



**Six Days **Online** Faculty Development Programme (FDP) on  
Research Methodology with a Focus on  
Hands-on Experience of Econometric Modeling with EViews  
18<sup>th</sup>-23<sup>rd</sup> March, 2024**



**Organised By**  
**Malaviya Mission Teacher Training Centre (MMTTC)**  
**Shri Mata Vaishno Devi University**  
**Kakryal, Katra-182 320**  
**Jammu and Kashmir, India**

## About the Topic of Faculty Development Programme (FDP)

Models play a major role in all research, whether theoretical or applied. A model is a simplified representation of an actual phenomenon, such as an actual system or process. The actual phenomenon is represented by the model in order to explain it, to predict it, and to control it. Modeling, that is, the art of model building, is an integral part of most sciences, whether physical or social, because the real-world systems under consideration typically are enormously complex. Indeed, econometrics is defined as the branch of economics concerned with the empirical estimation of economic relationships. Models, together with data, represent the basic ingredients of any econometric study. Typically, the theory of the phenomena under investigation is developed into a model which is further refined into an econometric model. This model is then estimated on the basis of data pertaining to the phenomena under investigation using econometric techniques. The estimated model can then be used for various purposes, including structural analysis, forecasting, and policy evaluation.

Econometrics was developed by Jan Tinbergen and Ragnar Frisch (Nobel Laureates (Economics)) for quantitative analysis of theoretical inter-relationships between economic variables. Econometrics is now used by several social sciences both in teaching and research. Its use in research is all pervasive. The reason is that modern academic and corporate research necessitates quantification of inter-relationships between the variables of investigation. Econometrics takes economic models and tests them through statistical trials. The results are then compared and contrasted against real-life examples.

Econometric Modeling provides new and stimulating introduction to econometrics, focusing on modeling. The key issue confronting empirical economics is establishing sustainable relationships that are both supported by data and interpretable from economic theory. Econometric models are elegant, capture the interaction among different factors and can be mimicked to explain complex phenomena in nature and computing. Econometric modeling in research not only enhances value of output of research but it also confers prestige and distinction on researchers.

Econometric models are either linear or non-linear. Early econometric models and many current econometric models are linear in that they can be expressed as models that are linear in the

parameters. This linearity assumption has been an important one for proving mathematical and statistical theorems concerning econometric models, for estimating parameters, and for using the estimated models for structural analysis, forecasting, and policy evaluation. Non-linear models, that is, econometric models that are non-linear in the parameters, have become more common in recent years largely due to advances in computer software and numerical analysis that have facilitated the estimation of such models. The parameters of a non-linear model are frequently estimated using successive linear approximations to the model, and the properties of such estimators can be derived asymptotically or approximately. While these properties are valid for large samples the exact small sample properties of estimators for general nonlinear econometric models are unknown. Furthermore, some of the properties have been shown to hold only under the assumption of normally distributed stochastic disturbances, and the consequences of model specification are generally not known in the non-linear case.

An econometric model is one of the tools that economists use to forecast future developments in the economy. In the simplest terms, econometricians measure past relationships among such variables as consumer spending, household income, tax rates, employment, and the like, and then try to forecast how changes in some variables will affect the future course of others. An econometric model is said to be complete if it contains just enough equations to predict values for all of the variables in the model.

### **Objective of the FDP**

This is designed to impart knowledge on Econometric Modeling and its Applications in the context of empirical research. The objective of this workshop is to cover important econometric models and methods for research application. This workshop is intended to introduce participants to the analytical framework of econometrics, the branch of economics that deals with estimation and evaluation of theoretical issues through econometric models. The workshop aims to cover a wide range of econometrics topics, so that the tools that participants will learn in this series of lectures will allow them to obtain a deeper understanding of how to analyze economic and financial data and how to derive policy conclusions through the use of different models.

The proposed workshop will not only equip participants with econometric methods and models of data analysis, but it shall also delineate the road map for the application of these models research data. The workshop will be beneficial to research scholars, academicians, policymakers, industry personnel, etc.

## **Topic and Subtopics**

- 1. Introduction to Econometrics**
- 2. Univariate Analysis & Bivariate Modeling**
- 3. OLS Model & Violations of OLS Model Assumptions**
- 4. Simple and Multiple Regression Modeling**
- 5. Specification Error and Model Selection**
- 6. Dummy Variable Model**
- 7. Limited Dependent Variable Models: Logit, Probit and Tobit**
- 8. Times Series Stationarity Test :Correlogram, DF and ADF, Philips Paron and KPSS**
- 9. Cointegration, ECM Model and Granger Causality**
- 10. Time Series Forecasting Model: ARIMA & VAR**
- 11. Time Series Volatility Model: ARCH & GARCH**
- 12. Panel Data Regression Model: Fixed Effect Approach and Random Effect Approach**
- 13. Panel Cointegration test**
- 14. Auto Regressive Distributed Lag(ARDL) Model**
- 15. Non Linear Auto Regressive Distributed Lag( NARDL)**
- 16. Generalized Method of Moments(GMM)**

## **Software Application**

E-views software will be used in modelling for time series and panel data. This workshop will be dedicated towards both the theoretical understanding and practical application of quantitative econometric tools with the help of E-Views and R software.

## **Target Participants**

The targeted participants include:

- Teachers in Colleges, Institutions and Universities

## How to Apply

Interested faculty members are requested to send his/her mail with recent CV to [a.billah@smvdu.ac.in](mailto:a.billah@smvdu.ac.in) OR [gopinathan.r@smvdu.ac.in](mailto:gopinathan.r@smvdu.ac.in) OR [pabitra@smvdu.ac.in](mailto:pabitra@smvdu.ac.in) before 17<sup>th</sup> March, 2024.

## No. of Participants

Maximum of 80 participants will be shortlisted for this Six Days **Online Workshop**. The committee will select the participant on the basis of their research topic, and Curriculum Vitae. The committee decision on the selection of the participant is considered to be final and decision binding. The selected participants will not be provided travel allowance in attending the Six-day workshop. The travel costs are necessarily self-financing. Local travel allowance also won't be given to participants. On first-cum and first-serve basis, the participants will also be provided food and lodging facilities on a double sharing basis in the University guest house.

## Registration Fee :

No Registration fee for attending this **Online FDP**.

## Certificate

The participants will be provided certificates on successful completion of the programme.

## ORGANISING COMMITTEE

|  |                         |
|--|-------------------------|
| <b>Prof. Pragati Kumar, Hon'ble Vice Chancellor, SMVD University</b> | <b>Patron</b>           |
| <b>Shri Ajay Kumar Sharma, Registrar, SMVD University</b>            | <b>Co-Patron</b>        |
| <b>Prof. Supran Kumar Sharma, Professor, SoB<br/>SMVDU</b>           | <b>Director, MMTTC-</b> |
| <b>Dr. Pabitra Kumar Jena, Assistant Professor, SoE</b>              | <b>Coordinator</b>      |
| <b>Dr. Arif Billah Dar, Assistant Professor, SoE</b>                 | <b>Co-Coordinator</b>   |
| <b>Dr. R. Gopinathan Assistant Professor, SoE</b>                    | <b>Co-Coordinator</b>   |

**Team Members of Malaviya Mission Teacher Training Centre (MMTTC) at SMVDU**

| <b>S.No.</b> | <b>Name</b>                      | <b>Designation</b>         | <b>Department</b>  | <b>Role</b>            |
|--------------|----------------------------------|----------------------------|--|------------------------|
| <b>I</b>     | <b>Dr. Supran Sharma</b>         | <b>Professor</b>           | <b>School of Business</b>                                    | <b>Director</b>        |
| <b>II</b>    | <b>Dr. Sharda M. Potukuchi</b>   | <b>Associate Professor</b> | <b>School of Biotechnology</b>                               | <b>Deputy Director</b> |
| <b>III</b>   | <b>Dr. Raghavendra K. Mishra</b> | <b>Professor</b>           | <b>School of Mechanical Engineering</b>                      | <b>Co-Coordinator</b>  |
| <b>IV</b>    | <b>Dr. Ankush Anand</b>          | <b>Professor</b>           | <b>School of Mechanical Engineering</b>                      | <b>Co-Coordinator</b>  |
| <b>V</b>     | <b>Dr. Sunanda</b>               | <b>Assistant Professor</b> | <b>School of Computer Science &amp; Engineering</b>          | <b>Co-Coordinator</b>  |
| <b>VI</b>    | <b>Dr. Surender Singh</b>        | <b>Assistant Professor</b> | <b>School of Mathematics</b>                                 | <b>Member</b>          |
| <b>VII</b>   | <b>Dr. Anil K. Bharadwaj</b>     | <b>Assistant Professor</b> | <b>School of Electronics &amp; Communication Engineering</b> | <b>Member</b>          |
| <b>VIII</b>  | <b>Dr. Kamaldeep</b>             | <b>Assistant Professor</b> | <b>School of Electrical Engineering</b>                      | <b>Member</b>          |
| <b>IX</b>    | <b>Dr. Pabitra Kumar Jena</b>    | <b>Assistant Professor</b> | <b>School of Economics</b>                                   | <b>Member</b>          |

## **Tentative Resource Persons**

- 1. Dr. Bandi Kamaiah, Emeritus Professor, School of Economics, University of Hyderabad and Past TIES President**
- 2. Dr. S. Madheswaran, Professor, Institute for Social and Economic Change (ISEC), Bangalore and Former Director, ISEC**
- 3. Dr. M. Ramachandran, Professor, Department of Economics, Pondicherry University and Past TIES President**
- 4. Dr. N. R. Bhanumurthy, Professor & Vice-Chancellor, BASE University, Bengaluru and Past TIES Secretary**
- 5. Dr. Neeraj Hatekar, Professor, Azim Premji University, Former Professor of Mumbai University**
- 6. Dr. Dr Bimal Kishore Sahoo , Department of Humanities and Social Sciences, Indian Institute of Technology, Kharagpur**