science, Management, Education, Psychology, Population studies, Rural studies etc., can apply for this workshop.

The workshop is expected to benefit participants on terms of improved conceptual clarity, data analysis skills through the application of the proper quantitative method and practical knowledge to undertake evidence-based quality research to make suggestions and recommendations for policy intervention.

Who can apply

The applicants must be a master student or currently enrolled in a Ph.D. or Post-Doctoral program or working as an Assistant Professor/Lecturer or having an equivalent Position in any recognized university/college in the Social Science. Management, Commerce or Law etc.

The Course Content

- Types of Data
- Scale of Measurement
- Sampling Technique
- Review of Literature
- Introduction to SPSS
- Descriptive Statistics and Graphs
- Frequency Distribution
- Cross Table
- Testing of Normality
- Hypothesis Testing – (Parametric & Non Parametric)
- ANOVA, Post Hoc Analysis, ANCOVA
- Correlation & Partial Correlation Analysis
- Regression Analysis – 1 (Linear, Bivariate, Multivariate, Log Linear and Non-Linear)
- Time Series Regression and Forecasting
- Multivariate Analysis
- Factor Analysis
- Cluster analysis

Important Notes

- Total 80 participants will be selected across the India.
- Participant will be given free boarding and lodging.
- Only shortlisted candidates will be invited to participate in the workshop.
- No T. A. will be given.

Patron and Chairman

Dr. Kishorsinh N. Chavda (Vice Chancellor, VNSGU)

Co - Patron

Dr. Rameshdan Gadhvi(Registrar, VNSGU)

Head of the Department

Pro. Gaurang D. Rami

Co-ordinator

Dr. Manish R. Patel

Dr. Yogesh N. Vansiya

Organising Committee

Ms. Urvisha J. Mataliya

Dr. Dilip M. Chaudhari

Dr. Merabhai K. Jamod

Dr. Vaishali J. Kharva

Ms. Smita A. Naik

Dr. Amit A. Valvi

Dr. Ankita A. Nadiyadara

Ms. Pragna Dhadhal

Registration link:

<https://forms.gle/yXUNFWZyTX2oeqr79>

You can also
register using
below link



Venue



One-week National Workshop on “Data- Driven discovery: A Hands-on Workshop” sponsored Sponsored by PM – USHA MERU Soft Component, VNSGU, Surat.

Organized by: Department of Economics, Veer Narmad South Gujarat University

Date: 23rd – 27th September, 2025

Venue: Department of Economics, Veer Narmad South Gujarat University

Report on One week national Workshop “Data Driven Discovery: A Hands-on Workshop”

The inaugural ceremony of the One week national workshop “Data Driven Discovery: A Hands-on Workshop” was held on 23rd September 2025 at 10:00 a.m. The event began with the traditional lighting of the lamp, symbolizing the pursuit of knowledge and wisdom.

The session featured encouraging and inspiring words from the Patron, Dr. Kishorsinh N. Chavda Vice Chancellor, VNSGU, Surat, Co-Patron, Dr. Rameshdan Gadhvi Registrar, VNSGU, Surat. Their words emphasized the importance of such academic initiatives in enhancing research skills, promoting knowledge-sharing, and fostering a spirit of inquiry among students and scholars.

The formal proceedings commenced with a welcome address, followed by the speech of In-charge Head, Dr. Yogesh N. Vansiya, Assistant Professor, Department of Economics, VNSGU, Surat who highlighted the importance of data-driven approaches in research and academic growth. Co – Patron, the

Registrar, VNSGU, Dr. Rameshdan Gadhvi, in his address emphasized the institutional support for fostering research culture and practical learning through such workshops.

The Chief Guest, Dr. Apurva Desai, Professor and Head, Department of Computer Science, CIQA, Director, VNSGU, delivered an insightful address on the theme of the workshop, stressing the role of hands-on learning and real-world applications of data analytics in today's digital era. His words inspired participants to engage actively throughout the sessions.

The Inaugural program concluded with a vote of thanks, acknowledging the contribution of the dignitaries, organizers, and participants. The workshop was thus set in motion with great enthusiasm and academic spirit.

The workshop coordinators, Dr. Yogesh N. Vansiya, Assistant Professor, Department of Economics, VNSGU, Surat and Dr. Manish R. Patel, Assistant Professor, Department of Economics, VNSGU, Surat, briefed the audience about the objectives, structure, and expected outcomes of the week-long program. Participants from diverse academic backgrounds were also welcomed, creating an environment of enthusiasm and anticipation.

On 23rd September 2025, the second session of the workshop was conducted from 11:30 to 1:00 pm by Dr. Vikramsingh Amaravat conducted an engaging workshop on Archival Sources of Economic History with the theme "From Chanakya to the Freedom Struggle to Today's Economics." The session highlighted how archival materials provide invaluable insights into the evolution of India's economy across different historical phases. Beginning with ancient India, Dr. Amaravat emphasized the Arthashastra of Chanakya as a foundational text that outlines taxation, trade, and statecraft, supported

by inscriptions, manuscripts, and coinage as important archival evidence. He then moved to the colonial and freedom struggle period, illustrating how administrative records, trade ledgers, newspapers, and correspondence reveal the workings of revenue systems, market structures, and the economic grievances that fuelled nationalist movements such as Swadeshi and boycotts. In discussing modern and post-independence India, he drew attention to the significance of policy archives, including Planning Commission drafts, Reserve Bank of India reports, and ministry records, which provide critical context for understanding the shaping of independent India's economic policies. The role of digitization in broadening access to archives was also addressed, with a caution that researchers must remain mindful of institutional biases in preserved sources. Methodologically, Dr. Amaravat stressed the need to triangulate between prescriptive texts, statistical data, and material records to reconstruct a more reliable picture of economic history. He emphasized source criticism by encouraging researchers to question who created a document, for what purpose, and with what intended audience. Practical skills such as data extraction, and ethical handling of restricted material were also discussed. The workshop concluded with key takeaways: archival research enriches our understanding of India's economic history by revealing both continuities and changes from Chanakya's era to the present. While digitization aids accessibility, critical archival methods remain essential. Dr. Amaravat recommended that universities promote hands-on archival training, build shared repositories and datasets, and foster interdisciplinary collaboration between history, economics, and data science. Overall, the workshop underscored that archival sources are indispensable for reconstructing India's long economic journey, offering both conceptual depth and practical tools for researchers.

On 23rd September 2025, the third session of the workshop was conducted from 1:30 to 3:00 p.m. by Dr. Gautam Dua on the theme of the Research Process. Dr. Dua systematically explained the step-by-step journey of research, beginning with the identification of a problem and formulation of research questions, and moving towards objectives, hypotheses, and methodology. He highlighted the importance of reviewing existing literature to build a strong theoretical foundation and to identify research gaps. Emphasis was laid on the selection of appropriate methods, both qualitative and quantitative, and the role of sampling techniques in ensuring reliability and validity of findings. Dr. Dua also elaborated on data collection tools, ethical considerations, and the importance of objectivity in research. Furthermore, he guided participants on the stages of data analysis and interpretation, stressing the need to link results with the research objectives. The session concluded with insights into writing a research report in a structured and coherent manner, along with tips on referencing and avoiding plagiarism. The interactive nature of the workshop encouraged participants to clarify doubts, making the session highly engaging and informative. Overall, Dr. Dua's session provided a comprehensive understanding of the research process, equipping participants with both theoretical knowledge and practical guidance for conducting academic research effectively.

The fourth session of the workshop was held on 23rd September, 2025, from 3:00 p.m. to 4:30 p.m., and was conducted by Dr. Vatsal Patel on the topic 'Scales of Measurement'. The session focused on an important foundation of research methodology – the classification and application of different scales used for data measurement. Dr. Patel began by highlighting the significance of measurement in research, stating that accurate

measurement tools are essential to ensure reliability and validity of results. He explained that scales of measurement provide a systematic way to classify, analyze, and interpret data, and serve as the basis for selecting appropriate statistical tests.

The session covered the four major scales of measurement:

1. Nominal Scale– Used for categorizing data without any quantitative value, such as gender, occupation, or brands.
2. Ordinal Scale – Used for ranking or ordering data, for example, customer satisfaction ratings or preference rankings.
3. Interval Scale – Highlighted as a scale where differences between values are meaningful but the zero point is arbitrary, such as temperature in Celsius.
4. Ratio Scale – Considered the most comprehensive scale, having all properties of the other scales and an absolute zero, such as weight, height, and income.

Dr. Patel explained the differences between these scales through practical examples from business, social sciences, and economics. He emphasized how the choice of scale affects the type of statistical analysis researchers can perform. For instance, while nominal data can only be analyzed with frequency counts and percentages, interval and ratio data allow for advanced statistical techniques like correlation and regression.

The session was highly interactive, with participants engaging in short exercises to identify scales of measurement in sample research questions. This helped clarify how improper classification of scales can lead to misinterpretation of data.

In conclusion, Dr. Patel stressed that a clear understanding of scales of measurement is crucial for designing research instruments, analyzing data correctly, and drawing valid conclusions. The session was insightful and provided participants with both conceptual clarity and practical applications, making it a valuable part of the workshop series.

24th September, 2025

The first session of the workshop on 24th September, 2025, was conducted from 10:00 a.m. to 11:30 a.m. by Pro. Digvijaysinh Thakor on the topic of Review of Literature. The session emphasized the central role of literature review in the research process and guided participants on how to approach it systematically.

Dr. Thakore began by explaining that a review of literature is not merely a summary of past studies but a critical analysis that identifies gaps, synthesizes knowledge, and provides a foundation for new research. He highlighted how a well-structured literature review helps in formulating research questions, refining objectives, and selecting suitable methodologies.

The discussion covered the purposes of literature review, such as:

Understanding the theoretical background of a topic.

- * Identifying gaps in existing research.

- * Avoiding duplication of studies.

- * Building a strong conceptual framework.

Dr. Thakore then explained different sources of literature, including books, journal articles, theses, reports, and credible online databases. He stressed the importance of relying on authentic and peer-reviewed sources.

Participants were also introduced to the use of citation and referencing tools, which help in organizing sources and avoiding plagiarism.

The session also addressed approaches to writing a literature review, such as chronological, thematic, and methodological organization. Through examples, Dr. Thakore demonstrated how to critically evaluate past studies rather than simply describing them, thus enhancing the depth and originality of research.

The session concluded with practical tips on maintaining research notes, using reference management software, and integrating reviewed literature with one's research objectives. Dr. Thakore emphasized that a strong literature review strengthens the credibility of any research work by situating it within the broader academic context. Overall, the session was highly informative and offered participants valuable guidance on structuring and writing an effective review of literature, making it a crucial part of the workshop series.

The second session of the workshop on 24th September, 2025, was conducted from 11:30 a.m. to 1:00 p.m. by Dr. Gaurang Rami on the topic Sampling Techniques. The session focused on the importance of sampling in research and provided participants with a comprehensive understanding of various techniques used to select study samples.

Dr. Rami began by highlighting that sampling is a crucial step in research since it is often not feasible to study an entire population. He explained that an appropriate sampling method enhances the reliability, validity, and generalizability of research findings.

The session covered the two broad categories of sampling: probability sampling and non-probability sampling.

Under probability sampling, Dr. Rami discussed methods such as simple random sampling, systematic sampling, stratified sampling, and cluster sampling, explaining how each ensures representativeness by giving every unit in the population a known chance of selection.

For non-probability sampling, he elaborated on techniques like convenience sampling, judgmental or purposive sampling, quota sampling, and snowball sampling, which are often used when probability sampling is impractical.

Through examples from social science, economics, and business research, Dr. Rami illustrated how the choice of sampling technique depends on the research objectives, resources, and nature of the study population. He also explained common pitfalls in sampling, such as bias and sampling errors, and shared strategies to minimize them.

The session was interactive, with participants engaging in short exercises to design sampling strategies for hypothetical studies. This hands-on approach helped in understanding the practical application of different methods.

In conclusion, Dr. Rami emphasized that selecting the right sampling technique is fundamental to ensuring the credibility and accuracy of research results. The session provided participants with both theoretical knowledge and practical insights, making it an enriching and essential part of the workshop.

The third session of the workshop on 24th September, 2025, was conducted from 1:30 p.m. to 3:00 p.m. by Dr. Monika Shah on the topic Frequency Distribution and Cross Tabulation. The session aimed at equipping

participants with essential data organization and analysis tools that form the foundation of statistical interpretation in research.

Dr. Shah began by introducing the concept of frequency distribution, explaining how raw data can be summarized into tables that display the frequency of occurrences for different categories or intervals. She highlighted the role of frequency tables, histograms, and bar charts in simplifying large datasets and making patterns easier to identify. Examples from survey-based studies were used to demonstrate how frequency distribution provides clarity in understanding respondent characteristics and responses.

The session then moved to cross tabulation (contingency tables), a technique used to analyze the relationship between two categorical variables. Dr. Shah explained how cross tabulation helps researchers identify patterns, correlations, and comparisons between variables such as gender and purchase preference, or education level and employment type. She also pointed out how cross tabulation forms the basis for advanced tests like the Chi-square test.

Participants were guided through step-by-step exercises to construct frequency tables and cross tabulations using sample data. This practical demonstration allowed them to understand how to code data, organize it into categories, and interpret the results. Dr. Shah also emphasized the importance of accuracy and clarity in presenting tables, as well as the role of software tools like SPSS and Excel in simplifying these processes.

In conclusion, the session underlined that both frequency distribution and cross tabulation are essential techniques for data analysis, providing

researchers with meaningful summaries and insights from large datasets. Dr. Shah's clear explanations and practical examples made the session highly informative and engaging, helping participants strengthen their analytical skills.

The fourth session of the workshop on 24th September, 2025, was conducted from 3:00 p.m. to 4:30 p.m. by Dr. Ushma Desai on the topic Test of Normality. This session, though brief, focused on an important statistical concept that underpins many data analysis techniques in research.

Dr. Desai began by explaining that many parametric statistical tests—such as t-tests, ANOVA, and regression—are based on the assumption that the data follows a normal distribution. Therefore, testing for normality is a crucial step before applying these methods.

The session highlighted both graphical methods and statistical tests for checking normality.

Graphical approaches included histograms, Q-Q plots, and box plots, which provide a visual sense of how closely data resembles a bell-shaped curve.

Statistical methods discussed included the Kolmogorov-Smirnov test and the Shapiro-Wilk test, both widely used for formally assessing normality.

Dr. Desai also touched upon the implications of non-normal data, suggesting the use of data transformation techniques or non-parametric tests when normality assumptions are violated. Practical examples were provided to demonstrate how results may differ when the assumption of normality is ignored.

The session concluded with the key message that testing for normality is not just a statistical formality but a necessary step to ensure the validity of conclusions drawn from research. Dr. Desai's concise and clear explanation made the concept accessible and highlighted its practical importance for researchers.

25th September, 2025

A workshop session was organized on 25th September, 2025 as part of the ongoing academic enrichment programme. The first session of the day was conducted by Dr. Jignesh Barot, an eminent academician and expert in the field of statistics. He delivered an insightful lecture on the topic "Descriptive Statistics and Graph".

Dr. Barot began the session by explaining the significance of descriptive statistics as a fundamental tool in data analysis. He elaborated on various measures such as mean, median, mode, standard deviation, variance, skewness, and kurtosis, highlighting their practical applications in research. Special emphasis was given to how these statistical tools help in summarizing, simplifying, and interpreting large datasets effectively.

The resource person also discussed the role of graphs and diagrams in data presentation, focusing on their importance in visualizing complex information. Various graphical techniques such as bar diagrams, histograms, pie charts, line graphs, and scatter plots were demonstrated with practical examples. Participants were guided on how to select an appropriate graphical representation depending on the nature of data and research objectives.

The session was highly interactive, with Dr. Barot encouraging questions and clarifying doubts. Participants appreciated his clear explanations and practical orientation, which made statistical concepts easier to understand and apply in research.

Overall, the session proved to be informative and enriching, laying a strong foundation for participants to apply descriptive statistical techniques and graphical tools in their academic and research pursuits.

On 25th September, 2025, the second session of the workshop was conducted by Dr. Shital Patel, who delivered an in-depth lecture on the topic “Hypothesis Testing (Parametric)”.

Dr. Patel began the session by explaining the basic concept of hypothesis testing, its role in research, and the distinction between the null hypothesis (H_0) and the alternative hypothesis (H_1). She elaborated on the steps involved in hypothesis testing—formulation of hypotheses, selection of significance level, choice of appropriate test statistic, computation of values, and interpretation of results.

The resource person provided detailed insights into various parametric tests, including the t-test, z-test, F-test, and ANOVA, and explained their applications in different research contexts. With practical illustrations, she demonstrated how these tests help in making decisions about population parameters based on sample data.

Dr. Patel also emphasized the importance of assumptions underlying parametric tests, such as normality and homogeneity of variance, and cautioned participants about the consequences of ignoring these conditions. The session was interactive, with participants engaging in discussions and

clarifying doubts about real-life applications of statistical testing in research studies.

The session was highly informative and practice-oriented, enhancing the participants' understanding of statistical decision-making through parametric hypothesis testing.

The third and fourth session of the workshop, held on 25th September, 2025 from 1:30 p.m. to 3:00 p.m. and 3:00 p.m. to 4:30 p.m. was conducted by Dr. Sachin Mehta on the topics “Hypothesis Testing (Non-Parametric), ANOVA, Post Hoc Analysis, and ANCOVA.”

Dr. Mehta began by introducing the concept of non-parametric tests highlighting their importance when the assumptions of parametric tests such as normality and homogeneity of variance are not satisfied. He discussed commonly used non-parametric methods like the Chi-square test, Mann–Whitney U test, and Kruskal–Wallis test, emphasizing their applications in social science and behavioural research.

The session then moved to ANOVA (Analysis of Variance), where Dr. Mehta explained how this technique helps in comparing means across more than two groups. He also elaborated on the need for Post Hoc Analysis when significant differences are found, illustrating methods like Tukey's HSD to identify where the differences lie.

Further, the resource person explained ANCOVA (Analysis of Covariance) as an advanced extension of ANOVA, which incorporates covariates to control extraneous variation. Practical examples were provided to demonstrate how ANCOVA strengthens research results by increasing precision.

The session was highly engaging, with Dr. Mehta combining theory and practical insights to ensure conceptual clarity. Participants benefited greatly from his systematic explanations and examples, which made complex statistical techniques accessible and applicable to real research problems.

Overall, the session was comprehensive and insightful, enhancing participants' skills in advanced statistical testing and analysis.

26th September, 2025

On 26th September, 2025, the first session of the workshop was conducted from 10:00 a.m. to 11:30 a.m. by Ms. Megha Bansal on the topic "Correlation."

Ms. Bansal began the session by explaining the meaning and significance of correlation in research, emphasizing how it measures the strength and direction of the relationship between two or more variables. She elaborated on different types of correlation, such as positive, negative, and zero correlation, supported with simple and practical examples.

The resource person then introduced various methods of measuring correlation, including Pearson's correlation coefficient and Spearman's rank correlation, highlighting the conditions under which each method is most appropriate. She also demonstrated the interpretation of correlation values, explaining concepts like perfect correlation, weak correlation, and strong correlation, and cautioned against the common misconception that correlation implies causation.

The session was interactive, with participants actively engaging in exercises and discussions. Ms. Bansal's clear explanations and practical orientation

helped participants grasp both the theoretical and applied aspects of correlation in research.

Overall, the session was insightful and enriching, providing participants with a solid understanding of correlation as an essential statistical tool in data analysis.

The second session of the workshop on 26th September, 2025, was conducted by Ms. Niharika Navlakha from 11:30 a.m. to 1:00 p.m. on the topic “Regression Analysis: Linear, Bivariate and Multivariate.”

Ms. Navlakha began by introducing the concept of regression analysis as a powerful statistical tool used to study the relationship between dependent and independent variables. She explained the principles of linear regression, demonstrating how it predicts the value of one variable based on another.

The session then covered bivariate regression, where the relationship between two variables was analyzed with practical examples, enabling participants to understand the interpretation of regression coefficients and the equation of regression lines. Moving further, Ms. Navlakha explained multivariate regression analysis, which involves more than one independent variable. She highlighted its importance in addressing complex research problems where multiple factors influence the outcome.

With the help of examples and case-based illustrations, she clarified how regression models can be used to make predictions, test hypotheses, and analyze patterns. She also cautioned participants about issues such as multicollinearity and overfitting that may arise in multivariate analysis.

The session was interactive, and participants actively engaged in clarifying their queries. Ms. Navlakha's systematic explanation and applied approach made complex regression concepts easier to understand.

Overall, the session was highly informative and practical, equipping participants with valuable knowledge on applying regression techniques in research and data analysis.

The third session of the workshop was conducted on 26th September, 2025, from 1:30 p.m. to 3:00 p.m. by Dr. Niharika Navlakha. The session focused on the topic "Log-Linear and Non-Linear Techniques of Regression" and proved to be highly insightful for participants aiming to strengthen their statistical knowledge and research skills.

Dr. Navlakha began the session by explaining the importance of regression techniques beyond the conventional linear models, particularly in cases where relationships between variables are not strictly linear. She highlighted how log-linear regression models are applied when variables exhibit multiplicative rather than additive relationships, making them especially useful in fields such as economics, social sciences, and market research.

The discussion then moved towards non-linear regression techniques. Dr. Navlakha provided a detailed explanation of their applications in modeling complex, curvilinear relationships that cannot be captured through linear regression. Through illustrative examples, she demonstrated the practical use of these methods in analyzing real-world data, emphasizing the interpretation of parameters and the challenges in estimation.

The session was interactive, with participants engaging in discussions and raising queries about the applicability of these models in their respective

fields of study. Dr. Navlakha patiently addressed their doubts and encouraged them to adopt advanced regression techniques for robust and reliable research outcomes.

Overall, the session was highly enriching and broadened the understanding of participants on advanced regression methods. It equipped them with valuable insights into handling complex data structures using log-linear and non-linear regression techniques.

The fourth session of the workshop was held on 26th September, 2025, from 3:00 p.m. to 4:30 p.m., and was conducted by Dr. Atman Shah on the topic “Time Series Regression and Forecasting.” The session focused on equipping participants with advanced techniques for analysing data observed over time and predicting future trends.

Dr. Shah began the session by introducing the fundamental concepts of time series analysis, highlighting the importance of temporal data in fields such as economics, finance, business, and social sciences. He explained the components of time series—trend, seasonality, cyclicity, and irregular variations—and emphasized their role in shaping regression models.

He then discussed time series regression, illustrating how dependent variables can be modeled with respect to time and other predictors. Through examples, he demonstrated the significance of autocorrelation and stationarity in building reliable models. Dr. Shah further elaborated on practical forecasting methods such as ARIMA models, exponential smoothing, and moving averages, making the session highly relevant for real-world applications.

Participants gained valuable insights into both the theoretical framework and the practical aspects of forecasting. The session also encouraged interactive discussions, where participants clarified their doubts regarding the application of forecasting models in their respective disciplines.

The workshop session concluded with Dr. Shah stressing the importance of accurate forecasting for effective decision-making in research, policy formulation, and business planning.

Overall, the session proved to be extremely enriching, as it broadened participants' understanding of time series regression and forecasting, enabling them to apply these techniques in their academic and professional pursuits.

27th September, 2025

The first session of the workshop on 27th September, 2025, was conducted from 10:00 p.m. to 11:30 a.m. by Dr. Bhavesh Vanparia on the topic “Exploratory Factor Analysis (EFA). And cluster analysis” The session aimed to familiarize participants with the principles, procedures, and applications of EFA as a statistical technique for data reduction and identifying underlying structures.

Dr. Vanparia began by explaining the theoretical foundations of factor analysis and the circumstances in which researchers apply it, particularly when dealing with large datasets containing multiple variables. He emphasized how EFA helps in identifying latent constructs, grouping correlated variables, and simplifying data without losing essential information.

He then elaborated on the key steps of EFA, including data suitability tests such as the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity, extraction methods like principal component analysis and principal axis factoring, and rotation techniques such as varimax and oblimin. With practical illustrations, he showed how to interpret factor loadings and communalities, making the concepts clear and engaging.

The session was highly interactive, with participants actively engaging in discussions and clarifying their doubts about factor analysis applications in social science and management research. Dr. Vanparia highlighted common pitfalls to avoid and offered valuable tips on ensuring reliability and validity in factor analysis.

Overall, the session was insightful and enriching, providing participants with a deeper understanding of Exploratory Factor Analysis as a vital tool in research methodology. It equipped them with practical knowledge that can be applied in analyzing complex datasets and deriving meaningful conclusions.

The second session of the workshop on 27 September, 2025, was conducted from 11:30 a.m. to 1:00 p.m. by Dr. Bhavesh Vanparia on the topic "Cluster Analysis." The session provided participants with an in-depth understanding of cluster analysis as a multivariate technique used to classify objects or cases into relatively homogeneous groups based on selected characteristics.

Dr. Vanparia began by introducing the concept of cluster analysis and its significance in research for identifying natural groupings within data. He highlighted its applications in diverse fields such as market research, social sciences, psychology, and data science. Participants were guided through the

distinction between hierarchical and non-hierarchical (k-means) clustering methods, with clear explanations of how each technique is applied and interpreted.

The session further covered the steps in cluster analysis, including selection of variables, measurement of similarity or distance (Euclidean and other measures), choice of clustering method, and validation of clusters. Dr. Vanparia also discussed challenges such as determining the optimal number of clusters and ensuring meaningful interpretation of results.

Illustrative examples and case studies were presented to demonstrate the practical application of cluster analysis in research. Participants showed keen interest and engaged in discussions, raising queries regarding software tools, interpretation of dendrograms, and real-life research applications. Dr. Vanparia addressed these questions thoroughly, ensuring clarity of understanding.

Overall, the session was highly informative and interactive, equipping participants with essential knowledge of cluster analysis and its practical utility in grouping data for research and decision-making.

On 27 September, 2025, from 1:30 pm to 3:00 pm, Dr. Dhaval Maheta, a distinguished professor from the Department of Business and Industrial Management at Veer Narmad South Gujarat University, Surat, conducted an insightful 90-minute workshop session on “Summary Measures, Parametric and Non-Parametric Tests, and Hypothesis Testing” as part of the third session of a broader series, likely virtual or hybrid, focusing on research methodology and data analysis. Dr. Maheta, known for his YouTube tutorials and hands-on workshops in tools like R, Python, SPSS, and XLSTAT, began

with descriptive statistics, covering summary measures such as mean, median, mode, variance, and standard deviation, with a focus on handling count data through proportions and contingency tables. He demonstrated these concepts using R on a survey dataset, emphasizing data visualization to detect skewness and outliers. The session progressed to parametric tests, including t-tests and ANOVA, highlighting their assumptions like normality and equal variances, with practical examples in SPSS, such as comparing student exam scores. For non-normal data, Dr. Maheta introduced non-parametric alternatives like the Mann-Whitney U, Wilcoxon Signed-Rank, Kruskal-Wallis, and Friedman tests, using Python's SciPy library to analyze datasets like patient satisfaction scores. The session culminated in a comprehensive overview of hypothesis testing, detailing null and alternative hypotheses, test selection, p-value interpretation, and power analysis with tools like GPower, illustrated through a business case study on A/B testing for marketing campaigns. Engaging participants with live coding and Q&A, Dr. Maheta addressed common pitfalls, such as misinterpreting p-values, and shared resources like his YouTube channel and sample code. Attendees, including researchers and students, appreciated the balance of theory and practice, though some suggested including advanced topics like regression in future sessions. This session reinforced Dr. Maheta's expertise in making complex statistical concepts accessible and applicable, equipping participants with robust tools for data-driven decision-making.

The valedictory session of the One-Week National Workshop on “Data Driven Discovery: A Hands-On Workshop” was held on 27th September 2025 at 3:00 p.m. onwards. The event marked the successful conclusion of a week-long academic engagement that brought together experts, faculty

members, and research scholars to explore the methods and applications of data-driven research.

The session was graced by the Patron, Dr. Kishorsinh N. Chavda Vice Chancellor, VNSGU, Surat, Co-Patron, Dr. Rameshdan Gadhvi, Registrar, VNSGU, Surat, Chief Guest, Dr. Vijay Kumar Joshi, Dean, Faculty of Commerce, Principal, M. K. College of Commerce, Bharuch, Guest of Honour, Dr. Dilip L. Varsani, Associate Dean, Faculty of Arts (VNSGU), Principal, Shree J. B. Dharukawala Mahila Arts College, Surat, Head of Department, Prof. Gaurang D. Rami, Department of Economics, VNSGU, Surat, and Workshop Coordinators, Dr. Yogesh N. Vansiya, Assistant Professor, Department of Economics, VNSGU, Surat and Dr. Manish R. Patel, Assistant Professor, Department of Economics, VNSGU, Surat. The distinguished gathering reflected the collaborative spirit and academic significance of the workshop. The session featured encouraging and congratulatory messages from the Patron and Co-Patron, appreciating the successful completion of the workshop and the efforts of the organizing team, resource persons, and participants.

The proceedings began with the welcome and address by the Head of Department, who highlighted the importance of data-driven approaches in contemporary research and encouraged students to apply the skills gained during the sessions. Following this, the Chief Guest delivered an inspiring speech emphasizing the growing role of data analytics and computational tools in shaping research and policy decisions. The Guest of Honour also addressed the gathering, appreciating the efforts of the organizing team and motivating participants to continue their journey of learning and innovation.

Participants from M.A. and Ph.D. programmes shared their views and experiences, expressing how the workshop enhanced their understanding of statistical techniques, analytical software, and research methodology. Their reflections showcased the success of the workshop in achieving its objectives.

The highlight of the session was the distribution of certificates to all participants, acknowledging their active involvement and completion of the workshop.

The session concluded with a vote of thanks proposed by the coordinators, who expressed gratitude to the dignitaries, resource persons, participants, and organizing committee for their invaluable contribution to the workshop's success.

The valedictory session thus marked a fitting end to an academically enriching workshop, leaving participants motivated and equipped with hands-on skills for their future research.