

LEARNING STATISTICAL METHODES WITH ONLINE ONLINE COURSE: SEM AND SSM FOR BUSINESS RESEARCH

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ABSTRACT

Today's business has become something complex. Various factors interact with each other and make business unpredictable. Research is an effort to develop knowledge, develop and test theories. The research objective is an effort to develop knowledge, develop and test the theory. Research activities in practice are likely to include multidisciplinary research and a combination of the application of multiple research methods. In practice, research can be carried out in multi-disciplinary and is a combination of several research methods. The function of research is to find explanations and answers to problems and to provide alternatives to the possibilities that can be used to solve the problem. On that basis, a systematic method is needed in overcoming various problems that arise in the business. The business research method is a systematic method that is useful for researching various aspects related to business. Statistics and research methods training aims to provide a better understanding of business research. The research methods discussed in this training are Structural Equation Modeling (SEM) and Soft System Methodology (SSM). This community service activity produces changes following the set output targets, increasing participant knowledge to help compile business research. The results of the evaluation of the implementation of training in business research methods for students, lecturers, researchers, and practitioners, show that the level of understanding becomes better after attending the training and has the motivation to conduct research with quantitative and qualitative approaches. Participants can also run the SEM LISREL application independently.

Keywords: SEM, SSM, Business Research, Statistical, Online Course

1. BACKGROUND

Research can be briefly described as an activity that observes facts that attract attention and raise questions. These questions will further encourage efforts to find answers to questions or problem solving with human knowledge. Observation of facts, identification of problems using knowledge is the essence of research activities. *Research* is an activity that aims to develop knowledge. Science is part of knowledge that has specific criteria. Research thus has a close relationship with science. Research is an operationalization of the method used to obtain scientific knowledge known as the scientific method (Malhotra et al., 2017).

The general purpose of the scientific method is to explain, predict, and control phenomena in social and business life. Therefore, a systematic method and procedure are needed to be able to solve every problem encountered. The information inside and outside the organization becomes essential and consideration in decision making. The research method is one of the appropriate procedures used for deciding on management and business. Several current business research activities have received recognition, especially from business circles, for their reliability in identifying, formulating, developing alternatives, and problem-solving.

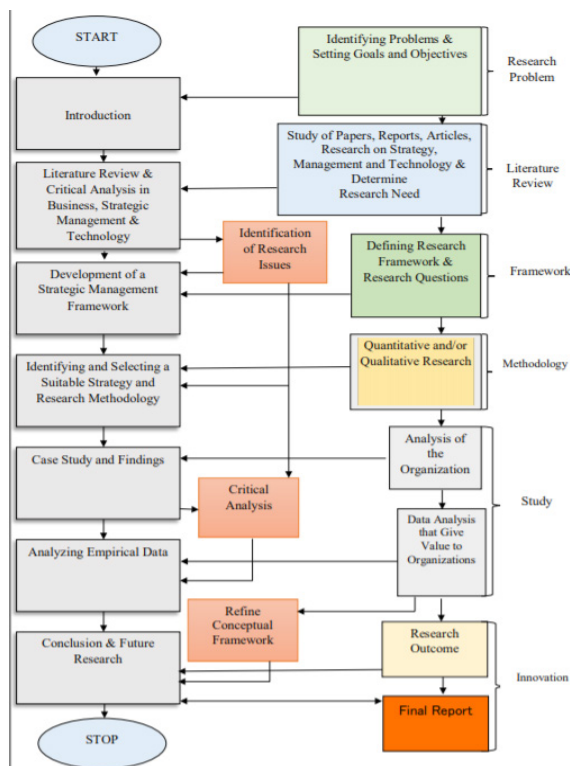
In its development, awareness of the importance of understanding research methods has made this field of science more and more in demand, in line with the increasingly complex problems in business and management life. In the business environment, research methodologies are often needed to make decisions to establish business strategies and policies. Therefore, essential decisions requiring a high degree of caution require a good understanding of research methodology.

The purpose of the research is to be able to use the results obtained. In general, the research results are expected to understand, solve, and anticipate problems. Understanding means clarifying a problem or information that is not known and then knowing. Solving means minimizing or eliminating the problem. Anticipating means trying to prevent problems from happening. The business research method can be interpreted as a scientific way to obtain valid data to find, prove, and develop knowledge so that it can be used to understand, solve, and anticipate problems in the business field.

Methodology training aims to provide quantitative skills for various parties who need quantitative methods and analysis to analyze an empirical condition and support policymaking. Writing good business research and scientific papers requires mastery of various methodological components. Therefore, to increase the mastery of students and various parties related to these components, it is necessary to carry out training and assistance on research methodology. After completing the training, participants are expected to master the methodological components needed in research writing following the rules of scientific writing. To better understand the entire research approach chosen, it is described in Picture 1.

Purpose

Research methodology is a scientific process or method to obtain data that will be used for research purposes. Research is a systematic investigation to increase the amount of knowledge, and it is also a systematic and organized effort to investigate specific problems that require answers. The nature of research can be understood by studying various aspects that encourage researchers



Picture 1. Research Methodology (Basias and Pollalis, 2018)

to conduct research. Everyone has different motivations, some of which are influenced by their respective goals and professions. The motivation and purpose of research, in general, are the same, namely that research is a reflection of the human desire that is always trying to find out something. The desire to acquire and develop knowledge is a basic human need that is generally the motivation to conduct research. The purpose of the research is to formulate research results through searching, finding, developing, and testing knowledge.

In terms of outputs or objectives in this training, they are as follows:

1. Understand the basic knowledge of business research
2. Understand the preparation of research objectives, research design, sampling techniques, and data collection by conducting qualitative and quantitative research in management and business.
3. Understand quantitative analysis methods: Structural Equation Modeling (SEM)
4. Understand quantitative and qualitative analysis methods: Soft System Methodology (SSM)
5. Participants can conclude a research model in the field of management

The training is designed comprehensively from the provision of basic concepts related to research, research design, and types of analytical methods (quantitative and qualitative) to the determination of analytical methods, preparation and improvement of research proposals, and implementation of research and preparation of research reports. In addition, the training design is made so that participants can conduct research. This training can help

participants who find it challenging to analyze research data. It is hoped that this training will be helpful, especially in improving the quality of research results.

2. METHOD

The training aims to improve the ability of participants, both students, lecturers, researchers, and business practitioners related to the implementation of research and data analysis—this course implementation of training for two times online meetings. The research method training activity was attended by 93 participants with a background of master's, doctoral students, lecturers, researchers, and practitioners. The implementation of service in business research methodology training is carried out in collaboration with the IPB Business School Alumni Association. Resource person Dr. Prita Prasetya, S.Si, MM and Dr. Sekar Wulan Prasetyaningtyas, S.Si, M.Pd.

The first meeting was held on June 7, 2020. The first stage consisted of presenting material on research methodology in management and business, followed by Structural Equation Modeling (SEM) and Soft System Methodology (SSM). Phase 2 will be held on June 14, 2020. Participants prepare their laptops which aim to understand quantitative research procedures and Structural Equation Modeling (SEM). Apply skills to operate the LISREL software. Can correctly interpret the results of software output as decision-making information. Can provide conclusions and implications of results for planning and managerial activities.

3. RESULTS AND DISCUSSION

Introduction

The opening activity is to explain the introduction to research. Scientific research in management aims to provide a deeper understanding of management decisions and their rationale or non-existence by looking into business research methods and their presence in management. In general, this introductory section presents analyzes and validates the problem to be solved through the study. There are two types of problems: problems that aim to increase knowledge and those that aim to make our lives better. The research topic comes from a detailed and in-depth analysis of a research problem as one of the possible ways to solve the problem. The analysis is derived from the experience gained and the literature review.

The analysis carried out includes:

1. Observations, experiences, views, opinions that reflect or create problems;
2. Background (historical, cultural, economic, social, etc.)
3. Rationale or theory or conceptual, basic information or foundation that provides knowledge to humans about the problem area.
4. The real problem we want to address contributes to the solution.
5. The purpose of the study and, where possible, the objectives based on which research questions can be derived.

CONCLUSION

The results of business training with Structural Equation Modeling (SEM) and Soft System Methodology (SSM) for students, lecturers, researchers, and practitioners show that understanding becomes better after attending the training and motivation to research with quantitative and qualitative approaches. Participants can also operate the SEM LISREL application independently. The enthusiasm of the participants after attending the training with many requests for the presenters. In addition, there will be re-implementation of more detailed training separately.

The results of his service on business research methods with SEM and SSM have also been written into a book entitled "Business Research Methods: Structural Equation Modeling and Soft System Methodology" with ISBN 978-623-256-000-0. IPB Press Publisher in Bogor. Preparing the book is to share the knowledge received during the learning process and research from the author. This book provides practical instructions to get a clear picture in completing the completion of research writing using the Structural Equation Modeling (SEM) and Soft System Methodology (SSM).

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