

Activity Based Costing & Time-Driven-Activity-Based-Costing In Increase Performance: A Review Literature**Mifta Aulia Mustafa¹⁾, Dea Saufika Mobilingo²⁾ Asri³⁾, Mediaty⁴⁾**^{1,2,3,4)} Master of Accounting, Faculty of Economics and Business, Hasanuddin University

Corresponding Author :

Email : auliyah883@gmail.com**Abstract**

This study aims to classify differences in the characteristics of the impact of implementing ABC and TDABC in improving company performance. The method follow the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA). The database search was done through science direct, emerald, cambridge, and Synta from 2017 to 2021. There are 93 articles, but after a screening test, only 20 articles were included. The results indicate that both ABC and TDABC can improve performance through the effectiveness and efficiency of production costs. However, both have different characteristics that must be considered in the implementation process. The implication of this study is to provide insight to management for considering the use of A B C and TDABC

Keywords: A B C, Performance, PRISM, TDABC .**INTRODUCTION**

Company need count costproduct For optimize performancecompany. There are several methods that can be used by companies in calculating product costs, including traditional methods and *Activity Based Costing (ABC)* method . However,calculation cost product with method traditional considered not enough give optimal accuracy in product cost (Altawati et a. 2018; Kusumaningtyas and Izzatul 2017). Matter This because of method traditional using rates cost single Now Which can cause distortion costs if using allocation rates based on higher volume and variety of products (Siguenza-Guzman et al. 2013; Simbolon 2015) . Weakness the cause determination Product selling price can be presented lower or higher than it should be. In addition, production management evaluation becomes lessright in determining product profitability. In order to overcome these various weaknesses, Kaplan and Cooper then developed A B C on year 1980s (Kaplan and Cooper1998; Siguenza-Guzman et al. 2013). Kennedy and Affleck - Graves (2001) found that use method A B C proven capable increase performance company. There is significant difference in company performanceWhich implement A B C And Noimplement A B C. Company Whichimplementing ABC has performance which is better than a company that doesn't implement A B C. A B C canincrease performance company through cost efficiency and effectiveness of asset use to achieve improved financial performance Which more Good.

Lendrasari (2015) mention that system A B C own excess in address the problem of cost distortion, but in its implementation it requires costs expensive both financially and in terms of time. Siguenza-Guzman et a. (2013) to summarize

Some of the weaknesses of ABC include distortion, accuracy data, level trigger which is inaccurate, time and resource consuming, limited system integration, complexity actual activity that is not captured, and is difficult in modeling multi-driver. *Time Driven Activity Based Costing* (TDABC) was developed in 2004 by Kaplan and Anderson to correct the deficiencies that exist in ABC (Kaplan and Anderson 2004). Differences The basic difference between ABC and TDABC is ABC system uses focus on the basis activities used to produce, distribute, and support components product (Zamrud and Ash 2020) whereas TDABC more focus on equality time and level cost activity (Anita 2021). The Story of the Sun (2015) mention that Application of TDABC method in companies the multi-driver is capable of providing accuracy more optimal costs in determining *profit margin*. Use TDABC can give solution which in accordance to determine total cost and evaluation consideration decision which appropriate for management to increase performance (Reveco et al. 2019). Therefore it can be concluded that the implementation of TDABC can be used as a solution to improve performance company.

Study This aiming to classify characteristics impact implementation ABC and TDABC on company performance. The novelty of this research is the research compares as well as evaluate implementation characteristics of ABC and TDABC which has been applied by a number of companies. TDABC is development of ABC. However, both of them have different characteristics. Emerald and Ash (2020) succeed to compare application of ABC and TDABC methods in terms of costs in the electronics industry and generate the finding that the implementation of TDABC provides better transparency on time duration activity. Alves et al. (2018) compare implementation method ABC and TDABC on determination of costs of prevention, diagnosis, and maintenance cancer in House Sick as well as produce findings that TDABC simplify implementation ABC on environment which is complex. However, second The study compares the implementation of ABC and TDABC based on cost efficiency, not the characteristics of its implementation and performance. In Kennedy and Affleck's research - Graves (2001) and Reveco et al. (2019) who found that ABC and TDABC practices influential to performance company.

The formulation of the problem in this research consists of two parts, namely: (1) what is the difference characteristics of the impact of the implementation of the method ABC and TDABC; and (2) how ABC and TDABC can increase performance company. Study This consists of introduction, method, results study and conclusion.

RESEARCH METHODS

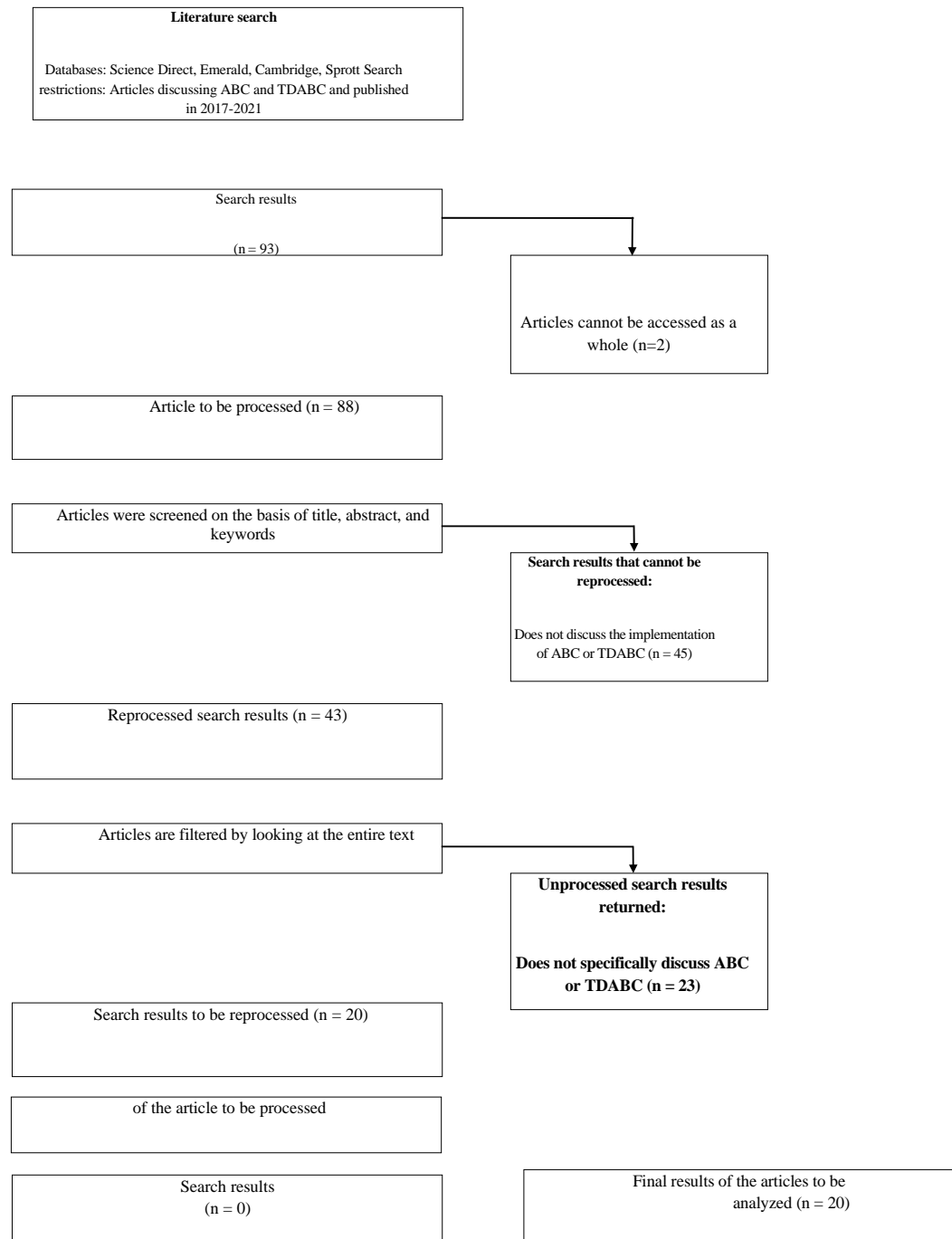
Study This is a study qualitative using study methods literature. Approach studies literature which used is systematic studies literature based on guidance from *Preferred Reporting Items for Systematic Reviews and Meta-analysis* (PRISM) (Page et al. 2021). Objective from study that is to know how does ABC implementation compare? And TDABC in increase performance company, No effect quantitative from its implementation. Therefore, the approach qualitative analysis was chosen to be able to carry out the analysis in depth based on the main objective study

RESULTS AND DISCUSSION

Characteristics General Literature

Literature which succeed pass test then extracted and *mapping is done* based on year, source journal, method, field of study, and state objects (tables 1 and table 2). Some large literature source originated in 2017. However, developments is quite consistent every year. The distance the time span of articles between years is not too significant, which it means study in implementation of ABC and TDABC continues to experience development during five year final. Both of these discussions are still topics which is relevant for keep going developed.

Furthermore, by field object, found that part big literature sourced from House Sick. Matter This shows that the development of ABC and TDABC has grown quite rapidly over the past five years in the realm of hospital cost adoption. Some The big article discusses more about TDABC implementation than ABC. TDABC than A B C. TDABC is development new from model A B C Which launched since year 2004 by Kaplan And Anderson (2004), so that most study latest more leaning Fordiscuss implementation TDABC.



Picture 1. Diagram PRISM

Table 1. Distribution Source Literature Reviews

No.	Source	Amount	Presentation
1.	<i>Science Direct</i>	10	50%
2.	<i>Emerald</i>	3	15%
3.	<i>Cambridge</i>	1	5%
4.	<i>Sinta</i>	6	30%
Total		20	

Characteristics A B C And TDABC

Process Implementation

According to Zamrud and Abu (2020) processABC implementation consists of five steps which are: shown in figure 2. First stepnamely identification and analysis of production. Steps This identify cost production And analyze according to the type of cost. Cost Which succeed identified Then done survey to capacity time.Based on the survey results, the data was validated for ensure the accuracy of the calculations. If the data Already in accordance so cost calculated anddetermined the activity driver. The last step determine production costs based on drivers activity Which has determined previously.

In contrast to ABC, the implementation process TDABC consists of from nine step Which shown in figure 3. The company needs toidentify resources, activities, and sub-activity Which done in process production. This data is then estimated capacity And the cost for Then Validation is carried out. Costs are estimated in detail to the sub-activities required in carry out production so that cost accuracy The production of the TDABC method is in more detail than A B C.

Effectiveness And Efficiency Process ToImprovement Performance

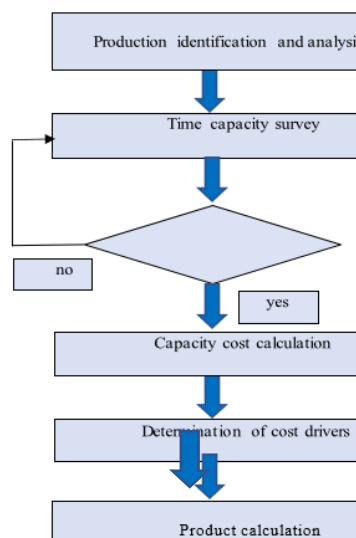
Implementation method A B C and also TDABC has been proven to increase efficiency production costs (Anzai et al. 2017; Azmi 2018; Vetchagool, Augustine, and Taylor 2020) . However, both have characteristics that different in creating estimation models framework cost production. Method A B Cprovide cost accuracy in terms of activity main production, whereas TDABCgive accuracy cost from aspect time production. Which (2018) in his research to company energy in Taiwanfound that the implementation of the ABC method give model integrated Which can assist suppliers in assessing accuracy andallocating resources and fundingWhich optimal.

This accuracy helps in performing efficiency cost based on each *driver* . Implementation A B C Also give information And analysis benefit Which can help party management inplan production Which better . Activity based cost analysis information drivers from ABC are a distinct advantage for management to be able to helpin evaluate product, whether a the product can be said to have reached the cost Which efficient or not. The information is be a determinant for management tomake production cuts or innovation. More detailed production cost information Accurate can also prevent companies from existence *undercost* in determination Price Cost of Production (COGS) and selling price (Pradipta 2021).

Table 2. Review Literature Reviews

Article	Method	Field	Country
<u>Kusumaningtyas And Izzatul (2017)</u>	A B C	Industry	Indonesia
<u>Yu et a. (2017)</u>	TDABC	House Sick	American Union
<u>keel et a. (2017)</u>	TDABC	House Sick	N/A
Bauer-Nilsen et a.	TDABC	House Sick	American Union
<u>Anzai et a. (2017)</u>	TDABC	Education	American Union

	Production identification and analysis		
Marlene et a. (2018)	A B C	Education	Indonesia
Which (2018)	A B C	Energy	Taiwan
Azmi (2018)	TDABC	House Sick	Indonesia
Alves et a. (2018)	TDABC	House Sick	N/A
Kaukab (2019)	A B C	MSMEs	Indonesia
Ganorkar et a. (2018)	TDABC	Industry	India
Kiss et a. (2019)	TDABC	Education	Greece
Reveco et al.(2019)	TDABC	Mining	Chile
Vetchagool et a. (2020)	A B C	Industry	Thailand
Adiguzel And Flores (2019)	TDABC	Industry	Greece
Etches et a. (2020)	TDABC	House Sick	N/A
Pradipta (2021)	A B C	MSMEs	Indonesia
Tewfik et a. (2021)	A B C	House Sick	Italy
Sulisityono et a. (2021)	TDABC	Industry	Indonesia
Alves et a. (2021)	TDABC	House Sick	Brazil

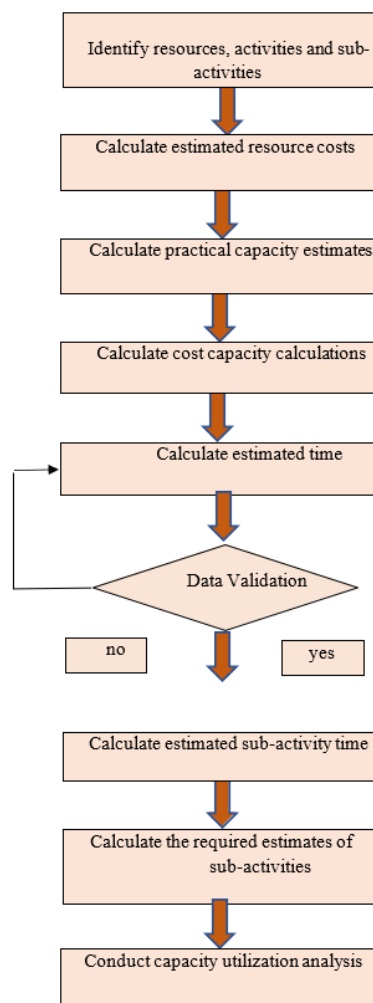


Picture 2. Framework Work Implementation A B C Source: [Emerald And Ash \(2020\)](#)

[Marlene et a. \(2018\)](#) mention that implementation method A B C can increase performance Which

Then impact to superiority compete. Based on his research Which donetowards 39 universities located in City Pekanbaru, [Marlene et a. \(2018\)](#) prove that with implementation A B C, performance from college tall sample increased. Improving the performance of higher education institutions This Also followed with existence improvementits competitive advantage. This is in accordance with [Kennedy And Affleck – Graves \(2001\)](#) Which Also found that the application of the ABC method proven capable increase performance company. Implementation A B C Which followed with the improvement of organizational performance can increase the company's value significantly No direct. Company Which own good performance is seen as having advantages compete Which more tall.

Proper implementation of the ABC method also can increase performance finance company. [Vetchagool et a. \(2020\)](#) do study implementation A B Cto all over company Which There is in Thailand And find results that implementation extensive from A B C proven contribute in improvement performance corporate organization. The performance of the organization high can produce work motivationhigh too, so that operational productivitycompany can increase. Productivity high will drive financial performancewhich is better for the company. Thereforethat, the implementation of the ABC method is not can directly improve financial performance company through improvement performance his organization.



Picture 3. Framework Work Implementation TDABC Source: Emerald And Ash (2020)

As with the ABC method, TDABC Also give framework cost more effective production, especially for

product or service innovation development (Yuet al. 2017) . TDABC produces a process map which is more detailed in reflecting the flow Work production, so that make it easiermanagement For do modification. Implementation TDABC proven capable produce decline Which significant on the duration of work and total costs. This model also makes management easier when you want to carry out new product development. Kiss et al. (2019) proved in their research to implementation TDABC on Greek library and produced findings that the application of the TDABC method in the process borrow borrow And return book help managers to read flow charts process. Manager can more easy in determine which activities require more time and money for lateranalyzed the causes in each sub-activities.

Keel et al. (2017) mentioned inhis findings on the implementation of TDABC on health agencies that TDABC helps cost process more efficiently. Process maps, resource inclusion, and estimated time developed through various methodsdemand amount source Power And level accuracy time Which different. Determination costmust customized based on need program. TDABC provides solutions tocomplexity of activities in activity agenciesby presenting a more detailed model in cut cost product. Results This according to research by Anzai et al. (2017) who found that the implementation of TDABC in hospitals has been proven to be able to increase efficiency through modification of resourceslower and according to needs medical. Cost efficiency and production maps thatmore effective, can reduce production costs Which furthermore increase profitability.

Strength And Weakness

ABC implementation provides accuracy higher production costs so that it can create efficiency cost with more easy (Which 2018). Through information And analysis of the costs generated, management also more benefited so that canmake it easier in process evaluation And pruning cost activity production that not enough efficient. Marlene et a. (2018) stated that the application of the ABC method can increase performance Which Thenimpact to superiority compete. These results are in accordance with the research of Vetchagool et a. (2020) Which mention that ABC implementation can improve performance operational organization company Which then have an impact on improving performance his finances.

But even though there are many benefits, generated, this method also has several weakness. Calculation method A B C Whichmore details And Details based on activity-activity main production, make implementation A B C need cost Which big both in terms of finance and time (Lendrasari 2015). ABC implementation process takes longer than method traditional For count And tracing activity *drivers* from cost estimates production. More accurate costs improve cost production so that profit company become more small (Caucasus 2019; Kusumaningtyas and Izzatul 2017) . Management must Can determine price sell Which in accordancefor production costs, considering the large amountcost Which caused by method A B Cthan method traditional because of impact of its accuracy. Management must also be able to evaluate or cut costs and activities Which No efficient in production process. If both of these methods can implemented properly for management, so implementation method A B C willgive impact benefit Which big to company so that benefit Which felt in accordance with the amount of costs incurredhas issued.

Based on *cost* And *benefits* Which obtained, then ABC is more suitable to be applied in company big with activity cost production Which diverse, for example like company manufacturing. Kusumaningtyas And Izzatul (2017) proved that the implementation ofABC method is successfully implemented in the company manufacturing with produce costmore accurate production than the method traditional. Cost activity information will also be becomes more effective when applied to companies with characteristics of high machine activity usage. Management canevaluate the production machine activity inefficient, so an evaluation can be carried out to cost production. However, althoughABC characteristics that are more inclined towards big company, it is not impossible for Micro, Small and Medium Enterprises (MSMEs) to apply the method. This has beenproven by Kaukab (2019) and Pradipta (2021) Which do study tomethod A B C on MSMEs. However, implementation A B C in MSMEs This must carried out based on *cost* considerations and*benefits* Which ripe.

Different with A B C Which give framework estimate cost based on activity production, TDABC offer framework Which more detailed in reflect channel Work production based on time (Yu et al. 2017). Implementation TDABC proven capable produce significant reduction in working duration And total cost. Implementation TDABC Also make it easier to manage reading map production flow in a way more details from aspect processes, resources, and time estimates (Keel et al. 2017) . This makes TDABC have advantages in level of accuracy than ABC, especially in company with high *multi-driver* characteristics . Adiguzel and Floros (2019) stated that TDABC more suitable for application in companies that nature congested work, for example manufacturing small scale that still uses power Work production conventional. Majority application of TDABC to literature sources in This research comes from a health agency or hospital. Keel et al. (2017) highlight a number of lack TDABC, like the ability of the method to inform payment reimbursement and coordination system shipping has not reached the level of efficiency expected. This is because TDABC is a new method, so some agencies must undergo long-term adjustments long to achieve efficient results. expected. Replacement of the new method that relatively expensive and impractical too consideration special in apply TDABC in a number of the agency that Not yet make adjustments. This finding becomes notes special in recommend TDABC replacement. Some new methods in a way historical sometimes more expensive And become No effective than method long (Finkler, Ward, and Baker 2007). Therefore that, the implementation of TDABC for new companies must be tailored to the goals and preferences done in a manner gradually.

Based on analysis from a number of research , researcher to summarize comparison strength and weaknesses implementation of ABC and TDABC into Table 3 as following:

Table 3. Comparison Strength And Weakness Implementation ABC/TDABC

Description	A B C	TDABC
Strength	Increase superiority compete through more cost-effective design accurate Improve operational performance and product development or service performance finance company Give information costs and activity based benefit analysis company More suitable For applied by company Which level activity the engine tall	Give framework cost production which is more effective in designing models innovation and product development or service Helps improve cost efficiency with level accuracy Which more tall Assisting management in carrying out evaluation subtraction capacity Which unused based on time with more accurate More suitable For applied by company congested work (like manufacturing scale small)
Weakness	It requires a large cost in its implementation Generate higher <i>profit margins</i> slow Because the amount cost absorbed activity Not relevant to apply in industry with characteristics <i>multi-driver</i> Because lower level accuracy	TDABC developed after A B C, so that for company Which new apply sometimes need quite a long adjustment to reach efficiency results Which expected Implementation TDABC Which done simultaneously relatively expensive and not practical, so it needs to be done carefully gradually

CONCLUSION

Company performance is an indicator *stakeholder* assessment of quality management management. High performance reflects good management quality. Company performance measurement can be done through profitability. Management must be able to increase cost effectiveness and efficiency in order to achieve product quality and price capable compete in market. A B C proven become a method with high accuracy in calculate the estimated production costs. However, in companies with *multi- characteristics driver* and labor intensive, ABC accuracy level decreased when compared to TDABC. TDABC provides a cost estimation framework more detailed in terms of processes, resources, and time estimates. ABC and TDABC have characteristics Which different, However second method This proven able to improve performance company through efficiency cost Which created If applied with appropriate.

Different as it is with A B C Which applied in many sectors, research on TDABC is mostly performed in hospitals. This contains questions about whether TDABC is more suitable for application in home agencies Sick than sector other, as well as whether The implementation of TDABC in hospitals resulted in output Which more Good than A B C. Two This question is interesting to study further. further in empirical research. This research to study difference effectiveness A B C And TDABC is based on empirical studies on one side implementation of ABC or TDABC which then compared to with article Which different. There is still little empirical research examining comparison of the success of ABC and TDABC in a way simultaneously. Matter This naturally cause doubt about factor success between both of them Which Possible just due to by control Which different. Gap research This become interesting For Then developed more carry on in study empirical to difference effectiveness A B C And TDABC with control factors Which Possible cause bias to results, like size company And other and so on.

This research has implications for realm theoretical And practical. Study This contribute to the additional literature on development And effectiveness model A B C And TDABC. This study provides an overview comparison of ABC implementation and TDABC for improving company performance. The results of the study showed that both ABC and TDABC have been proven to increase performance company with give framework product costs that more accurate than method traditional, However must customized return to characteristics each company. Practical implications from study This can used as guide for management in consider the appropriate method whether use A B C or TDABC For reduce costs production in accordance with characteristics operational company.

Limitations in this research is range time article Which short, so that No Can known in a way details long history differences between ABC and TDABC implemented. Therefore, the research Next, it is hoped that it will be able to provide ABC implementation development overview and TDABC with a longer time span long. In addition, this study does not provide a comprehensive sample description of implementation of ABC and TDABC in various countries. Study furthermore expected can provide an overview of the objects of ABC application And TDABC with range Which more wide.

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