



## **Economic Researcher & Methodology of Scientific research**

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### **Abstract**

The paper contains an theoretical analysis of the interrelation between methodology of economics used by economic researcher and methodology of scientific research, encouraging readers to think differently about one of the most complicated & controversial subject.

The analysis begins with determination of propositions that were discussed and explained in the course of the argument.

- 1- The economic researcher, like scientific one goes after the procedures of physical sciences and benefits of the forms of logic.
- 2- Economics deals with human behavior while the natural sciences deal with matter.
- 3-This similarity and variance is reflected well in the nature of laws and generalizations.

## **Introduction**

This paper is an attempt at analyzing the interrelation between economics and natural sciences from viewpoint of scientific methodology, by which the facts are established.

Here I have concentrated on the economic side of an issue which is very complicated and controversial and discussed whether the economic methodology is scientific and whether the economists follow procedures and steps similar to those used by physical scientists and make use of forms of logic.

Even if we admit that economists apply the scientific method in dealing with different economic events, we need to explain the scope of variance between the generalizations

in each field on the one hand and how to justify the gap between economic theory and practice on the other hand.

Our attempt to give answers to these questions will perhaps help us in understanding the nature of physical and social laws, wherein the former deals with matter, while the latter deals with human behavior, which is different from person to person and from place to place.

Some actions are moreover bound by the legal and social institutions of society in which one lives. As a result different laws built, a comparison is made between positive and normative economics by saying that economics is not only positive science of what is, but also a normative science of what ought to be.

This consists general principles, laws and theories of the discipline of logic, which may be applied to the interpretation of all economic problems past or present.

In this paper we relied on a theoretical analysis of the assumptions and hypothetical questions presented by us, besides the material used in writing about this subject was drawn from academic sources (books & journals) in English and Arabic, as well as from experimental facts and from own personal experience in the process of investigating during more than twenty years.

The points mentioned above and that which may be arisen in this context have been explained deeply and in short, one by one. The summary of the paper is followed by our treatment of the subject.

### **1- Scientific methodology & its steps**

The term of scientific methodology refers to the process of investigating deeply into why / how the science is established. It is a way for building the facts, knowledge and beliefs which consists of significant steps.(1)

Steps of scientific methodology- These steps are a series of actions that are done to achieve a particular end, explained in short as follows:

In order to achieve the ultimate objective of any scientific research the researcher must begin with selecting the problem, which makes the process of collecting the data and information possible.

Without limiting a clear idea about subject it will be impossible to present and develop any assumption, which in return depends upon the nature of the problem on the one hand and the researcher's experience on the other.

The next process of scientific methodology is collecting the information; it is an important action to achieve the aim.

Sometimes, some facts and economic laws can be found by abstract observation like, "the law of diminishing returns", and "Marshall's theory about price".

The following step is classification of data, which is away to know the things.

It is necessary step through which the researcher perhaps faces some temporary solutions expressing the subjected answer to the problem, which is known by the hypothesis.

The formulation of the hypothesis proceeds from noticed facts and the researcher's experience. All principles coming from noticed facts in economics are known by theory.

The hypothesis should be such that the deduction can be drawn from the hypothesis itself, whether it could explain the fact or not.

Here we want to focus on the fact that the testing of the hypothesis takes place throughout the scope of consistency with real events, where a real economic life is an economic laboratory.

The last stage is writing the scientific research. This process belongs to, 'Applied Economics'.(2)

The determination of the scope of consistency between the hypothesis and its related facts forms the process of verification, which is done by means of notice or experiment. It is mistakable to consider the false hypothesis without usefulness, because sometimes it leads us to new facts.

Any way if any hypothesis is refused to be accepted, the researcher should choose a new one and start again until he or she reaches the possible solutions to the selected problem.

**2 -Forms of discipline of logic:** Deduction & induction are two methods of scientific study. They are two forms of logic that help to establish the truth.

Deduction refers to the process of drawing the conclusion from available information. Deduction, as a form of logic and a scientific method as well, is a descending process which proceeds from the general information to the particular facts or form universal to the individual.

In reality, deduction can be applied to all economic problems. Ricardo is regarded as the first economist who applied this method in investigating the economic phenomena.

Deduction is of mathematical & non-mathematical method, the first method was used by classical economists, while lately the second was adapted and became increasingly used in economic analyses.

**Induction:** By induction as a form of logic and a scientific method we mean, it is a reasoning process and an ascending process in which we draw general conclusions starting with particular facts to the general principles.

This form of logic was employed in economics by the German historical school.

Both deduction & induction are combined and used jointly in physical and economic sciences to confirm the conclusions, Alfred Marshall supported this idea by saying : "deduction and induction are both needed for scientific thought, as the right and left foot are needed for walking".(3)

Thus any true progress in any scientific research can be made only by a wise combination of forms of logic.

### **3 - Nature of generalization & laws:**

Generally, generalizations and laws describe a causal relationship between cause and effect and refer to establishment of general truth on the basis of particular experience.

It is a statement of general tendencies or uniformities between two or more phenomena. Economic laws in this sense are like scientific laws, which draw a shape of causal relationship between two or more variables.

The following are main features of generalization and laws:

- The economic laws are like natural sciences are positive and behaviorist, but the economic laws are not exactly as laws of natural sciences.
- The economic laws like scientific laws are hypothetical as they assume, 'other things remaining the same', but the former are less stable accordingly, they work differently in different institutional conditions.
- Unlike scientific, economic laws are not assertive and as a result, the accurate prediction is not possible as in physical sciences.

In regard to the scope of variance in the nature of laws within each field may be related to some facts like

- The economics deals with the human who acts in accordance to his taste, habits and particular way of behaving and thinking, which are changeable, while natural sciences deal with matter.
- Unlike the natural sciences, economics has a little scope of experimentation because the economic events happen at the same time.
- As to accurate predictions are not possible in economics, we can make sure even the natural sciences like meteorology cannot forecast the event correctly. Meteorologists say can be 85% certain about the weather conditions in ten hours' time but they can never be really sure.
- Further, the economic world is extremely complicated and one possible way of understanding the laws is by controlled experiment that could happen when everything under investigation is held constant, where economists have no such environment.

But as compared with laws of other social sciences, the economic laws are less hypothetical and more exact, precise and accurate due to the economics possess the measuring rod of money, which is not available to others, like ethics and sociology.

As a result, prediction concerning human behavior is liable to error.

### **4 -The role of an economic researcher:**

Usually the economic researcher faces some questions when he or she tries to deal with any economic problem like:

What should an economist know? How to do? How to move from a state of complete confusion in data and information to economic laws? How to modify the theoretical solution to the controversies today?

All these questions can be combined into one. How to overcome the gap between economic theory and practice?

We think that the suitable answer to all these questions is exclusively not easy, because we live in an age of uncertainty and there is unproductivity even in most precise physical sciences.

Therefore we cannot agree with the French mathematician, Laplace, when he thought more than one century ago, that with sufficient data and time for computation, we could see the future as clearly as the present.(4)

As we explained before, economists, as a scientific researcher, sometimes, arrive at an uneasy agreement and solution on how should economy works.

In reality the most influential economists has no answers to all previous questions.

But they should at least define the right questions.(5)

Economists should not be neutral to what is going on in our economic world, but he or she must attempt at embody both the established wisdom and the hot controversies of today, and he must know how to modify the scarcity of resources to wants.

Economic world is extremely complicated; one possible way of understanding economic laws is by controlled experiments.

A controlled experiment takes place when everything under investigation is held constant. But economists have no such surrounding.

**5 - Conclusion:** Proceeding from theoretical analysis the interrelation of methodology of economics and that of scientific research in the light of assumptions were presented, we will outline the results as follows:

- The term scientific methodology is a way by which facts and knowledge are established, which consists of significant steps that must be followed in writing the scientific research.

- As to the forms of logic, they help to build truth. Both of them are combined and used jointly in physical and economic sciences to confirm the conclusion.

- As regards to laws and generalization which describe the causal relationship between cause and effect and refer to established general tendencies or uniformities between two or more phenomena.

- As to respects to the role of economic researchers: We may conclude that economics is not only a positive science of what is but also a normative sciences of what ought to be which consists of a general principles, laws and theories and of discipline of logic which may be applied to the interpretation of all economic problems past or present as pointed by Building.(5)

Despite of the fact that both of them deal with causal relationship between the cause of event and its effect, they look at the same problem in different ways.

- We do not agree with some researchers who looked at economic generalizations and laws as abstractions, which have only a limited application to given time, place and environment.

But if the assumptions are consistent with each other and if the process of reasoning is logical, economic generalizations and laws will be applicable, but they are not a copy of our real world.(6)

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