

**THE ROLE DEDUCTIVE AND INDUCTIVE METHODOLOGIES IN THE CONSTRUCTION OF SCIENTIFIC KNOWLEDGE: A CRITICAL STUDY**Thiraviyanathan Thileepan¹, Markandan Rubavathan²

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Abstract

Different Methodologies have been used historically for the construction of knowledge the development of new theories and the creation of innovative thoughts. Against this background the birth of deductive and inductive methodologies are new dimensions in scientific research. This research aims to critically analyze the special characteristics of deductive and inductive methodologies and their implications for the construction of scientific knowledge. In the development of scientific methodology, early thinkers discovered new realities using observation and experience. Its continued development is the emergence of the deductive method; this method was used to infer an individual result from common data. This method was logically introduced by Aristotle in science. This methodology has been useful to ideological and mathematical inquiries. In the history of scientific methodology, the inductive method was introduced by Francis Bacon following the deductive method. This method draws broad generalizations based on specific observations. These methodological thoughts developed by Bacon were the basis for the development of modern science and construction of knowledge. Hence, these methodological thoughts brought about revolutionary changes in scientific research and drew the attention of many late thinkers. This study is based on secondary data and deploys historical methodology, comparative methodology and critical analysis.

Keywords: Deductive, Inductive, Methodology, Construction of Knowledge.

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