ACTIVITY-BASED COSTING (ABC) IN THE MANUFACTURING INDUSTRY: A LITERATURE REVIEW

Abdulmalek Marwan M. Saeed*1
Aristanti Widyaningsih2
Amgad S. D. Khaled3

1,2 Department of Economic and Business Education, Universitas Pendidikan Indonesia, Bandung, Indonesia 3 Department of Management Information System, Aljanad University for Science and Technology, Taiz, Yemen

ABSTRACT

Activity-based costing (ABC) is a way to figure out actual costs. It has become an essential part of both manufacturing and service organizations. This study aims to figure out the effect of the ABC on the manufacturing system. The data was collected from different countries. The method of this study is the systematic Literature Review of the last ten years, 2012-2022. Activities-based costing (ABC) is a good system because it was adopted by many manufacturing businesses to achieve several benefits, including cost ascertainment, which helped them make wise price decisions, cost reduction, which increased profitability, increased productivity, time and resource savings, and improved production quality. Lack of information and inadequate understanding of how to use the ABC system in their company were to blame for companies that did not accelerate its use. Using activity-based costing is effective.

Keywords: Activity-based Costing (ABC), Manufacturing Industry

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Introduction

The economy of a country depends a lot on its industries, especially manufacturing industries like clothing and textiles, leather, medicine, cement, electronics, etc. As more companies enter manufacturing, they face more competition, which means they have to offer good customer service at a fair price. Several businesses have left because they couldn’t keep their rising overhead costs in check. So, for a company in the manufacturing industry to stay in business, it needs to keep its operating costs at a minimum and use that as a competitive advantage to make even more money. Management and cost accounting concepts and techniques are employed within manufacturing to furnish data regarding expenses, which can then be utilized for decision-making purposes. Activity-based costing (ABC) was developed at the end of the 1980s to fix the problems with traditional costing systems and keep up with
the fast changes in technology and automated manufacturing (Al-Dhubaibi, 2021). Numerous research studies suggest that the ABC system has effectively minimized operational costs in the manufacturing sector while simultaneously enhancing customer service.

Activity-based costing (ABC) serves as a method for accurately determining actual expenses, and it has gained significance in both manufacturing and service enterprises. ABC is a method that measures the cost and performance of activities, resources, and cost objects. It could be an alternative to traditional cost accounting systems (Kumar & Mahto, 2013).

The activity-based costing system, also called the ABC system, is a newer, better way to determine how much a product costs than the old way of accounting. Cooper and Kaplan created the ABC system in the 1980s because traditional cost accounting methods were becoming less valuable. It assigns overhead costs to end products, jobs, and processes. Its goal is to fix the problem of incorrect cost information caused by choosing the wrong bases for overhead apportionment (Salem & Mazhar, 2014).

The objective of this study is to investigate the impact of ABC within the manufacturing system. By doing this kind of study, the goal is to fix the problems with standard cost accounting methods and make cost information more accurate and reliable. The word “urgent” means that this area of study needs to be looked at and worked on right away if it’s going to make progress on time and help businesses make better decisions and allocate costs.

**Literature Review**

Activity-based costing is a way to figure out how much something costs that focuses on the things that are done to make the product. It is a way of figuring out costs in which costs are first found in activities and then in products. It is a better way to determine how much each cost object should pay. It is a method for figuring out how much something costs that looks at the activities of an organization and assigns the cost of each activity’s resources to all products and services based on how much of each they use (Upadhyay, 2017). ABC is a cost allocation strategy that involves initially assigning overhead costs to activities and allocating them to goods, orders, or customers depending on how much they utilize these activities (Huang et al., 2014). The ABC costing method is the foremost approach for enhancing operational efficiency and competitiveness inside enterprises (Tran & Thao, 2020).

ABC is a way to figure out how much something costs. Many researchers have said that the ABC system is a reliable way to determine how much products and services cost. This costing system also fixed the problems with Traditional Costing Systems (TCS) (Al Rababah, 2012).

The ABC (Activity-Based Costing) technique is a systematic approach that involves two steps in allocating indirect costs to cost objects. This allocation is based on utilizing cost drivers corresponding to varying degrees of activity. During the initial phase, the allocation of manufacturing overhead costs to activities or activity cost centers is accomplished by employing appropriate cost drivers that accurately reflect the use of resources. During the second phase, the cost of activities or activity cost pools is allocated to cost objects by utilizing suitable activity consumption cost drivers. The ABC analysis technique may be employed to identify non-value-added operations and eliminate them to enhance the efficiency of a production system (Rundora et al., 2013). The ABC system offers potential solutions to many challenges encountered in utilizing the conventional system, particularly with activities based on volume, diverse cost drivers, and the trajectory of the value chain within corporate operations (Al-Halabi & Shaqqour, 2018).
Based on the research conducted by Kumar & Mahto (2013), the Traditional Cost Accounting (TCA) approach for looking at the data and the Activity Based Costing (ABC) method for figuring out the real costs: Activity-based costing tells us at the end of the study how much each part really costs. So, the company can make more money by increasing sales based on how much demand there is for its products and by keeping in mind the true costs of the parts, which are calculated by the ABC method. It can also easily decide which products or parts it needs to make more of in order to reach its goal. In a related study ABC does a more accurate job of figuring out how much a product costs, which helps keep costs under control and makes it easier to make good business decisions, like setting prices and cutting out activities that don’t add value to the product (Salem & Mazhar, 2014). Activity-based costing (ABC) is a methodology utilized to assess the expenses and effectiveness of activities, resources, and cost items. It is the best way for a manufacturing or services company to find out what its actual costs are (Teklay et al., 2021). ABC models a company’s production-related economic activities (Effiong & Akpan, 2019). The utilization of the activity-based costing (ABC) methodology offers a viable approach to address the issue of escalating proportions of indirect fixed costs within a product’s cost framework (Almeida & Cunha, 2017).

The manufacturing industry is an essential component of many national economies and plays an active role in producing environmentally responsible economic expansion. At the same time, it is a sector vulnerable to internal and external pressures that result in variations in the economic cycle, replicating its development or even outstripping the development of economic cycles. These fluctuations may be a consequence of both internal and external factors (Behun et al., 2018).

Methodology

The first step of this literature review is to collect data. It can be done by doing a simple search on the Google Scholar and Academia page using the words “activity-based costing in manufacturing” from the source above. It will bring up an average of 17,900 articles from different national and international journals; only 26 articles were taken because they are the most suitable for the current research, and data from the last ten years will be used so that the articles are relevant and the research topics are more up-to-date. The search process is described as follows:

**Figure 1: The Search Process**
Results and Discussion

As stated by Dwivedi & Chakraborty (2016), the ABC model offers a means for management to enhance the efficacy of many processes and activities. Its improvement is achieved through using data on underutilized capacity costs, with the ultimate objective of establishing a sustainable, long-term competitive advantage. In addition to facilitating informed management decisions within the business, these findings also aid in monitoring the different operations of the department to put those decisions into action. Additionally, adopting the ABC model permits analysis of the department’s resources and activities’ efficiency and effectiveness.

Shil & Pramanik (2012), the current study in Bangladesh, shows that a survey of management accounting used in the listed manufacturing sector shows that advanced techniques like Activity-Based Costing must be used better. There are many reasons for this. Manual approaches, top managers, information, tools, and technologies are old. ABC would have to change its process, which is hard and Lacks software.

Rbaba’h (2013) examined the link between industry type, number of people, number of goods, overhead level, and ABC adoption. ABC adoption in Jordanian Manufacturing Companies is 19.5%, based on the number of implementers. This research employed Logistic regression and chi-square to assess hypotheses. The study revealed that the impact of overhead expenses on the adoption of Activity-Based Costing (ABC) in Jordanian manufacturing shareholding enterprises was deemed to be statistically negligible. The hypotheses H₁, H₂, H₃, and H₄ are invalid.

According to Nassar et al. (2013), findings show that sufficient training is the most essential element in deciding to apply ABC and that growing overhead costs and product variations stimulate the process. This study demonstrated that catalysts, facilitators, and motivators combine to produce change potential in firms. Change obstacles may explain the different ABC adoption rates within the Jordanian industrial segment. The primary obstacles to ABC implementation were the substantial expenses associated with setup, consulting services, and the allocation of computer staff time.

According to John (2014), this research examines activity-based costing system applications in Nigerian industry. According to data research, 74.2% of listed Nigerian Stock Exchange manufacturing businesses use activity-based costing. 74% of Nigerian Stock Exchange-listed industrial enterprises use activity-based costing to allocate overhead expenses.

Al Rababah (2012), the main goal of the questionnaire survey was to evaluate the current state of ABC adoption and implementation in industrial shareholding businesses in Jordan. Furthermore, the survey was designed to identify the many aspects that impact the motivation, facilitation, or hindrance of implementing ABC. Additionally, the study aimed to assess the influence of several characteristics, including sector type, firm size, diversity, and degree of overhead, on adopting Activity-Based Costing (ABC) inside these organizations. Thirteen enterprises were employed in all. The research findings demonstrate a significant association between fashion, compelled decision-making, fads, and efficiency in the
implementation decisions undertaken by manufacturing shareholder enterprises in Jordan. The results suggest no apparent correlation between the several variables, including sector type, organizational size, diversity level, and overhead level, and the use of the Activity-Based Costing (ABC) technique. Implementing Activity-Based Costing (ABC) inside Jordanian manufacturing shareholding firms is subject to the effect of variables of both demand and supply.

The utilization of the ABC model would aid the management in elevating the efficiency of multiple processes and activities by leveraging information on the cost of unused capacity to achieve a competitive advantage that is sustainable over the long term. In addition to facilitating informed management decisions within the business, these findings also aid in monitoring the different operations of the department to put those decisions into action. Additionally, the adoption of the ABC model permits analysis of the department’s resources and activities’ efficiency and effectiveness. The ABC model helps develop strategies for each type of material that will help keep costs down. Even though this ABC model was made for a particular part of a steel plant, it could be used across the whole organization in the future (Dwivedi & Chakraborty, 2016).

According to Abdelraheem (2016), the primary aim of this research endeavor was to investigate the impact of ABC (Activity-Based Costing) on the activation of competitive advantage inside industrial companies located in Khartoum State. One theory was put to the test by the study. There is a strong link between using the ABC and helping industrial companies stay ahead of the competition, as Khartoum states. A researcher gave out 300 questionnaires to workers in the field who were randomly chosen (280), and 93% of the forms were turned in. SPSS is a statistical package for social sciences that is used to look at data. Some things were learned from the study, such as ABC helping industrial companies save money on production costs - Khartoum State, ABC is a system for reducing costs from a strategic point of view. The study suggested the following: It is imperative to employ a comprehensive approach by integrating several strategic cost strategies to sustain a competitive edge.

According to Stefea et al. (2013), the current analysis tries to identify the variables influencing the development of the Activity Based Costing (ABC) system in Egypt. The research used the survey approach to define and examine these aspects in various Egyptian companies. The manufacturing companies in Egypt make up the study’s population. In the initial six months of 2013, 392 questionnaires were collected from 23 industrial enterprises based in Egypt. Finally, the research identified a few driving forces for the emergence of the ABC system in Egyptian manufacturing companies. The following elements may be ranked in decreasing order of severity for developing the ABC system in Egyptian businesses: Managing profitability, financial planning, strategic planning, performance management, and human capital management.

The objective of this research is to examine the impact of the Activity-based-costing (ABC) approach on the performance of enterprises in Vietnam. This study is grounded in agency theory, uncertainty theory, sociological theory, and an extensive literature survey, culminating in the development of a comprehensive model consisting of seven hypotheses. A sample of 1,008 observations was collected from a population of 112 mining businesses to conduct research. The collected data was subjected to statistical analyses, including Cronbach’s alpha, Exploratory Factor Analysis, and Regression. The study’s findings indicate that the effective implementation of Activity-Based Costing (ABC) in manufacturing enterprises in Vietnam is influenced by two significant factors: environmental unpredictability and a market-oriented approach. Activity-Based Costing (ABC) has been found to have a statistically significant and
favorable impact on business performance. This finding provides support for the notion that promoting the use of activity-based costing (ABC) can facilitate the steady and sustainable growth of manufacturing enterprises, leading to continuous enhancements in their market position and overall firm performance (Pham et al., 2021).

According to Stefea et al. (2013), the objective of this study is to investigate the determinants that influence the implementation of the Activity-Based Costing (ABC) system in Egypt. The survey methodology was employed to examine and analyze these aspects within a selection of Egyptian companies for this study. The research primarily examines Egyptian manufacturing companies. A total of 392 questionnaires, obtained from 23 Egyptian industrial enterprises, were collected during the initial six months of 2013. Finally, the study provided a rationale for the evolution of the ABC system among Egyptian manufacturing enterprises. The criteria above might be arranged in a decreasing sequence based on their respective impacts on the development of the ABC system inside Egyptian enterprises. The critical focus areas in this context are profitability management, financial planning, strategic planning, performance management, and human capital management. Activity-based costing (ABC) is often considered to be more complex and time-consuming in comparison to traditional costing methods such as job costing or process costing. However, it is essential to note that the accuracy of cost allocation in ABC is generally considered superior to that of traditional costing methods.

According to Khamis et al. (2016), the objective of this research is to identify issues related to the application of Activity-Based Costing and to demonstrate the effective utilization of Time-Driven Activity-Based Costing within the manufacturing sector in Egypt. This paper examines certain shortcomings in traditional Activity-Based Costing (ABC) and illustrates how Activity-Based Costing, with a Time Emphasis, addresses and resolves many of these issues. Using a case study, we illustrate the process of implementing Activity-Based Costing with a Time Emphasis and highlight its advantages. The findings reveal that creating a precise model is more efficient and expedient when employing Activity-Based Costing with a Time Emphasis than traditional Activity-Based Costing.

The existing body of literature has identified that firm size, amount of competition, support from senior management, and variety of products are all factors that could affect a decision to use activity-based costing systems. Some of the previous studies should have looked at critical factors in the environment that affect how activity-based costing is used. For example, they left out some variables. They suggested that, in addition to trying to improve the ways they measure the variables, future researchers should consider adding other essential variables that were left out of their study but are likely to affect the implementation of the cost system. In particular, support from senior management was named as one of the contextual factors that could have a significant effect on implementing a cost system (John, 2013).

According to Al-Qudah & Al-Hroot (2017), the main goal of this study is to find out what happens to the profits of manufacturing companies in Jordan when the activity-based costing technique (ABC) is implemented. This study’s sample comprises 72 observations of six financial ratios based on the financial statements of 12 industrial companies in Jordan that used the ABC technique from 2000 to 2011. All technique variables are based on the average of the four years before and after the ABC technique was used. Findings show that the ABC technique has yet to make a big difference in the overall profitability of Jordanian manufacturing companies.
According to Effiong & Akpan (2019), this study examined how ABC affects industrial productivity. Traditional cost accounting needs to be corrected and more accurate because it gives too much cost to one product and not enough to another. Activities-based cost accounting was made to show a more accurate picture of how the activities that go into making a product or service affect costs. The study used a descriptive survey method based on questionnaires. The data were looked at with ordinary least square Regression. The findings show that the ABC technique makes the manufacturing process more efficient. ABC uses more than one cost driver, like direct labor, to determine how much to spend on overhead. A good understanding of ABC and how to use it would help manufacturing companies gain a competitive edge and work more efficiently.

According to Oranefo (2018), this study aims to determine how Activity-based Costing affects manufacturing enterprises in Nigeria. We used ex-post facto research. Yearly time series data, including total cost, inventory, revenue, income, and operating profit, were extracted from the annual financial reports of the selected production companies. The hypothesis was tested using regression and Chow tests. The investigation shows that the ABC technique improves inventory management in manufacturing organizations. The research also reveals that the ABC approach boosts manufacturing business income. Finally, the ABC technique of costing affects manufacturing business profits. The research found that product cost is the most significant factor in production. Profits. This research suggests that manufacturers should understand their cost drivers to price their goods correctly. Based on the study, manufacturing companies should have a comprehensive understanding of their goods’ costs and process activities. Advanced manufacturing companies with several product lines should use ABC.

The goal of this study is to figure out how much the Activity-Based Costing (ABC) system helps achieve the goals of Continuous Improvement (Kaizen). The results showed that the ABC system has helped some Egyptian manufacturing firms reach their goals. The number of questionnaires sent in was 385—the idea of costing. The researcher did a field study. The people in the study are meeting the goals of the Continuous Improvement (Kaizen Costing) concept while it is being used in the companies (Stefea & Abbas, 2015).

According to Godil & Warraich (2015), this research aims to determine what influences ABC practices in Pakistan’s textile business. Questionnaire data was collected via convenience sampling. The initial question’s dependability was checked using Cronbach’s Alpha. Further binary logistic Regression was used to test ABC factors. Except for behavior and organization, organizational structure, culture, technology, and business size have little influence on ABC adoption. This article contributes to the present literature, but it is the first of its type to analyze ABC procedures in Pakistan’s textile business. It teaches managers the importance of the proper behavioral and organizational aspects for ABC implementation effectiveness.

Conclusion

Activities-based costing ABC is a good system because it was adopted by many businesses in the manufacturing sector to achieve several advantages, including cost ascertainment, which inevitably assisted them in making wise price decisions; cost reduction advantage, which assisted them in increasing profitability; increased productivity; time and resource savings; and, most importantly, improved production quality. The lack of information and inadequate understanding of how to use the ABC system in their company was to blame for the companies that did not accelerate the use of the ABC system. The effectiveness of activity-based costing is apparent.
Declarations

Conflict of Interest Statement

The authors say they have no conflicts of interest to report. There are no primary rival financial, professional, or personal interests that have affected how well this study was done or what it found. We confirm that there are no problems that could arise because of conflicts of interest.

Availability of Data and Materials

The data and materials used in this literature study are freely available from reputable scholarly sources.

Authors’ Contribution

Author 1 initiated literature search, selection, and data extraction. Author 2 structured the review, rated article quality, and grouped content topically. Author 3 proofread, referenced, and ensured article quality as final editor. This combined effort produced a well-structured, thorough literature review.

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