GUJARAT TECHNOLGICAL UNIVERSITY

Centre for Global Business Studies

Report – FDP on Quantitative Techniques for Scientific Research Using Statistical Software

21-25 July 2014 @ GTU Chandkheda Campus

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With the increase in complexities of modern business it is not possible to rely on the unscientific decisions based on the intuitions. This provides the scientific methods for tackling various problems for modern business. Quantitative techniques provide solutions to almost every area of a business. Quantitative techniques provide a method of decision making in the face of uncertainty. Considering the importance of the theme, Gujarat Technological University (GTU), Centre for Global Business Studies (CGBS) organized Five Days FDP on 'Quantitative Techniques for Scientific Research Using Statistical Software' during 21-25 July 2014 at GTU – Chandkheda Campus, Ahmedabad. The FDP aims to impart knowledge on Research Methodology, Scientific Discovery, Quantitative Techniques, Marketing Research, Charts, Hypothesis Testing, Cluster Analysis, Multi-Dimensional Scaling (MDS), Correlation& Regression, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA),Path Analysis, Structured Equation Modelling (SEM), SPSS, AMOS, etc.

The Inaugural session of FDP was started in presence of Dr. G. P. Vadodaria, I/C Registrar, GTU, Prof. (Dr.) Dheeraj Sharma, Marketing Chair, IIM-Ahemdabad and Dr. Akshai Aggarwal, Vice Chancellor, GTU. Dr. Vadodaria welcomed all the guests and faculties for FDP. He also shared his personal experience of scientific research with the participants. He admitted that there were no FDP at the time of his Ph. D. and he has done all the statistical analysis manually. He motivated all the faculties/participants to take maximum

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advantage of this FDP. In the inaugural speech of FDP, Dr. Akshai Aggarwal, Vice Chancellor of GTU emphasised on quality of research. He stressed that the research which is being conducted by our faculties should be of international quality.

Prof. (Dr.) Dheeraj Sharma, Marketing Chair, IIM-Ahemdabad gave a key note speech. In his key note address he spoke on "Good Research". He pose certain questions to audience regarding constitutes of good research. Dr. Sharma explained the need and motive of research. He quoted that "researchers have defined good science as science which is replicable, makes sense, and is able to predict and explain, has objective criteria, is relevant, has experimental control, expands knowledge and is accepted by society". He, then explained building blocks for a good research. Dr. Sharma posed certain questions which need to be answered before conducting a research. He was of the opinion that "What, How, Why, Who, Where, When, etc. Dr. Sharma also explained the factors which are to be considered for judging a paper for publication i.e. What's New, So What, Why So, Well Done, Why Now, Done Well and Who Cares etc questions should be considered for publication.

Dr. Rajnikant Patel, Professor and Head at Postgraduate Department of Business Management, Sardar Patel University took the first session of Faculty Development Program. He emphasised on importance of research methodology and use of statistics in the field of management research. He started his presentation with the topic "Why we do research?" and threw light on importance of research in the academic field. He explained some live examples of his Ph. D. students and motivated all the faculty members / participants to carry out a good quality research to succeed in the field of academics. Dr. Patel also focused on tools and techniques of the research which are mostly used in scientific research to come to some concrete conclusion.

Dr. Kaushal Bhatt took post lunch sessions. He took the topics such as Basic commands of SPSS, Data Handling, Data Preparing, Data Standardizing, Missing Value Analysis, Data Re-coding, Creating New Variable, Creating and Editing of Graphs, etc in the first session. During the first

session of Dr. Bhatt, he explained basic steps to operate and enter data into SPSS for scientific research. He also shared live examples for creating new variable and other. Post tea session Dr. Bhatt explained Uni-variate and Bi-variate hypothesis testing with pre allotted data. He explained t-test, chi square test, z-test, cross tabulation, estimation of hypothesis testing, etc during the second session. During his discussion of topics he explained various live case studies and explained importance and use of these statistical tools for hypothesis testing.

Dr. Nishith H. Bhatt is currently working as an associate professor in department of management, Hemchandracharya North Gujarat University, Patan, Gujarat since December, 1996. He has more than 18 years of an experience in teaching and academic field. He started his lecture with explanation of types of scale and its use in research methodology. He also explained the steps to check Normality of the data. He shared that before conducting and test one has to check normality and based on the answer of normality type of test can be used. Dr. Bhatt also explained the steps for statistical analysis. Dr. Nishith Bhatt explained the topics like One Way ANOVA, Regression Analysis, etc. He has also explained the importance of Regression Analysis to participants.

Dr. Ritesh Patel took sessions on various topics of the theme on entire 3rd day of Faculty Development Program. He explained the topics i.e. Classification and segmentation Techniques (Cluster Analysis), Discriminant Analysis, Multi-Dimensional Scaling Techniques (MDS), Attribute-based perceptual mapping using Discriminant Analysis and Reliability and Validity concepts. Dr. Patel took various examples and made all the participants to work live on their laptops. All the queries were resolved by the expert. Dr. Patel also explained these scientific techniques for data analysis and interpretation. He discussed the ways to write the analysis of result which is being produced by the software. He explained in depth the techniques like Cluster Analysis, Discriminant Analysis, Multi Dimensional Scaling, Methods to check Reliability and Validity of the data, etc.

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Dr Jagannath V. Aghav is currently working as a Professor and Head Department of Computer Engineering and Information Technology College of Engineering at Pune. He has tremendous experience in teaching and research around 25 years. He is a Gold medallist in BE and ME. His area of interests is Synchronous programming, System Verification, System biology, Software tools, and Cloud Computing. He took sessions on Data Analytic Applications: Algorithmic Perspective (real application with case study on application of live analytic in CS domain). His session was highly technical and knowledge sharing.

Dr. Vipul V. Patel is doctorate guide in management at Ganpat University, R K University and C U Shah University. He has delivered expert sessions in FDPs on Factor Analysis using SPSS and AMOS software. Dr. Patel took sessions on Exploratory Factor Analysis, Confirmatory Factor Analysis, Difference between Exploratory and Confirmatory Factor Analysis, Determining Validity and Reliability of

Scale using CFA, Cronbach's alpha : a coefficient of internal consistency, etc on SPSS software. He also took session on AMOS software i.e. Structured Equation Modelling (SEM), Evaluating a Model Fit, Relative Fit Indices (IFI, TLI, NFI), Parsimonious Fit Indices (PGFI, PNFI, PNFI2, PCFI), Non-centrality-based Indices (RMSEA, CFI, RNI, CI), etc.

All participants / Faculties were highly satisfied with the concept and content of FDP.

Memories:

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