
A Practical Framework and Model for Promoting Cost-Inclusive Evaluations

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Background: Cost studies are an important component of any serious professional evaluation. Regardless of whether an evaluation is conducted in the public or private sector, decision-makers want answers to two fundamental questions: (1) Is the program, project, or investment worthwhile? and (2) Can funds be used in a better way? The answers to both questions rely on the use of cost analysis techniques. However, according to the literature, most evaluations do not include any type of cost study (see Christie & Fleischer, 2010) and when studies are included, very few are of high quality and rigor (see Madsen, Eddleston, Hansen, & Konradsen, 2017). This may in part be as a result of the relatively limited emphasis placed on this important topic in the evaluation-specific literature, coupled with the reality that many evaluators lack expertise to conduct cost analysis studies.

Purpose: Given the limited use of cost studies in professional evaluations to assess actual program merit/worth, this paper presents a practical framework/model to help evaluators understand fundamental issues that must be considered when thinking about some form of cost-inclusive evaluation.

Setting: Not Applicable.

Intervention: Not Applicable.

Research Design: External desk research was used to ascertain the extent to which cost analysis is discussed in the evaluation literature and the reasons highlighted for underuse. This review provided the foundation for developing the practical framework/model presented in this paper for promoting cost-inclusive evaluation.

Data Collection and Analysis: Not Applicable.

Findings: Cost analysis, which can considerably enrich professional evaluations, is currently quite underused in the evaluation profession. Notable progress has been made over the last 15 years with government agencies around the globe taking the lead to promote cost analysis. However, most independent evaluators are still failing to measure, report, and analyze costs because many do not understand the fundamentals of cost studies. This paper promotes cost-inclusive evaluation by providing evaluators with a framework/model to help them understand important issues in cost analysis.

Keywords: *cost-analysis; costs; cost studies; benefits; evaluation; framework; measurement; model; valuation*

Introduction

An analysis of costs in relation to benefits should always be a fundamental component of any serious professional evaluation. However, several prominent evaluation practitioners note that most evaluations do not account for program resources consumed (Yates & Marra, 2017¹), while others highlight that many program evaluators are not trained to perform cost studies. For example, Royce, Thyer, Padgett, and Logan (2001) stress that it is necessary for evaluators to gain competencies in cost analysis to demonstrate why one program is better than another; Posavac and Carey (2003) note that evaluators seldom have cost accounting training; Rossi, Lipsey, and Freeman (2004) explain that many evaluators ignore costs and have no idea about the sources that should be used to gather cost information; Levin (2005) points out that cost studies are not commonly done by evaluators; Herman, Avery, Schemp, and Walsh (2009) explain that evaluators often think that they do not have the training to undertake cost analysis studies which results in limited use of such studies as a component of evaluations; Yates (2009) notes that evaluators' training is primarily focused on evaluating outcomes while ignoring the resources used to achieve those outcomes; and Scriven (2015) highlights that cost analysis—the other quantitative component of evaluation—is still fundamentally underutilized in evaluations.

In light of the aforementioned concerns regarding the limited use of cost studies in professional evaluations to assess actual program merit/worth, this paper will present a practical framework/model to help evaluators understand basic issues that must be taken into account when thinking about some form of cost-inclusive evaluation. The paper is structured as follows: (1) origins and development of cost analysis, (2) cost analysis coverage in the evaluation literature, (3) importance of cost analysis in professional evaluations, (4) a framework to determine which cost analysis methodology is best suited for the evaluation study, (5) challenges with identifying, measuring, and valuing costs and benefits, (6) models for identifying relevant costs and benefits, (7) issues to keep in mind when conducting a cost study, (8) drilling down to a level of analysis that serves useful decision-making, (9) strategies for gathering data for the cost study when the evaluation budget is limited, and (10) the way forward.

Origins and Development of Cost Analysis

Cost analysis—the practical process of calculating the cost of something (Scriven, 1991) can be traced as far back in history as 1772 when Benjamin Franklin asserted that the best way to analyze the most beneficial course of action was to weigh the pros and cons of various options (Gramich, 1981). In 1844, cost analysis became officially documented with the publication of Jules Dupuit's paper which examined measurement of utility of public works (Chawla, 1987). The 1900s witnessed various initiatives in the United States (US), most notably the US Corps of Engineers' use of cost analysis principles in 1902, the passage of the US Floor Control Act of 1936 (Chawla, 1987; Yates, 2009), the US Federal Inter-Agency River Basin Committee on Water Resources report of 1954 (Gilpin, 1995), the National Environmental Policy Act of 1969, and Executive Order 12291—Federal Regulations of 1981 (National Archives, 2017), which all contributed to promoting the use of cost analysis in the US. Today, the US Federal Government's position on cost-benefit analysis is governed by Executive Order 13563 of 2011 which states that government agencies must "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs" (The White House, 2011, 3). However, according to Copeland (2013), many independent regulatory agencies are not actually adhering to this mandate since they are not expressly required in their authorizing statutes to perform cost studies.

Cost Analysis Coverage in the Evaluation Literature

A review of popular evaluation texts, the American Journal of Evaluation, conference programs of the American Evaluation Association (AEA), and widely used evaluation standards and guidelines reveal that cost analysis is not widely discussed in the evaluation literature. *Program Evaluation: Alternative Approaches and Practical Guidelines* by Fitzpatrick, Sanders, and Worthen (2011), one of most commonly used texts in evaluation courses, provides only a three page discussion on the topic. Other popular evaluation texts that mention cost analysis include: Michael Scriven's (1991) *Evaluation Thesaurus*, Posavac and Carey's (2003) *Program Evaluation: Methods and Case Studies*, Rossi, Lipsey, and Freeman's (2004) *Evaluation: A Systematic Approach*, and the *Handbook on*

Practical Program Evaluation edited by Wholey, Hatry, and Newcomer (2004). Three relatively comprehensive texts on this subject which are not generally prescribed as required readings in an evaluation-specific course are Yates' (1996) *Analyzing Costs, Procedures, Processes, and Outcomes in Human Services*, Levin and McEwan's (2001) *Cost-Effectiveness Analysis: Methods and Applications*, and Shaffer's (2010) *Multiple Account Benefit-Cost Analysis: A Practical Guide for the Systematic Evaluation of Project and Policy Alternatives*.

Christie and Fleischer's (2010) review of 117 evaluation studies published during the period 2004-2006 in eight leading North American evaluation journals has also highlighted the very limited use of cost studies. Their research revealed that only 5% of the studies (6 out of the 117) reported a cost analysis study. More recent research by Madsen, Eddleston, Hansen, and Konradsen (2017) which examined the methodological quality of 30 economic evaluations from North America, Europe, Australia, and Hong Kong revealed that the majority of studies fell into the range of poor to average quality. A search of the electronic database of the American Journal of Evaluation for the period 1999 to 2015 supports Christie and Fleischer's (2010) finding. This search revealed that only a minuscule number of papers (less than 5%) mentioned words such as *costs*, *program costs*, *cost-benefit*, and *cost-effectiveness*. A review of the Conference Programs for AEA for the period 2005 to 2015 further highlighted that less than 1 percent of all papers presented annually at the AEA Conference are submitted to the Costs, Effectiveness, Benefits, and Economics Topical Interest Group.

Some of the most commonly used guidelines for guiding the professional practice of evaluations also reveal that discussion of cost analysis in the context of judging program merit and worth is either non-existent or just briefly mentioned. For example, the Program Evaluation Standards (PES 3rd edition) produced by the Joint Committee on Standards for Educational Evaluation (2011) which provide the most comprehensive guidelines for carrying out an evaluation, focus on the cost-effectiveness of the actual evaluation; that is, resources used/expended for the evaluation in terms of the value of the results derived from the evaluation (Feasibility Standard 4). None of the standards talk about the holistic comprehensiveness that can be derived from an evaluation if a cost study of the actual program inputs in relation to outputs was conducted using

one of the many well-known cost analytical methods in existence to validate program success.

In contrast to the PES, the Key Evaluation Checklist (KEC) (Version 2015) by Michael Scriven, another widely used evaluation guideline, provides a brief discussion on costs. For example, under the Costs Checkpoint (Number 3), the names of a few cost analytical methods are mentioned and different types of costs are discussed. The importance of cost analysis and comparison to critical competitors are also emphasized for the determination of merit and worth of the evaluand (i.e., what is being evaluated). The discussion under the Costs Checkpoint in the 2015 version of the KEC is a little more detailed compared to the 2007 version of the KEC which is available on the Evaluation Center's website at Western Michigan University.

Importance of Cost Analysis in Professional Evaluations

Organizations—public, private, and not-for-profit—all face serious financial constraints and have limited budgets. This, coupled with funders and other stakeholders' questions about accountability and transparency, and media scrutiny, clearly necessitate that decision-makers be concerned about program costs and whether their programs provide the *best value for money* (Persaud, 2007, 2009; Rossi et al. 2004; Wholey, 2003). For example, many funders now expect service providers to “demonstrate at least minimum levels of effectiveness for no more than a maximum allowable cost” (Yates, 1999, p. 1). Evaluators therefore have a responsibility to conduct sufficiently rigorous evaluations that examine both programs costs and benefits in order to determine a program's true merit/worth.

Regardless of the type of program/project/intervention being evaluated, the most important political question today is: “What is the program or system's cost-effectiveness, compared with other programs or systems” (Chelimisky, 1997, p. 65). In other words, demonstration of “a positive result, even one that is statistically significant and casually linked to a program, is not sufficient in itself to logically justify continuation of the program” (Weiss, 1998, p. 246) since this provides no indication of the program's cost-effectiveness (Davidson, 2005), or whether the program is even cost-feasible. Moreover, non-consideration of program costs makes it impossible to ascertain if financial and other resources were used efficiently. The complete omission of program

costs can therefore considerably reduce the comprehensiveness/usefulness of an evaluation since questions may be raised about whether the program resources actually maximized public good.

Many evaluations take account primarily of program effects (Fals-Stewart, Yates, & Klostermann, 2005; Herman et al., 2005). However, it is becoming increasingly obvious that the traditional approach to evaluation cannot work in an environment where financing is frequently hard to obtain and budget cuts are a stark reality. Funders and other decision-makers require very detailed cost studies to avoid bad investments and to capitalize on good investments. Evaluators therefore need to address tough questions such as: Can alternative programs provide the same or better service at a lower cost? How can cost savings be realized? Should this program be continued or terminated?

The consideration of program costs should therefore be a component of any sound and serious evaluation, since according to Posavac and Carey (2003), "programs have not been fully evaluated without a consideration of costs" (p. 215). Proper and rigorous assessment of costs in relation to benefits is therefore important, as it can assist decision-makers and program administrators to make the best use of their limited financial resources (Cellini & Kee, 2015), especially when several programs are competing for the same resources (Herman et al. 2009). Rigorous cost studies provide logical, responsible, and justifiable ways to allocate scarce resources and provide greater understanding regarding value for money.

A Framework to Determine Which Cost Analysis Methodology is Best Suited for the Evaluation Study

Evaluators can choose from a vast array of cost analysis methods. However, for an evaluator with little or no knowledge of cost analysis, choosing a suitable cost analysis method for an evaluation study can often prove to be quite challenging and confusing especially since cost analysis terms are often used interchangeably depending on the discipline or text. A good starting point for figuring out which method is best suited for a study would be to conduct a literature review or web search to see what types of methods have been used in similar program/project evaluations. This search would also assist with identifying the types of costs and benefits that were included in the analyses, as well as provide insight on various assumptions used

such as the discount rate and valuation procedure for costs and benefits. Before choosing a method, consider the issues discussed below and diagrammed in Figures 1, 2, 3, and 4 to help you think about the type of cost study that would be most useful and suitable.

When will the Study be Conducted?

Cost studies can be conducted *ex-ante* (prior to program implementation to determine feasibility of a proposed program, fiscal implications, or net contribution to wealth), *in medias res* (during program implementation to refine program design or determine if the program should be continued, expanded, or terminated), or *ex-post* (after program completion to determine overall success of the program or to learn from the program). Although each type of appraisal is conducted for different reasons, each is intended to be used for some sort of decision-making and as such should be properly designed.

What do you Want to Learn from the Study?

An important consideration is what one wished to learn from a study. Different methods focus on different issues. For instance, net present value examines the profitability of an investment (i.e., wealth maximization). However, for most social programs, wealth maximization is not a priority. Rather, serving the most clients in the most cost-effective way is the primary goal of such programs. Unlike the private sector which is profit-driven, government has a social responsibility to provide certain goods and services to its citizenry. It is therefore important to understand the focus of each method.

Whose Perspective/Viewpoint Will the Study Examine?

A critical consideration when planning a cost study is the perspective/viewpoint of the study. There are basically three perspectives that can be examined when conducting cost studies: (1) the organization's perspective (i.e., entity providing the program or service), (2) the program recipients' perspective (i.e., the participants or consumers of the service), and (3) the societal perspective (i.e., society as a whole which aggregates all perspectives). The first type is the most common perspective adopted for the majority of cost studies, while the latter type is the most comprehensive and sophisticated

(Persaud, 2007; Herman et al., 2009). The societal perspective requires complex analyses and should only be performed by seasoned cost analysts. Each perspective looks at different types of costs and benefits (World Health Organization, 2003) and may produce radical differences depending on the viewpoint adopted (Drummond, Sculpher, Claxton, Stoddart, & Torrance, 2015; Yates & Marra, 2017²).

Has a Specific Cost Analysis Method Been Requested?

In many instances, funders and/or clients may request use of a particular cost analysis method. Government-funded and private sector-funded initiatives for example generally stipulate use of net present value, internal rate of return, and cost-benefit analysis computations. However, for social programs being run by not-for-profit agencies, cost-effectiveness comparisons may provide more useful information to both funders/decision-makers.

Can Costs and Benefits be Quantified Into Monetary Units?

A critical issue that will determine choice of method is whether you will actually be able to quantify both costs and benefits into monetary units and the accuracy of that quantification and valuation. Many cost analysis methods require that both costs and benefits be converted into monetary units (see Figure 4). However, placing a monetary value on some types of costs and benefits can often prove to be quite problematic (Beardshaw, 1992). For instance, it is generally quite difficult to value many types of intangibles such as quality of life, pain, and clean air. Additionally, the valuation of certain tangible costs and benefits can also be quite controversial and highly subjective. What is the value of a life saved? Should a millionaire's life be valued at a higher price compared to a beggar on the street? To avoid difficult and controversial valuations, it is generally recommended that certain types of costs and benefits be discussed purely in qualitative terms. Additionally, evaluators can use a cost analysis method such as cost-effectiveness analysis (Copeland, 2013; Herman, 2009; Kee, 1994; Office of Management and Budget, 2011) where costs are presented in monetary metrics and benefits are presented as output units (e.g., lives saved).

What is the Evaluation Budget and Time Frame for the Study?

Cost studies need to be properly conceptualized prior to the preparation of the evaluation budget because such studies carry a price. However, when included from the outset in the timeline and evaluation budget, the evaluator can properly plan for this data collection, and it may even be possible to simultaneously collect some or most of the data needed for the cost study at the same time when other data is being collected for the evaluation.

How Does the Program or Intervention Compare with its Competitors?

To truly gauge the value of a particular program or intervention requires comparison to different alternatives (Herman et al., 2009). Performing comparisons to critical competitors can be quite illuminating and are particularly useful for program improvement. Different types of comparisons can be made: first, to alternatives that may use fewer resources but obtain the same or better outcomes; second, to programs that cost the same to see if they are being run more efficiently; third, to more expensive options since the payoff may be quite superior to the current program (Scriven, 2015—see KEC Checkpoint 4). The number of critical competitors evaluated will obviously depend on the evaluation budget and the sophistication of the cost analysis being done. Comparative cost analyses may not be something that novice evaluators now learning the basics of cost analysis may wish to undertake. However, as one develops competencies in cost analysis one will definitely want to do cost analysis comparisons, as this can tremendously enrich decision-making.

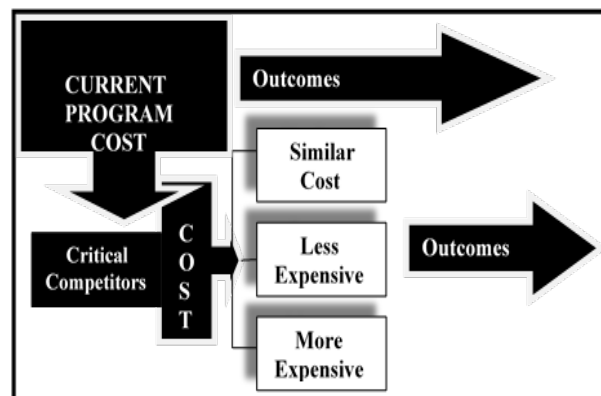


Figure 1. Program/Intervention Comparison

Challenges with Identifying, Measuring, and Valuing Costs and Benefits

Evaluators face a number of challenges when trying to identify, measure, and value costs and benefits. For instance, *ex-ante* cost studies to determine feasibility of a proposed initiative may necessitate that the evaluator make speculative estimates of costs and benefits, as there may be little or no information on the types of costs and/or benefits that could materialize in the future. If similar programs are in existence, these may provide a good indication of estimates. However, evaluators are cautioned that they should not include costs and benefits merely because others have done so. Specifically, The New Zealand Treasury (2005) advises that analysts should constantly ask themselves if a particular cost or benefit is relevant to their analysis. Mohr (1995) explains that analysts tend to borrow ideas from “. . . one sort of program to another” (p. 276) without stopping to think about relevance. Additionally, evaluators may often need to look beyond the obvious to unanticipated secondary effects (Scriven, 2015).

When cost studies are being conducted *in medias res* or *ex-post*, the evaluator may encounter challenges with getting good data to quantify costs and benefits (Copeland, 2013). Common problems include: incomplete or missing accounting records; errors in records; data in a form that cannot be easily comprehended by the evaluator; inconsistencies in the recording process; incomplete budgets that do not include cost information on all relevant expenditures; resources that have been paid for already being indiscernible as a result of being included in another agency’s budget or because of misclassification; and the recording of different costs under one cost classification or a larger unit, which makes it difficult to separate costs (Persaud, 2005).

The entity’s accounting records (e.g., financial statements, budgets), will often provide a good starting point for identifying costs and benefits for cost studies conducted after implementation. However, evaluators must bear in mind that accounting records are prepared for financial reporting purposes. Therefore, accounting records may include certain costs that may need to be excluded in cost analysis (e.g., depreciation must be excluded if you have included the capital cost of the asset) or exclude certain costs (e.g., opportunity

costs, social capital costs) or benefits (e.g., donated goods and services) that are critical and require consideration in a cost analysis (Persaud, 2007). For example, records in many human services programs do not reflect cost savings and income enhancement benefits, or even account for volunteer time and donated facilities, thus making program replication difficult. When cost data is not readily available and costs and/or benefits are intangible and/or minor, the evaluator will need to carefully weigh the cost of trying to obtain this information against the value that could be added from very accurate information. In such cases, it would instead be best to make reference to these costs and benefits via qualitative assessment (New Zealand Treasury, 2005).

Evaluators also need to know that costs and benefits can be categorized into a number of ways including Direct/Indirect, Tangible/Intangible, and Monetary and Nonmonetary classification systems (see discussion under *Models for Identifying Relevant Costs and Benefits*). The placement of costs and benefits into various classification systems is usually based on the analyst’s judgment. Some types of costs and benefits are quite straightforward to classify compared to other types of costs and benefits. Direct costs (e.g., capital investment costs, recurring expenditure) and benefits (e.g., revenue, number of patients served) can be easily traced to the evaluand and are generally associated with the primary program goals. In contrast, indirect costs and benefits cannot be easily traced to the evaluand and may even be unintended (Kee, 1994). For example, an unintended benefit of a reading program may be the self-confidence developed by the program participants. This type of benefit is also considered to be intangible in nature and usually cannot be quantified into a monetary unit. Similarly, a government rehabilitation initiative for drug addicts which places program participants back into employment have several indirect benefits (e.g., taxes from the employed, savings in welfare payments, less stress on immediate family members). All indirect costs and benefits also need to be included in cost analysis computations. However, when monetary quantification is not possible because of the intangible nature of certain costs or benefits, these costs and benefits should at least be discussed qualitatively.

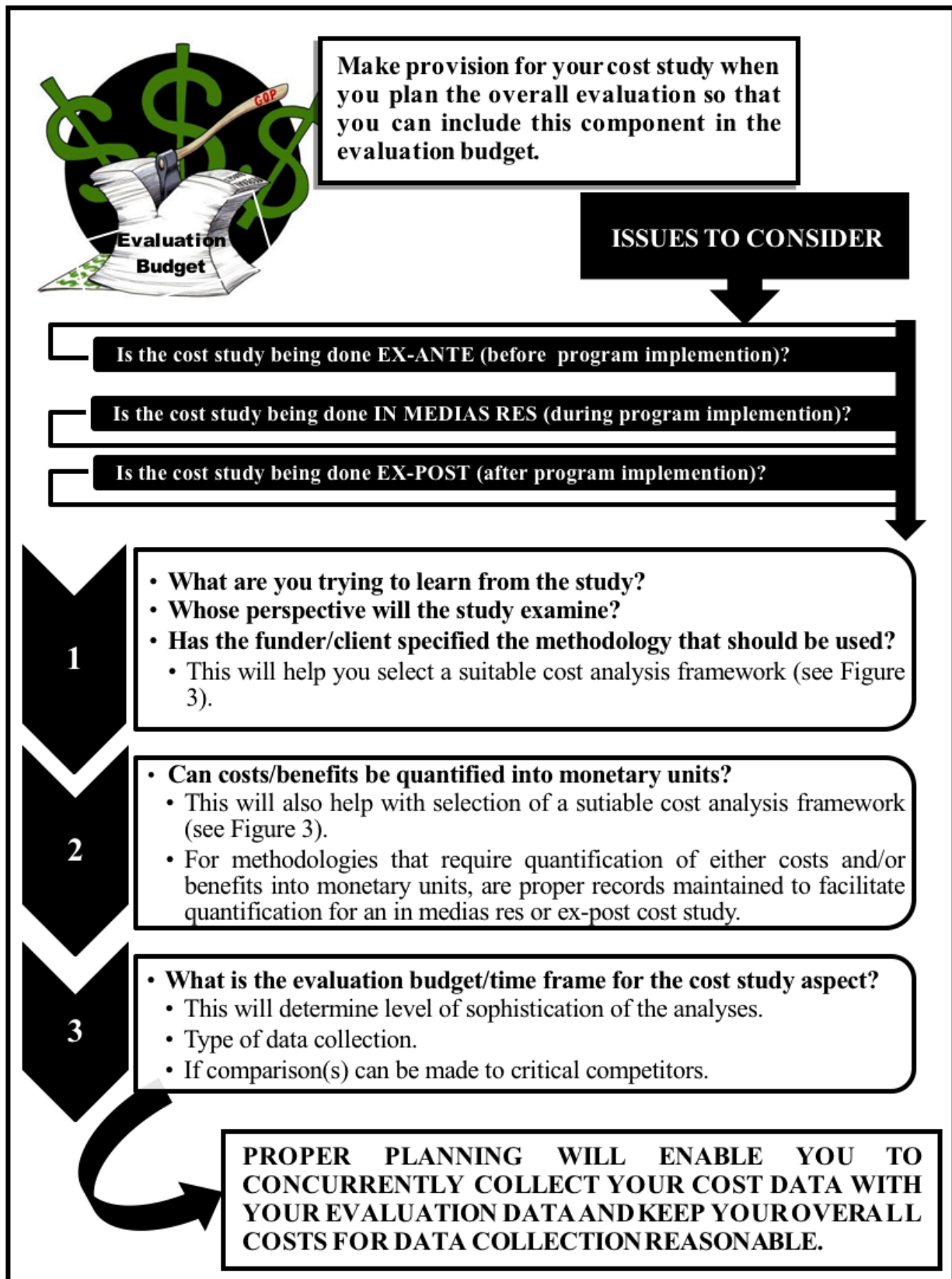


Figure 2. Issues to Consider Before Selecting a Cost Analysis Framework

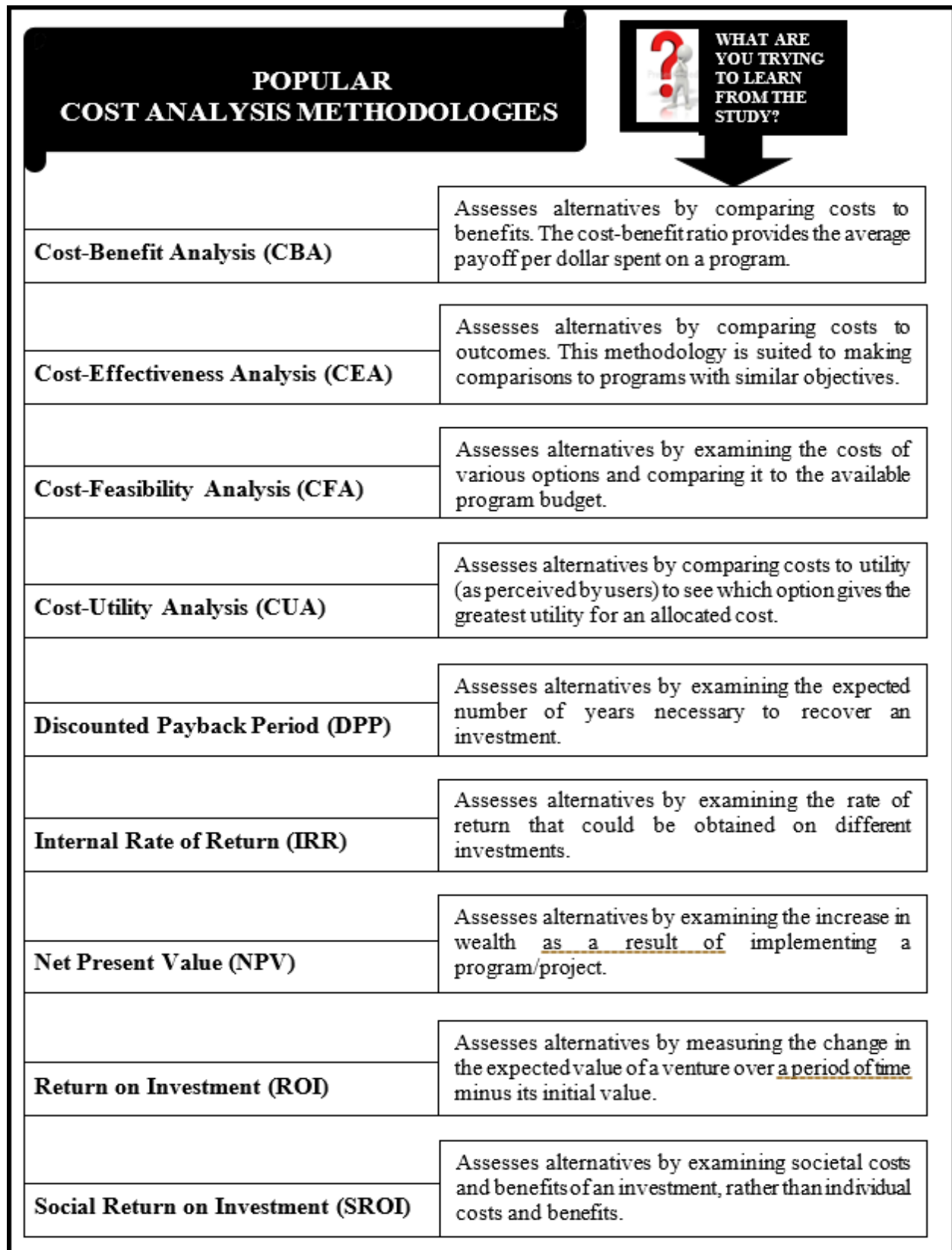


Figure 3. Framework for Choosing the Right Cost Analysis Framework

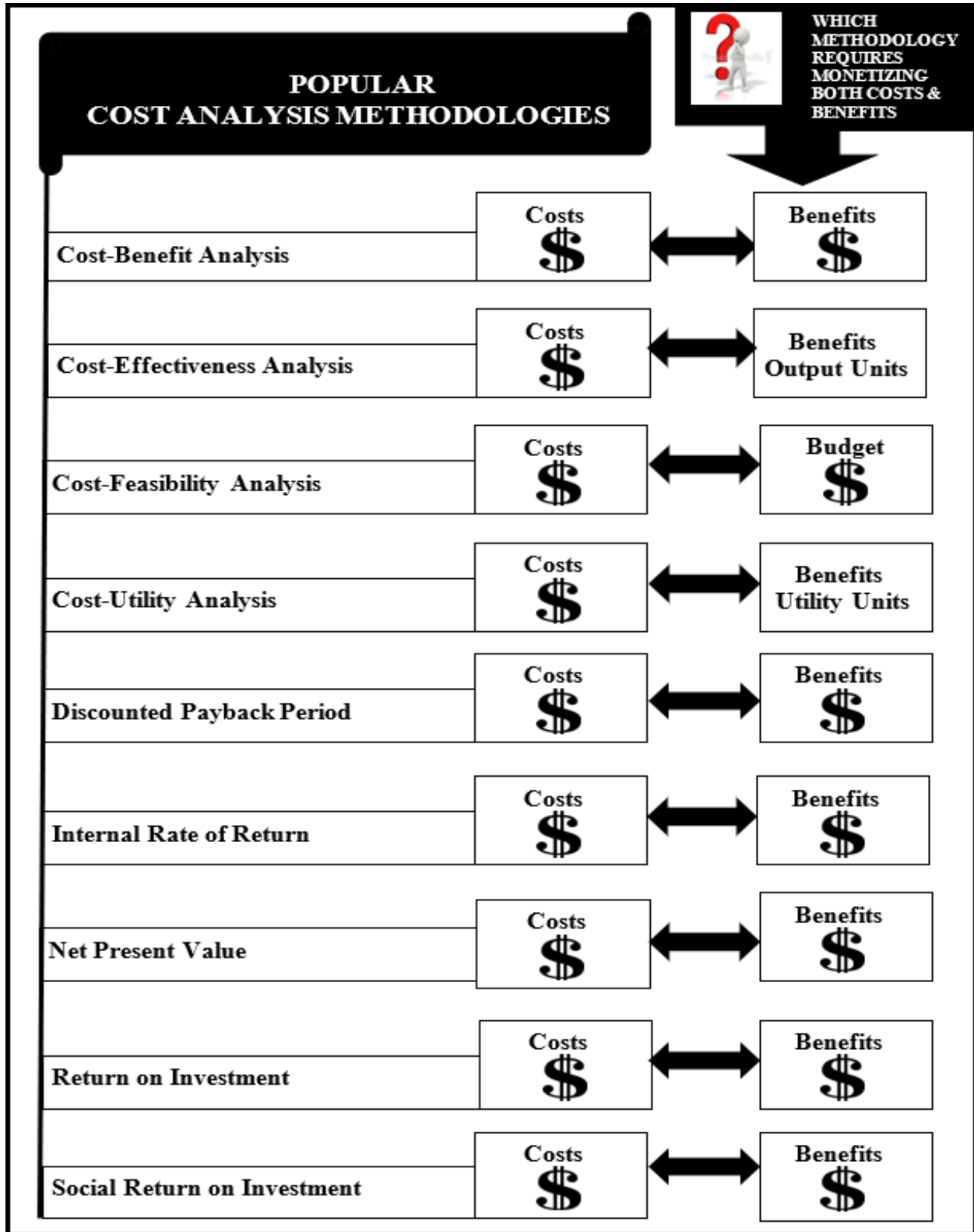


Figure 4. Monetizing Costs and Benefits

In all situations, it is important that the evaluator be vigilant and ensure that costs/benefits are not double counted and/or omitted in error, as this will result in inaccurate analyses, which can positively or negatively influence decisions (e.g., whether to proceed with a new program or terminate an existing program). For example, if certain operating costs in human services are counted twice because of bad accounting procedures and/or classification, it could make the per-unit cost-per-client appear expensive compared to another program. Likewise, if certain costs (e.g., donated time and facilities) are omitted and not taken into account and the program is replicated elsewhere, the administrators in charge of that program will face some serious challenges because the true program costs were severely underestimated. For novice and experienced evaluators alike, ensuring that costs are not double counted or omitted may often prove to be quite arduous. The next section discusses two models which can help with preventing omissions and/or duplication when identifying costs and benefits for a study.

Models for Identifying Relevant Costs and Benefits

All types of cost studies require relatively accurate input data if the numbers generated are to be useful for decision-making. This means that costs and benefits need to be specified as precisely as possible. Notwithstanding, evaluators need to keep in mind that the time spent on data collection must be worth the cost. Therefore, focus should be placed on cost categories that consume the largest share of the entity's budget. For example, employee salaries generally represent a huge chunk of many organization and program budgets (generally between 75% - 80%), while office supplies represent less than 1 percent of most budgets. A 15 percent error in salaries of \$1 million (i.e., \$150,000) will greatly affect the overall cost estimate, while a 100 percent error in office supplies of \$3,000 will be comparatively negligible (i.e., \$3,000). The same logic should be applied when identifying benefits.

A practical strategy that can be used to avoid omissions and/or duplication and to ensure that costs and benefits data is relatively accurate is to use some type of costs model and benefits model to assist with the identification process of costs and benefits. The Costs and Benefits Identification

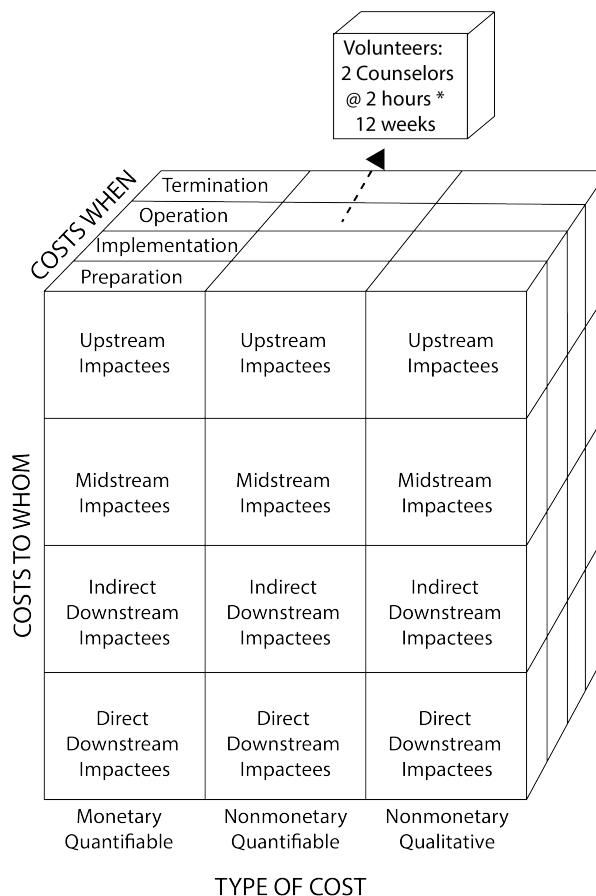


Figure 5. Costs Identification Model

models presented in this section examine costs and benefits from three dimensions.

The Costs Identification Model (Figure 5) was developed and builds on ideas from Davidson (2005), Kusek and Risk (2004), Persaud (2007), Scriven (1991, 2015), and Yates and Marra (2017¹). As can be observed in the Costs Identification Model, the *Type of Cost* dimension has three categories: (1) costs which can be easily quantified into monetary units; (2) costs which are nonmonetary in nature (e.g., volunteer services, donations)—this category of costs can be converted into monetary units if the free goods and services are no longer forthcoming; and (3) nonmonetary qualitative costs—this category includes costs which are generally quite difficult and/or impractical to quantify or have no known market value. Costs included in the latter two categories would generally be discussed qualitatively in a cost analysis write-up. The *Costs to Whom* dimension carries 4 categories. The terminology in this dimension is adopted from Scriven's (2015) KEC. *Direct Downstream Impactees* are the immediate

program consumers/ users, *Indirect Downstream Impactees* are the immediate program consumers' family, peers, and friends who are impacted via the ripple effect, *Midstream Impactees* are the program staff, and *Upstream Impactees* include all other stakeholder groups (e.g., government, direct funders/investors, taxpayers, volunteers, political supporters, anticipators, suppliers, etc.). The *Costs When* dimension uses a typical four-phase program life cycle: (1) Preparation, (2) Implementation, (3) Operation, and (4) Termination. Note that organizations and different types of programs/projects may have different life cycle phases, so this dimension may need to be modified to make it context-specific to a study.

The Benefits Identification Model (Figure 6) is quite similar to the Costs Identification Model. It also has 3 dimensions. The *Benefits When* and *Benefits to Whom* dimensions carries the same categories as the *Costs When* and *Costs to Whom* dimensions. However, the *Benefits When* dimension does not use the project life cycle but rather uses labels to reflect the timing of the benefits (i.e., Immediate, Short Term—less than 1 year, Medium Term—1-3 years, and Long Term—greater than 3 years). Note that both models are designed to obtain very detailed itemized information, and both models can be used to identify relevant costs and benefits for any type of cost analysis study.

An alternative way to identify costs and benefits for a study would be to use a table format if that is easier to visualize and list all inputs (i.e., resources used/consumed). This table can be prepared using the identical categories from the Costs and Benefits Identification Models. Table 1 provides an illustration using the categories from the Costs Identification Model. A similar table template would be created to capture benefits using the categories from the Benefits Identification Model. It should be noted at this point that regardless of the model format being used, one will not always incur costs and benefits for each category in each of the three dimensions. The costs and benefits in each dimension will be program-specific. For example, although you may have two reading programs with the same goal (e.g., to improve reading skills in the age group 8-9 years), the programs may use quite different strategies. Program A may focus on technology use (e.g., interactive computerized games that teach grammar, spelling and so on), while Program B may focus on one-on-one teacher interaction. In this example, Program A will incur costs for technology in the Preparation, Implementation, and Operation phases, but Program B will not incur this cost. In

contrast, Program B will have a much higher cost for *teaching personnel* in the Operation phase compared to Program A because of its strategy of one-on-one interaction.

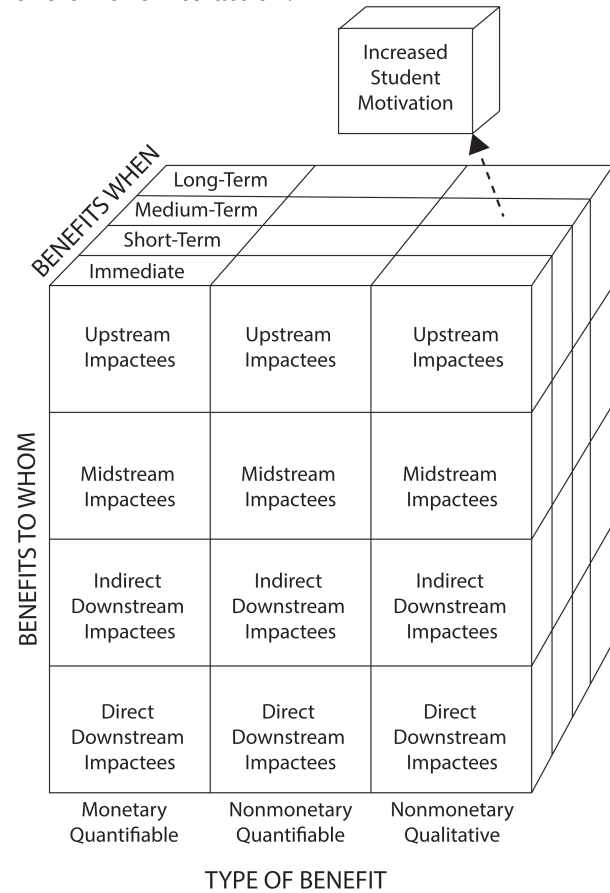


Figure 6. Benefits Identification Model

Issues to Keep in Mind When Conducting a Cost Study

Similar to any type of research, cost studies follow a practical and systematic approach. Once it has been established what one wishes to learn, the next task is to determine a suitable methodology to collect the information that is needed. Then, one must collect, measure, and value the costs and benefits for the study. If programs or investments have a life of more than a year, this will require the use of discounting techniques to take account of the time value of money, as a dollar today is not worth the same amount in the future due to inflation and other factors (e.g., risk, uncertainty, political unrest). Since the discount factor chosen can greatly impact the final calculations, it is of paramount importance that this rate is carefully

Table 1
Alternative Framework to Identify Costs¹

Dimension 1 TYPE OF COST	Dimension 2 COST TO WHOM	Dimension 3 COST WHEN	Narrative for Itemization
Monetary Quantifiable	Direct Downstream Impactees	Preparation Implementation Operation Termination	Provide detailed itemization in dollars for each phase.
	Indirect Downstream Impactees	Preparation Implementation Operation Termination	
	Midstream Impactees	Preparation Implementation Operation Termination	
	Upstream Impactees	Preparation Implementation Operation Termination	
Nonmonetary Quantifiable	Direct Downstream Impactees	Preparation Implementation Operation Termination	Provide detailed itemization for qualitative discussion. It may also be insightful and useful to actually quantify into monetary units.
	Indirect Downstream Impactees	Preparation Implementation Operation Termination	
	Midstream Impactees	Preparation Implementation Operation Termination	
	Upstream Impactees	Preparation Implementation Operation Termination	
Nonmonetary Qualitative	Direct Downstream Impactees	Preparation Implementation Operation Termination	Provide detailed itemization for qualitative discussion.
	Indirect Downstream Impactees	Preparation Implementation Operation Termination	
	Midstream Impactees	Preparation Implementation Operation Termination	
	Upstream Impactees	Preparation Implementation Operation Termination	

¹ Note that costs are program specific. The three dimensions and the categories in each dimension are provided to ensure that you do not omit and/or duplicate costs. Your specific program may not have costs in many categories.

researched, since one will need to justify its selection. Sensitivity analysis should also be conducted. This *what-if* investigative technique allows the analyst to consider a range of plausible alternatives to determine overall program vulnerability to reasonable assumption changes. Specifically, this technique is used to essentially check the robustness of computations or sensitivity of outcomes to changes in its parameters (Copeland, 2013; Office of Management and Budget, 2003—Circular A-4). For instance, if a discount factor of 7% is used for the cost analysis computations, perform a sensitivity analysis using discount factors of 6 percent and 8 percent and observe the effect on the cost analysis computations. Or if the program uses volunteer services, price these services and observe how it would affect the outcome if the volunteer services were no longer forthcoming.

Additionally, to ensure transparency and reproducibility, it is also recommended that all assumptions used for measurement and valuation (including the assumption used for selection of the discount rate) be documented and justified so that readers can follow all computations to understand how the conclusions were reached. Circular A-4 (Office of Management and Budget, 2003) also stresses that it is even important to explain why certain approaches were used (Copeland, 2013; Office of Information and Regulatory Affairs, n.d.). Lack of detail about the processes used, assumptions employed and so on, has been highlighted as a major weakness in cost studies. For example, the Madsen et al. (2017) study noted that the majority of studies did not provide clear discussion of methodological decisions and detailed data was not provided to see how analysts reached their conclusions. Additionally, more than half of the studies did not take into account the time value of money. In studies that used discounting, only a few provided the discount rate used or provided any justification for the rate selected. Several studies did not indicate the perspective adopted. The authors concluded that due to the inadequacy of the methodological discussions in the studies, as well as lack of homogeneity in methods used, that it was impossible to make direct comparisons between studies. Evaluators therefore should note that simply presenting summary figures without an explanation of how the figures are derived is not helpful for decision-making. Moreover, the study may be criticized, as skeptics may suggest that the assumptions used are arbitrary and perhaps even speculative. It is therefore critical that all assumptions be made explicit so that the study can be credible and useful.

These detailed explanations and computations should either be in the main body or appendices of the evaluation report.

Also note that if one conducts a cost study to determine if a program should be continued after a period of time (e.g., after 5 years in existence), that one will need to consider a cost category referred to as *sunk* costs. Specifically, a decision pertaining to whether to continue or discontinue an existing program considers only the current and future costs that would be incurred for continuation of an existing program—not previous costs. Therefore, costs incurred for previous capital investments, research and development, legal fees and so on to establish the initial program are irrelevant in a decision of whether to continue the program. These costs have already been spent and the resources used. They are therefore irrecoverable and should not be considered in an analysis regarding program continuation. However, many of these costs will be important in an analysis for program replication.

Drilling Down to a Level of Analysis that Serves Useful Decision-Making

The budget and time frame of a study, coupled with what one is trying to learn, will all influence the sophistication of a cost study. Keep in mind that even when doing more rudimentary types of cost analyses it is important that the analyst thoroughly understands the goals of the program, as well as its context. To illustrate, assume that a client is currently funding a program to create permanent employment for young women under the age of 21 who have dropped out of high school due to pregnancy. Phase 1 focuses on issues such as getting to work on time, courtesy when interacting with customers, and appropriate dress etiquette. Phase 2 focuses on actual hospitality training (e.g., bartenders, waitresses, and store clerks). Phase 3 provides internship opportunities with local organizations in the community. Organizations providing internships have all committed to providing full-time employment for their intern if they are satisfied with the performance of their intern after the 3-month internship period. The first cohort comprised 500 students and costs \$500,000.

A very rudimentary type of cost analysis that could be done with this data is to calculate the unit cost to train each student ($\$500,000 / 500$ persons = \$1,000 per person). However, a much more insightful type of analysis would be to calculate the cost per graduate. If only 300 students graduated

from the program, the cost per graduate would be $\$500,000 / 300 \text{ persons} = \$1,666.67$ which would provide a true cost-effectiveness index if the outcome was graduates. This second analysis provides a more reflective dollar amount of what it is really costing the organization for training. At the same time, it allows the evaluator to investigate the reasons why 200 students dropped out of the program. Although both analyses have provided useful information, neither have addressed the program goal which is to help the young women to gain permanent employment. To determine the program's success, the analyst really needs to figure out the cost per employed graduate, perhaps a year after graduation, or even maybe two years after graduation. However, to do this particular type of analysis would entail having a larger budget for the cost study, a longer time-frame for the study, and program records that tracked where students were assigned for their internships. Additionally, this level of cost analysis would only be possible if the evaluation was requested a year after the graduation of the first cohort.

Drilling down to different levels of analyses provides valuable insight into the true merit and worth of a program. At the same time, it opens up opportunities to investigate other issues which would not be possible if the particular type of cost analysis was not performed. For instance, the collection of data to determine the cost per employed graduate a year later provides an opportunity for the evaluator to gather data from employees on which aspects of the program training are visible in the graduates a year later. Collection of this type of data can help with program restructuring to improve on areas where training was not very effective and to capitalize on areas where training was very effective.

Strategies for Gathering Data for the Cost Study When the Evaluation Budget is Limited

When clients commission an evaluation, they generally want much more than is realistically possible given the shoestring evaluation budget proposed. Evaluators therefore need to come up with very creative options to try and satisfy client needs while at the same time trying to incorporate a cost component into the evaluation plan. As previously mentioned, making cost-inclusive evaluation an integral part of the evaluation budget from the outset will help you to strategically and

efficiently plan your data collection, as data collection is one of the most expensive activities in any evaluation. In addition to this strategy, explore other options such as getting the program staff to collect some or all of the cost data needed or using graduate evaluation students to collect the data. The latter option can considerably reduce costs while providing valuable field experience and mentorship for the students (Nicholson & Greene, 2017). Costs can also be reduced by using technology. For instance, in the example which proposed tracking graduates a year after graduation, the interviews with the employees could be conducted via phone or teleconferencing, rather than in person, which would considerably reduce costs for this data collection activity.

The Way Forward

The notion of cost-inclusive evaluation is still a relatively new phenomenon. The evaluation field has made some progress and is now "entering the age of cost-inclusive evaluation" (Yates, 2009, 52). However, there is still a long road to travel. At the same time, it is noteworthy that the last 15 years have witnessed substantial progress in promoting the use of cost studies as evidenced by the very detailed guidelines now issued by several government agencies (see Department of Finance and Administration, Australia, 2006; European Commission, 2014; HM Treasury, 2011; Office of Management and Budget, 2016; New Zealand Treasury, 2015; Treasury Board of Canada Secretariat, 2007). However, as highlighted in the literature, there is still clear evidence that most independent evaluators are failing to measure, report, and analyze costs in their evaluations (Christie & Fleischer, 2010; Herman et al., 2009).

This paper has developed a practical framework and model to assist evaluators who feel they are not sufficiently skilled to conduct cost studies to understand some fundamental issues that need to be considered when conducting a cost study. It is hoped that this paper will inspire evaluators to start to think seriously about cost-inclusive evaluation, as an analysis of costs in relation to benefits/outputs is the only practical way for evaluators and decision-makers to ensure value for money and the best use of financial resources. Admittedly, cost-inclusive evaluation will definitely require more effort and this may be a little intimidating for many evaluators. However, as Herman et al. (2009) point out "the benefits from performing cost-inclusive evaluations are well worth time and effort involved" (p. 55). Moreover,

the notion of cost-inclusivity will change how evaluators think about evaluation, as this component will provide a much more holistic approach to any evaluation.

In addition to the framework/model presented in this paper, evaluators may obtain additional insights on costs and benefits and the various methods discussed in this paper by perusing the very detailed *free* electronic resources provided by the government agencies cited in the opening paragraph of this section, along with the electronic resources of French (2003) and the manual compiled by Yates (1999) for the National Institute on Drug Abuse.

In closing, both evaluators and program administrators need to understand the value added that can be derived from cost-inclusive evaluation. Evaluators have an important role to play in helping to educate clients about cost-inclusive evaluation so that they can ensure that proper mechanisms are put in place when programs are implemented to collect and record accurate cost information. However, this can only be done if evaluators themselves understand cost analysis fundamentals and the benefits to be derived from cost-inclusive evaluations.

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