The Steps in Conducting Evaluation Research

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Evaluation research is very useful to the field of public administration because it systematizes the steps and procedures necessary in the objective assessment of the performance of programs and projects sponsored by both the government and private institutions. The nine steps in the conduct of evaluation research are: (1) understanding the general objectives of the program and identifying the specific objectives to be focused on, (2) understanding the components of the specific objectives to be studied, (3) formulating the hypotheses and theoretical framework, (4) formulating the indicators for measuring performance, (5) formulating the research methodology, (6) data collection, (7) data processing, (8) analysis and interpretation, and (9) recommendations. Different indicators of performance such as efficiency, productivity, profitability and effectiveness have been highlighted.

Introduction

Evaluation research is one type of research which is relevant to the field of public administration. In particular, this type of research is useful to public administration as it provides steps and strategies in the objective assessment of programs and projects of government and of those sponsored by other institutions that have an impact on the public or selected sectors of the population.

Two broad problems usually addressed to in conducting evaluation research are discussed in this article. One is to determine the performance or potential performance of a program or project. For example, one may evaluate the health program of government while it is being implemented. Is it moving according to schedule? Is it accomplishing the objectives embodied by the policy framework of the program? Another inquiry may be raised about the potential of a program even before it gets implemented. Will the program be accepted by the target beneficiaries? Will enough support be generated from the program implementors to accomplish the objectives of the program?

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Another broad question which evaluation research often addresses concerns the factors that may affect the performance or potential performance of a given program or project. What qualities do the components of the service delivery system possess that affect the performance of a given program or project? How about the beneficiaries? Do they facilitate or hinder the program's implementation? What qualities do the beneficiaries possess that lead to the success or failure of the program?

Types of Evaluation Research

Evaluation may be undertaken in the different stages of a program's implementation. When an evaluation is pursued to ascertain whether it is worth implementing, evaluation is conducted even before the program is implemented. This type of evaluation is called *ex-ante* evaluation. The broad research problem raised in this type of evaluation is to determine the potential performance of a program or project and to ascertain if there are factors that may influence its accomplishments. Sometimes, this type of evaluation research is also called a feasibility study.

When a program or project is assessed while it is being implemented, this type of evaluation is labelled as on-going evaluation or *in-vivo* evaluation. On-going evaluation is often undertaken to determine what corrective measures to apply in order to improve the process of implementation. The results of this evaluation may provide program managers directions for the modification of the mechanics of implementation so that the objectives of the program can be effectively fulfilled. Hence, the relevant research question to raise in this type of evaluation pertains to the fulfillment of the program's initial objectives. Are there bottlenecks or impediments in the process of implementation? Are there factors that hasten or facilitate the way the program is proceeding?

When the purpose or objective of the research is to determine whether the program merits replication or termination, the type of evaluation that is appropriate is called *ex post* or impact evaluation. This type of research is implemented after the program has been completed or fully implemented. The relevant research question that may be raised when this type of evaluation is pursued concerns the success or failure of the program. Has the program fully realized what it has been determined to accomplish? What is the program's impact on the clientele? Has the program affected the target beneficiaries in accordance with its premises? What factors have led to its success or failure? (See a summary of this discussion in Figure 1.)

Who Benefits?

Several sectors are benefited by the conduct of evaluation research. These are the policy-makers, the program or project managers, the staff of

the service delivery system, the target beneficiaries and the sponsoring agency, if any. For one, policy-makers may be concerned about whether or not the program or project merits continuity. The results of the evaluation may guide the policy-maker in making decisions on whether or not the program should be continued and even expanded in other areas. The policy-maker may also be concerned to know about the aspects of the program that impede its implementation so that the mechanics of implementation can be improved.

Figure 1. Types of Evaluation Research
by Type of Research Problem
and Purpose

Research Problem	Research Purpose	Type of Evaluation
1. To determine the potential performance (Is it likely to succeed or fail?) 2. To determine the factors that may affect potential performance	1. To ascertain if the program/ project is worth implementing 2. To determine what aspects of the program/project can be modified to assure successful implementation	Ex-ante evaluation or feasibility study
1. To determine how the program/ project is performing 2. To determine the factors that influence how it is being implemented	1. To determine what corrective measures to apply to improve implementation 2. To determine if the program/ project should be stopped or continued	In-vivo evaluation or ongoing evaluation
1. To determine if the program/ project succeeded or failed (What is the impact on target beneficiaries?) 2. To determine the factors that led to success/failure	1. To determine whether the program/ project merits expansion or replication in other areas 2. To ascertain what aspects can be modified to improve implementation in other areas	Ex-post evaluation or impact evaluation

Project managers and the staff of the service delivery system may be equally concerned with the results of evaluative studies in order for them to determine what are the recurring problems in the process of implementation so that similar problems may be prevented from cropping up in the future. Hence, evaluation studies will generate useful information for the application of corrective measures in the delivery system by the different sectors concerned. The project managers need not wait too long for the project to be fully implemented so that waste of resources and energies is prevented towards directions that fail to generate the desired benefits.

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The target beneficiaries of programs and projects of government have as much right to learn about the potential or actual benefits of a program or project. In the first place, the beneficiaries are the ones that will be directly affected by the program or project. Then of course, some beneficiaries may be interested to be involved in undertaking the evaluation itself. Mobilizing citizen participation in evaluation will, however, be dependent upon the commitment of the persons undertaking the evaluation.

The sponsoring agency or the agency extending financial and other forms of support to programs and projects has as much stake as the other sectors we mentioned earlier who are concerned about the results of evaluation studies. The sponsoring agency may be interested to know whether its investment on a given activity has proceeded in the way it has envisioned the program or project to progress. Availing financial support for a similar activity by a particular agency in the future will depend upon the fulfillment of certain missions and the performance of the delivery system.

The Steps in Evaluation Research

Like any other research activity, evaluation research has to proceed along some specified steps and stages in order to assure that the data being generated are valid and reliable. These steps are as follows:

1. Understand the objectives of the program or project being assessed and identify the objective(s) to be focused on;
2. Understand the components of the objective(s) to be studied;
3 Formulate the hypotheses and theoretical framework;
4. Formulate the indicators/measures for performance and other variables or factors to be studied;
5. Formulate the methodology for data collection and data analysis;
6. Data collection;
7. Data processing;
8. Analysis and interpretation; and,
9. Recommendations.

Let us now consider each step of evaluation research and the related issues as each step is pursued. Some available techniques will be discussed as each step is considered.

Step 1: Understand the Objectives of the Program/Project and Specify
the Objectives to Focus on in the Research

Understanding the objectives of the program or project being evaluated is a basic step in the conduct of this study. The objectives of a program or project or what the program or project wishes to accomplish are the bases

for ascertaining performance. These will serve as the standard against which success or failure is determined.

However, some problems may crop up in the identification of objectives. For one, there may be programs/projects that aim to accomplish numerous objectives. The task of the researcher is to spell out how much resources are available which could determine the magnitude of the evaluation. Then of course, another determining factor is the priority given to certain objectives if the available resources cannot accommodate an assessment of all the objectives the program/project aims to accomplish.

Another possible problem may arise when some objectives are ambiguous. For example, one thrust of then Ministry of Human Settlements is to raise the "quality of life" of the people. What does achievement of this goal mean — raising income level? improving health conditions? improving environmental sanitation? Clarifying vague objectives is important because standards or measures for achievement may be difficult to specify if there is lack of clarity in the way the objectives are formulated. Hence, it is the task of the researcher to seek clarification about ambiguous objectives from knowledgeable persons like policy-makers or program implementors. However, in instances where program implementors or policy-makers cannot disclose the specific goals because of some "hidden agenda" for certain vague statements, the evaluator can then focus on how the program actually impinges on the target beneficiaries. After all, the ultimate test of the performance of certain programs or projects depends upon how it touches the lives of people.

Another complicating factor in ascertaining objectives is the fact that some objectives change over a given period in the process of implementation. Some objectives are *immediate* while others are *terminal*. Immediate objectives are the goals that have to be initially accomplished before the ultimate goals are achieved. For example, prior to improving the income level of farmers as a rice variety is introduced is to first achieve some more prior objectives like improving the knowledge of extension agents that will disseminate the new variety; then improving the knowledge and attitude of the farmers towards the new variety; and then, to improve the farmer's actual application of the new variety that has been disseminated. The terminal objective, or the final objective will necessarily depend upon the attainment of some prior objectives. It is, therefore, the task of the researcher to spell out at what point in time the program or project will be assessed. It is not fair to evaluate the attainment of terminal objectives if the immediate ones are still in the process of implementation. The evaluator has to determine what objective can be reasonably assessed.

Another aggravating circumstance towards the identification of program objectives is that some objectives are modified as the program or project is being implemented. Hence, what may be written in a given program document may not fully embody what is the current thrust because the program or project has been subjected to several modifications. Hence, it is the evaluator's responsibility to identify what changes have taken place with respect to some program objectives. What will, therefore, be focused on for the research will depend upon certain priorities that will be specified by the evaluator, by the funding institution for the evaluation and/or by the priorities that will be indicated by the agency implementing the program or project.

Step 2: Understand the Components of the Objectives to be Studied

After having identified what objectives of the program or project will be focused on in a given evaluation, it is also important to understand the components that are necessary towards the fulfillment of certain objectives. This is because, understanding the reasons for success and failure of some specified goals or objectives will also depend upon the way these different components are harnessed.

The components of a program or project that are necessary towards the fulfillment of objectives include — the inputs, the conversion process, the outputs and the outcome. Furthermore, there may also be some contextual factors which may also affect the way the program/project is to be implemented.

The *inputs* are the resources necessary towards the fulfillment of the objectives. Inputs may be material such as financial resources and the equipments that are vital in undertaking the activities that have been specified leading to objective fulfillment. Non-material resources include the personnel, the leadership and the structure of the organization in which the other resources are embedded. Inputs may be inherent in the organization which undertakes the program or project. But other inputs may also be extra-organizational, such as the target beneficiaries of a program or project who must necessarily participate to achieve certain objectives. Target beneficiaries, in turn, possess certain qualities which may facilitate or hinder the manner in which the program or project will be implemented.

The *conversion process* refers to the different strategies that are pursued in harnessing the resources towards the accomplishment of the objectives. For instance, if the introduction of a new rice variety aims to improve the income of farmers, the conversion process here includes the

techniques or strategies implemented by the extension workers in order to disseminate the new rice variety and the techniques adopted in order to cultivate the new variety.

The *outputs* refer to the initial results achieved after the conversion process has been undertaken. This should not be confused with *outcomes* which is often measured in terms of the effect of certain outputs on the clientele. In a rice production program for example, outputs include the number of farmers visited by extension workers in a given period and the number of farmers actually planting the new rice variety. Once the impact of certain program results on the target beneficiaries are examined, the outcome becomes the major focus of attention. Hence, if a rice production program aims at improving the income level of farmers, a measure of outcome will be in terms of the improvement of the income of farmers over a period of time.

The *context* within which a given program or project is being implemented is another factor that one must contend with as it may affect the implementation of a program or project. This may include such factors as the socio-political milieu, the topography of the area where implementation takes place and the climate. For example, if a program is being implemented in an area beset by peace and order problem, this may hinder the implementation process. If the target beneficiaries are situated in hilly or mountainous places, access to them may be found difficult by extension workers delivering some services compared with beneficiaries located in lowland areas.

As an evaluator, it is necessary to understand these different components because the selection of the factors or variables to be focused on will depend upon a fair appreciation of these. Second, these different components must be distinguished from each other and should not be confused or else, measures of performance may be erroneous.

As an evaluator, one should be able to distinguish between the components that should ideally constitute the program or project, as against those that actually compose the implementation process. For instance, a rice production program may have initially conceived that there should be about one extension worker to 200 farmers. In reality, how has this target been achieved? Is there a discrepancy between the program's visions and reality?

Since the components of some programs may be numerous, the evaluator may also limit the variables or factors that one wishes to focus on in the evaluation. However, a justification must be made for limiting the attention on some selected factors.

Step 3: Formulate the Hypotheses and Theoretical Framework

After having delimited the variables to focus on from the list of program components that are necessary to fulfill certain objectives to be evaluated, the evaluator then proceeds to formulate the hypothesis. Thereafter, the theoretical framework will have to be designed.

The hypothesis is a statement of what the researcher expects to find in the study. The formulation of the hypothesis is important in a given research as it provides the direction for data-gathering and data analysis. The hypothesis usually shows the relationship between two variables. One broad hypothesis is usually formulated regarding the presumed effect of the program on the target beneficiaries such as, for example, to hypothesize that the "introduction of the family planning program leads to an improvement in the knowledge, attitude and practice of family planning among married couples of reproductive age." Another set of hypotheses include statements concerning the factors that may affect the performance of a given program or project. For instance, one may argue that "the performance of the service delivery person in a family planning program influences the overall level of knowledge, attitude and practice of family planning of couples of reproductive age who are targetted by the program."

The evaluator should keep in mind that the hypothesis must be formulated in an ethically neutral manner. One must not use the word should or ought in the formulation of the hypothesis. The hypothesis has to be stated in an objective manner as responses to propositions raised are based on empirical and objective data.

The hypothesis may be stated in the null, arguing that "no relationship exists between two variables." However, in a research proposal, it helps to argue that a "relationship exists between two variables" as one speculates further for the reasons why such exists and therefore, be able to contribute to theory building. If the proposition states that a relationship exists, this may be argued positively or directly, meaning, with the presence of X which represents the assumed cause or the independent variable, Y or the assumed effect, the consequence or the dependent variable also appears. Another way of stating the relationship is to argue that with increases in X, Y also increases. Conversely, with the absence or decreases in X, Y also disappears or decreases. For example, one may argue that in addition to the family planning program, the knowledge, attitude and practice (KAP) of family planning may also be influenced by the couple's educational attainment. In particular, it may be argued that a direct relationship exists between the two factors. As educational attainment increases, KAP also improves.

Another way of positing that a relationship exists is to argue this in an inverse manner. That is, as X appears or increases, Y disappears or declines. On the other hand, if X disappears or declines, Y appears or increases. For instance, it may be proposed that age and KAP of family planning are inversely or indirectly related, that is, as one gets older, KAP declines. Conversely, those who are young have higher scores on KAP. (See a summary of how to state the hypothesis in Figure 2.)

Figure 2. How to State the Hypothesis

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1.   State that there is no relationship between two variables.

   Ex.   The family planning program has no effect on the knowledge, attitude and practice (KAP)
         of family among married couples of reproductive age.   °

2.   Argue the existence of a relationship between two variables.

   a.   Argue a positive (direct) relationship

      Ex.   Educational attainment is directly related to the KAP scores of married couples of
            reproductive age. More specifically, those with higher educational attainment have
            higher KAP scores. On the other hand, those with low educational attainment have
            lower scores.

   b.   Argue an inverse (indirect) relationship

      Ex.   Age is inversely related to the KAP scores of married couples of reproductive age.
            That is, those who are young manifest higher scores on KAP than those who are
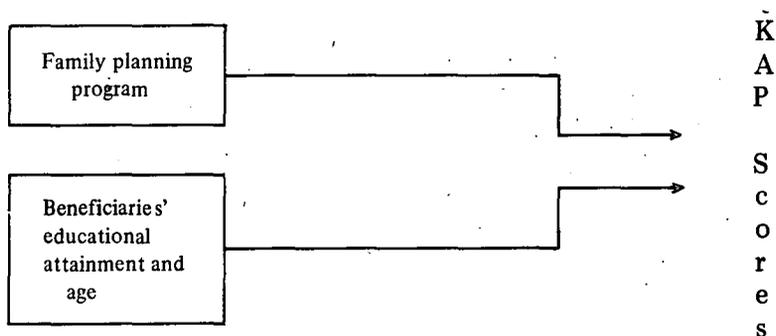   older.

It must be borne in mind, however, that a hypothesis should have a theoretical basis. One should not be indiscriminate in listing down several hypotheses without being able to provide a justification about why certain factors are being related. Hence, after itemizing the hypotheses for a given evaluative study, it is also necessary for one to formulate the theoretical framework as this provides the meaning or rationale for the statement of the hypotheses. Furthermore, the theoretical framework also points out the linkages between and among several variables which are quite disparate when they are only embodied in the hypotheses. The theoretical framework gives an overview of the interrelationships of the different variables. As an evaluator, it may help the reader summarize these interconnections by preparing a diagram showing the flow of connections between the different variables or factors. This diagram may likewise help the evaluator in preparing the narrative part of the theoretical framework. Figure 3 illustrates an example of a diagram showing a theoretical model and a narrative statement of the interrelationships of the different variables. This is a simple theoretical model showing the interrelationships of four dependent variables — the family planning program, the target beneficiaries' level of educational attainment and age, and scores on knowledge, attitude and practice of family planning.

The narrative statement also explains why these variables are being correlated. The variables discussed in this model are based on the examples on how to formulate the hypotheses mentioned earlier.

Figure 3. An Example of a Theoretical Model

This research has the primary objective of assessing the effectiveness of the family planning program by examining its effect on the level of knowledge, attitude and practice (KAP) of family planning among married couples of reproductive age who are the target beneficiaries of the program. In addition, this research will also focus on the impact of certain characteristics of couples like educational attainment and age. For instance, it is proposed that educational attainment and KAP scores of couples are directly related. More specifically, couples with higher educational attainment have higher scores on KAP vis-a-vis those with lower educational attainment. This is because, those with higher educational attainment have more exposure to other sources of information than those with lower education, thus reinforcing the effect of the program. Furthermore, those with higher education are better able to absorb and appreciate the campaign objectives of family planning.

On the other hand, age and KAP scores are inversely related. Those who are younger tend to have higher scores on KAP than the older ones as they are more open to changes in traditional ways. Furthermore, the older ones may have lower scores on KAP as they may have already completed childbearing so they no longer have any room for modifying their total number of children. The diagram below shows a summary of the interrelationships of these different variables.

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+----------------------+                                     K
|   Family planning    |                                     A
|      program         |----------------+                    P
+----------------------+                |-------------->
                                        |                    S
+----------------------+                |                    c
|   Beneficiaries'     |--------+-------+--------------->    o
|   educational        |                                     r
|   attainment and     |                                     e
|       age            |                                     s
+----------------------+
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Step 4: Formulate the Indicators and Measures for Performance and Other Variables/Factors Focused on in the Evaluation

Another important step in designing the research is to formulate the indicators or criteria for measuring and the corresponding operational definitions for every variable to be investigated. Indicators are properties of a variable to be investigated which have to be specified by the researcher. Some variables which are complex may call for the identification of indicators before detailing the operational definition or the actual procedures for measuring each indicator of the variable. For example, performance of a program or project is a complex variable, the properties or indices of which can be itemized before appropriate measures can be given. Some common indicators or indices for performance are efficiency, productivity, profitability

and effectiveness. On the other hand, age is a simple variable so that the procedure for measuring can be directly specified unlike performance. Age can be simply operationally defined in terms of the "age to the nearest birthday as reported by a respondent."

As operational definitions or measures for performance are spelled out for every indicator or variable, one should be careful in sorting out a conceptual definition from an operational definition. Oftentimes, conceptual definitions are confused with operational definitions. In research parlance, an operational definition is the empirical dimension of a concept. For example, citizen participation in a program or project is defined conceptually as "the involvement of the citizens in the different stages of implementation such as planning and implementation." In research parlance, this may be operationally defined in terms of "the number of activities participated in by the citizens in designing and implementing the plans of a given program/project."

Since performance is the critical variable in undertaking evaluation research, let us now consider and distinguish the different indicators for performance such as efficiency, productivity, profitability and effectiveness.[1]

Efficiency, Productivity and Profitability. Efficiency, productivity and profitability have one thing in common. They are all measured in terms of the relationship between input and output of a given program or project. However, efficiency may be distinguished from the other two indicators as efficiency considers the ratio of output to input in aggregate terms, which means lumping all resources together. This is often expressed in terms of the overall cost of inputs for a given period in producing a certain amount of output. For instance, the efficiency of the family planning program may be measured in terms of the average cost involved in campaigning for family planning and extending other services to every married couple. In an agricultural program, this may mean the average cost of extending a package of technology to a given farmer.

Productivity as an indicator, in turn, is operationally defined considering the ratio of output to input based on a specific type of input (such as labor, land or machine) in a given period. For example, the productivity of extension workers in the family planning program can be measured based on the average number of couples served for a given period. In the agricultural program, this may be measured through the number of farmers convinced by an agricultural extension worker to adopt a package of technology.

Profitability is not as common as the other two indicators in the field of public administration. This is because the primary objective of govern-

ment is to deliver the service rather than to gain monetary returns from a given output. Gaining profit is the more common thrust in a business enterprise. Profitability focuses on the monetary gains after transforming input to output. The difference between the cost involved in processing the input and the corresponding monetary amount of the output constitutes the profit.

The measures for success for these three indicators are as follows: when the output increases inspite of a decline in input, when the output increases while the input remains constant, when the output remains constant while the input declines, and when the output declines but there is more than a proportionate decline in input.

However, these three indicators fail to include the beneficiaries' perception of how the program or project has touched their lives. The measures for performance gives primary attention to the internal components of the organization delivering the service. Hence, these indicators fall short of ascertaining whether the goals or objectives of the program are fulfilled particularly if they aim at bringing about changes in the lives and behavior of a certain sector of the population.

Effectiveness. The indicator of effectiveness is able to respond to the weakness of the three aforementioned indicators. The fact that this indicator takes into consideration the attainment of the objectives of a given program or project, inevitably makes the evaluator to consider the impact of outputs on the target clientele.

As an assessment of the effects on the beneficiaries is undertaken, it may help to distinguish between the actual and the expected, the positive and the negative, the anticipated and the unanticipated, and the short-term vis-a-vis the long-term effects. In order to have a comprehensive view of performance, these different indicators may be used in varying combinations. Thus, one can be assured that an assessment is made of inputs, outputs and outcomes, particularly if effectiveness as an indicator is combined with any one of the three other measures of performance.

Dynamics of Implementation. On the whole, all these indicators are limited because they fail to capture the dynamics of implementation of the program or project. However, it is also important to know why certain outputs and outcomes are not achieved if one appreciates the problems encountered in generating the inputs, i.e., funds are not released on time, extension workers are difficult to retain because of work-related hazards, etc. Problems may also be encountered in translating inputs to outputs as the context in which the program operates may impose certain constraints in the expedient delivery of services. For instance, the target site for service deli-

very is saddled with target beneficiaries to adopt whatever is being extended to them because it fails to respond to their needs. These different problems may help understand why certain outputs do not come up to expectations. Ascertaining the dynamics of implementation may also help explain factors facilitating the attainment of certain outputs. Hence, other variables that influence the program's performance will also have to be discerned for a more comprehensive understanding of performance. These variables that are included in the hypotheses should also be operationally defined in a given research proposal.

Quantity and Quality of Performance. As measures for performance are made, careful attention should be given to both the quality and quantity of service delivered. For instance, in measuring the output of a program, the assessment should not only be made in terms of the number of clients visited or convinced to apply a given technology. The nature of the output can be qualitatively assessed by considering the manner through which a given service is delivered. The criteria[2] that can be adopted include: (1) timeliness — if the service is delivered at the right time; (2) appropriateness — if the service delivered is relevant to the needs of the target beneficiaries; (3) adequacy — if the service delivered is sufficient; (4) equity — if the service is delivered in the same manner irrespective of the background of the client; (5) progressiveness — if the service is modified according to the changing needs and demands of the client; (6) continuity — if the service is delivered in an uninterrupted manner; and, (7) demeanor of the service provider — if the service is delivered in a manner that wins the rapport of the client.

Step 5: Formulation of the Research Design (or the Scheme for Data Collection and Data Analysis)

After having identified the measures or procedures to be undertaken for every variable or factor to be studied, the researcher has to formulate the research design or the plan for collecting and analyzing the data. Four items usually compose the research design. These are: the identification of the type of research design to be implemented in the research; the identification of the respondents of the study and an indication of whether or not sampling strategies will be applied; the selection of the techniques of data collection that will be applied in the evaluation; and, the identification of the statistical tools that will be relevant to the operational definitions that had been formulated at the outset.

Type of Research Design. Identifying the type of research design is a critical aspect of the research proposal as it details the framework or structure in undertaking the process of evaluation. The type of research design

to be applied defines the number of groups to be studied, when observations will be made and the conditions under which observations are to be undertaken. Identifying the type of research design is necessary to assure that variables that are extraneous or irrelevant to the research will not intrude in the investigation. It is in this stage where the different tools and strategies of social science research may be applied.

The conduct of evaluation research calls for the implementation of an explanatory type of research design. This is a type of design that shows the relationship between two or more variables. An evaluation study is necessarily an explanatory type of study because one of its major components is the explanatory hypothesis which argues that the program (the assumed independent variable) influences or affects the behavior or condition of a certain group of clientele or beneficiaries (the dependent variable). Another broad issue that has to be addressed to pertains to the effect of other factors related to the service delivery system, the target beneficiaries and other contextual factors or independent variables on the behavior or condition of the target clientele.

Several types of research design from which the evaluator may select have likewise been formulated. These broad types include: the experimental, the quasi-experimental and the non-experimental approaches. The experimental approach is characterized by manipulation on the part of the researcher for the independent variable to occur to be assured that it is the prior factor that leads to the changes on the behavior and the condition of the target clientele. A second characteristic is the random assignment of subjects who are willing to participate in the experiment to either the experimental group or the control group. The experimental group will be subjected to the independent variable which corresponds to the program itself in the case of evaluation research. On the other hand, the control group will not be exposed to the program. The rationale for randomly assigning subjects to the two groups is to assure that variable experiences of subjects are equally distributed between the two, if matching of the subjects' characteristics is impossible to obtain. Having a control group enables the researcher to have a comparative frame of reference when the independent variable is introduced to the experimental group.

Like an experiment, the quasi-experimental approach is characterized by manipulation to guarantee the occurrence of the independent variable on a given group. However, it differs from the first because the subjects to be studied are not randomly assigned to either the experimental or control groups. The subjects or the researchers select the options that the subjects will be exposed to.

The non-experimental approach, which is sometimes referred to as the survey approach, studies the program or project as it is being implemented or has been completed without any manipulation or intrusion on the part of the researcher to ensure the occurrence of the independent variable. Secondly, subjects are not randomly assigned to conditions. Observations are made of subjects as they have been affected by some assumed independent variables.

Each of these types may further be distinguished according to timing of observation or measurement of the influence of the independent variable.[3]

Identifying the Respondents. Identifying the persons who will provide the information about the program or project is another important component in the research design. Several sectors may provide information about the program or project. These include the program managers, the service delivery persons and the clients themselves. As the respondents are selected, it is important to find out if they are knowledgeable about the topic being studied and if they can provide objective information about the program or project.

When the respondents of the study are identified, one should know the total number of persons that constitutes each sector and on the basis of this information, make a decision regarding the sampling strategy to be adopted if the population is high. If one will resort to sampling, the researcher has to determine what a statistically significant sample size is to be able to generalize about a given population.[4]

Techniques of Data Collection. After knowing from whom to gather information about the performance of the program being evaluated, the researcher has to identify the particular instruments or approaches to be adopted as an aid to observation. Two broad techniques are available. One is the primary technique. This includes approaches or strategies of gathering information by relying on the persons who have direct access to the event being measured. This technique includes direct observation, interviews and questionnaires. The researcher who will apply any one of these approaches should know the strengths and weaknesses of each approach and the responsibility of the researcher as a particular approach is chosen.

The secondary technique includes strategies for collecting data based on materials or information that had been gathered by other persons. This type includes statistical records or documents compiled periodically by institutions, memoranda circular or office directives and publications of agencies. The advantage of relying on this technique is that once the approval of the agency that stores these documents has been extended, the information can

be retrieved at the convenience of the researcher. There is no need to establish rapport with the primary sources. Then of course, this technique is more economical. However, one should be wary about the objectivity of the data gathered and the relevance of the data collected to the purposes of the research.

Data Analysis. Another component of the research proposal is the scheme for analyzing the data gathered. What statistical tools or other relevant techniques for presenting the report should the evaluator adopt? The choice of the appropriate tools will be largely determined by the manner in which the variables have been measured. The choice has to be tied up with the operational definitions of the different variables in the evaluation.

Step 6: Data Collection

This step calls for the implementation of the research proposal. It is possible that some schemes that were initially designed may not work out in reality because some problems may not have been anticipated by the researcher. Hence, some modifications may have to be undertaken in the course of gathering the data but the alterations will have to be explained by the researcher in the written report.

Step 7: Processing of Data

After having gathered data from the field, the evaluator is ready to organize and process the data. This step includes categorizing data that was not done earlier because the questions raised are of the open-ended type.[5] This step also entails coding the information into symbols to simplify tabulation and the application of the appropriate statistical tools. In case computer analysis is to be relied upon, coding is a necessary step and the codes to be adopted have to be appropriate to the language or symbols of the computer.

Step 8: Analysis and Interpretation

After having processed the data gathered from the field, the researcher is ready to analyze and interpret the findings of the study. As much as possible, the evaluator should try to draw the implications or significance of the data that had been gathered. Here is where he can be creative. The evaluator does not only point out trends and patterns but also attempts to give the meaning of the findings. The researcher should be able to tie up his findings with the theoretical framework of the research. Are his propositions validated by his findings and why. If no, why not. Some more speculations can be expressed if the hypotheses are not substantiated by the empirical findings.[6]

On the whole, the pattern of analysis may proceed according to how inputs had been made available and processed and how goals or objectives had been fulfilled. There are several conclusions that may possibly be drawn from the evaluation. One possible outcome is to find out that goals are achieved because the inputs had been made available and had been fully harnessed or processed according to the scheme of the program or project. Thus, the evaluator can say that the program had been a success.

Another possible outcome is to find out that goals had not been achieved because the inputs had not been adequate or that the process of implementation did not materialize according to the plan. For example, some extension workers who are expected to disseminate the innovations in agriculture had not been adequately trained. In some instances, the extension workers are well-trained and equally distributed to the different target areas in a country but they perform differently because of varying obstacles in the sites where they had been assigned. Hence, the program is considered a failure because the necessary components for program implementation had been beset by obstacles.

Furthermore, it may be possible to note the non-attainment of the goals or objectives of the program inspite of the fact that the inputs are made available and are fully harnessed in accordance to the program design. This is another case of program failure stemming from the fact that the approach itself is not responsive to the population being served. (See Figure 4.)

Figure 4. Possible Outcomes in an Evaluation Study

Case Number	Inputs	Process	Goals	Interpretation
1	Adequate	Pursued as planned	Achieved	Program success
2	Inadequate	Pursued as planned	Not achieved	Program failure
3	Adequate	Not pursued as planned	Not achieved	Program failure (due to implementation)
4	Adequate	Pursued as planned	Not achieved	Program failure (due to the program's design)

Step 9: Recommendations

As an evaluator, one's major responsibility is to utilize the data that had been gathered in order to suggest recommendations to the appropriate sectors who are concerned with the results of the evaluation. The recommendations will largely depend on the findings of the study. Roughly, if the program succeeds as noted in case number one, the more likely suggestion that may be offered by the evaluator is to replicate the program or project in similar sites. (See Figure 4 on p. 123.)

If the second and the third outcomes are obtained — where the program fails because of the obstacles in the process of implementation — the more likely recommendations that may be extended would be to increase the inputs and improve the strategies of implementation. The creative imagination of the evaluator will be harnessed here as he is expected to think of ways to effectively mobilize and utilize the inputs of the program or project.

If the fourth possible outcome is obtained where the program or project fails because of the design of the program itself, the evaluator may suggest the termination of the program or speculate on ways to modify the nature of the input as well as the strategies adopted in the program implementation.

Finally, the utility of the results of an evaluation study depends upon how well the evaluator is able to disseminate the results of the evaluation to the appropriate sectors who can make important decisions about the program. To be able to effectively disseminate the information, the evaluator should be concerned about the manner of presentation of the findings of the study. The evaluator should give as much concern and effort to convince the affected sectors regarding the proper direction of the program or project.

Then of course, the evaluator will also have to contend with the openness and the willingness of key decision-makers to make significant changes that would affect the fate of the program or project. The usefulness of an evaluative study will also be dependent on the decision-makers' political will.

Endnotes

[1] For a more detailed discussion of this topic, see C.Y. Wu, "Refining Concepts of Performance in Development Effectiveness, Profitability and Productivity," *Philippine Journal of Public Administration*, Vol. XVII, No. 3 (July 1973), pp. 287-311.

[2] See Ledivina V. Cariño and Associates, *Integration, Participation and Effectiveness: An Analysis of the Operations and Effects of Five Rural Health Delivery Mechanisms* (Manila: Philippine Institute of Development Studies, 1982), p. 15

[3] See Donald T. Campbell and Julian C. Stanley, *Experimental and Quasi-Experimental Designs for Research* (Chicago: Rand McNally College Publishing Company, 1963). Also refer to Louise H. Kidder, *Research Methods in Social Relations,* Fourth Edition (New York: Holt, Rinehart and Winston, 1981), pp. 15-81.

[4] Some more detailed steps and strategies in sampling are discussed by Kidder, in *ibid.,* pp. 418-444.

[5] Questions that do not provide fixed categories of answers.

[6] For a comprehensive discussion of this topic, refer to Cristina P. Parel et al., *Data Analysis and Interpretation* (Quezon City: Philippine Social Science Council, 1979).

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