

# THE ADOPTION OF COST-BENEFIT ANALYSIS AS AN INDICATOR FOR EVALUATE THE ACCOUNTING PERFORMANCE OF BUSINESS ENTITIES (THE CASE STUDY FOR CANADIAN RAILWAY)

Ali Qasim Hasan AL-Obaidi, University of Kerbala  
Amal Mohammed Salman, University of Kerbala

## ABSTRACT

*This study tested the relationship between the total cost and expected benefits to the project that proposed by top management of company selected. It was based on a key hypothesis that states, the outcome of proper and accurate analysis of the cost-benefit relationship can be considered as an indicator that can be used to assess the financial benefit of the proposed project and at the same time evaluation the accounting performance of the accountants who responsible for carrying out this process.*

*The study contributed to formulating a group of objectives, in order to achieve the main objective of the study and test the main hypothesis, a study sample was chosen (Canadian Railway Co.) by examine a certain case in it related to study.*

*Finally, the study reached a number of conclusions and recommendations, most importantly are, the application of the concept CBA in a proper manner will help the company to obtain a set of benefits, not limited to the assessing of the performance of accountants within company but expanded as to include the encouraging the accounting authorities within country in the selection of best accounting practices and applications that enhancing the accountants duties in future.*

**Keywords:** The Cost Benefit Analysis, Accounting Performance, The Proposed Project, Accounting Indicators, Management Decisions.

## INTRODUCTION

Nowadays, the process of making decisions in the business environment is considered as one of the most difficult tasks of modern business organizations because of their association with the success or failure of these organizations. One of the most important tools that help to facilitate this task is the cost-benefit analysis as it connect directly with the needs and requirements of a wide group of users whether inside or outside business. Recently, the process selection of any project related to the business activities of the company has become difficult and complicated due to the complexity the process of matching the expenses that a company may incur from this project in return to the benefits expected to be obtained in the near future.

There are many factors that affected on CBA concept, as mentioned in the study of (Ivanov, 2018). This study confirmed heavily on the factor of size for companies. For small companies, the application of CBA is very easy and simple and requires a short period of time, while in large companies the process of application CBA are often considered very difficult and complex process because it require advanced cadre in accounting and a long period of time.

On other hand, our previous study (Al-Obaidi, 2014) addressed other factors that also affect CBA concept, such as the level of inflation within country and the nature of the economic system applied. The economic system applied in the developing countries (including the Republic of Iraq) is different from that applied in developed countries, and this factor plays a vital role on the nature of accounting applications and practices particularly in the process of applying CBA concept for economic offer. Through studying the advantages and disadvantages of applying the concept of CBA, it is clear that despite the advantages that entities can get from CBA concept, there's a set of disadvantages including the difficulty of identifying and measuring of the costs associated with the proposed economic offer, both direct and indirect, as well as a set of obstacles that hinder the process of assessment of economic benefits, whether tangible or intangible such as evaluating the customer behavior and the level of customer satisfactions (Vladimirovna, 2019).

Since there is a difficulty in the process of determining and measuring the costs and benefits of economic offer, the local entities within the Republic of Iraq must looking for an accurate application of CBA concept and motivating national accounting staff in selecting the best rules, and practices related to the CBA through which the desired results can be obtained and avoid all practices that hinder application this concept and lead to utilize the personal judgments. The reliance on personal judgments will contribute to the emergence a group of problems, including the trend towards bias and away from objectivity of accounting practices in a manner that meets the needs of top management without taking into account the wishes and requirements of other interested users whether inside and outside the company. Hence, according to the opinion of (Cristina, 2017) the most important benefit of using CBA analysis is to evaluate the performance of the accounting department (including accounting staff) within business organizations and their ability to keep pace the developments that occur in the modern accounting environment, then assess the performance of other departments related to the economic activity of these organizations. Therefore, it can say that, the accountant who is capable of accomplishing the task of analyzing (cost-benefit) in a proper way of any economic project is considered an accountant with high accounting knowledge and experience and can be rely on his abilities and skills in accomplishing many complicated tasks that relating to accounting activities.

## LITERATURE REVIEW

### Cost-Benefit analysis CBA, Definition and Meaning

The concept of cost-benefit analysis has emerged in the 1840s, then it became more common and used in the 1950s. According to the opinion of Jules Dupuit, who founded this concept, the process of choosing any option amongst alternatives available require studies the relationship between total cost of this option and the benefits that related, then make decision depending on the results of this relation.

There are many authors who have addressed this concept; the most important opinions are listed into the following Table 1 below:

<b>Table 1</b>	
<b>AUTHORS OPINION ON THE CONCEPT OF COST-BENEFIT ANALYSIS</b>	
1	<i>"It is a procedure for estimating all costs involved and possible profits to be derived from a business opportunity or proposal"</i> (Kenton, 2018).
2	<i>"It is a systematic approach is used to estimating the strengths and weaknesses of any transactions or</i>

	<i>activities by compare potential benefits against costs concern to the transactions" (Kevin et al., 2010).</i>
3	<i>"It is an effective tool is used by business organizations to evaluate the total anticipated cost of a project compared to the total expected benefits in order to determine whether a proposed project is worthwhile for a firm or team"( Boardman, 2011).</i>
4	<i>"It is a key decision-making way that helps determine whether a planned action or expenditure is literally worth the price, it can be used to help decide almost any course of action, but it's most common use is to decide whether to proceed with a major expenditure" (Robert, 2014).</i>
5	<i>"It is an analytical practice; the outcome of this practice will help managers to determine whether the project is financially useful before erecting a new plant or taking on a new project" (John, 2009).</i>

From the table above it is noted that, there is a difference and variation in the opinions of the authors about the definition of the CBA concept, whether as procedure, systematic approach, effective tools, key decision-making way or analytical practice.

Hence, the authors can describe the CBA concept as:

*"Is an objective guide or indicator that contributes significantly to judging the future strategies of the business entities, the advisability of their proposed project and the efficiency of their accounting and financial performance by estimating all the costs associated with the process of selection project against the benefits expected".*

Factually, CBA has two main applications (Maureen et al., 2018):

1. To identify the soundness of any investment opportunity verifying whether its benefits outweigh the costs, and by how much.
2. To provide a basis for comparisons any investments in projects with other such proposals, identify whether the benefit of this option exceed the cost related or if the business must direct to another option.

Coates, (2015) considered that CBA can be used into the following aspects:

1. Making decisions of hiring new employees.
2. Assessment of economic offer that proposed for various types.
3. Identifying the financial benefits of the purchasing activities.

Regarding to the process of selection economic offer that available, CBA holds that the cost of this offer should not exceed its benefits expected. In order to achieve this goal and avoiding the incurring excessive cost, all accountants must take into account the following issues (Robert, 2014):

The level of information details: The accountant who responsible of preparing accounting report about this project should not spend an inordinate amount of time and an excessive amount of work to deal with secondary paragraphs in financial statements.

The Information required by users: All accountants need to study and estimate the requirements and wishes of users before starting in the process of disclosure the information about this project that include in reports.

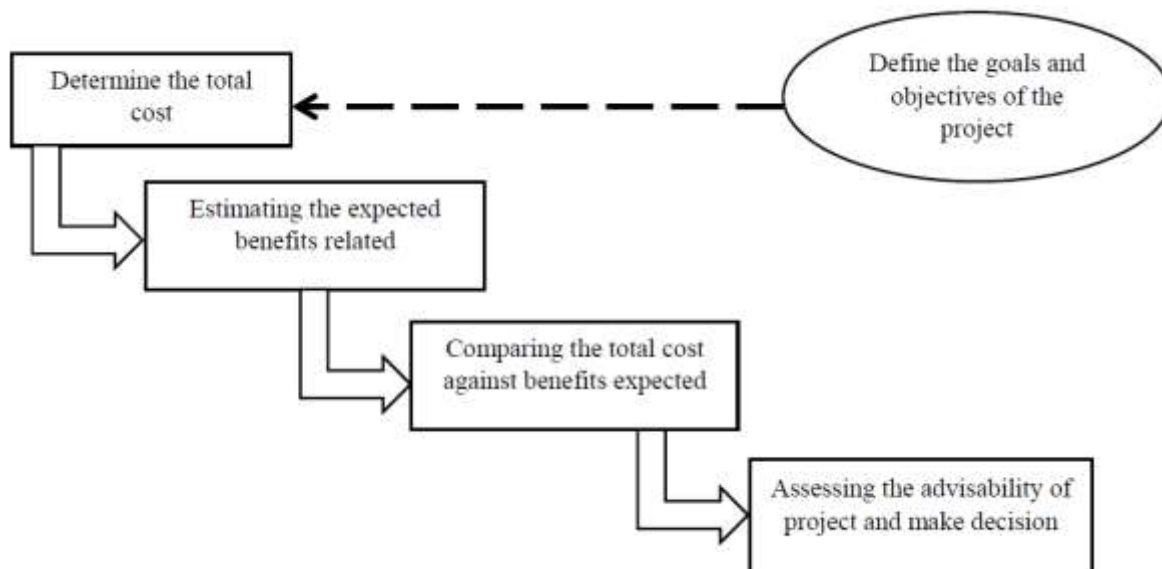
The results of CBA concept, depended heavily on the size for companies, for small businesses, the application of CBA is very easy and simple and requires a short period of time, while in large business the process of application CBA require a long period of time and are often considered very difficult and complex process. In addition to the size of companies there are also other factors that affecting the application CBA, such as the constant change in the cash

flows, the level of inflation within country and the nature of the economic system applied (Kenton, 2018).

### How to Conduct the CBA Concept

According to the opinion of Boardman, in order to implement this concept in the process of choosing any proposal project, there are four main steps the accountant should adhere to as following (Boardman, 2011) (Figure 1).

1. The first step in the process is to compile a comprehensive list of all the costs associate, which include all financial resources of the proposed offer, whether direct or indirect, other related costs such as intangible costs, opportunity costs, in addition to the costs which may arise due to the riskiness of the proposed offer. As well as the cost of the human effort involved in all phases of this project. Costs are often relatively easy to estimate (compared with revenues).
2. The second step is calculating the benefits and assigns a monetary value to the benefits of the project. The benefit should include all direct and indirect and intangible benefits, such as increased production from improved employee safety and morale, or increased sales from customer goodwill. This step is more complicated than previous step, primarily, it's hard to estimate benefit properly, Secondly, along with the financial benefits that you anticipate, there are often intangible, or soft, benefits that are important outcomes of the company.
3. The third step is comparing the value of costs and the value of benefits. To do this, calculate total project costs and total benefits, and compare the two values to determine whether project benefits outweigh costs.
4. The final step is using this analysis to decide company course of action. If the benefits of proposed project outweigh the overall cost, it considered positive point to the company and all accounting departments related, in contrast considered as negative point to the performance of company.



**FIGURE 1**  
**THE MAIN STEPS OF CONDUCTING CBA CONCEPT**  
 (Source: Prepared by authors depending on accounting literature of study)

### The Advantages and Disadvantages of Conducting CBA Concept

There are many advantages that business entities can achieve by adopting CBA concept (Figure 2); the most important are (Gartenstein, 2016):

### **Facilitate the task of decision-making**

Cost-benefit analysis is considered as a good tool to simplify the process of making decisions of enterprise, different project might entail vastly different type of expenses and benefits, by using CBA let business compare projects of any type no matter how dissimilar they are. Through collecting total cost minus total benefits, equal net benefits.

### **Enhancing objectivity**

Cost-benefit analysis helps to provide an objective way to compare two or more options. Before the owners make any actions about new investments, they using CBA for comparing these options based on the actual and objective results are financial costs and benefits.

### **Drawing goals correctly**

If the company is capable of calculate total cost and estimating the net benefit of any option in accurate way, then a cost-benefit analysis can give the great idea of company about the process of drawing its goals correctly, which considered the basis for the success of economic decisions associated with the company's activity.

### **Give a glimpse of current affordability**

The advantage of application of CBA is not limited to clarifying the total costs and benefits associated with the proposed economic offer, but rather expanded to the possibility of giving a clear picture of the additional costs that the company may incurred if it accepts such offer regardless of the outcome of the analysis.

### **Proper selection rules and policies**

The proper application of CBA concept encourages accountants within business entities in selecting the best rules, and applications in accounting field, through which the desired results can be obtained and avoid all practices which hinders the duties of accountants and lowers the performance for them. Despite the benefits indicated above by using CBA, in contrast there is a set of disadvantages related the most important are (Plowman, 2017).

### **Define goals in advance**

In spite of all the possibilities and resources the companies possess, it's usually fail to apply the concept of CBA, the most studies in this field indicate that the reason for the failure is the lack of formulating a plan in advance that illustrates the main objective of applying this concept and the way of its contribution to facilitating the decision-making process.

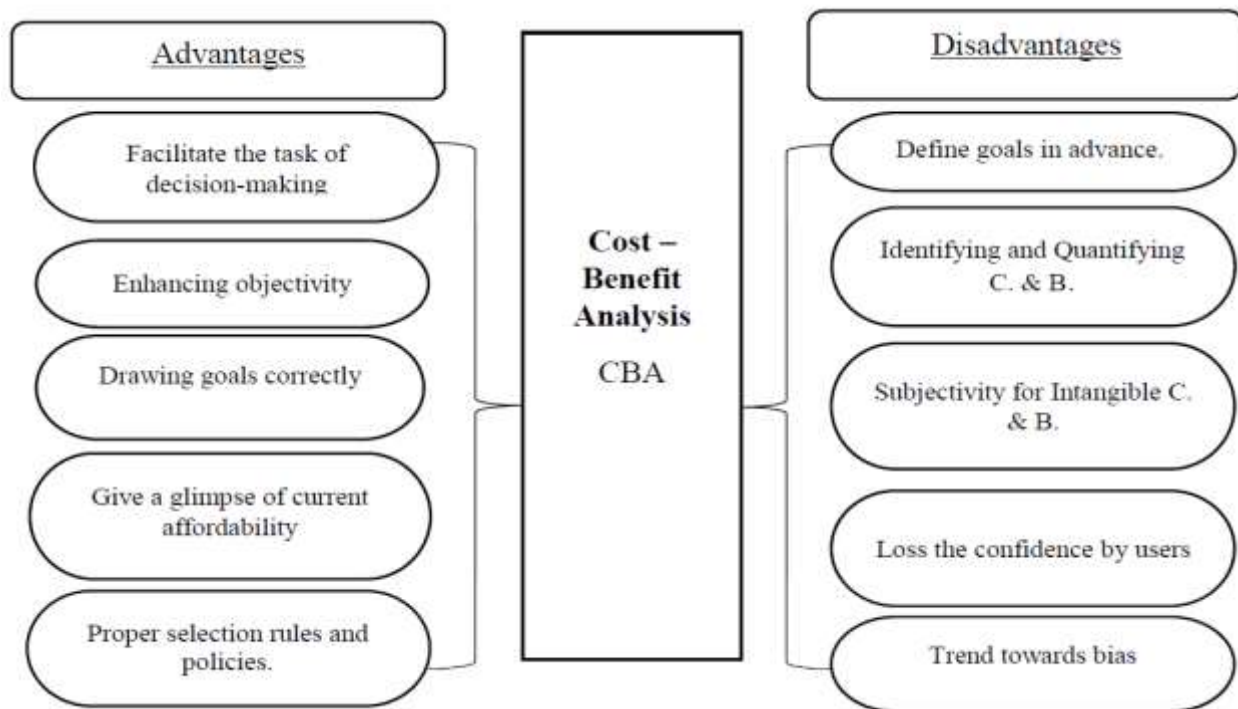
### **The difficulties of measuring and evaluating the cost and benefits of economic offer**

The main disadvantage of implementing the concept of CBA is the difficult of identifying and measuring of the costs associated with the proposed economic offer, both direct and indirect,

as well as a set of obstacles that hinder the process of assessment of economic benefits, whether tangible or intangible including evaluating the customer behavior and the level of customer satisfactions, this shortage lead to misleading the final results. although the presence of an effective accounting staff and modern accounting systems within many advanced companies, it's not been able to overcome these obstacles, that still represent the greatest risk to the process of choice of economic offer amongst alternatives (Al-Obaidi, 2014).

**Increase personal judgments and estimates related with costs and benefits**

Since there is a difficulty in the process of determining and measuring the costs and benefits of economic offer, most accountants will be subject to the personal judgments, estimates and accumulated accounting experience they owns in order to accomplish this task. The reliance on these personal judgments will contribute to the emergence of a group of problems, including the trend towards bias and away from objectivity of accounting work in a manner that meets the needs of top management without taking into account the wishes and requirements of other interested users whether inside and outside the company (Kevin et al., 2010).



**FIGURE 2**  
**THE ADVANTAGES & DISADVANTAGES OF CONDUCTING CBA CONCEPT**  
 (Source: Prepared by authors depending on accounting literature of study)

**Loss the confidence by users**

All accountants must realize the important fact that stated, the output of implementing CBA concept does not guarantee the entire success of the proposed economic offer. This is considered as significant disadvantage that may lead to entails a set of negative consequences

including loss a confidence of a wide range of users, who are associated with direct and indirect financial interests of the Company.

### **Trend towards bias**

One of the disadvantages that mentioned by modern accounting literature is the existence of the direct and close relationship between accountants and senior management that may be used negatively in order to achieve a range of desired outcomes, including mislead the process of measuring and disclosing of the economic costs and benefits associated with the proposed economic offer. This represents a form of bias by reducing the costs to the maximum extent possible in return for maximizing the relevant benefits towards present a bright picture for interested users of the project to be chosen (James, 2009).

### **Accounting Performance, Definition and Measurement**

According to the opinion of many authors, accounting performance can be defined as following Table 2:

<b>Table 2</b>	
<b>AUTHORS OPINION ON ACCOUNTING PERFORMANCE</b>	
<b>1</b>	<i>"The manner of reacting that indicates how well an organization is achieving its objectives, and used to examine the all aspects of a business, including the accounting, finance, marketing, production, research, and sales departments"</i> (Cristina, 2017).
<b>2</b>	<i>"The accomplishment of a given accounting task measured against preset known standards of accuracy, completeness, cost and speed"</i> (Walaa & Robert, 2018).
<b>3</b>	<i>"The execution of the firm policies and operations in monetary term, these results is reflected in the firm's resources and obligations"</i> (Brian, 2007).
<b>4</b>	<i>"The fulfillment of organizational strategic goals that management already established to outline expected outcomes and guide accountant's efforts"</i> (Marelli, 2015).

Through the above definitions the authors can define accounting performance as:

*"The actual outputs that reflect the progress of accounting work based on a set of measurements that contributes in the process of evaluating performance"*.

Therefore, in addition to the CBA concepts, accounting performance can be measured based on a number of indicators, it can be define as:

*"An effective ways for measuring and tracking progress in essential areas of company performance including accounting performance and lead to provide a general picture of decision makers about the overall health of accounting output of company"* (Walaa & Robert, 2018).

The most important of these indicators are:

#### **Net income**

The number that shown at the end of the income statement (net income) is considered very important and interesting by many users due to its direct connection with their needs and requirements, including the process of assessing the accounting performance within the business entities, in addition to its role in disclosing of the amount of profits or losses that occurred during

the period, this requires to attention of this element in order to ensure the positive financial evaluation of accountants and the company at the same time by interested parties (Ashraf et al., 2016).

### **Customer satisfaction**

According to modern studies, one of the most important reasons for success or failure of business organizations is customer satisfaction. The study and diagnosis of the behavior and requirements of the customer and the quest to build an integrated model to achieve the highest level of services that provide to customer has become the subject of interest of many advanced literature in the field of marketing and management. Therefore customers' opinion and feelings about the company ability to saving financial resources, and generating revenue in both positive and negative way, is considered as an essential indicator to evaluate accounting performance (Fornell et al., 2010).

### **Sales growth**

Is the percentage change in sales revenue that reflects the evolution in sales over the period. Sales growth analysis is a core part of any business strategy and allows firms to set and forecast realistic revenue objectives. There are many factors that influence sales growth, including the nature of the company's products and marketing policy within business entities. Accordingly, it's considered as effective tool to evaluate business performance as well accounting performance in addition to its role in evaluating the competitive position of the company's products compared to competitors in the market (Michael, 2018).

### **Financial ratios**

Financial ratios are considered the most common financial analysis instruments; it expresses the relationship between two or more items in the financial statements. There are many common financial ratios used to assess the overall financial condition of companies. Generally, the size of assets and the amount of its use, borrowing and financing costs are significantly effect on those ratios. One of the most important uses of financial ratios is to measure the ability of a company to pay its short-term liabilities from its current assets, measuring the company's ability to achieve profits, In addition to its pivotal role in evaluating the financial and accounting performance of business organizations (Martin, 2011).

### **Expenses reductions analyst ERA**

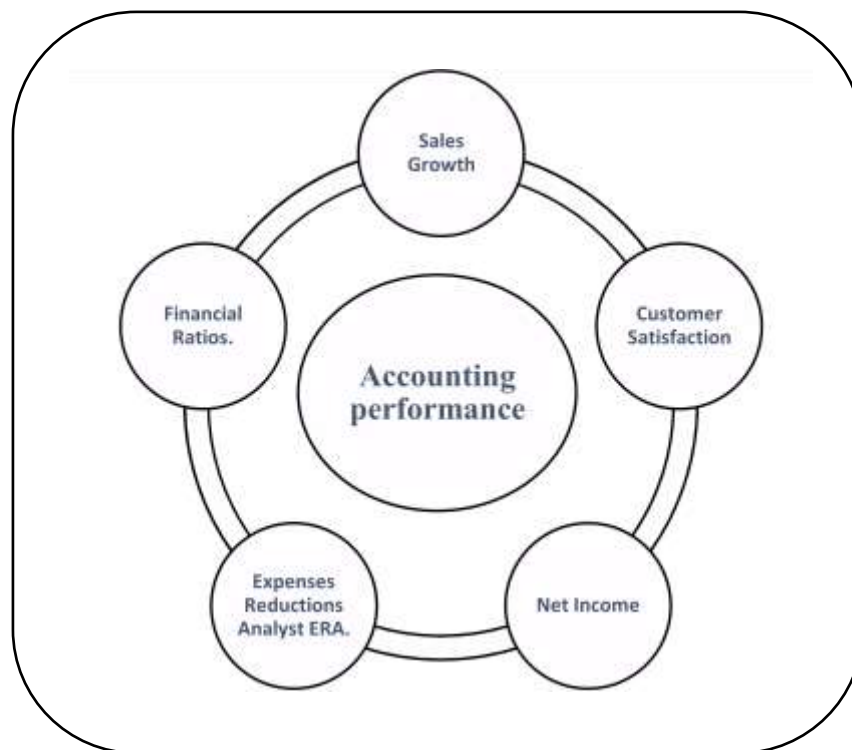
If the company controls its expenses well and makes the cost management and ERA practice as a part of the duties of all accountants, the company will continue to progress but this strategic goal require provide the resources need. Company managers should know that a challenging competitive environment requires them to improve productivity while eliminating excess expenses and achieving targeted revenue. The success of cost control and applied ERA practice requires more than just stated policies and objectives. It is not a process that is determined and left to work. But requires close attention, giving responsibilities to specific persons and publishing reports with real figures. The cumulative impact of small improvements can be significant and can give the company a competitive edge in costs that its competitors cannot replicate. The company should therefore not look for long-term improvements, but instead begin looking for what can be repaired right away. It is important to appoint a financial



and managerial accountant with experience in cost management. The time required for cost management is commensurate with the amount of effort and the expected savings in costs. Therefore, these efforts can be as indicator to measure accounting performance of employees within company (A.A.A, 2014).

### Study Problem

Most of the business entities within country are proposed a group of projects during the year, and then formulating and preparing accounting reports related in order to present it to a wide range of users by carrying the largest amount of costs associated with this process whether direct or indirect cost, without taking into consideration the process of identification the benefits that can be obtained as a strategic goal can be relied upon before starting in this task. The most important consequences of this weak point is the exceed of project costs versus benefits, and this weak point has been proven and overcomes by the most of the practices that occurred within various company in developed countries including Canadian National Railway (Figure 3).



**FIGURE 3**  
**THE MOST IMPORTANT INDICATORS THAT CONTRIBUTES OF EVALUATION**  
**OF ACCOUNTING PERFORMANCE**

### THE STUDY CONCEPTUAL FRAMEWORK

#### Study Hypothesis

Based upon the study conceptual framework, the hypothesis states;

*"The adoption of accurate and proper analysis of the cost-benefit concept for any a proposal project selected by the top management and related to the business activities can be considered as an important indicator that contributes to achieve a set of objectives include determine whether the project is worthwhile and evaluating the efficiency and effectiveness of the accounting staff within business entities".*

## **Study Objectives**

The study objectives can be listed into the following:

1. Provide an integrated conceptual framework that seeks to study all the costs associated with the process selection any proposal project and the benefits that expected to obtain from this process.
2. Spreading the concept of cost-benefit analysis among local business organizations as one of the most important modern accounting literature that has been highly focused on it by most accounting researchers and accounting boards in developed countries.
3. Test a hypothesis of study by proving that, the right analyzing of total cost and estimating the benefits to any economic offer selected by top management will contribute in avoiding highly costs and saving expenses as well as assessing the financial benefit of offer and performance of the accountant who responsible for that process.

## **The Importance of study**

This study is very important for authors in the field of accounting and finance, professional boards and associations in accounting whether local or international, as well as national business entities within country for the following reasons:

1. It comprehensively addresses the benefits of any proposal project and total cost related, because cost-benefit analysis considered as decision-making tools help users to see company's financial position, and business trends , also it help to answer a group of questions that relates to interested users like, to what company own, what owe and how much money the company makes. These questions must answer by accountants in order to make strategic decisions on how to make business successful.
2. This study indicates how well a business entity is achieving its objectives by applying the cost-benefit analysis concept. This concept can be used to examine the performance of accounting department and all departments of a business, including the finance, marketing, management, production, research, and sales departments.
3. Its helps in suggestion a ways and approaches of reducing future costs by lowering a potential increase in expenses, that can play an essential role in business planning, budgeting, and decision support.

## **The study sample**

in order to achieve the objectives of study and testing the main hypothesis of study the authors selected a sample represent by the Canadian Railway company by testing a certain case relating to the process of buying new stamping machine and clarify the extend of justified this proposed project through analyzing total cost and benefits associated to this project.

## **METHODOLOGY OF STUDY**

In order to achieve the objective of study and testing the main hypothesis of study, the authors selected a certain case that conducted by the study sample (Canadian National Railways).

The company decided to buy new stamping machine, since the objective of CBA is to ascertain the soundness of any decision and determine the total cost of this decision as well the expected benefits related, the results of conducting CBA of company offer as following:

### Data Presentation and Analysis

To ensure the validity of the economic offer of the company and the evaluation of accounting performance who responsible of this process, there are a group of steps related to measuring the costs and benefits of this offer as follows Figure 4:

**Identify objective:** The new stamping machine aims to increase the level of sales revenue by redesign the shape of company's products (travel card) and reprinting the tickets exterior with new specifications.

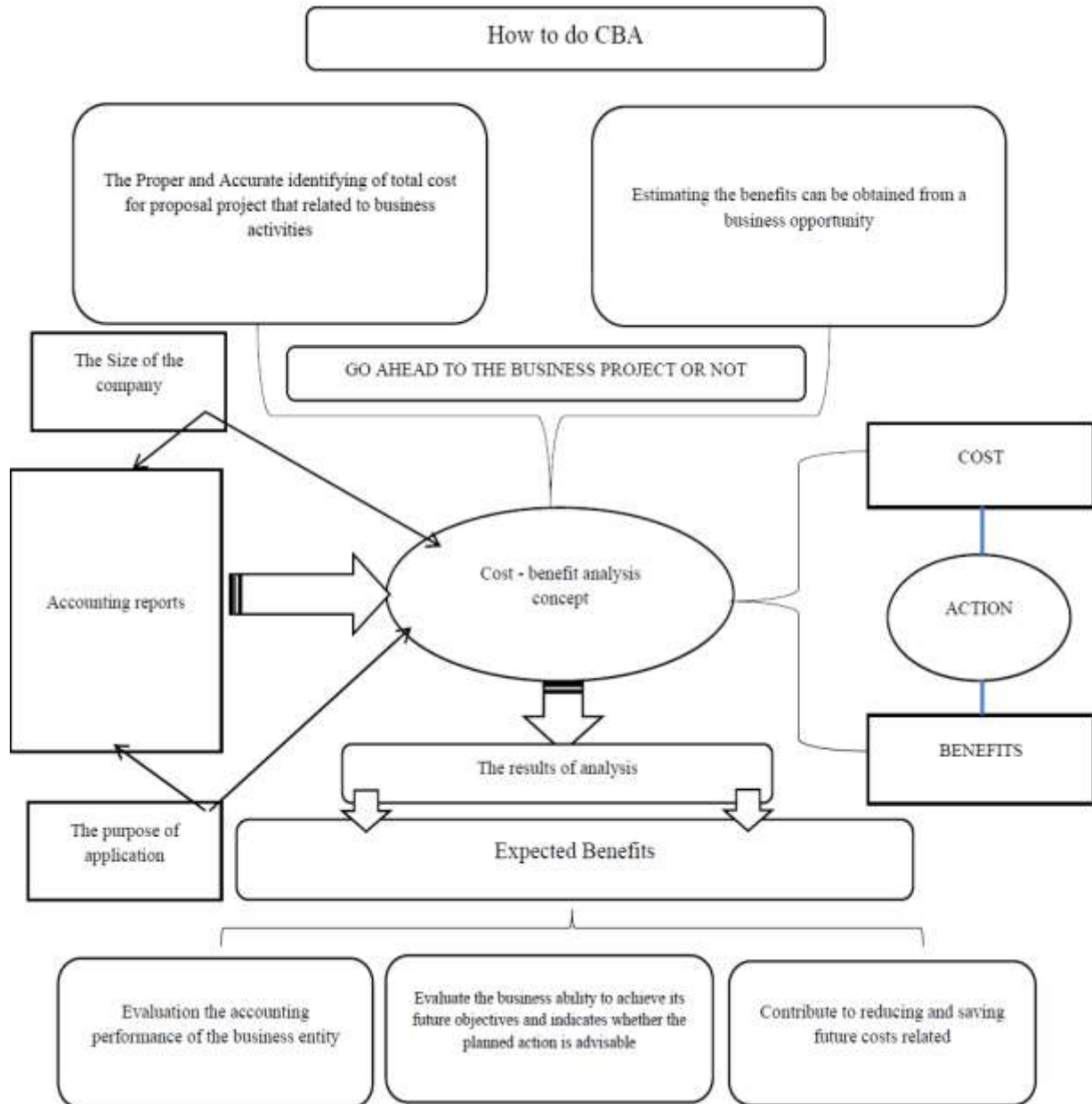


FIGURE 4

## REPRESENTS THE OVERALL RESEARCH MODEL EMPLOYED FOR THE STUDY

(Source: Proposed by authors)

**Identify the total cost related to the buying of new equipment:** The total cost that incurred by company in first year when buying new machine can be classified as following:

a. Purchase of new stamping machine

1. The cost of physical resources needed (cost of buying machine - includes interest and taxes )=\$134000
2. Cost of installation machine (including screens & removal of existing stampers)=\$ 3123
3. Cost of raw material (paper roll) \$ 18700.
4. Cost of labor (human resources) that participated in economic offer including: (two designers are working full-time, 100 hours/month-\$25 per hour Training cost of new system or technology (machine) \$ 4500-cost of additional staff (increased in overhead cost) \$ 12500-Cost of Hire two more designers of orientations \$ 3000.
5. Cost of leases (rent of allocated space of machine 675 S.F.-\$20 per S.F.)=\$ 13500
6. additional workstations (software licenses = \$ 1100–furniture and hardware=\$ 4000)
7. Machine downtime cost. Two weeks at approximately \$ 5,500 per week.
8. Insurance cost \$ 800 and other utilities cost \$ 1350.

b. Costs to consider in our case study

1. Relevant costs: These are costs affected by company decision. They can be identified because they will be different between two courses of action. Relevant costs are always included in the analysis. In our case, these include the cost of the new machine, proceeds from selling the old machine, decreases in operating costs, and increased revenues.
2. Opportunity costs: Costs (or benefits) that will be lost by selecting one course of action over another; these costs should be included in your analysis. Opportunity costs in our example are the investment income that company foregoes if it buys the new machine.
3. Sunk costs: These are costs that have already occurred and cannot be recovered. These are not included in our analysis. A sunk cost in our example is \$ 2,000 paid to the person to perform the analysis.
4. Non-monetary costs and benefits: Social and environmental impact and the company's reputation are qualitative factors that go into the final decision. The new machine being more environmentally friendly is a non-monetary factor.

**Identify a monetary value to the benefits of buying new equipment:** This phase is more difficult than previous phase, primarily; it's hard to measuring and estimating the benefits that relating to buying new stamping machine). Secondly there's another obstacles in the process of identifying the intangible benefits of company offer.

According to the company option about buying new machine, the accountant estimated the financial benefits can be obtained from this option as following:

1. Increase in the level of sales revenue (35%) with new design of product; the machine will produce 100 more units per hour.= \$ 250,000.
2. The level of production of workers will be increased according to the increase in the volume of sales (10%)=\$ 75500.
3. (Reduction cost) saving in marketing and administrative cost \$ 2700.
4. Benefits associated with customer satisfaction (improved quality of the service)=\$ 9000.
5. Saving in labor cost (100 hours/month - \$25 per hour) versus (100 hours/month - \$ 50 per hour): Total saving in designers cost=\$ 30000
6. Saving on health care cost \$ 7390.

The most obstacles in this step are the process of estimating (intangible benefits), such as customer behavior benefits because there is no market for them (like feeling better because you are healthy) it never get counted. For examples: (The level of customer satisfaction-Customer

voluntary performance-Social benefits to other customers-Social benefits for employees-Employee retention)

**Comparing total cost and benefits of buying new equipment:** Finally, compare the value of total costs of company option to the value of benefits expected to yield from this option to know if the total benefits are exceed the total cost or should direct to another economic offer. The analysis horizons are one year that is; he expects benefits to accrue within the year (Table 3).

<b>Category</b>	<b>Details</b>	<b>Cost in first year</b>
The cost of physical resources needed	Cost of buying machine-includes interest and taxes	\$134000
Cost of installation machine	Including screens & removal of existing stampers	\$ 3123
Cost of raw material	Paper roll	\$ 18700
Cost of labor (human resources) that participated in all phases of economic offer.	<ul style="list-style-type: none"> <li>• Two designers who working full-time, at a cost of \$ 25 an hour.</li> <li>• Training cost of new system or technology (machine).</li> <li>• Cost of additional staff (increased in overhead cost).</li> <li>• Cost of Hire two more designers of orientations.</li> </ul>	\$ 30,000 \$ 4500 \$12500 \$ 3000
Cost of leases	Rent of allocated space of machine 675 S.F. - \$ 20 per S.F.	\$ 13500
Two additional workstations	Software licenses. Furniture and hardware.	\$ 1100 \$ 4000
Machine downtime cost	Two weeks at approximately \$ 5,500 per week.	\$ 11000
Insurance cost		\$ 800
Other utilities cost.		\$ 1350
<b>Total cost</b>		<b>\$ 237,573</b>
<b>Benefits within year</b>		
Estimated increase in revenue ( level of sales) %35		\$ 250,000
The level of production of workers will be increased (10%)		\$ 75500
Saving in labor cost (100 hours / month - \$ 25 per hour) versus (100 hours / month - \$ 50 per hour) : Total saving in designers cost		\$ 30,000
Saving in marketing and administrative cost.		\$ 2700
Improved customer service and retention.		\$ 9000
Saving on health care cost.		\$ 7390
<b>Total Benefits</b>		<b>\$ 374,590</b>

The results of cost-benefit analysis clearly show the purchase of the stamping machine is justified, because the new machine will save the company \$ 137,017 a year.

By comparison the results above of study sample, with the study that conducted in the United Kingdom in health sector by (Robert, 2014) entitled "*Cost-Benefit Analysis and Health Care Evaluations*", notes the following:

1. The current study focused on the transport sector (Canadian Railway company) , while the comparative study focused on the health sector;
2. The process of classification the total cost of comparative study (health care sector) are not accurate , and some of measurements are tend to personal judgments, while study sample avoided any estimated or personal judgments;
3. The most obstacles in comparative study are the process of estimating (intangible benefits), especially estimating the customer satisfaction about the quality of health care;
4. There is no saving in marketing and administrative cost, improved customer service and retention; in comparative study, while current study indicates to the process of saving these type of cost;

5. There is no any proposal approach in comparative study to process of reduce the excess or undesired costs;
6. The labor cost (human resources cost ) in comparative study are fixed and there is no mention to the cost of training employees in health sector and cost of hiring new employees;
7. The process of matching of total cost of health care against the expected benefits is very difficult and complicated, resulting excess these cost to the benefits related , this considered as one of the most important problems that faced comparative study.

## **HYPOTHESIS TESTING AND RESULTS**

The analysis that conducted in previous steps can be considered an important indicator that proves the main hypothesis of the study and testing the advisability of company offer as following:

1. The project proposed by the company is a successful project, the results of CBA indicate that the financial benefits can be achieved from this project (\$ 374,590) exceed the total costs related (\$ 237,573) and save to the company \$ 137,017 per a year.
2. The result of CBA indicate that, the accounting performance of the company are very high, means it has effective accounting staff because they participated in calculating total cost and estimating benefits that considered very difficult and complicated step according to the opinion of many accounting authors especially the process of estimate the level of production of workers (\$ 75500) and customer service and retention (\$ 9000).

Hence we can say that, the accountants who work within the company have the following characteristics:

### **Attention to detail**

One of the most important characteristic of a successful and distinguished accountant is attention to detail. The above analysis shows the ability of accountants within company to focus on all the key details associated with the proposed project and avoid all items that do not has effect on the purchase decision and this is proven by the measurement of Machine downtime cost \$ 11000.

### **Creativity**

The creative capabilities of accountants within the company are helped them to correctly determine the expected benefits which are considered the most important obstacles to the proper application of cost-benefit analysis.

### **Great communication skills**

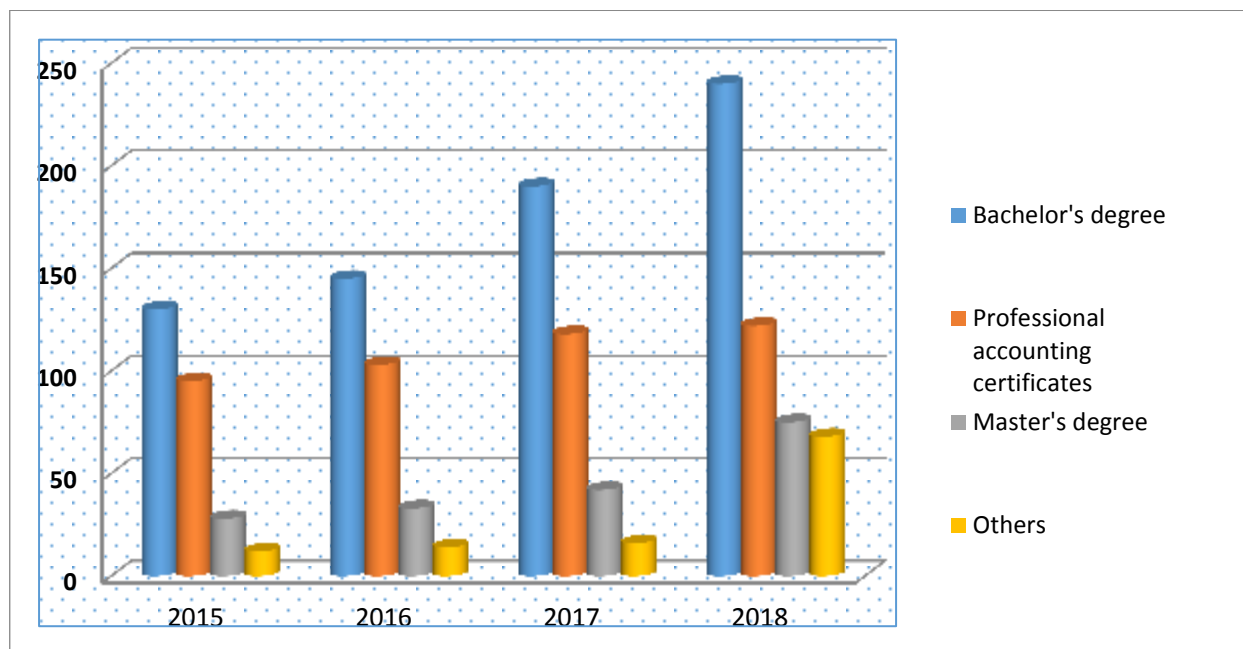
Communication skill had a great role in ensuring application of cost-benefit analysis of company. The accountants within the company were able to accomplish the task of communication with other related departments, including marketing, sales, production and engineering department, as well as with senior management in a manner that contributed to selecting the offer and achieving objectives that formulated in advance and this is proven by the measurement of marketing and administrative cost \$ 2700 and Cost of leases \$ 13500.

### **Time management skills**

The success of accountants to achieving their task about completing the analysis in exactly period indicates that , they take care of many tasks which are added to their financial duties including management their time in correct manner and this is proven by completing the analysis on time by senior accountant.

### Flexibility skill

Environmental changes that surrounding the company including the level of inflation, the economic system followed and the nature of the accounting policies applicable, have been one of the most important challenges that faced accountants in the application of CBA concept. The results of analysis above indicate that all accountants within company were capable of adopting and responding to these changes consistently, and this had been proven by the process of determining and estimating the intangible benefits of the proposed offer despite the difficulty of this step.



**FIGURE 5**  
**CLASSIFICATION OF ACADEMIC AND PROFESSIONAL CERTIFICATES OWNED BY THE COMPANY'S ACCOUNTANTS**

### Scientific capabilities and professional advance of accountants

The positive results achieved by accountants in the company, especially with regard to the proper application of the above analysis is due to the level of academic education owned by these accountants, in addition to the level of expertise that accountants have in dealing with proposed projects which selected by senior management.

The Figure 5 shows the following:

1. *During the year 2015*, the number of accountants who owns a bachelor's degree 130, Professional accounting certificates 95, Master's degree 28, others 12.

2. *During the year 2016*, the number of accountants who owns a bachelor's degree 145, Professional accounting certificates 103, Master's degree 33, others 14.
2. *During the year 2017*, the number of accountants who owns a bachelor's degree 190, Professional accounting certificates 118, Master's degree 42, others 16.
3. *During the year 2018*, the number of accountants who owns a bachelor's degree 240, Professional accounting certificates 122, Master's degree 75, others 68.

The remarkable progress mentioned above that achieved by accountants at the academic and professional level, especially in the year 2018, is considered the main factor for raising the accounting performance of the accountants within the company and success in choosing the proposed project amongst the available alternatives.

## **CONCLUSIONS & RECOMMENDATIONS**

- It is impossible to apply the cost-benefit analysis in a properly manner of selection the proposed project without formulating a comprehensive plan in advance that explaining the main goals of this project and the reasons that encouraged the senior management to choose it.
- Although the outstanding results that may be obtained from an application of CBA in the process of selecting the proposed project and evaluating the accounting performance of the company, However, many accounting authors believe that, this analysis lacks the element of accuracy due to difficulties in estimating the expected benefits from the project, and the feature of completeness because of the difficulty in matching those expected benefits with total cost related.
- The benefits of application of CBA cannot be limited to the process of selecting the proposed project and evaluating the accounting performance, but rather expanded to encouraging the accounting legislators to choose accounting practices and applications that achieve the best accounting output.
- The reliance on CBA application in the process of evaluation of the advisability of company's decisions without recourse of other indicators that were already discussed in the theoretical part of study might lead to the loss of confidence by users in the most of the company's decisions.
- That excessive use of the concept CBA may sometimes be forced accountants within company to bias in favor of most management decisions in selecting the proposed project, by inflating the financial benefits of the project and reducing costs related to the lowest possible level.
- The accounting performance of a company cannot be judged depending on proper application of CBA only, but rather this concept must correspond to the element of speed in application and flexibility in responding to the requirements of application in addition to the level of attention to all the basic details associated with the application.
- Despite the significant role of this concept that played in assessing the performance of accountants within the company, there may be more important indicators in accomplishing this task, including the organizational capabilities possessed by accountants which added to their accounting capabilities.
- It is difficult to apply the concept of CBA correctly unless there are creative capabilities in accountants in the process of deal with the items of this analysis, especially with regard to the process of estimating the expected benefits, in addition to the coordination's skills that accountants owns in dealing with different departments within the company including the department of marketing, Insurance, research and development, in order to calculate the total costs in the exactly form.
- All accounting authorities within the republic of Iraq must work on spreading the concept of cost-benefit analysis among academic universities and professional accounting associations as one of the most important modern accounting literature that has been highly focused on it by most accounting researchers and accounting boards in developed countries.
- The top management of all local entities within country must focusing on this concept in order to help them in the process of evaluating the performance of accounting department (accounting staff as well ) and all departments of a business, including the finance, marketing, management, production, research, and sales departments.
- The national accounting staff within country must use this concept in the process of suggestion ways and approaches of reducing future costs by lowering a potential increase in expenses, that can play an essential role in business planning, budgeting, and decision support, this goal can achieve by



- studying all environmental changes that surrounding the company which considered the most important challenges that faced accountants in the application of CBA concept.
- The national accounting staff within country must enhancing the characteristic of communication with top management and at the same time they must avoiding the bias towards any part in the process of measuring and disclosing of the economic costs and benefits associated with the proposed economic offer, in order to promote the confidence by a wide range group of users that depending heavily of the results of this concept.
  - The necessity to focus on the process of compatibility between the academic and professional requirements in the process of haring accounting staff within business organizations in country and this has been proven through the positive results that accomplished by Canadian Railway company.

## REFERENCES

- Al-Obaidi, A.Q.H. (2014). The fundamental qualities that influence the usefulness of accounting information. *Moscow Academy of Economics and Law (Moscow)*, 1(57), 37-43. Retrieved from <https://elibrary.ru/item.asp?id=22156280>
- Al-Obaidi, A.Q.H. (2014). The possibility of providing the best accounting information for the users. *Moscow Academy of Economics and Law (Moscow)*, 3(17), 27-29.
- Arab Accountants Association, A.A.A. (2014). *Definition of public expenditure and its components*. Kuwait: Arabic publishing house. Retrieved from: <https://accdiscussion.com/acc10859.html>
- Ashraf, B., & Abedalqader, R. (2016). Comprehensive income and net income, which is more powerful in predicting future performance. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 114-120.
- Boardman, A.E. (2011). *Cost-Benefit analysis: Concepts and Practice (Fourth Edition)*. USA: Prentice-Hall pub.
- Brian, K. (2007). *How to read and understand financial statements* (First Edition). Washington, USA: Atlantic Publishing Group Inc.
- Coates, J.C. (2015). Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications. *The Yale Law Journal*, 124(4), 882-1345.
- Cristina, M. (2017). *How to measure the performance of your accounting department*. USA: Performance Magazine. Retrieved from: <https://www.performancemagazine.org/measure-performance-accounting-department>
- Cropper, M.L., Guttikunda, S., Jawahar, P., Lazri, Z., Malik, K., Song, X.P., & Yao, X. (2018). Applying Benefit - Cost analysis to air pollution control in the Indian power sector. *Benefit-Cost Analysis in Low-and Middle-Income Countries: Methods and Case Studies*, 10(S1), 185-205.
- Fornell, C., & Roland, T. (2010). The effect of customer satisfaction on consumer spending growth. *Journal of Marketing Research*, 47(1), 28-35.
- Gartenstein, D. (2016). Advantages and disadvantages of cost benefit analysis. *Australia Regional Business Development Conference*, 3, 8-14.
- Ivanov, D.C. (2018). Challenges of using cost-benefit analysis for multi-activity companies. *The Journal of Economic Prospects*, 4(22), 66-75.
- James, K. (2009). *The problems with regulatory cost-benefit analysis*. USA: The Baseline Scenario. Retrieved from <https://baselinescenario.com/2009/08/31/the-problems-with-regulatory-cost-benefit-analysis/>
- John, S., & Gordon, M. (2009). *A dictionary of sociology* (Third Edition). England, UK: OUP Oxford PUB.
- Kenton, W. (2018). Cost-Benefit Analysis. USA: Future University. *Future Business Journal*, 3(2), 90-105.
- Kevin, C., Lewis, E., & James, M. (2010). Objective RMA decision-making: Cost benefit analysis as an economic and practical framework. *Resource Management Journal*. Retrieved from <http://www.nera.com/publications/archive/2010/objective-rma-decisionmaking-cost-benefit-analysis-as-an-econo.html>
- Marelli, A. (2015). The evolving role of environmental management accounting in internal decision-making: a research note. *International Journal of Accounting, Auditing and Performance Evaluation*, 11(1), 14-47.
- Martin, S.F. (2011). *Financial Statement Analysis: A Practitioner's Guide (Fourth Edition)*. New Jersey, USA: Wiley pub. Inc.
- Maureen, L.C., Guttikunda, S., Jawahar, P., Lazri, Z., Malik, K., Song, X. P., & Yao, X. (2019). Applying Benefit - Cost analysis to air pollution control in the Indian power sector. *Journal of Benefit Cost Analysis*, 10(S1), 185-205.

- Michael, M. (2018). How to Calculate the Percent Sales Growth on an Income Statement. Retrieved from <https://smallbusiness.chron.com/calculate-percent-sales-growth-income-statement-67997.html>
- Plowman, N. (2017). Disadvantages of using a cost benefit analysis. *Project Management Conference*, 11, 45-56.
- Robert, J.B. (2014). *Cost-Benefit Analysis and Health Care Evaluations (Second Edition)*. London, UK: Edward Elgar Pub.
- Vladimirovna, F.A. (2019). Economic role of the process of Cost-Benefit analysis: Advantages and disadvantages. *Moscow, Russian Federation: Business Environment Journal*, 2(7), 113 -118.
- Walaa, W., & Robert, C. (2018). Organizational culture's impact on management accounting and control practices in the United Arab Emirates. *International Journal of Accounting, Auditing and Performance Evaluation*, 14(1), 24-46.