



## The Relevance of Standard Costing and Variance Analysis in Global Industries Today

Teoh Choon Hung<sup>1</sup>, Jaya Kumar Shanmugam<sup>2\*</sup>

Faculty of Business and Management AIMST University, 08100 Kedah, Malaysia

**Corresponding Author:** Jaya Kumar Shanmugam [jaya\\_jkumar@yahoo.com](mailto:jaya_jkumar@yahoo.com)

### ARTICLE INFO

*Keywords:* Management Accounting, Standard Costing, Variance Analysis

*Received :* 07, December

*Revised :* 12, January

*Accepted:* 26, February

©2023 Huang, Shanmugam :

This is an open access article distributed under the terms of the

[Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



### ABSTRACT

Standard Costing and variance analysis are a set of management accounting tools that assist industries in controlling the cost of production. It involved the establishment of a cost standard that is required, and the standard cost was applied for comparison to the product's actual cost. This article aimed to critically explore and assess the applicability of using standard costing and variance analysis as management accounting tools in today's varied worldwide industries. By compiling the findings from various scholars and researchers, this article primarily examines what standard costing methods and variance analysis are, as well as their advantages, limitations, and usefulness. Moreover, the proposed research framework on the motivation of industries in standard costing technique adoption and recommendations were added for future research purposes in this article. As a result, the article successfully concluded that standard costing techniques and variance analysis were relevant and crucial management accounting tools for industries today.

## INTRODUCTION

The main objectives of a business were concerned with earnings, and profit maximization from ancient times till now. To achieve profit maximization, a general principle of maximized sales and reduced costs was applied widely for almost every business and every entrepreneur. Cost control is crucial for a company to optimize profits because, according to Likert & Seashore (1998), profit maximization is best accomplished through the strategy of cost minimization rather than revenue maximization. The cost was defined as a resource that an entity would utilize to sacrifice for a particular purpose, and it is usually measured in the monetary unit concept of Generally Accepted Accounting Principles (GAAP) (Horngren, et al., 2014). Feldstein & Coussons (2020) once defined the business performance of a business as the reflection of how an organization utilized its monetary, materials, and human resources efficiently and effectively with the purpose to achieve its business objectives. In fact, profitability is to be realized through the effective and efficient process of cost controlling, and every entrepreneur should clearly understand where their costs flow from the beginning till the end of the production. To have good management of the costs incurred within the organizations, it is important to let the organizations understand why management accounting techniques were widely used from the ancient past until today's modern business era. There were various types of management accounting techniques that could help the entrepreneur in controlling the cost such as Activity-Based Costing (ABC), Just-In-Time (JIT) costing, variable costing, absorption costing, and also the standard costing and variance analysis. Among these techniques, standard costing and variance analysis were a technique in which most scholars today were at each other's throats, arguing and debating about the relevance of it to be used in today's business since industry nowadays is facing so much revolution and changes. Therefore, this article's goal is to discuss what the standard costing method is, as well as variance analysis, and critically review the criticism and relevance of standard costing methods to be applied in today's business.

## LITERATURE REVIEW

### *What is Standard Costing and Variance Analysis?*

As defined by Bromwich (2000), standard costing is a procedure of establishing a cost standard that may be used to compare the actual and standard costs incurred throughout manufacturing. Referring to Horngren et al., (2014), standard costing is a well-established cost per unit that production should be attained. This is also supported by CIMA (2008), in which a standard cost is a predetermined unit cost of a product or service produced in a given period of time. Meanwhile, variance analysis is a tool for a company to benchmark the cost incurred in an operation, and this information will be essential to the company's daily activities. Variance analysis is also defined as the process of arranging the total volume of a component for the purpose of establishing reasonable ways to influence the factors of variances

(Aimagambetova et al., 2020). It is crucial since the goal of the analysis is to gather crucial data that is able to draw management's attention and help them understand how successfully and efficiently cost control has been implemented in production. From these definitions above, it is clearly to be seen that standard costing and variance analysis is a combo set of tools that allow a corporation to measure its productivity performance and achieve efficient cost control. According to Adenji (2009), the objective of setting up a standard costing method is to provide an estimation of costs, provide guidance to control costs, and provide an analysis that allows the manager to assess the performance of the production.

According to Tamplin (2021), there were a few types of standard costs:

#### ***Basic Standard Cost***

This is a standard cost that does not change for many years. It acted as the historical cost to serve as the base for comparison with the real costs incurred over a period of time. However, it does not reflect on the current situation, so the accuracy and reliability were questionable.

#### ***Ideal Standard Cost***

This standard cost is referring to the operation of the firm operating in a perfect condition where there are no wastages and idle time will occur during the production process. It represents perfect efficiency and only minimum cost will be incurred, but it will lead to an adverse in reporting the variances because the 'perfect' was always difficult to achieve as nothing is perfect in this world. The usefulness of this standard cost is applicable in today's industry because it acts as a target for the firm to achieve by fully utilizing their available resources to create a maximum profit.

#### ***Current Attainable Standard Costs***

This standard cost reflects the best and possibly attain that a firm could produce under a certain level of efficiency. It considered the allowance for material losses, the default of machines, idle time of production, and other demotivation factors towards the production process as well. These standards acted as a motivation for the employees to work harder since they reflected the realistic situation but also might be thought to achieve as it requires the corporations and synchronization (coordination of the human resources) of the corporate's staff to carry forward. Anyhow, this standard cost is the most suitable to most of the business firms from a variety of industries today as it considers their ability and reflects the reality in today's business world.

#### ***Materials Standard Cost***

It refers to the resources that are used and applied for the production process in creating the products, such as raw materials, piece parts, finishing products, and work-in-progress. It is mostly obtained from technical and engineering parameters and is commonly measured in units like kilograms,

tons, and pieces, or even utilizing monetary measurement units like the Malaysian ringgit (RM).

**Labor Standard Cost**

It mainly focused on human resources and intellectual capital. It is used as a yardstick to measure the actual outcome based on the manpower applied. It is also used to separate the grade of the labor, which the grade was evaluated based on the skills, knowledge, and experience of labor, and this grade allowed the manager to forecast the relevant wages or salary for future compensation.

Generally, the characteristics of standard costing such as cost determination, cost comparison, variances verification, and revision of standard costs, were usually applied in the production of automated manufacturing, unitary and diversified products such as canned food, motor vehicles, shampoo, etc. Standard costing techniques are frequently concerned with the materials, direct labor, and overheads in a firm specifically. This is because these costs were often to be determined as the variable costs in the production or services and they could be easily controlled compared to the fixed costs like rents of the factory that were not flexible and out of control from the manufacturing process. In the simplest way, the variance analysis allowed the company to benchmark the price differences and it usually indicates ‘favorable’ and ‘unfavorable’ in the process of comparing. As a simple illustration, if the standard cost of direct materials in the production of a can of soda is RM2.40 and the actual cost is RM2.20 per can of soda incurred, which means the cost of direct materials in the production of a can of soda was still produced within the range of the standard cost budgeted, and the cost produced was lower than the predetermined value, which could be a good indication of cost minimization and profit maximization. Then, the actual cost can be labeled and indicated as ‘favorable’. As an example of the application of standard costing and variance analysis in the industry, Tables 1 and 2 indicate the study of Aurelian, et al. (2020) clearly illustrated how a confectionery productions industry applied the standard costing techniques and variance analysis within the organizations:

Table 1. Report on Variances from Standard Costs for Raw Materials and Direct Materials in The Confectionery Production in January 2020

No.	Material	Unit	Consumable quantities (kg)		Supply price (lei)		Raw material value (lei)			Deviations (lei)		TOTAL
			Effective	Standard	Effective	Standard	Effective	Standard	Ce x Ps	Quantity	Price	
0	1	2	3	4	5	6	7 (3 x 5)	8 (4 x 6)	9 (3x 6)	10 (9-8)	11 (7-9)	12 (10+11)
1	Peanuts	kg	73.4	72.1	9.73	9.50	714.18	684.95	697.30	12.35	16.88	29.23
2	Flavors	kg	8.5	8.9	34.75	34.10	295.38	304.17	289.85	-14.32	5.52	-8.80
...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
64	Sugar	kg	673.4	675.6	2.70	2.70	1 818.18	1 824.12	1 818.18	-5.94	0.00	-5.94
TOTAL							26 587.55	26 497.63	26 508.33	10.70	79.22	89.92

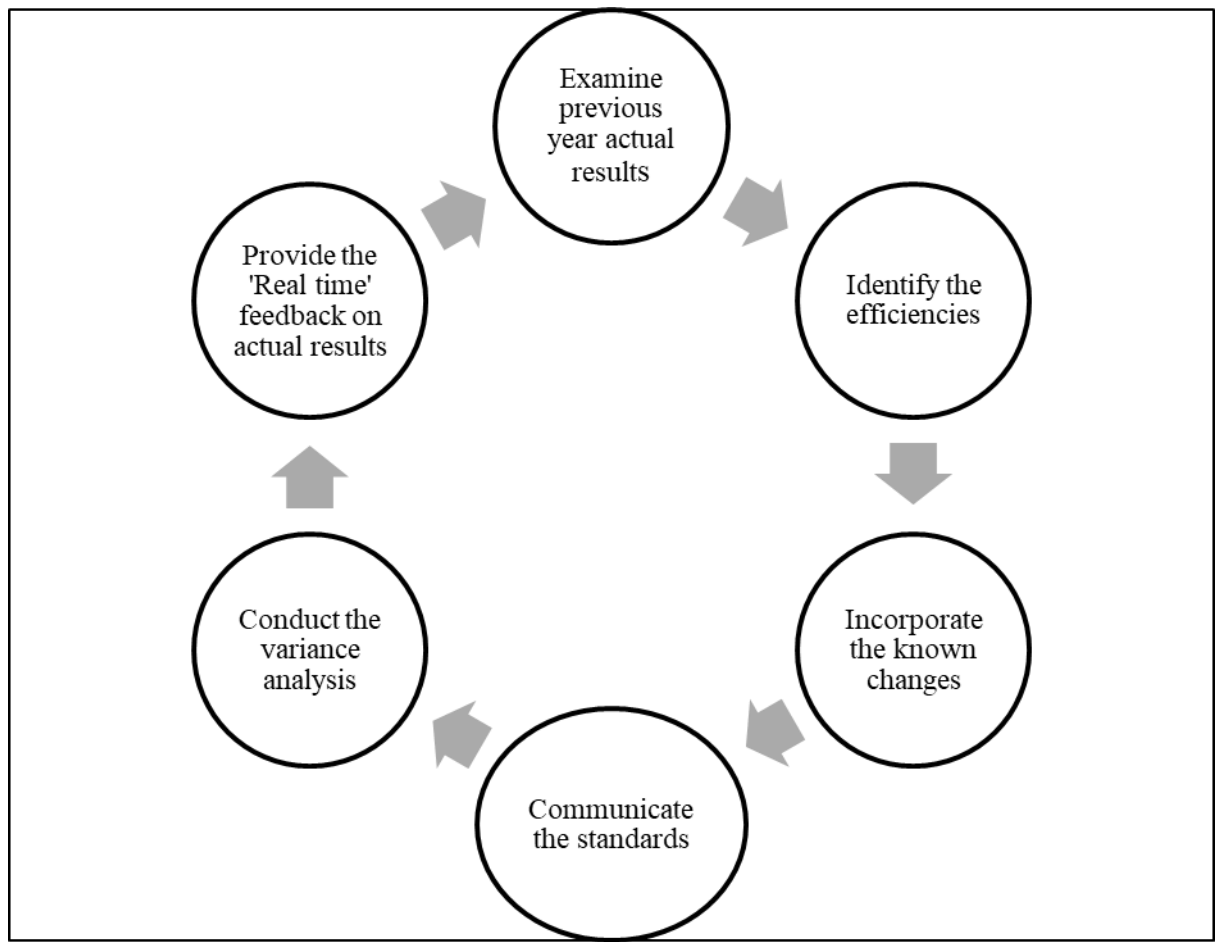
(Sources: Aurelian, et al., 2020)

Table 2. Report on Variances from Standard Costs for Direct Labor in January 2020.

No.	Operation	Total processing time (h)		Salary rate (lei/h)		Labor costs (lei)		Effective labor at standard costs	Deviations		
		Effective	Standard	Effective	Standard	Effective	Standard		Work efficiency	Salary rate	Total
0	1	2	3	4	5	6 (2 x 4)	7 (3 x 5)	8 (2 x 5)	9 (8-7)	10 (6-8)	11 (9+10)
1	Dosing, mixing, screening of raw material	74.6	72.5	27.9	27.9	2 081.3	2 022.8	2 081.3	58.6	0.0	58.6
2	Preparation of pie sheets, portioning in trays, baking operations	63.7	73.9	30.6	30.6	1 949.2	2 261.3	1 949.2	-312.1	0.0	-312.1
3	Cream preparation	57.5	53.2	27.9	27.9	1 604.3	1 484.3	1 604.3	120.0	0.0	120.0
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Portioning, decoration	105.3	95.5	32.6	32.6	3 432.8	3 113.3	3 432.8	319.5	0.0	319.5
	TOTAL	1656	1583	-	-	50 508.0	48 281.5	50 508.0	2 226.5	0.0	2 226.5

(Sources: Aurelian, et al., 2020)

The establishment of standard costing was not a complicated job, the findings from Rakos (2020) mentioned that the company does not require any special tools or conditions. This finding was supported by CIMA (2008) where the organizations were only required to maintain past historical records of the particular products or perform the engineering services such as physical observation and data collecting in observing the production or services process. In general, the establishment of standard costing began with setting up the cost of products to be produced, tracking and recording the differences between the actual cost and standard cost, organizing the deviations, and then using the variance analysis to make the comparison (Ionescu, et al., 2020). The following flow charts showed the flow of developing a standard costing system (unbroken cycle) provided by Dosch & Wilson (2010):



(Sources: Dosch & Wilson, 2010)

Figure 1. The Unbroken Cycle of Developing the Standard Costing System

From Figure 1, the unbroken cycle of developing the standard costing system began with evaluating the relevance of past data and information in regard to production. Secondly, the accountant should identify the efficiencies of the productions based on the given past records. At the same time, foreseeable changes such as rising in the cost of raw materials or increasing in labor wages in accordance with the employment law provided by the government should be considered to ensure the setup of the standard costing is accurate and relevant. Next, the standard setup should be communicated to ensure the product meets the overall goal congruence for the firm. After the production is in progress, the accountant should monitor and perform the variance analysis to examine how accurate and favorable the standard could be provided to the company. Finally, with the completion of variance analysis, the differences between standard and actual production can act as real-time feedback to the management team, so that further corrective actions could be implemented to ensure the product is highly effective and efficient. In short, the companies can apply the unbroken cycle provided by Dosch & Wilson (2010) to ensure the appropriateness of the information in setting up standard costing techniques for the benchmarking between the actual cost and standard cost.

### *Criticism of Standard Costing and Variance Analysis*

Although Rakos (2020) provided that setting up a standard costing system was not complicated, however, there were few scholars who disagree with the continuous application of standard costing in today's business world. In the late 19<sup>th</sup> century, Johnson & Kaplan (1987) critically foresaw that corporations should abandon standard costing techniques in the future market. Fleischman & Tyson (1998) also supported this statement and argued that standard costing no longer provides adequacy to managers in the establishment of corporate internal management strategy. The usefulness and reliability of the standard costing were questioned because they predicted that there will be many uncertainties, changes in structures, unstable fluctuations of the global economy, and inconsistency in modern company management (Badem, et al., 2013). The article by Bowhill & Lee (2002) argues that there are three main reasons that the standard costing method might not be useful today, the reasons such of lacking focus, accuracy, and relevance. Lack of focus is due to the focus of standard costing being all about the cost, quantity, and delivery speed, which ignores the required quality of the production. The standard cost might be inaccurate, especially in a small volume of production, where the manufacture of low-quantity products charging with the standard inputs of resources will cause an inappropriate calculation for the variance analysis. Meanwhile, the irrelevance of standard costing might point to the quick change in the environment, especially technology. In the past few years, Januarie (2016) examined the usefulness and relevance of the standard costing method to be applied in the current technological advancement business era. Januarie (2016) raised an argument that the concept of continuous improvement is challenging to align and matched with the standard costing system. In consequence, setting up the standard costing system might possibly become a waste of time and jobs, as there is too much uncertainty and inconsistency in today's business nature.

The study from Camilleri (2013) also confirmed that standard costing techniques are obsolete in the hospitality industry, especially the hotel industry as the results showed the usage of standard costing techniques is very poor. Based on the findings, the hotel's entrepreneurs prefer a customized costing system as it is more relevant than the standard costing method. However, the variance analysis was still utilized in most of the hotels, even the foreign and popular five stars hotels, because the variance analysis was still able to provide assistance for managers in the management decision-making in the hotel industry.

According to Chea (2011) argues standard costing no longer provides a suitable cost reporting standard for firms today, on the other hand, Activity-Based Costing (ABC) will become the suitable management accounting tool for the modern industry. The author judged that the ABC method suited most of the ledger entries of the organizational accounting system. The author also mentioned that ABC is more suitable for service-based firms because service firms are more concerned with the labor cost, the failure of implementing the standard costing method in service firms is because it does not reflect the actual

and accurate cost of the service firms. The fact that standard costing does not reflect the actual cost in service firms is that not every customer consumes the same service even though the service provided is more or less the same. As an illustration, not every patient who enters the dentist clinic gets the same treatment on their teeth, relevant treatments which reflect on the business activities, and these activities are more suitable to determine by using the relevant cost driver for the cost recognitions. Therefore, Chea (2011) concluded that ABC will be a suitable tool for service firms rather than using standard costing methods.

Raghavan (2019) provided that the ABC method is more comprehensive, consistent, and preferable by industries today over the standard costing method. For the purpose of gathering data regarding the performance of the manufacturing firm with the deployment of the Lean system (a method of eliminating wastages and reducing the defects in the production), the author set up simulations that replicate the physical manufacturing process in a virtual simulation. Since Lean was a system focusing on production maximization through minimizing the costs and eliminating wastages and defects, the results from Raghavan's (2019) simulations clearly showed that all the raw materials cost and labor costs are similar but by using the ABC method, it will incur lower overhead cost compare to the standard costing method for all the conditions of production under the Lean system. This leads to the total production cost of ABC being lower compared to standard costing. The explanation for this is that ABC assigns overheads based on the level and resource utilization of the activity incurred based on the cost driver, while standard costing allocates overheads primarily based on the direct labor usage for each unit of production. Therefore, by accumulating the findings and opinions from the researchers above, the standard costing methods might not be suitable to become an effective and efficient tool to control the cost.

### *The Relevance of Standard Costing and Variance Analysis*

There is no rose without a thorn, the standard costing should be a relevant management accounting tool although there are some arguments and criticisms. As proof, the adoption of the standard costing method was still incorporated in the subject of management accounting and continues to be taught in the course curriculum in every university worldwide was the best evidence to prove the relevance of standard costing and variance analysis to be implemented continuously in the industries. Moreover, there were still many scholars and researchers countering the statements that the standard costing techniques should not be abandoned by continuously examining and proving the relevance of standard costing methods with their high-quality of research studies. Dosch & Wilson (2010) provided that the standard costing method was an essential management accounting tool for managers in facilitating cross-functional communication, consistency assurance in measurement, reporting, and cost management, and providing real-time feedback for them to take immediate corrective actions.

Secondly, standard costing was a useful tool to eliminate the limiting factors of production. The constraints of production or the bottlenecks of production limited the ability of a firm to carry out the production towards profit maximization due to insufficient resources to meet the requirements. The capacity constraints resource (CCR) was a general issue that constrained the production of most of the firms, especially the manufacturing firm. To overcome it, the firm usually chooses to stock up on the required resources to eliminate the constraints, however, it does not effectively eliminate the limitations where the remaining stock will be a waste to the company (Bowhill & Lee, 2002). Why is standard costing more suitable to eliminate limiting factors? This is because standard costing was a good tool to act as a 'ruler' for the manager with the predetermined cost for comparison and the data provided could help the manager in calculating the resources that are required by a firm to fulfill the demand. In other words, the more favorable the production of comparing the real and standard cost, the higher the efficiency for the organization to eliminate the limiting factor. Moreover, the other advantages such as being easy-to-understand, and the 'real-time information of standard costing allowing to provide quick decisions and supporting the manager in formulating the product price easily were the highlight for most of the industry in continuously implementing standard costing methods within the firm.

Looking into the evidence provided by various scholars and researchers. First and foremost, the research of Ngozi (2013) evaluated that the application of standard costing as an accounting tool has a significant relationship with the profitability of manufacturing firms. This implied that standard costing was an effective tool for improving a firm's profitability through effective cost reductions. Secondly, the author found that a company's Total Quality Management (TQM) system heavily relied on standard costing. (Rostami, et al., 2013). According to Rostami, et al (2013), standard costing played a role in eliminating demotivation and inability to perform work due to the lacking of skills and knowledge of human resources within a firm, and it aided the manager in coordinating the workforce to increase productivity and effectiveness for the organization. According to Davison (2015), the standard costing approach is still frequently used in the construction industry even though the custom strategy is more suitable for this firm given its nature. Iliemena and Amedu (2019) contributed findings in demonstrating how manufacturing firms should continue to adopt and consistently apply standard costing management accounting techniques in their accounting system. This technique proved to the manager that it allowed the manager to have well-reported information which ensured the usage of resources efficiently in reducing wastages, providing flexibility in cost-cutting, and finally achieving profit maximization. Although the standard costing might seem to be too old to be relevant for application, according to Sil (2021), the application of standard cost was still acceptable, compatible, and in vogue in most modern industries. The author supported that most of the manufacturing firms choose to continue applying the standard costing method, while the service firm, will prefer the ABC method.

Next, the article of Marie, et al. (2010) illustrated that there were 77% of the business companies in Dubai's industrial sector and 39 % of Dubai's service sector still apply the standard costing methods as a tool for cost controlling the business. Most of the industry in Dubai provided that inventory costing is one of the key functions that could not be ignored in the productions and standard costing techniques are the most relevant and effective tool to manage them. Moreover, standard costing methods could provide adequate assistance to managers in establishing cost minimization strategies, therefore it is clearly to be seen that standard costing techniques were still relevant in this diamond metropolis of the desert in the Middle East. In Iraq, a researcher from Baghdad carried out research on how standard costing affects the rationalization of financial decision-making and looked into how it influenced the control over the financial performance of the soft drinks company (Fadhil , et al., 2022). According to the findings, the standard costing technique allowed for to enhancement of the financial decision-making process in the soft drinks company. Not only that, but it also increased the control over the company's financial performance by applying the standard costing method while the periodical reporting on variance analysis also allows managers a strategic determination to carry out the immediate corrective measures for the firm's productions.

The research of Akenbor and Agwor (2015), which focused on a nation in west Africa, discovered that the standard costing technique has a close and strong relationship with cost control in the Nigerian and gas industry. According to them, the oil and gas industry in Nigeria suggested the use of standard costing because this technique is a well-established technique in daily operations such as workers monitoring, performance overlooking, and production operating management, and also it able to serve as a great tool to motivate their staffs in order to improve on the required standard and qualities in this industry.

In North Africa, the country like Sudan was also a country with many industries applying standard costing techniques. Hussein (2017) supported this claim with a study that focused on the standard costing system in cost controlling and financial decisions of various Sudanese industrial companies. The author discovered that the standard costing method is necessary for monitoring and performance evaluation by performing variance analysis, which is benchmarking between actual and predetermined standard costs. Not only that, according to Ahmad (2018), there is a clear connection between the efficiency of cost control in the Sudanese grain mills sector and the standard costing method. Next, the data from Al-Shattarat et al., (2021) noted that there is a substantial correlation between Jordan's industrial performance and its standard costing method. In other words, standard costing techniques will potentially improve an organization's overall performance, especially production performance. Therefore, the authors suggested that the shareholders and the management of every industry all around the world should continue to apply standard costing techniques in the cost minimization of production and

that information generated by this technique be used by the managers in order to make further and better improvements in future manufacturing.

Focusing at Asia, Khan et al. (2016) found that 71% of Chinese enterprises and 69% of local firms still adopted the standard costing system as one of the major methods in manufacturing management accounting in Pakistan. This study also examined the importance of standard costing to be used in both Chinese and Pakistani firms in the manufacturing sectors of Pakistan, and both of these firms recommended the standard costing system to be applied because it aids the process of computation for the products in the decision-making process. Secondly, standard costing also simplified the budgeting process because it allowed for cost benchmarking. Moreover, many Pakistani firms mentioned that they will not abandon the usage of the standard costing system in their organization because it provides good guidance to the manager in cost control and overall performance evaluation. In India, standard costing methods were found essential for auto ancillary companies (Chavan & Thorat, 2017). The data collected from their interview pointed out that the standard costing techniques positively contributed towards the profitability of the auto ancillary companies. This is because it aids the auto ancillary companies in the elimination of unprofitable products, and provides timely and reliable cost information to achieve effective cost control. In a top-ranked economy-developed country like Japan, the relevance of standard costing was proved by the critical review of De Zoysa and Herath (2007). Japan is one of the most popular automobile production countries in the world, and one of the famous costing accounting techniques is the Just-in-time inventory management system (lean manufacturing) which is one of the famous inventory management systems used by Toyota automobile production. According to De Zoysa and Herath (2007), they stated that although lean manufacturing techniques have become widely spread and implemented by most of the firms in Japan, the study had shown that there is no decline in the standard costing adoption. Furthermore, the research also revealed that Japanese industries that have expanded overseas will continue to adopt and promote the usage of standard costing management accounting approaches to help with internal production management.

Finally, looking back to the ASEAN countries, the evidence from the study of Sulaiman, et al. (2004) proved that the standard costing method was still widely adopted and applied in Malaysia's industry, especially the manufacturing industry. Although the studies had found that standard costing is certainly not the main technique to be applied in Malaysia's industry, this technique acted as the alternative technique that was able to aid in overall performance management and improved the effectiveness and efficiency of cost controlling in the productions. Although the findings of Camilleri (2013) argued that standard costing is irrelevant to be adopted in the hospitality service sector such as the hotel industry, these findings had been overturned by Ekerkil & Göde (2020). The authors provided that the adoption of standard costing techniques and excellent supply chain management was the facts that contributed to the success of the hotel industry in Singapore. Based on the

author's findings, both of these techniques reflected the activity of the hotel in a particular period. These techniques could be used to initially predict and update on the total energy usage and utility costs, especially the electricity costs easily and able to vary both the fixed and variable costs in the hotel. This data set is relevant and useful in evaluating the performance per night with the hotel's types of rooms and customer information.

**PROPOSED RESEARCH FRAMEWORK**

From the literature review above, it is obvious that standard costing was a good technique that all the industry could continue applying although it might be considered as one of the traditional management accounting techniques. Since there were still many scholars who provided concrete evidence on the relevance of implementing the standard costing techniques, therefore, it is important to examine why and what motivated the industries to the continuation of applying the standard costing method. Table 3 shows the operationalization of the variables on the importance of standard costing adoption.

Table 3: Operationalization of Variables

Country	Author	Importance of Standard Costing Adoption	Findings
Malaysia	Sulaiman, Ahmad & Alwi (2005)	Cost control and performance evaluation, Costing inventories, As an aid to budgeting, Computation of product cost for decision-making, Data processing economies	Most of the local firms in Malaysia suggested implementing standard costing techniques as this technique can assist in cost control and performance evaluation of the firms.
Dubai, United Arab Emirates	Marie, Cheffi, Louis & Rao (2010)	Cost control and performance evaluation, Costing inventories, As an aid to budgeting, Computation of product cost for decision-making, Data processing economies	Most of the industries in Dubai are concerned with the implementation of standard costing in costing inventories and cost control and performance evaluation. Meanwhile, service firms are concerned about how standard costing aids budgeting.
Turkey	Badem, Ergin & Drury (2013)	Cost control and performance evaluation Costing inventories, As an aid to budgeting, Computation of product cost for decision-making, Data processing economies	Standard costing for the primary firm is concerned with how it aids the budgeting process while the supplier is concerned with cost control and performance evaluation in the automotive industry of Turkey.
Pakistan	Khan, Rizwan, Islam & Aabdeen (2016)	Cost control and performance evaluation, Costing inventories, As an aid to budgeting, Computation of product cost for decision-making, Computation of Product Cost	For Chinese firms in Pakistan, Standard costing implementation is mainly concerned with the purpose of computation of product cost while Pakistani firms mainly used standard costing techniques for cost control.

After examining the past literature review from various authors which mainly concerned with the importance of adoption of standard costing technique, the researcher intended to propose the following research framework:

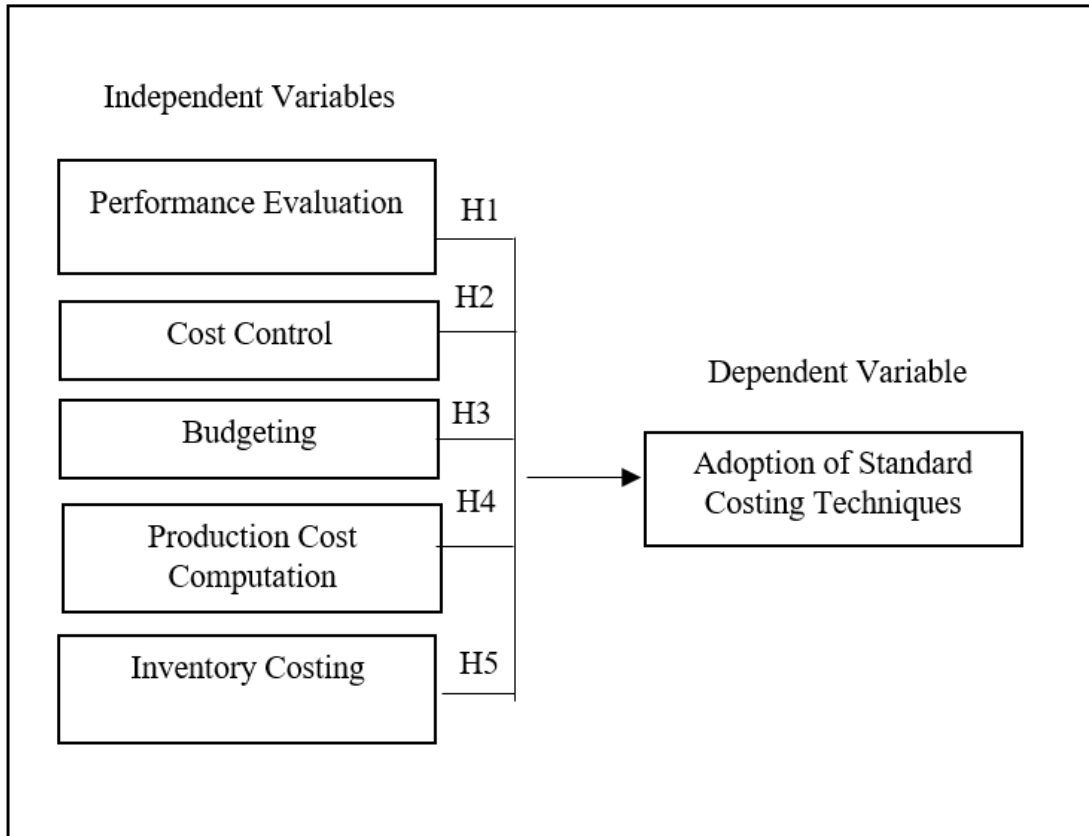


Figure 2. Proposed Research Framework on the Importance of Standard Costing

### RECOMMENDATIONS

As the recommendations towards the industry, the firms which utilized the information provided from the standard costing should perform examinations and updates periodically such as semi-annually, annually or quarterly to ensure the accuracy of the data provided by this technique and to make sure that the data was aligning and able to reflect the current economic situations (Khan, et al., 2016). Although the article demonstrated the industry's need for standard costing and variance analysis, it may not be applicable to different business types due to its restriction on giving facts specific to one industry. Before developing a standard costing system for the business, the firm must conduct research to evaluate its practicality. Next, every entrepreneur, accounting personnel, and business organization should learn and understand why management accounting techniques could be widely used no matter how long time had passed. So, the entrepreneur and industries themselves could identify and evaluate which of the management accounting techniques is the most relevant and suitable for the business nature and environments, rather

than follow the methods used by competitors and other industries blindly (Tabitha & Ogungbade, 2016). Moreover, the innovation of combining Activity-Based Costing and Standard Costing as one system could be considered a future management accounting tool in various industries (Tsai, et al., 2020). The innovation of the Activity-Based Standard Costing model should be a concern for researchers and scholars in the upcoming future, as it might be able to replace the traditional model of standard costing in order to synchronize with the technological changes towards industry 4.0.

## **CONCLUSIONS**

In a nutshell, standard costing is a management accounting technique that is still relevant and widely used in today's business. This article has critically reviewed the findings of scholars around the world on the use of standard costing in various countries such as Dubai, Jordan, Pakistan, Japan, Malaysia, Singapore, Nigeria, and more and proved that standard costing and variance analysis are relevant to continue in an application for most of the industry, especially the manufacturing industry. From the discussions above, the benefits of using the standard costing techniques can be summarized as it helps management to have a regular checking over the costs incurred, the variance analysis act as a benchmarking tool on costs which compares actual and pre-set costs, it aids for the production budgeting, it is an effective tool in eliminating the limiting factors, it simplified the interpretation of operating reports in a comprehensive, meaningful and faster way, and also provide 'real-time information to the manager in the allocation of resources and carry out the corrective actions to improve the productivity of the firms. On the other hand, there is still a minority group of scholars who deny the relevance of standard costing to be continuously adapted and applied in the industry today. This is because standard costing might require a lot of scientific research and studies in determining the pre-set costs per unit. In consequence, small firms might face these difficulties due to resource constraints, especially monetary resources constraints. Moreover, they also argued that the industries which produce non-standardized products will not be suitable to implement a standard costing system because they are facing uncertain fluctuations in the prices of materials, labor, and overheads in their production and it might vary from one situation to another. Although the majority of the researchers in the management accounting field had provided significant evidence as discussed above to judge that standard costing is a useful management accounting tool in today's business, however, the criticisms of standard costing should also be concerned as it narrated the limitations of this technique practically. As a result of this article, standard costing was still a well-developed method for cost controlling, it should be continued to be applied and implemented in the learning process for accounting scholars globally in the upcoming future.

## FURTHER STUDY

This research still has limitations so that further research is still needed related to the topic The Relevance of Standard Costing and Variance Analysis in Global Industries Today.

## REFERENCES

- Al-Shattarat, B., Al-Shattarat, H. & Dannoun, Z., 2021. The Impact of the Standard Costing System on the Performance of Industrial Companies in Jordan. *Academy of Strategic Management Journal*, 20(1), pp. 1-10.
- Adeniji, A. A., 2009. *Cost Accounting: A Managerial Approach*. Lagos State, Nigeria: El- Toda Ventures limited publishers.
- Ahmad, M., 2018. The Standard Costs System and Its Role in Cost Control. *Unpublished doctoral dissertation, Shendi University, Graduate School..*
- Aimagambetova, A., Akhmetova, A. & Urazbaev, N., 2020. Application of an Improved System for Accounting for Income and Cost Variances in the 'Standard Costing' System. *News of the National Academy of Sciences of the Republic of Kazakhstan, Series of Social and Human Sciences*, Volume 4, pp. 37-43.
- Akenbor, C. O. & Agwor, C. T., 2015. Standard Costing and Cost Control in Nigerian Oil and Gas Industry. *Journal of Modern Accounting and Auditing*, 11(4), pp. 185-193.
- Appelbaum, D., Kogan, A., Vasarhelyi, M. & Yan, Z., 2017. Impact of Business Analytics and Enterprise Systems on Managerial Accounting. *International Journal of Accounting Information System*, Volume 25, pp. 29-44.
- Aurelian, I. C. et al., 2020. Standard Cost Method in Confectionery Production. *Annals of Constantin Brancusi'University of Targu-Jiu, Economy Series*, Volume 5, pp. 62-77.
- Badem, A. C., Ergin, E. & Drury, C., 2013. Is Standard Costing Still Used? Evidence from Turkish Automotive Industry. *International Business Research*, 6(7), pp. 1-12.
- Barrett, M. E. & Fraser, L. B., 1977. Conflicting Roles in Budgeting for Operations. *Harvard Business Review*, July, 55(4), pp. 137-146.
- Bowhill, B. & Lee, B., 2002. The Incompatibility of Standard Costing Systems and Modern Manufacturing: Insight or Unproven Dogma?. *The Journal of Applied Accounting Research*, 6(3), pp. 1-24.
- Bozgulova, N. et al., 2019. Calculation Method for Cost Management in the Construction Industry. *Entrepreneurship and Sustainability Issues*, 7(2), pp. 1450-1461.
- Braide, J. J. M., 2002. *The Theory and Practice of Management Accounting*. Owerri: Springfield Publishers.

- Bromwich, M., 1980. Standard Costing for Planning and Control. *Topics in Management Accounting*, pp. 193-220.
- Camilleri, E., 2013. Costing Systems and Variance Analysis for the Local Five-Star Hotel Industry. *Bachelor's Thesis, University of Malta*.
- Chavan, A. & Thorat, H. D., 2017. Effects of Standard Costing Techniques on the Profitability of Auto Ancillary Companies in Bhosari MIDC. *Journal Impact Factor (JIF)*, 2(2), pp. 19-28.
- Chea, A. C., 2011. Activity-Based Costing System in the Service Sector: A Strategic Approach for Enhancing Managerial Decision Making and Completeness. *International Journal of Business and Management*, November, 6(11), pp. 3-10.
- CIMA, 2008. *Standard Costing and Variance Analysis*. 24 ed. London: CIMA.
- Davison, J., 2015. Visualising Accounting: An Interdisciplinary Review and Synthesis. *Accounting and Business Research*, 45(2), pp. 121-165.
- De Zoysa, A. & Herath, K. S., 2007. Standard Costing in Japanese Firms: Reexamination of Its Significance in the New Manufacturing Environment. *Industrial Management & Data Systems*, 107(2), pp. 271-283.
- Dosch, J. & Wilson, J., 2010. Process Costing and Management Accounting in Today's Business Environment. *Strategic Finance*, 92(2), pp. 37-44.
- Ekerkil, V. & Göde, M. Ö., 2020. *The Role of Supply Chain Management and Standard Costing Techniques in Performance Evaluations of Hotel Businesses*. Springer, Singapore., In *Travel and Tourism: Sustainability, Economics, and Management Issues*, pp. 3-28.
- Fadhil, S. K., Azeez, H. A. & Mutter, A. H., 2022. The Extent to Which Standard Costs can be Used to Rationalize Financial Needs: An Applied Study In Baghdad Soft Drinks Company. *World Bulletin of Management and Law (WBML)*, 4 April, Volume 9, pp. 17-24.
- Feldstein, J. & Coussons, . H., 2020. Achieving a Robotic Program Best Practice Performance and Cost Versus Laparoscopy: Two Case Studies Define a Framework for Optimization.. *The International Journal of Medical Robotics and Computer Assisted Surgery*, Volume 16(3), p. e2098.
- Fleischman, R. K. & Tyson, T. N., 1998. The Evolution of Standard Costing in UK and US, From Decision Making to Control. *Abacus*, March, 34(1), pp. 92-119.
- Horngren, C. T. et al., 2014. *Introduction to Management Accounting*. Bangsar South: Pearson Malaysia Sdn Bhd.
- Hussein, I., 2017. The Standard Costs system and Its Role in Monitoring and Rationalizing Financial Decisions in Industrial Establishments. *Unpublished doctoral dissertation, Nilin University*.

- Iliemena, R. O. & Amedu, J. m. A., 2019. Effect of Standard Costing on Profitability of Manufacturing Companies: Study of Edo State Nigeria. *Journal of Resources Development and Management*, 53(0), pp. 28-34.
- Januarie, X., 2016. The Rationale of Using Standard Costing in Manufacturing Organizations in the Eastern Cape When the Modern Alternatives are Available. *Unpublished doctoral dissertation, Nelson Mandela Metropolitan University*.
- Johnson, T. & Kaplan, R., 1987. *Relevance Lost: The Rise and Fall of Management Accounting*. MA: Harvard University Press.
- Khan, M. N., Rizwan, M., Islam, F. & Aabdeen, Z. U., 2016. The Extent of Application of Standard Costing: A Comparison of Chinese and Pakistani Manufacturing Firms. *International Journal of Economics and Business Administration*, 2(1), pp. 1-6.
- Likert, R. & Seashore, S. E., 1998. *Making Cost Control Work*. London: Sweet and Maxwell.
- Marie, A., Cheffi, W., Loius, J. R. & Rao, A., 2010. Is Standard Costing Still Relevant: Evidence From Dubai. *Management Accounting Quarterly Winter 2010*, 11(2), pp. 1-10.
- Ngozi, O. V., 2013. Effect of Standard Costing on the Profitability of Manufacturing Companies.
- Raghavan, A., 2019. A Comparative Analysis of Activity-Based Costing and Standard Costing in Tracing the Effect of Lean Implementation in a Deterministic Process. *Master's Thesis, University of Tennessee*, May.
- Rakos, I. -S., 2020. Particularities of the Standard Single Cost Method. Methodological Case Study on the Inventory, Analysis, and Control of Costs by the Method- On the Example of Economic Entity. *Annals of the University of Petroşani*, 20(2), pp. 79-86.
- Rostami, M., Rostami, M. & Jalilian, K., 2013. TQM Implementation and Their Impact on Employee Performance and Synchronization in Standard Cost System. *Journal of Natural and Social Science*, 2(3), pp. 1252-1257.
- Sil, K., 2021. Scientific Application of Standard Costing Practices in Manufacturing Industries- A Case Study. *ComFin Research*, 1 October, 9(4), pp. 27-33.
- Sulaiman, M. b., Alwi, N. & Ahmad, N. N. N., 2005. Is Standard Costing Obsolete? Empirical Evidence from Malaysia. *Managerial Auditing Journal*, 20(2), pp. 109-123.
- Tabitha, N. & Ogungbade, O. I., 2016. Cost Accounting Techniques Adopted. *Journal of Advanced in Management and Economics*, 5(1), pp. 48-61.

- Tamplin, T., 2021. *Finance Strategists*. [Online] Available at: <https://learn.financestrategists.com/explanation/variance-analysis/standard-costing/> [Accessed 17 September 2021].
- Tsai, W. H., Lan, S. H. & lee, H. L., 2020. Applying ERP and MES to Implement the IFRS 8 Operating Segments: A Steel Group's Activity-Based Standard Costing Production Decision Model. *Sustainability*, 12(10), p. 4303.
- Wojtowicz, Z., Chater, N. & Loewenstein, G., 2019. Boredom and Flow: An Opportunity Cost Theory of Attention-Directing Motivational States.