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EVALUATION METHODS, USE OF RESULTS AND PERCEIVED BARRIERS IN MANAGEMENT TRAINING PROGRAM EVALUATIONS OF PENANG FIZ FIRMS.

by

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ABSTRAK

Objektif utama kajian ini ialah untuk mengetahui dengan lebih mendalam tentang penilaian yang dijalankan terhadap kursus-kursus latihan pengurusan. Ini termasuklah : cara penilaian dijalankan, penggunaan hasil penilaian dan rintangan yang dihadapi dalam menjalankan penilaian. Selain daripada itu, kajian ini juga bertujuan untuk mengenalpasti sama ada wujudnya kaitan di antara 'rintangan yang dihadapi' dengan 'cara penilaian dijalankan'; dan di antara 'rintangan yang dihadapi' dengan 'tujuan penggunaan hasil penilaian'. Sejumlah tujuh puluh dua jawapan telah diterima daripada para responden yang telah menyiapkan borang soal-selidik yang dikirimkan kepada mereka. Daripada data responden ini, empat 'cara penilaian dijalankan', dan tiga 'tujuan penggunaan hasil penilaian' telah dapat dikenalpasti. Hasil daripada kajian ini juga menunjukkan bahawa, terdapat kaitan rapat di antara 'rintangan yang dihadapi' dengan 'cara penilaian dijalankan' dan di antara 'rintangan yang dihadapi' dengan 'tujuan penggunaan hasil penilaian'.

ABSTRACT

The main objective of this study is to gain a better understanding of evaluations for management training programs. This includes : the evaluation methods used, the use of evaluation results and the perceived barriers to effective evaluations. In addition, this study also attempted to determine if significant relationships existed between 'perceived barriers' and 'methods used'; and between 'perceived barriers' and 'use of evaluation results'. A total of seventy two respondents completed and returned the survey form. From the respondent data, four main 'methods' of evaluation and three main 'use of results' were identified. The result of the study also indicated that there existed significant relationships between certain 'perceived barriers to effective evaluation' and 'methods used'; and between certain 'perceived barriers to effective evaluation' and 'use of results'.

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Chapter 1

INTRODUCTION

1.1 Introduction

It is widely acknowledged that the quality of human resources is a vital ingredient to the success of an organization. Successful organizations share a long term vision that perceives human resources as a major corporate asset to be nurtured and developed (Rajah & Wallace, 1995). Towards this end, organizations have often invested heavily on human resource development. Training is now considered one of the vehicles in taking a company on a successful journey ahead. The training and development, or human resource development (HRD) field have grown at a phenomenal rate in recent years. Speaking to the 1982 Annual Conference of the American Society for Personnel Administration in San Antonio, Texas, futurist Alvin Toffler predicted that HRD, not computers or genetics, will be the fastest growing, most critical industry in the future (Toffler, 1990).

However, training without knowing the actual contribution to the organization is becoming more and more unacceptable. Therefore one of the most debated issues in the field of HRD are evaluation, results-oriented training, and bottom-line contribution. Training and development departments are struggling to meet demands from management for profit contributions and from participants who wants programs which produces results. This trend towards accountability is a significant development in the field of HRD in recent years, yet, many HRD professionals are still reluctant to change (Phillips, 1990).

Although it is known that numerous benefits could be derived from evaluating training programs such as in decision making of whether to continue, modify or eliminate certain training programs, many are still not convinced. A survey of 611 companies in U.S.A. indicates that 32% of companies did not evaluate the effectiveness of their short-course programs. Although 92% of the respondent did conduct some form of evaluation of their company-specific programs, these evaluations mostly focused on the reaction of the trainee to the program, rather than determining whether learning had taken place and job performance had been positively impacted (Saari, Johnson, McLaughlin & Zimmerle, 1988).

In addition, various other problems in the training profession could be traced to a lack of measurement. Jack Zenger summarized it this way :

> Many line managers have long been dubious about the value of training expenditures. While some management groups supported training as a matter of faith. It has been hard to find thoughtful top executives who could really be convincing about the long term benefits of training for supervisors and middle management and participants in training, while expressing satisfaction and enjoyment, have been hard pressed to describe sustained behavior change (Zenger, 1980).

Therefore, a deeper understanding of training evaluation is required. Hamblin (1970) defined "evaluation of training" as "any attempt to obtain information (feedback) on the effects of a training program, and to access the value of the training in the light of the information'. It should be noted that this definition includes investigation before, during, and after the training. It should also be clearly understood that there are distinct differences between the evaluation of training and the validation of training programs. Evaluation differs from validation in that it attempts to measure the overall cost-benefit of the course or program and not just the achievement of its laid down objectives (Hamblin, 1974).

One of the most widely used models for classifying the levels of evaluation comes from Kirkpatrick (Reeves, 1994). Kirkpatrick (1959) suggests that evaluation procedures should consider the following four levels :

- Level 1 : **Reaction** : How did the participants react to the program?
- Level 2 : **Learning** : What did individuals learn?
- Level 3 : **Behavior** : What are the long term effect to job performance of the individuals?
- Level 4 : **Result** : How did the company or organization benefit from the exercise? What was the organizational impact?

Based on the levels above, it was found that the frequency with which each evaluation level is used by organizations are as follows (Cummings & Parks, 1992) :

- Level 1 : 85%
- Level 2 : 22%
- Level 3 : 15%
- Level 4 : < 10%

It could be seen from the results above that few organizations venture beyond the first level of evaluation ('reaction'). This is due mostly to the fact that Level 1 evaluation is the most convenient. In addition, the reaction of the participants is often perceived as a critical factor in the continuance of training programs (Philips, 1990). Another factor could be that, since these 'happy sheets' are used so widely, they are often thought of as the *only* method for assessing training (Newby, 1992). This study will attempt to determine if the situation have changed since these earlier studies were done and the underlying reasons.

1.2 Problem statement

The purpose of this study is to better understand management training program evaluation. Evaluation methods, use of results, and perceived barriers to effective evaluation will be examined. This study will also seek to determine if relationship existed between perceived barriers to effective evaluation and :

- evaluation methods
- use of results

This study is based on a study by Margaret Erthal (1993) for her doctorate dissertation, which covered 114 organizations across the U.S.A. For this study, it was limited to private sector manufacturing organizations operating within Penang FIZ (Free Industrial Zone) which are involved in conducting management training for their employees. This study was directed towards the following individuals within the selected organizations, for example :

- trainer
- human resource development personnel
- evaluator.

The problems to be investigated in this study are as follows :

- To analyze procedures for evaluating management training programs in the selected organizations.
- To determine how evaluation results from management training programs are used by these organizations
- To identify perceived barriers to effective evaluation of management training programs.

1.3 Research questions

Based on the problems identified above, attempts will be made through this study to answer the following research questions :

1. What methods do organizations use to evaluate management training programs?
2. How do organizations use management training program evaluation data?
3. What are the perceived barriers to effective evaluation of management training programs?
4. Is there a relationship between evaluation methods and perceived barriers to effective evaluation?
5. Is there a relationship between utilization of evaluation results and perceived barriers to effective evaluation?

1.4 Significance of the study

Based on the literature review done, this is the first time that such a study have been conducted across organizations within Penang FIZ to further understand how they practice management training evaluations. By investigating the evaluation methods used, the use of evaluation results, as well as the relationship between these variables and perceived barriers, it was hoped that a clearer understanding could be achieved about trainers' practices in management training evaluation.

The findings from this study is of significance to trainers and evaluators in heightening their awareness regarding the current state of management training evaluations among Penang FIZ organizations. It will thus help organizations and training departments in comparing their own evaluation practices with other organizations. In addition, this study would also attempt to identify perceived barriers (by trainers and evaluators) to effective evaluations, relative to the methods used and the use of evaluation results. This knowledge would most probably be of use to trainers and evaluators in overcoming the identified barriers.

1.5 Overview of the report

Succeeding this chapter, literature related to this research is reviewed in Chapter 2. The research design for this study is explained in detail in Chapter 3. This includes the theoretical framework, the hypotheses as well as the treatment of collected data. Findings for this study is presented in Chapter 4, where responses from respondents are arranged in manners more suitable for analysis. Observations in Chapter 4 are discussed in detail in Chapter 5. In concluding this report, implications and suggestions are also presented for training and evaluation practitioners as well as for future researchers in this subject.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the literature related to variables in this research is reviewed and elaborated upon. Concepts of training evaluations, evaluation methods, the use of evaluation methods and the perceived barriers to effective evaluations are also described in detail.

2.2 Training evaluation

Training evaluation could be described as a systematic process of collecting information for and about a training activity which can then be used for guiding decision making and for assessing the relevance and effectiveness of various training components. It is also used to determine the immediate impact of the activity (Raab, 1987).

One frequently asked question is : Can training be evaluated? To evaluate something is to decide on its value or worth, not necessarily in terms of money, but also in terms of enjoyment, or usefulness as a means towards some non-financial objectives or in terms of moral standards. In that case, training could be evaluated in terms of criteria which could be explicitly stated.

This leads to the next questions of how should training be evaluated and by what criteria should training be evaluated. For most organizations, the only evaluation which really counts is the financial related one. In this case, training should be evaluated in terms of the degree to which it helps or hinders the achievement of the firm's financial objectives. However, this is not always the case. This is due to the fact that, not all firms have objectives which are exclusively financial. For example, the training of nurses is aimed at saving the lives and well-being of patients. In most cases, even profit-making firms have subsidiary objectives which are non-financial, and training may be the means by which they try to achieve these ends (Hamblin, 1974).

Generally, the objectives of training programs reflect the numerous goals ranging from the progress of the trainees, to the goals of the organizations. From this perspective, training evaluation is not just an information-gathering technique that could pinpoint or categorize a training program as good or bad. Rather, training evaluation should capture the dynamic flavor of the training program. Under such circumstances, the information gathered will be available to revise instructional programs to achieve the desired instructional objectives (Goldstein, 1993).

2.3 Evaluation methods

Review of the literature revealed two major training evaluation framework currently in use. They are:

- Formative and summative evaluation

- Context, input, process and product evaluation (CIPP) or Context, input, reaction and outcome (CIRO).

2.3.1 Formative and summative evaluation

As originally conceived by Scriven (1967), formative evaluation is used to determine if the program is operating as originally planned or if improvements are necessary before the program is implemented. Whereas, the major concern of summative evaluation is the evaluation of the final product with the major emphasis being program appraisal. Thus, formative evaluation stresses on tryout and revision processes, primarily using process criteria, while summative evaluation uses outcome criteria to appraise the instructional program.

Campbell (1988) managed to identify two types of summative evaluations, namely, summative evaluation and comparative summative evaluations. Summative evaluation refers to the question of whether a particular training program produces the expected outcomes. The comparison is between the trained and untrained (control) group. In comparative summative evaluations, (which Campbell found to be a more powerful question), the question is which of the two or more training methods produces the greatest benefits.

Improvements based on formative evaluations are related more to how close to the original design the program is operating. The formative evaluation should be completed and judged adequately before summative evaluations are started. A false concern with formative evaluations is that methodological difficulties might be caused by the continual changes adopted from the collected data. But that constant modification is exactly the purpose of the formative period, and experimental-design considerations should not prevent the necessary changes. Once the formative evaluation is completed, experimental design provides the foundation for the summative evaluations (Goldstein, 1993).

2.3.2 Context, input, process and product evaluation (CIPP) or context, input, reaction and outcome (CIRO)

From the perspective of performance technology, the following question is always asked : "Why is the trainee not performing as expected, even after being trained?" To answer this question, the following three questions would have to be answered first (from the perspective of training evaluation) :

- What needs to be changed?
- What is likely to bring about the desired changes?
- What suggests that a change has actually taken place?

This approach, developed by Warr, Bird and Rackham (1979), is called the CIRO Framework because the acronym refers to Context, Input, Reaction and Outcome (it is also known as CIPP which stands for Context, Input, Process and Product).

This evaluation approach is especially important as the cost of training increases, organizations are turning to outside vendors. One such example is IBM which uses the CIRO framework for their training evaluations (Erthal, 1993).

2.3.2.1 Context evaluation

- Warr, Bird and Rackham (1979) suggested that, context evaluation answers the question "what needs to be changed?" Within context evaluation, the trainer looks at ultimate objectives, intermediate objectives and immediate objectives. For example :
- The defects in the organization which the trainer is hoping to change (ultimately).
- The intermediary objectives, such as changes in employees' work habits, which the trainer is hoping to influence.
- The immediate skill, knowledge and attitude which the employees would need to have before the intermediary objectives could be met.

2.3.2.2 Input evaluation

Warr, Bird and Rackham (1979) suggested that input evaluation answers the question, "what is likely to bring about the desired change?" Here the trainer must evaluate his or her resources and decide on the best way to proceed. Questions about budget, staff, merits of different training techniques, external versus internal resources would be asked at this stage. In addition, others factors to be considered includes, trainee qualifications and instructor's experience. The input stage generally identifies elements that could be evaluated in terms of their potential contributions to training effectiveness.

2.3.2.3 *Reaction evaluation*

Obtaining the reactions of the participants in a course either during or after the event can be a useful part of the evaluation exercise. Uncovering reactions of participants could be done formally through questionnaires or other informal means, several weeks after the training (Warr, Bird and Rackham, 1979).

2.3.2.4 *Outcome evaluation*

Warr, Bird and Rackman (1979) have identified four stages of outcome evaluation:

- Defining training objectives
- Selecting measurements for these objectives
- Measuring the objectives at the appropriate time
- Assessing the results to improve the training.

As could be seen above, defining training objectives would have been done as part of the context evaluation. The primary purpose of this stage of the evaluation process is for the trainer to improve their product. The results of outcome evaluation allow trainers to go back and refine current training and plan future training.

2.4 Use of evaluation results

The most common view of evaluation is that it completes the cycle of training (which consists of the components of : Training Needs Analysis, Training Development, Implementation, Evaluation). Furthermore, it has the key role of quality control of the cycle by providing feedback on :

- The effectiveness of the methods being used
- The achievement of the objectives set by both trainers and trainees
- Whether the needs originally identified, both at organizational and individual level, have been met (Bramley, 1991).

Easterby-Smith and Mackness (1992) offers three general purposes for evaluation : proving, improving and learning. *Proving* aims to demonstrate conclusively that something has happened as a result of the training. *Improving* implies an emphasis on trying to ensure that either the current or future programs and activities become better than they were initially. *Learning* recognizes that evaluation is and integral part of the learning and development process itself. The author also suggest the existence of another purpose that is often hidden behind large evaluation exercises, that is the desire to control how a training or educational initiative is implemented.

Grove and Ostroff (1990) noted the following ways in which training evaluation could make a contribution to the organization :

- It could serve as a diagnostic technique to permit the revision of programs to meet the large number of goals and objectives. Thus the information could be used to select or revise programs. It can also be used to determine whether people liked the program, whether they learned, and whether it positively affected their job performance.
- Effective evaluation information can demonstrate the usefulness of the programs. This type of information could actually show the benefits and the costs gained

from training. These data can be very useful when economic realities force difficult decisions on how organizational budgets should be allocated.

- Legal issues are becoming important considerations in human resource management. Employment discrimination lawsuits often question the criteria for entrance into certain training and the value of the training program, especially when it is used as a requirement for promotion or job entry. In those cases, evaluation data are required to show the job relatedness of the training program.

Erthal (1993) stressed that establishing evaluation guidelines prior to training serves as a standard from which to measure the effectiveness of training. With these guidelines in place, evaluation may help in :

- justifying the cost of the training program
- determining whether trainees actually learned new knowledge, skills and attitudes as a result of the training program
- identifying differences in behavior, investigate causes of behavior and predict other outcomes related to behavior.
- identifying ineffective training programs which do not support organization goals (where these programs could be restructured or eliminated).
- determining the training needs of the people in the organization
- selecting and creating the appropriate training programs.

Arthur Andersen & Co. (1984) has recognized that training evaluation is vital in assessing the training process, and in measuring the short-term and long-term outcomes of training.

2.5 Perceived barriers to effective evaluation

It could be seen from above that training evaluations have been recognized as a vital component of the training process, yet there are still organizations which are not taking training evaluations seriously. Grove and Ostroff (1990) described some of the barriers to training evaluation in work organizations. They include the following points :

- Top management does not emphasize training evaluation. Although top management is usually interested in evaluating all aspects of business practice, they do not tend to apply the same pressure on training management to evaluate their products. Some may feel that is because top management fervor in emphasizing the importance of training and career development results in their accepting training on the basis of faith in its value.
- Training directors often do not have the skills to conduct evaluations. Many directors were direct-line managers or are human resource generalists. Given that training evaluation is a complex enterprise, they often do not have the required skills.
- It often is not clear to training human resource personnel what should be evaluated and what questions should be answered by an evaluation. It is difficult for evaluation to be conducted without a clear idea of the objectives to be achieved by the program.
- There is a view that training evaluation can be a risky and expensive exercise. There is the fear that an evaluation will indicate that a publicly endorsed program is not meeting its objectives.

In addition to the points presented above, Phillips (1990) have also identified the following factors :

- there is a general belief that results of training efforts could not be measured accurately. Therefore, there is always a nagging question about whether it is worthwhile for a training evaluation to be carried out.
- if the return on investment (ROI) for training programs could not be calculated to yield meaningful results, then there is no point conducting training evaluations. This is due to the fact that ROI considerations for training programs are usually based on a few subjective premises, consequently, the calculation may not be as specific as the ROI of a capital investment.
- a belief that meaningful measurements could only be done in the production and financial area, not training.
- a belief that there are too many variables affecting the behavior changes to accurately measure the impact of the training. On the job, there are many variables which can affect the performance of a participant after the completion of the training program. These variables includes : self motivation of the participant, the environment in which a participant is working in, and the support from the superior of the participant.
- the fear of evaluations will lead to criticism. Evaluation results can be unfavorable on those who have designed / conducted the program. Unless an organization is ready for criticism, evaluation will not be able to take place effectively.
- the ego of the program designer / trainer who have proven track record. Many designers / trainers have established good reputation for their efforts and feels that they do not have to justify their existence.

- Inappropriate HRD (Human Resource Development) program design. There are instances where HRD programs do not follow logical steps in their design and development. They are solutions looking for problem. For example, training programs offered are those where the HRD personnel have just attended a similar program. This will lead to a situation where programs offered will be centered around the interests and needs of the HRD personnel and not the needs of the organization as a whole. In such cases, efforts at evaluating the impact will be meaningless and inconclusive.

In a report which was produced to address issues related to training effectiveness, Brandenburg (1989) concludes that the state of the art evaluation methodology is adequate, but is still not always implemented in day-to-day practice.

In studies conducted by Clegg (1987), Lippitt, Langseth & Mossop (1985) and Gutek (1988), reasons identified for not evaluating include: lack of time and expertise, expense and evaluation is not required by the organization.

Erthal (1993) in her study identified that a majority of the respondent agreed that :

- evaluation of training is difficult to measure
- lack of expertise in training evaluation
- there are a lack of standards for training evaluations.
- there are not enough people for evaluation of training
- isolating behaviors is difficult

Most respondent however disagreed that :

- there was not enough time or funds to evaluate training
- evaluation was not required
- it was difficult to gain management support for evaluation
- objectives were not established or measurable
- management prefers a particular evaluation method
- they were unsure of what to evaluate
- there is a lack of computer equipment to process collected data
- the result would have little or no impact to the organization.

2.6 Summary

Training evaluation could be described as a systematic process of collecting information for and about a training activity which can be then used for guiding decision making and for assessing the relevance and effectiveness of various training components. Review of the literature revealed various training evaluation methods currently in use which could be classified under two major framework. They are 'formative' and 'summative' evaluations; and 'Context, input, process and product evaluation'(CIPP) or 'Context, input, reaction and outcome' (CIRO).

Information derived from training evaluation are used for numerous purposes. These purposes could broadly be summarized as: determining the effectiveness of the training, the achievement of the trainers and trainees relative to the objectives set for the training, and also whether the needs identified to be fulfilled by a training program, have been met. The literature review also revealed that although the are numerous training evaluation approach to suit different situations, evaluators are still faced with what they perceived to be barriers to effective training evaluation. These barriers have been identified to be related to many aspects of training evaluation, for example: top management support, available skills and resources, uncertainty over the methods/standards to be used, uncertainty on whether detailed evaluation is worthwhile and measurability of results based on objectives set for training programs.

Chapter 3

RESEARCH DESIGN

3.1 Introduction

In this chapter, the following topics will be covered :

- the theoretical framework of the research
- hypotheses developed for the research based on the theoretical framework
- the development of measures for all the concepts introduced in the theoretical framework

3.2 Theoretical framework

The main variable of interest to this study is the dependent variable of the *perceived barriers to effective evaluation*. The two independent variables to be examined in this study are : *training program evaluation methods* and *use of evaluation results*.

These independent variables will be used in an attempt to gauge their impact on perceived barriers to effective evaluation. Please refer to **Figure 3.1** for the schematic diagram.

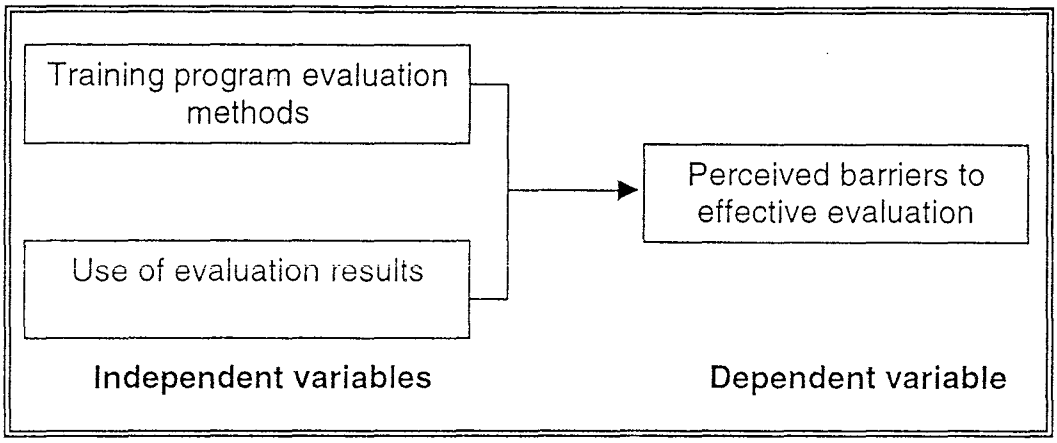

Figure 3.1 : Schematic diagram of the theoretical framework

The associations among variables shown in **Figure 3.1** will be described in detail in the following section.

- Relationship between management training program evaluation method used and perceived barriers to effective evaluation of management training program. Grider , Capps and Toombs (1990) found that commitment from top management is vital for effective evaluation in addition to sufficient resources. Clegg (1987) have also addressed the evaluation issues and determined that lack of standards is one of the most pressing problems. Another constraint identified is the lack of time. In the study done by Erthal (1993) statistically significant ($p<0.05$) relationships were found between management training program evaluation methods and perceived barriers to effective evaluation of management training programs.
- Relationship between utilization of management training program evaluation results and perceived barriers to effective evaluation of management training programs. A study done by ASTD (American Society for Training and Development) in 1989, found that management will ignore evaluation reports during times of budget restraint and that gaining top management support for evaluation is essen-

tial. Erthal (1993) found several significant relationships ($p<0.05$) between the utilization of management training program evaluation and perceived barriers to effective evaluation of management training programs.

3.3 Hypotheses

The hypotheses developed for this study are as follows:

H_1: There is significant relationship between the evaluation methods used and the perceived barriers to effective evaluation of management training program.

H_2: There is significant relationship between utilization of the evaluation results and the perceived barriers to effective evaluation of management training programs.

3.4 Data collection method

The target population for this study is the managers / evaluators of training departments of electronic/electrical-based manufacturing organizations operating within the Penang FIZ (Free Industrial Zone) which totaled 153 companies. Names and addresses of these organizations were obtained from the "Factories : Penang Malaysia" directory published by PDC (Penang Development Corporation, 1998).

The data collection instrument for this study is a survey questionnaire (Appendix A). This questionnaire is based on the one developed by Erthal (1993). This survey consisted of close-end questions to ascertain evaluation methods and use of evaluation results, and a Likert-type scale to identify perceived barriers to effective evaluation.

Demographic information requested include : title or position of respondent, information related to tenure with the organization and tenure in a training capacity. This information will be used to determine if the respondent possesses expertise and experience in management training program as well as program evaluation.

Table 3.1 presents the relationship of research questions to survey instruments questions. Survey question one, relating to evaluation procedures, was designed to answer research question one. Survey question two, relating to use of evaluation results, was designed to answer research question two. Survey question three, relating to perceived barriers to effective evaluation, was designed to answer research question three. Survey question one and three were designed to answer research question four. Survey question two and three were designed to answer research question five.

Research Question	Survey Question
1	1
2	2
3	3
4	1,3
5	2,3

Table 3.1 : Relationship of research questions to survey instrument questions

The questionnaires (Appendix A) were sent to the identified samples (in this case the population of the study which consists of 153 organizations) describing the purpose of the study and anticipated benefits to respondents. Stamped self-addressed envelopes were also be included. Responses from the survey were coded and entered into a computerized database by the researcher. Data analysis was conducted using SPSS/PC, version 6.

3.5 Treatment of collected data

Descriptive statistics, frequencies and percentages, were reported for the demographic data, Research Question 1 (relating to evaluation methods), Research Question 2 (relating to use of evaluation results), and Research Question 3 (relating to perceived barriers to effective evaluation).

A bivariate correlation was used to analyze Research Question 4 (perceived barriers and evaluation methods); and Research Question 5 (perceived barriers and use of evaluation results).

Two-way Analysis of Variance (ANOVA) techniques were utilized to determine if a relationship existed between perceived barriers and evaluation methods (Research Question 4) and perceived barriers and use of evaluation results (Research Question 5).

A Principal Component Analysis (PCA) was conducted for Research Question 1 relating to evaluation methods, Research Question 2 relating to use of results, and Research Question 3 relating to perceived barriers to effective evaluation to determine if the number of variables could be reduced. The specific goals of PCA are to (Tabachnick & Fidell, 1989) :

- summarize patterns of correlation among variables