

Hypothetico-Deductive Method

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Introduction

Many arguments in science are often accompanied by the induction or deduction. In the empirical sciences induction is used to summarize the data, the results of observations or experimental research (Lawson, 2014). The conclusions obtained in this manner represent the hypothesis is correct which further verified by deriving the logical consequences of these. Once scientists have gradually come to realize the idea that inductive logic cannot be considered an infallible remedy for the discovery of new scientific truths, they are increasingly began to pay attention to the hypothetical-deductive method of investigation. This paper Compare and contrast two business research papers as to describe how the researchers utilized the hypothetico-deductive method.

Discussion

Over of hypothetico-deductive method

Hypothetical-deductive method is a theoretical method of scientific knowledge based on deductive inference consequences of the hypothesis or system of hypotheses and empirical (experimental) verification. Since the deduction fully transfers the value of truth from premises to conclusion, the negative results of empirical tests indicate incorrect initial hypothesis (or the need to make the appropriate changes in procedures of empirical tests or in the logical and mathematical consequences of withdrawal) (Clapham et al., 2012). For the same reason the confirmation deductive consequences can not be a sufficient condition for the truth of the hypothesis to be tested, but only the condition of its likelihood or probability. In general, the evaluation of the initial hypothesis on the basis of this conclusion is complex and multi-stage character, as only a lengthy process testing hypotheses in the scientific knowledge can lead to sound its acceptance or refutation.

The grounds of the hypothetico-deductive method are based on the postulate that the development of theoretical knowledge is not built at the expense of inductive generalization procedures, data and facts, i.e. the "bottom," and unfolds like the "top" in relation to the latter. The method of constructing such knowledge is that first created a hypothetical construct that deductively unfolds to form a system of hypotheses, and then the system is subjected to experimental verification, in which it is specified and concretized.

Any deductive hypotheses developed system has a hierarchical structure. First of all, it has a hypothesis (or hypotheses) of the upper tier and lower tiers of the hypothesis, which is a consequence of the first hypotheses (Trotta et al., 2013). Each hypothesis is introduced so that by logic or logical-mathematical methods from it could bring the following hypothesis and the hypothesis of the lower tier directly compare with experimental data. The development of science often has to deal with not one but a whole system of hypotheses higher tiers, which are derived from the investigation, as verified in the experiment.

A characteristic feature of the hypothetico-deductive system is its integrity. In the empirical test is compared with the experience of the whole system of hypotheses as a whole, and it makes the process of restructuring hypotheses rather complicated procedure (Romesburg, 2014). The simplest case is when there is a hypothesis of the upper tier and it definitely should be a linear chain of intermediate hypothetical statements, compared with the experience. In this case, the experimental data immediately take out "the sentence" hypothesis.

From a modern point of view of the hypothetico-deductive theory to its logical structure can be viewed as interpreted axiomatic systems like, for example, the content axioms of Euclidean geometry. To this should be taken as axioms the strongest hypothesis, and all their consequences to consider theorems (Man, 2013). Although from a purely logical point of view is

quite difficult to argue against this approach, yet hypothetical-deductive model is well reveals some specific features of the deductive construction of expert knowledge from which completely distracted at the axiomatization of mathematical theories

Study 1

The first study analyzed aimed to explore the key factors that have influenced the managers and leaders to adjust their leadership styles while working on international assignments. The study also aimed to explore whether adaptation to new style proved beneficial or caused difficulties while managing re-entry to native culture. In this study the researcher initially observed a fact about which he wanted to find an explanation or draft a law. After making the observation of a fact or a regular researcher seek an explanation if none exists in the corpus accepted science, and build a hypothesis. The researcher constructed a theory or law to explain the observed facts. The researcher of the study once prepared an explanatory hypothesis elucidated the empirical and theoretical implications of the hypothesis. Subsequently, the researcher returned to the expertise to analyze whether his predictions about what should happen, according to his theory, are true or not. Finally he reached the conclusion that adaption to new national or organizational culture significantly depends upon changes in exiting leadership styles.

Study 2

The purpose of conducting this study was to identify the reason that individuals and organizations can have for the adoption of the cloud computing system, in order to satisfy their day to day needs related to the movement of the data. The ultimate goal of the study was to provide cloud providers, cloud computing customers and decision makers with the information concerning the benefits of cloud computing. The researcher of this study followed the following steps

- collection and systematization of factual material that requires a theoretical explanation; - extension and justification of hypotheses about the causes, characteristics, relationship, patterns of the investigated object in raising the necessary logical methods;
- assessing the validity and validity of hypotheses, selection of the most probable;
- removal of the hypotheses usually deductive way, consequences;
- Experimental verification of hypotheses derived from the consequences, after which the hypothesis is complete or partial confirmation or refuted.

Similarities and differences in how the researchers applied the hypothetico-deductive method

In both the studies, the researchers had initially analyzed the factual material that requires a theoretical explanation. Both the researchers critically analyzed the reliability and theoretical implications of the research hypothesis they had formulated. However, the disparity in the way both researchers conducted hypothetico-deductive method was that the second researcher experimentally verified the hypothesis.

Rule derived about using the hypothetico-deductive method

1. Approach to a problem for which the available knowledge of our age, principle, has no answer will be considered only scientific questions that can be addressed using the experimental method.
2. Construction of Hypothesis. A hypothesis is an answer that ventures to solve a previously formulated scientific problem. In the formulation of hypotheses plays a role especially important is the imagination . This allows construct reasonable conjectures (for example: the structure of the molecule is a hexagonal benzene ring) and also can design the experiments with which to compare the proposed hypotheses (for example: what

experiment could be designed to show that the hypothesis is true that eels are oriented in their travel through the memorization of variations salinity and temperature of the water?).

- a. Mathematical formulation of the hypothesis . This one is obtained conceptual greater precision (not the same degree precision say that water is at 29 ° to say that the water is warm) and also an argumentative rigor that ensures the validity of the reasoning are performed.
- b. deduction of consequences .all hypotheses have some observable consequences or events that are expected that occur in the case of being true. that is precisely what is to be tested in the next step.

3. Experimental test and its possible outcomes. The verification is the testing of a hypothesis, comparing it with the facts.
4. The formulation of scientific laws and theories when a hypothesis is sufficiently general and has been victorious in several processes crosscheck becomes considered a scientific law. when the development of the science, the various laws are organized and systematized, passing up a theory scientific

Conclusion

Hypothetico-deductive method is the method of obtaining new knowledge and deployment method theory, the essence of which is to create deductive-linked hypotheses of which are derived (deduced) ultimately statements about empirical facts. The method is based on the postulate that the development of theoretical knowledge is not built through inductive generalization procedures, data and facts, i.e., "Bottom" and would be deployed as the "top" in relation to the latter. The hypothetical-deductive method has several essential steps: observation

of the phenomenon to be studied, creating a hypothesis to explain this phenomenon, deduction of consequences or more elementary than the hypothesis own propositions, and verification or proof of the truth of the statements deduced by comparing them with the experience. This method forces the scientist to combine rational reflection or time wise (hypothesis formation and deduction) with the observation of empirical reality or time (observation and verification)

References

Clapham, M., Nevin, O. T., Ramsey, A. D., & Rosell, F. (2012). A hypothetico-deductive approach to assessing the social function of chemical signalling in a non-territorial solitary carnivore. *PloS one*, 7(4), e35404.

Lawson, A. E. (2014). Hypothetico-deductive Method. In *Encyclopedia of Science Education* (pp. 1-2). Springer Netherlands.

Man, A. (2013). deductive reasoning 73, 92–3, 96; see also hypothetico-deductive method discursive complex 50 disenchantment of the world 58, 59 evolution (biological) 15, 20, 24, 30, 60. *Jung and the Question of Science*, 118, 189.

Romesburg, H. C. (2014). Exercises for Bringing the Hypothetico-Deductive Method to Life. *The American Biology Teacher*, 76(5), 346-348.

Trotta, M., Lemaître, A., & Donnay, J. P. (2013). Operationality of geographic profiling through a hypothetico-deductive method. A review of constraints and factors. *Bulletin de la Société Géographique de Liège*, 60.