IJCRT.ORG

ISSN: 2320-2882



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

The Growing Importance of Cost Accounting for Hotel Industry

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Abstract

Chapter 1: Chapter 1 introduces cost accounting and discusses its role in the hotel sector. Then it shows the importance of this study in the hospitality business by reflecting on its growing importance in solving managerial and financial challenges of hospitality managers. Finally, it depicts the challenges faced in adopting cost accounting practices.

Chapter 2: This section of the analysis mainly discussed the important part of this research analysis. It analysed the important factors of the cost accounting method and the problems of cost accounting in the hotel industry. The cost accounting process in the business of the hotel industry is very effective and important.

Chapter 3: This methodology section is mainly based on the interpretivism research philosophy and descriptive research design.

Chapter 4: In the *result chapter*, secondary articles have been incorporated which highlighted the cost accounting practices in the hotels or the hospitality industry. It has been seen that auditing of the sectors in the hotels is incorporated in the hospitality business which can help to estimate the weekly, monthly or yearly deficiency or the mitigation of deficiency of costing.

Chapter 5: In the *discussion chapter*, it has been seen that different financial indicators are used and visualised in the hotels that can further help in assessing the further steps and the decision on the modification of the hotels' endeavours.

Chapter 6: In *conclusion*, the recommendation has highlighted better proceeding in the hotels with better allocating of staff, which can lead to a flawless cost accounting process.

Keywords: Cost accounting, hotel industry, financial indicators, budget variance analysis

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Chapter 1: Introduction

1.1 Introduction

Cost Accounting quantifies and delineates an organization's financial as well as non-financial information on the consumption or acquisitions of its resources as it contributes knowledge for both management and financial accounting.

1.2 Background

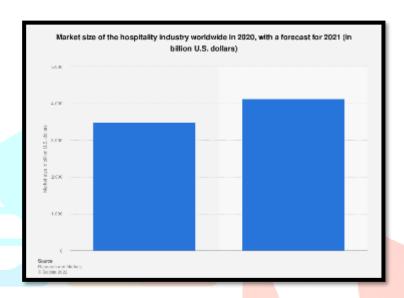


Figure 1.1: Global Market Size of the Hospitality Industry 2020

(Source: Statista.com)

The hotel industry is the most promising and rapidly blooming industry that generates millions of dollars of revenue worldwide. The share of the hotel sector accounts for 6% of the "World's National Product", 7% of total "Global Investment", and 11% of total consumer spending globally. Mashayekhi and Ara (2017), state that although there is limited knowledge about the usage of cost accounting in the hotel industry, it is an area of high interest in the tourism and hotel industry now. Cost accounting in hospitality service represents a bunch of thoughts and techniques designed to promote the aggregation, analysis, and application of historical according to Nurmagambetova *et al.*, (2020). An estimated per-unit costs for utilization in the decision-making process of the management.

1.3 Rationale

Accounting is the most important area of activity in the hotel industry as it reflects its economic activity and a proper accounting system provides access to valuable information, which in turn helps to project and predict the needs of the future (Saleh *et al.*, 2021). This study focuses on the growing importance of cost accounting in

the hospitality sector to help managers to plan better operations, control their activities, and make valuable decisions to maximize their profit.

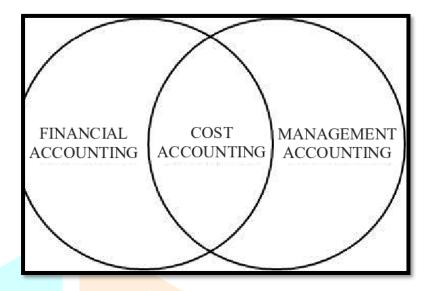


Figure 1.2: The Place of Cost Accounting in the Accounting System

(Source: Lew, 2019)

1.4 Problem statement

The hotel industry faces many challenges in terms of resource planning, decision-making, cash flow monitoring, budget making, and forecasting future demands. The process of cost accounting helps to identify, manage and control the cost which in turn helps to reduce the overall expenditure of hotels.

1.5 Aim

The study aims to understand the concept of cost accounting and its growing importance in the hotel industry by thoroughly analysing the challenges faced by hotels in their managerial and financial activities. This study also explores the problems encountered by hotel managers in implementing and managing and controlling the cost accounting process.

1.6 Objective

- To understand the concept of cost accounting in the hotel industry.
- To evaluate the growing importance of cost accounting in the hospitality sector by analysing the managerial and financial challenges encountered by them.
- To assess the problems faced by the managers of the hotel industry to adopt, implement, and control
 cost accounting practices.

1.7 Research question

RQ1: What are the key components of cost accounting in the hotel industry?

RQ2: Why does cost accounting gaining importance in the hospitality sector, and what are the reasons behind it?

RQ3: What are the challenges encountered by hospitality managers in adopting, implementing, and controlling cost accounting practices?

1.8 Research significance

The study will help to understand the idea of cost accounting in the hotel industry precisely. Further, it gives insights into the growing importance of cost accounting to resolve the managerial and financial challenges faced by hotel managers and maximize their revenue. Finally, it also assesses the difficulty in adopting cost accounting practices by hospitality managers and controlling them.

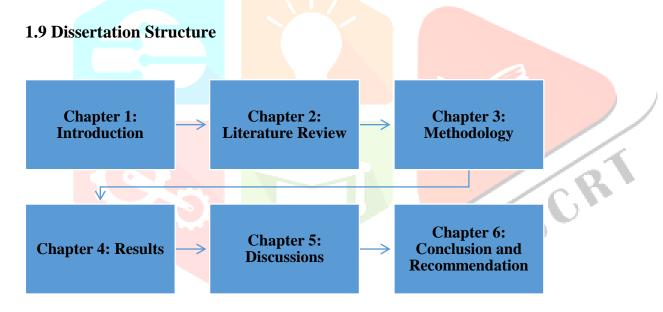


Figure 1.3: Dissertation Structure

(Source: Self-created)

1.10 Summary

This chapter provides a compact understanding of the concept of cost accounting in the hotel industry and gives little insight into its growing importance in the hotel sector. It also reveals the challenges of adopting and implementing the cost accounting practice in the hotel industry.

Chapter 2: Literature Review

2.1 Introduction

The given topic is based on the significance of cost accounting in the different types of hotels. This literature review section will discuss the importance of the cost accounting process and the problems of this cost accounting in the industries of hotels.

2.2 Conceptual framework

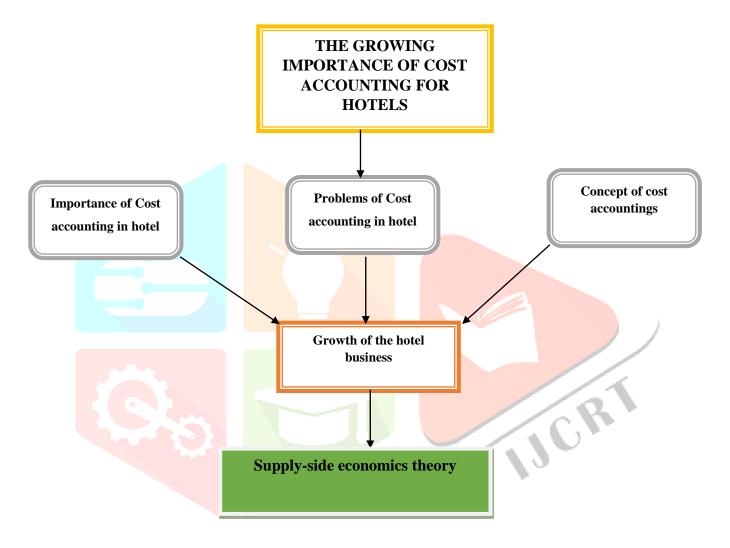


Figure 2.1: Conceptual Framework

(Source: self-created)

2.3 Importance of cost accounting in the Hotel business

"Hotel cost accounting" is vital because by registering and observing "cash flows" both out and in, the organisation can more profitably predict the future, maintain a more pragmatic opinion of the resort's launched costs and confirm that yearly appropriations are sustained. As opined by Filimonau and Delysia, (2019), similarly, this domain of the hospitality business is essential to the correct administration of any kind of hotel and the reason it takes out critical positions like economic reporting, funding administration, payroll rectifying, expenditure search and economic auditing. There are present different types of important factors in cost accounting. These factors importance is as follows:

Cost allocation: This is extremely helpful for hotel business management. According to Abdou *et al.* (2020), administrators can assign costs by development, which can help in the growth of the financial structure of the hotel business.

Forecasting and Budgeting: Estimating costs for personal activities allows senior executives to prepare plans for coming spending for the hotels and indicate their finances for destiny.

Profit drivers: As stated by Filimonau and Naumova, (2020), Expense accounting allows hotel business proprietors to achieve a more in-depth knowledge of their earnings verge and what navigates it.

Cost savings: With the help of utilizing cost accounting, hotel industries may be capable to recognise unique efficiencies to assist save cash.

2.4 Problems of effective cost accounting in hotel business

The cost accounting process in the business of the hotel industry is very effective and important. It helps in the growth of the business. However, there are present different types of problems in this cost accounting process. These different types of problems are

Data Overload: According to Rhou and Singal, (2020), maximum hotels have entrance to a collection of data groups, including reports of STR, (property-administration method), financial data, visitor satisfaction records, opinions and economic data from numerous belongings. Hence there is an overloaded presence of registered data, which is a problem for the business in the hotels.

Shortage of transparency on objectives: "The cost accounting department" team should be apparent of the preferences and purposes of the hotel business. They should understand the intent of the knowledge gathered and its future use. According to Lawn *et al.* (2020), when they are not able to collect the proper information or may transmit wrong or insufficient information then it will be problematic for the business.

Different management systems: The effective costing method may be founded on a legal authority system, but invalidity, there might exist an additional management system. As an example, it can be stated that, if business unions of the hotel industries have more remarkable leverage in the finding-making method, then the strategy may operate into problems.

2.5 Theoretical perspective

The developing significance of the cost accounting process in the hotel business can properly discuss with the help of a few types of theories. As stated by Alharahsheh and Pius, (2020), one of those theories is the "supply-side economics theory". Therefore, this theory can help to discuss the process and the importance of

the cost accounting process in the business of the hotel industry. As opined by Rhou and Singal, (2020), it can also discuss the different types of problems related to this topic. On the other hand, as stated by Filimonau and Naumova, (2020), this theory is significant because it provides a method for effective economists to research and forecast the conduct of economic status in the hotel business and mainly it can discuss the cost accounting matter also. Hence it can be stated that this kind of theory is important in the development of the research analysis of this cost accounting process.

2.6 Literature gap

A literature gap means that, the absence or the shortage of sufficient data or information, which are important for the research analysis. In this research analysis, it can be stated that there are also present different types of gaps. Such as, this report has no proper information, which might be helpful for the development of this topic, On the other hand, a few types of information about the problems of the cost accounting process is not that clear. Hence, there is a scope to analyse the problem section of this topic more prominently, but because of the unclear information, it could not have happened properly.

2.7 Summary

This section of the analysis mainly discussed the important part of this research analysis. It analysed the important factors of the cost accounting method and the problems of cost accounting in the hotel industry.

Chapter 3: Methodology

3.1 Introduction

This methodology section is mainly based on the interpretivism research philosophy and descriptive research design. On the other hand, it will discuss the inductive approach, secondary data collection process and thematic analysis for the development of this topic.

3.2 Research Philosophy

This research work will be considered the effective "Interpretivism research philosophy". As stated by Emery and Anderman, (2020), effective interpretivism philosophy exists as a benefit for researching the social philosophy of this topic that is research-related.

3.3 Research Design

This research work evaluates the "descriptive research design". This effective research design includes being accepted in charge of determining objective and systemic explanations circumstances and the inhabitants as nicely as any wonder.

3.4 Research Approach

An effective inductive research approach will be taken in this research work. It can help to evaluate the entire topic and the important approaches to this research.

3.5 Data Collection Method

This research analysis considers the secondary data collection methods, which properly applicable in this case to evaluate the research work. As stated by Ruggiano and Perry, (2019), effective secondary databases exist as

extremely concise to access. Therefore, the plurality of secondary sources is entirely positive for usefulness or at excessively lower costs. Hence, it is applicable to evaluate this topic of the importance of the cost accounting method in the business of the hotel industry.

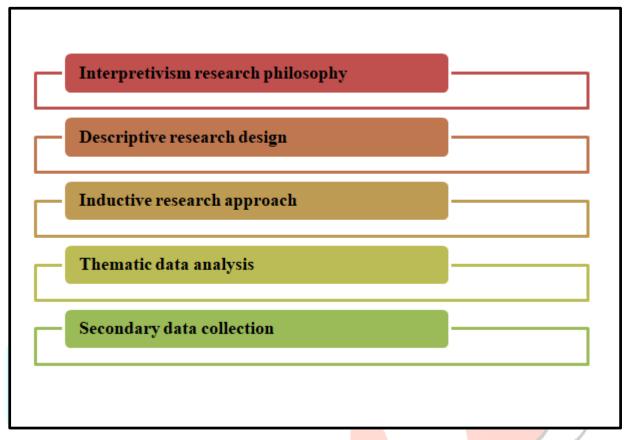


Figure 3.1: Methodology

(Source: Self-created)

3.6 Data Analysis Method

This research analysis incorporates the effective and important thematic data analysis process. This is appropriate for the methodology section of this research analysis. According to Dufour and Richard, (2019), thematic reflection is a method of analysing qualitative knowledge, which affects reading through a compilation of facts, and looking for techniques for important information to uncover documents. It exists as an elaborate technique of laboursaving in that the knowledge investigator is at the midpoint of constructing awareness of the details.

3.7 Ethical Consideration

The effective "data protection act" is considered here as an ethical consideration. This important research analysis has supported regulations and translucency as nicely as right in every part of this analysis.

3.8 Summary

This part of this research work analysed the different stages of the methodology section. Here it has discussed the secondary data collection method, interpretivism philosophy and inductive research approach.

Chapter 4: Findings and analysis

4.1 Introduction

In this chapter, 7 secondary articles and journals have been chosen that highlight cost accounting in hotels. The analysis has been done and the trends have been comprehended.

4.2 Result or findings

Cost accounting is the process by which the hotels or the hospitality industry includes the task of collecting, analysing, summarising and evaluating different actions based on cost efficiency. According to Safwat (2020), it has been seen that the hospitality industry and mainly the hotels include the cost accounting for the measurement of the capability of costing. The detailed cost information in every sector of the hotels can be estimated through the accounting options and the current operations can be analysed (Statler, 2021). In addition, future planning can be constructed based on cost accounting. According to the supposition of Al-Alkawi (2020), it has also been seen that financial affairs can be managed which can clear the details of tax and provide solutions to accounting issues. The administration of the hotel industry and the tracking of the expenses are done and with that, the restriction or addition in the expenses can be generated.

The finance department of the hotels can include the food, drink and different orders according to the demand and requirements of the guests. According to the presumption of Lacalle (2021), it can be visualised that cost accounting also initiates and regulates orders from additional branches of the lodging or the diner and transmits them to the costing and buying division again to put orders with exterior suppliers (Santos, 2022). At the end of the month, it can be estimated what percentage of the cost is generated in the hotel that can go into the profit account. In addition to that, hotel accounting includes the seamless flow of information and communication across departments, revenue streams, vendors, and properties in different geographical locations. In that case, the tax codes and different financial regulations are also included in the hotel proceedings which can help to smoothen the stay of the guests (Gargaro, 2023). According to the view of Bhavana (2023), vendor contracts are also included in the cost accounting operation that can help to get and transact the contract and multiple revenue systems and department systems.

4.3 Analysis

The effectiveness, efficiency and economy can be identified and estimated for the benefit of the hotels through cost accounting in the hotels. The gaps in the revenue and the expenses can be identified in the hotels that can be mitigated also with the process of cost accounting. It can be seen that financial reporting is essential in cost accounting in the financial sectors or departments of the hospitality industry (Statler, 2021). The hotel costing can be changed daily or monthly unpredictably. In that case profit and loss, balance sheets, cash flow and yearly budget comparison are incorporated.

4.4 Summary

From the above discussion, it can be seen that cost accounting is in every sector of the industry and it is highly evident in the hotel or restaurant industry.

Chapter 5: Discussion

5.1 Introduction

In this chapter, the discussion of the data that has been derived from secondary articles based on the cost accounting in the hotels has been incorporated.

5.2 Discussion

Theme 1: cost accounting is beneficial in the hotel industry:

The hospitality industry can be the backbone of any country and a huge amount of revenue and profit is regulated in the hotels regularly. Traditional management accounting and cost accounting practices are included in the hotels, which can highlight the product's costing, return on investment, strategic planning and product profitability. According to the view of Ribarić Čučković (2020), it can be seen as the different kinds of situations seen in the hotel can be adverse or beneficial for the hotels and that can be estimated by the cost accounting in the hotels in a definite time span gap.

In addition to that, the break-even point and the "tableau de bord" can be included in the hotels along with "budget variance analysis". In the case of hotels, motels, homestays and other places budgeting can be most important for the modification and estimation of the further costing in that organisation. According to the view of Wedasuari et al. (2022), it can be seen that different planning and techniques are incorporated into the costing and budgeting of the hotels and the calculations are highly important for the customers as well as the administrators of hotels. Specific analysis can be done with this method.

Theme 2: cost accounting is important and without it financial crisis can be seen in the hotels

Budget variance commentary is exponentially included in the hospitality industry. A specific analysis is needed that can help in the estimation of the specific sector that needs more concentration from the end of the administrators (Afianti and Megasari, 2022). Product profitability is also accounted for in the hospitality industry mainly in the hotels for the tenants and the employees in the hotels (Sewwandi, 2018). With perfect accounting, the remuneration of the employees and the workers can enhance the reputation of the hotels. The departments such as human resources, accounts and financing and management can be smoothly regulated and accelerated perfectly in the forthcoming time.

The profitability in the industry can be assessed with the cost accounted and that can support the other subsections of the hotels. Strategic planning believes in the technique of driving decisions and regulating succeeding workouts with the ambition of facilitating managers to prefer the best strategic course for the establishment (Sewwandi, 2018). Long-term goals can be established in the hotels which can be implemented in the current strategy.

Theme 3: managers in the hotel face problems in the accounting practices

Contemporary management practices are also included in the hotels for the cost accounting that can help in managing the issues. Customer profitability analysis is now incorporated in the cost accounting of hotels and activity-based costing is also included which can highlight the profit and loss percentage of the hotels (Rahayu *et al.* 2022). The cost is accumulated per activity and the financial and non-financial indicators are implemented in the hotel proceedings, which can be further, applied in other secretions in the hotels. In

addition, benchmarking can also be an evident process that can be estimated in the case of cost accounting, which can compare the year's performances in the hotels that help in the processing of the modification. Managers face different problems in the hospitality industry while implementing accounting practices.

"Customer profitability analysis" (CPA) assigns all earnings and expenses to particular customers to estimate the level of profitability and decide who is yielding profits. Customer relationship management approaches have been supplemented, making it possible to enhance the understanding of prosperous and unprofitable consumers (Joldeska et al. 2022). The strategic planning tools are inserted in the costing and accounting of the hotels, which can further help in strategically allocating definite benefits to different sectors. The "Economic value added" process is inserted in the cost accounting of hotels for assessing the sectors of profitability in the hotels and the restaurants belonging to the hospitality sectors.

5.3 Summary

From the above discussion, it can be summarised that cost accounting is necessary for hotels. This can further help in the assessment of the profit and loss in the hotels.

Chapter 6: Conclusion and recommendation

6.1 Conclusion

In this chapter, the recommendation and short summary have been incorporated along with the limitation of the study. This chapter also links the total research with the objective that has been constructed in the chapter introduction. In addition, the future scope has also been incorporated which can highlight the perspective of the research in the upcoming future. In the previous chapter, it has been seen that cost accounting is evident in the hotels, which can help in the incorporation of benefits and profit with the estimation of the gaps in costing and budgeting. The tracking of the budget can be done with cost accounting in these sectors.

6.2 Linking with objective

Objective 1: in the research, the first objective was to understand the concept of cost accounting and that has been established in this research.

Objective 2: In the next objective, the cost accounting importance in the hospitality sector is included which highlights the financial challenges in the hotels.

Objective 3: it has been seen that accounting practices can be crucial and critical in hotels and issues can arise while accounting regarding the miscalculation and misestimation.

6.3 Recommendation

Some recommendations to the hotels can be included that can help in the cost accounting process-

- Periodic estimation of the costing and expenses should be regulated in the hotels to keep the calculation up-to-date (Rahayu *et al.* 2022).
- The different allocation of skilled staff can be done that can help in perfect accounting practices.
- Feedback can be taken for the better modification of the cost accounting practice in hotels.

6.4 Limitations of the study

The research has been done in the secondary qualitative process which can lack information in the research. The survey in the hotels or the interview process of the hotel's staff could have included better authenticity.

6.5 Future scope

In future, the research can help hotel accountants to modify their financial endeavours. The mismanagement in cost accounting can also be mitigated in the forthcoming time.

Reference

Abdou, A.H., Hassan, T.H. and El Dief, M.M., 2020. A description of green hotel practices and their role in achieving sustainable development. *Sustainability*, *12*(22), p.9624.

Afianti, A.F. and Megasari, C., 2022. Financial and cost management strategies for hotel operations with public sector accounting (case study of enhait hotel bandung). *Jurnal Manajemen Pelayanan Hotel*, 6(2), pp.341-348.

Alharahsheh, H.H. and Pius, A., 2020. A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), pp.39-43.

Alvarez, T., Sensini, L., Bello, C. and Vazquez, M., 2021. Management accounting practices and performance of SMEs in the Hotel industry: Evidence from an emerging economy. *International Journal of Business and Social Science*, *12*(2), pp.24-35.

Dufour, I.F. and Richard, M.C., 2019. Theorizing from secondary qualitative data: A comparison of two data analysis methods. *Cogent Education*, 6(1), p.1690265.

Emery, A. and Anderman, L.H., 2020. Using interpretive phenomenological analysis to advance theory and research in educational psychology. *Educational Psychologist*, 55(4), pp.220-231.

Filimonau, V. and Delysia, A., 2019. Food waste management in hospitality operations: A critical review. *Tourism management*, 71, pp.234-245.

Filimonau, V. and Naumova, E., 2020. The blockchain technology and the scope of its application in hospitality operations. *International Journal of Hospitality Management*, 87, p.102383.

Geri, R.T., Tjahjono, J.K. and Chrisdianto, R.B., 2020. Effectiveness and efficiency analysis of night auditor function toward internal control at hotel wo surabaya. *Journal of accounting, entrepreneurship and financial technology (jaef)*, 2(1), pp.1-20.

Joldeska, I., Mecheski, S. and Merko Zabzun, N., 2022. Environmental management accounting in service sector. *European Journal of Economics, Law and Social Sciences*, 6(2), pp.128-134.

Lawn, S., Oster, C., Riley, B., Smith, D., Baigent, M. and Rahamathulla, M., 2020. A literature review and gap analysis of emerging technologies and new trends in gambling. *International journal of environmental research and public health*, 17(3), p.744.

Mashayekhi, B. and Ara, M., 2017. Activity-based costing in the hospitality industry: a case study in a hotel. *International Journal of Social and Business Sciences*, 11(9), pp.2254-2258.

Rahayu, N.P.A., Sudana, I.M. and Yintayani, N.N., 2022. Analysis of the Application of Environmental Accounting as One of Social Accountability at the One Legian Hotel. *Journal of Applied Sciences in Accounting, Finance, and Tax*, 5(2), pp.140-145.

Rhou, Y. and Singal, M., 2020. A review of the business case for CSR in the hospitality industry. *International Journal of Hospitality Management*, 84, p.102330.

Ribarić Čučković, E., 2020. Quality cost accounting in the hospitality industry. *Tourism and hospitality management*, 26(1), pp.249-252.

Ruggiano, N. and Perry, T.E., 2019. Conducting secondary analysis of qualitative data: Should we, can we, and how?. *Qualitative Social Work*, 18(1), pp.81-97.

Ryder, M., Jacob, E. and Hendricks, J., 2019. An inductive qualitative approach to explore Nurse Practitioners views on leadership and research: An international perspective. *Journal of Clinical Nursing*, 28(13-14), pp.2644-2658.

Saleh, M.M.A., Jawabreh, O.A., Al Om, R. and Shniekat, N., 2021. Artificial intelligence (AI) and the impact of enhancing the consistency and interpretation of financial statement in the classified hotels in aqaba, Jordan. *Academy of Strategic Management Journal*, 20, pp.1-18.

Sewwandi, L.Y.R., 2018. Impact of cost accounting applications on financial performance of hotel industry in hambantota district. *Tourism and hospitality management*, 31(1) (pp. 324-354).

Walter, D. and Ophir, Y., 2019. News frame analysis: An inductive mixed-method computational approach. *Communication Methods and Measures*, *13*(4), pp.248-266.

Wedasuari, P.R., Yintayani, N.N. and Sudana, N.M., 2022, December. Environmental Cost Accounting in the Hotel Industry "A Case Study". In *International Conference on Applied Science and Technology on Social Science* 2022 (*iCAST-SS* 2022) (pp. 342-347). Atlantis Press.

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Articles for result

Al-Alkawi, T., 2020. *The Role of Cost Accounting System in the Development of The Tourism Industry*. Available at: https://www.mosuljournals.com/article_162119.html [Accessed on: 10th March 2023]

Bhavana, 2023. *Cost Accounting*. Available at: https://cleartax.in/g/terms/cost-accounting [Accessed on: 10th March 2023]

Gargaro, D., 2023. *What Is Cost Accounting?* Available at: https://www.businessnewsdaily.com/16096-cost-accounting.html [Accessed on: 10th March 2023]

Lacalle, E., 2021. What is hotel accounting and why is it crucial for the hotel industry? Available at: https://www.mews.com/en/blog/hotel-accounting [Accessed on: 10th March 2023]

Safwat, O., 2020. The importance of cost accounting and its applications on the best cost accounting software.

Available at: https://accflex.com/en/Accounting-articles/best-cost-accounting-program [Accessed on: 10th March 2023]

Santos, L. L. 2022, February 16. *Management Accounting Practices in the Hospitality Industry*. Available at: https://encyclopedia.pub/entry/19536 [Accessed on: 10th March 2023]

Statler, J., 2021. *Hotel Accounting 101: What Every Operator Needs to Know*. Available at: https://www.plateig.com/blog/hotel-accounting/ [Accessed on: 10th March 2023]