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INTRODUCTION TO RESEARCH METHODOLOGY*

BY

B. FOUNOU

* For 6-month research trainees.

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INTRODUCTION TO RESEARCH METHODOLOGY*

In science, method is the overall process of steps followed by the mind to discover and demonstrate truth. (Petit Robert). Research, in its strict sense, relates to that part of scientific work which leads to discovery, with the report in the form of a demonstration, being the visible part of the iceberg. The introduction we are presenting relates especially to the concealed part of this iceberg. In view of this, we do not intend to present a method of discovery the truth, the reason being that not only are 6-month trainees not requested to carry out discoveries, but above all, because there are no recipes to propose.

In the field of research, each researcher ultimately discovers his own method. Nevertheless, an account of some principles which can be invaluable as a guide to average beginners does not seem useless to us. In social science research, data of all types, generally presented in statistical form by economists especially when this involves empirical research (the only type of research we had in mind at the time of writing this script), plays essential roles, but only as aids to problematics. This is also true of bibliography.

The availability of time, bibliographical data and references has a very great influence on the choice of subjects of research thesis and on the problematic. It is for this reasons that while striving to make general proposals, we try to take into account, constraints inherent in a six-month course at I.D.E.P.

We shall begin with the definition of scientific approach (Part one); this will be followed by the role of bibliography and bibliographical research. (Part 2); quantitative data and statistical research. (Part 3), and conclude with a few remarks on the appraisal of the end-of-training course.

* For six-month research trainees.

1 - Scientific approach

1.1 Research and study

A Scientific research should conform to the rules of scientific work namely, accurate formation of the subject, definition of terms employed in the subject where necessary, the terms of a problematic, report in the form of a demonstration including the use of adequate concepts and hence essential statistics or bibliographies. In this way, it differs from a simple report which merely describes a situation without necessarily emphasizing the train of facts and being burdened with references. It differs from remarks which constitute partial viewpoints expressed on problems. Finally, it differs from any study which aims at describing without necessarily providing explanations. For example, the study on the trend of consumption patterns must involve the concepts of elasticity - incomes and price elasticity within the context of the consumer, theory, which in itself, is incorporated in the theory of production modes and social formations.

Scientific research aims at revealing something new: a concept (mental representation of an object or relationship), a theory, the rational explanation of a phenomenon or a system of phenomena.

The introduction of a new concept into the theory of an object can throw this very theory out of gear. Thus, the concept of the reproduction of hired labour force by non-commodity labour affords a better understanding of imperialism and underdevelopment.

A research is scientific not only by virtue of its results but perhaps even more, by virtue of the approach adopted. A scientific approach does not always lead to the desired result; similarly, by intuition, certain results can be ascertained.

In empirical research, theoretical apriorism is one of the greatest enemies of scientific approach. The dominant theory or that theory best known by the researcher can conceal the reality from him; for, instead of providing adequate description and comparing the results of his description

to it, he strives to incorporate them into the narrow scope of its theory, which he then stricks to as a simple ideology. Indeed, although it is true that reality is not transparent (since it is always discerned through a theoretical or ideological screen or any other prejudice), reality is nonetheless richer than theory. The aim of theory should be to make it possible to understand reality and not to conceal it.

Scientific approach, in our view, involves three fundamental stages: (1) the choice of the subject and the problematic which leads to a research project; (2) the necessary data research leading to the preparation of a documentation; (3) the drafting phase which naturally leads to the systematic presentation of results. In the case of a memory or a thesis, a fourth stage could be distinguished, namely, the defence of the thesis. Each of these stages poses specific problems which are however, interconnected. A good problematic devoid of sufficient bibliographical or statistical data to provide answers to the questions cannot lead to suitable results.

1.2 Research, subject and problematic

The scope of the subject plays a leading role; when it is too vast, it inevitably leads to the repetition of generalities; when it is too limited, it calls for in-depth knowledge, which, in the social sciences are increasingly technical and decreasingly scientific. It is obvious that a subject like "imperialism in Africa" is clearly too vast: whereas a subject such as "millet beer industry" in a given Sahelian African country is too circumscribed. On the other hand, a subject like "the crisis of accumulation in the import-substitution industry in any average African country in the course of the 1970's" can be handled and treated by a trainee who has assimilated in detail, any previous theoretical lessons taught at the Institute.

It is the formulation of the problematic which, most often, helps to provide adequate details on the subject. The formulation of a problematic consists in raising a series of interconnected questions the answers to which will constitute so many stages leading to a general solution of the problem

intended to be tackled. From this problematic emerges a research plan, more or less detailed in form, and including all important items to be treated. All questions should be formulated even if only a part is treated (subject limitation).

The problematic cannot be confined to only a follow-up of questions. Knowledge having been acquired, reading a few basic bibliographical or statistical documents, combined with common sense by the researcher, should enable him to formulate working assumptions, that is, tentative answers to questions that he may formulate.

These questions should be thoroughly examined later, but the formulation of tentative assumptions is essential for the one who does not expect that "facts speak for themselves". Some beginners indeed think that it is data or bibliography which indicate what should dictate research. It is the opposite which is true. It is the working assumptions which should be uppermost in the organisation of statistical information, directing the questions towards a specific goal and indicating the limits to bibliography. Moreover, consideration should be given to organizing bibliography and documents into parts and sub-parts eventually.

This will then be followed by a detailed plan, that is, the list prepared in an orderly fashion, of items to be treated. It is obvious that in empirical research, description comes first, followed by theory, even if this plan is not adopted at the time of drafting. The research plan should be accompanied by a workplan, which shows the order in which constraints may compel commencement. The work plan should show dates, which could be reviewed in the process.

2. Role of bibliography and bibliographical research work.

2.1. Specific features of bibliographical problems in the social sciences.

The area tackled by the researcher is rarely new or unexplored. The reading of texts written by others in the field he deals with enables him on the one hand, to save energy and time and on the other hand, to slightly vary his own conclusions. Since the ultimate aim of research in the social sciences is to highlight concealed or badly understood relationships, no one should undertake his own research without knowing where his predecessors got to; their point of arrival should serve as his point of departure.

We must not however, forget in bibliographical selection the characteristics of the results of social science research, which are different from those of the experimental sciences and mathematics. Indeed, in the experimental sciences, it can be admitted that, to some extent, the process of knowledge production is cumulative, while it is not possible to be affirmative in the field of social sciences. Here, culture, ideology and interests exert their influences not only on the choice of the subject and the problematic but also on the choice of concepts employed. This is why the results arrived at by one school are not always transposable into another school. This is one of the causes of difficulty in building up an exhaustive bibliography. Added to this are linguistic difficulties etc.*

* The bibliography available at I.D.E.P. is biased by virtue of its interest in Africa and the Third World. But this bias is appreciably less pronounced than that of libraries in central countries. Indeed our library affords the building up of an acceptable bibliography for most of the subjects chosen by trainees, in view of the aims of the thesis. Besides, owing to linguistic and other barriers, it is not possible for anyone to boast of having thoroughly exhausted the bibliography on a subject.

What is most important for beginners is that scientific approach should be followed

Once the theoretical approach has been determined, choice should be made between first hand reference and second hand reference. The use of primary references consists in reading and using the texts of authors written either in their own language or translated. These are books or articles which suggest an interpretation of socio-economic "reality". Second hand references are obtained from authors who have read and summarized the former texts for teaching or other purposes.

A confirmed researcher should always refer to primary texts in order to incorporate them himself within his own research process. The beginner should also follow this line of action. If he does not succeed in this (and he rarely succeeds), he should be conscious of the limits of his conclusions. Indeed, there is no guarantee that the interpretation afforded by the second hand source really reflects the thought of the author to whom one refers by interposed interpretation or popularization. From this standpoint, text books are generally more faithful than thesis books whose texts authors tend to read through the patterns of their own systems.

But supposing that the original texts are all available and accessible to the researcher, the problem of selection still continues to arise, for, in many fields, it is not useful to read certain texts, except when one wishes to delve into the history of science or stages of analysis of a concrete phenomenon. (Historiography). Indeed certain texts are out-of-date as far as their capacity to explain contemporary reality goes.

Certainly, studies are not "neutral", but their main objective is to identify certain short-term trends from the observation of relatively short periods (generally from one to five years). Analytical or interpretative texts attempt to build up a theory or rather a metatheory of reality by seeking to establish fundamental relationships, generally socio-economic or socio-political in character, which studies do not generally seek to highlight. More basically, in the purview of development, it is important even in an empirical search to consider that, over and above relationships between things, there are structured interests whose operations favour or, on the contrary, go counter to the process of socio-economic transformation required by the country studied to rid itself of underdevelopment. The ensuring considerations concern more especially, interpretative bibliography.

2.2. Bibliographical Research and reading notes

Bibliographical research is an important stage once the problematic and the research plan have been established. A part of bibliography constitutes a part of the very process of choice of subject. In the theoretical field if one is not conversant with some texts or at least, theories considered as "classical" as well recent developments in all related fields, it becomes impossible to formulate a scientific problematic on the subject. When the subjects are empirical, the recent tools developed for their analysis should also be mastered. It is beyond this stage that actual bibliographical research work begins. This can be successfully done if the list of items to be treated is already available.

We wish in principle, to distinguish three phases namely: the preparation of a list, selection of articles and reading and note taking.

In the first phase i.e., the preparation of the list, one merely calls the titles out of obedience. Thus, no difference is made between descriptive and interpretative texts, but rather between the forms in which the references are presented: general bibliographical collections only provide the list of books and articles classified according to author and subject. This is the case, for example, of the UNESCO social science bibliography; most of the science periodicals do mention in the **current issue of the year, the list of articles published in the year**. Catalogues of important bodies or agencies which produce scientific publications such as I.L.C. and UNESCO may be interesting to consult. An analysis of periodicals likely to contain texts related to the question treated is essential.

With regard to the second phase, i.e. selection of articles, one should in principle, read everything and eliminate certain references of minor interest. However, most often, when the approach is empirical, one relies more or less, on others to carry out the first selections: thus, one will select the article or book of such an author for his repute in the field. Book reports prepared by reviews could also be a reliable source. With regard to articles, publications providing summary reports on them can sometimes be consulted. One will also find it helpful to skim through

certain articles himself especially those articles which are not mentioned anywhere else. During this selection phase, more summary writing is done than very accurate note taking after which a genuine reference bibliography will be selected.

After this operation of analysis or selection, begins the reading phase. Here, the main problem is note taking. In my view, it is necessary to take notes fairly abundantly and always leave space for a possible comment to be made on them. According to some authors, the notes should be distributed among various parts. This poses no problem when the viewpoint expressed in the reference only concerns a part of the research. If it turns out to be the contrary, it will be necessary to classify according to authors; at least this is what I am trying to do. Whatever the case, references made on note sheets should be sufficiently accurate to avoid having to fumble at the time of drafting. In this field, there is no substitution for personal experience. Moreover, I believe that no one observes the three "phases" we have distinguished.

3 - Categories of quantitative data and statistical research

3.1. Categories

Distinction should be made between primary and secondary sources of information or viewpoints. Concerning quantitative information the primary source can derive from the author himself who has had ad hoc statistics prepared, or stem from agencies specialized in the production of statistical data.

These agencies, specialized or having specialized departments or divisions (Central Banks for example), may be national, international or foreign.

Indeed, sometimes most statistical publications derive their data from some basic documents produced at the national level, by the National Bureau of Statistics, the Central Bank, or Research Consultances. Differences may appear especially in the degree of aggregation; the statistics published by national Departments and Research Bodies being more detailed than the statistics of international agencies. Quantitative secondary data or second hand data can be found in research texts where they serve as a support for argumentation.

Certain publications overlap the secondary and primary sources as well as the quantitative data and interpretative texts. Notable among these publications are the yearbooks and "surveys" the most outstanding of which are the "Europa" collections, the special issues of "Machés Tropicaux", the "Bulletin d'Afrique Noire", the Africa Research Bulletin and the World Bank and I.M.F. reports.

As a rule, the researcher should use only the primary sources of quantitative data bearing in mind that the narrower the field being treated, the greater his need for detailed statistics, which, in general, are not found in international publications.

Sometimes, there may be no quantitative data on an interesting subject for the fairly simple reason that there are some sectors that the ruling classes would like to exclude from scientific investigation to safeguard

their interests. Formulation of the research subject is not complete as long as the gap between the available sources of information and the necessary sources of information remains unbridged and does not affect basically, the conclusions that could be drawn from the research.

At I.D.E.P., the most interesting subjects involve the use of quantitative data dealing with national economies, sectors and subsectors and branches. In general, there is adequate data for treating these subjects on condition that one knows how to go about research (For geographical or historical reasons, it is on West Africa that these data are most abundant).

3.2. Statistical Research.

In general, it is advisable to begin with statistical annuals, irrespective of whether they are national, international or even regional. In this connection, United Nations Yearbook (Yearbook of national accounts. Yearbook of general statistics, Population year book). Yearbooks of specialized Agencies such as UNESCO, FAO, ILO, UNIDO, GATT etc.), publications of the World Bank (Report on world development since 1978 annual report, World Tables (1976 and 1980) UNCTAD'S Trade and Development Manual are remarkable as well as ECA'S public statistical yearbook and Foreign Trade statistics for Africa. For some countries, we have a stock of National Development plans, National Accounts, Industrial and Agricultural Surveys, etc.. Each trainee should make a full list of these items with regard to his own country.

The number of monthly statistical bulletins has reduced. The most regular is that produced by the United Nations. Each trainee should modify his subject according to the volume of quantitative data he may have at his disposal at I.D.E.P.

4. Final Remarks on the appraisal of the 6-month research course at IDEP.

At I.D.E.P., the "Master's Degree Certificate in Development in Planning" is awarded upon successful defence of the thesis. There is no separate theoretical examination; the reason being that the research training is considered as the logical continuation of courses for the last twelve months. The beginner in research who is the trainee, is supposed to be already sufficiently equipped with the necessary theoretical and conceptual background or at least, he must be capable of detecting his own deficiencies or inadequacies and request for assistance accordingly. The thesis for the award of the masters should therefore be considered as a stage in the training process. In fact, it is the right moment for the trainee to demonstrate that he is capable of choosing a research topic independently. Nonetheless, we insist that the work produced should conform to some acceptable scientific standards. The choice of the subject is achieved within the framework of certain constraints which should be borne in mind.

- 1) It is I.D.E.P.'S vocation and, consequently, its Pan-African teaching and research staff that it is most expedient to recommend only topics which have direct relationship with the socio-economic development of Africa.
- 2) The interest and aptitude of the trainee are taken into account. The trainee should be convinced that it is not enough to show personal interest with regard to a topic, for certain topics are more difficult to treat than others.

In general, the more theoretical the subject, the higher the expected mastery of concepts and theories to expedite topic treatment appropriately. Each trainee should be capable of testing himself in this field. In general, preliminary discussions with the trainee and the assistance of his thesis supervisor are critical at this level.

- 3) Time is a fundamental limiting factor. The chosen subject should be fairly easy to treat within the time limit set, i.e. 6 months; this infact means that one month will be required for drawing up the project, followed by four months of research and approximately one month for drafting the thesis.

- 4) The availability of quantitative and bibliographical data plays a primordial role in confining the scope of the choice of subject most often, to an intermediary level between micro-and macro-economics.

; It must be borne in mind that quantitative and bibliographical data never "speak for themselves". (i.e. they are never self-explanatory). It is the aids which only have their place within the framework of a problematic and a development determined by the researcher himself.

In conclusion, I wish to state that in the research phase, which leads to discovery, or a causal explanation of economic phenomena, the trainee must demonstrate method. It is no use embarking on the demonstrative phase i.e. drafting which can only be convincing if it is based on reliable statistical data and bibliography compatible with the subject to be treated. It is desirable that the subjects should deal with major problems facing Africa.

Where the subjects treated are empirical, the inductive approach should be adopted at the research stage, even if the theory is set out first at the time of demonstration.