

The effect of strategic management accounting practices and integrated information systems on business performance in hospitality businesses

Introduction	4
Chapter 1. Theoretical framework of strategic management accounting and business performance measurement	5
1.1 Strategic management accounting, its functions and tools	5
1.1.1 Just-in-Time Manufacturing and Management.....	9
1.1.2 Kaizen Costing	9
1.1.3 Activity Based Costing (ABC)	9
1.1.4 Balanced scorecard.....	10
1.1.5 Cost-Volume Profit Analysis.....	13
1.1.6 Product Life Cycle Analysis	14
1.2 Performance measurement models	15
1.2.1 Financial performance measuring	17
1.2.2 Economic Added Value (EVA)	18
1.2.3 Benchmarking	21
1.3 Integration of information systems in enterprises	24
1.3.1 OLTP (On Line Transaction Processing Systems)	29
1.3.2 Computer-based management system.....	34
Chapter 2. Strategic management accounting and integrated information system applications in hospitality businesses	38
2.1 Management accounting unit and its importance in hospitality business.....	38
2.2 Reports of strategic management accounting.....	43
2.3 Integrated information system and software usage	46
2.3.1 External Information Systems.....	51

2.3.2 Internal Information Systems.....	53
Chapter 3. Empirical research.....	57
3.1 Research purpose.....	57
3.2 Research methodology.....	57
3.2.1 Research approach.....	57
3.2.2 Sampling.....	58
3.2.3 Data collection.....	59
3.2.4 Data analysis.....	60
3.2.5 Ethical considerations and limitations.....	60
3.2.6 Research Hypotheses.....	60
3.3 Findings.....	61
Conclusion.....	80
Appendix 1.....	88
Appendix 2.....	90

Introduction

The hospitality industry plays a significant role in the economy and has a significant impact on the daily lives of people around the world. To remain competitive and improve business performance, hospitality businesses must adopt effective strategic management accounting practices and integrate information systems. The hospitality industry is a dynamic and rapidly growing sector that plays a significant role in the global economy. It is characterized by intense competition and the need for efficient and effective management practices. In recent years, there has been growing interest in the impact of strategic management accounting practices and integrated information systems on business performance in the hospitality industry. This is because the adoption of these practices and systems can lead to improved decision making, increased competitiveness, and enhanced performance.

Strategic management accounting practices refer to the use of accounting information and techniques to support the formulation and implementation of an organization's strategy. It involves the use of relevant, reliable, and timely information to support decision-making and monitor progress towards the achievement of strategic goals. On the other hand, integrated information systems refer to the integration of different information systems within an organization to provide a unified view of data and support decision-making.

The hospitality business is one in which the implementation of integrated information systems and strategic management accounting methods can potentially yield a variety of positive outcomes. For instance, the implementation of such techniques and procedures can assist hospitality businesses in gaining a deeper comprehension of their clientele, internal operations, and monetary standing. Because of this, one's ability to make decisions, as well as their level of competitiveness and performance, can all improve.

The purpose of this thesis is to investigate the impact that implementing strategic management accounting techniques and integrated information systems can have on the overall performance of hospitality-related firms in Azerbaijan. A questionnaire will be sent out to forty different hospitality establishments as part of the research project, which will be carried out using a quantitative research methodology. The findings of this research will add to the existing body of knowledge in this area by shedding light on the significance of implementing efficient strategic management accounting procedures and integrated information systems for companies operating in the hotel industry.

Chapter 1. Theoretical framework of strategic management accounting and business performance measurement

1.1 Strategic management accounting, its functions and tools

Businesses are being forced to make adjustments not only in production but also in management as a result of increased competition and globalization. Low price advantage or poor quality is no longer a guarantee of long-term viability and market share growth. Business management should now be able to identify the company's future position, as well as its objectives, and show how to attain these objectives successfully. Although cost accounting remains a function of financial accounting in firms, management accounting, which aggregates and presents information to management, is gaining traction. As a result of these requirements, the concept of strategic management accounting emerges as the new face of management accounting. If you want to sum up the concept of strategic management accounting, it's the alignment of management strategies and programs with accounting execution tools. It is envisaged that this harmonization will provide continuity by taking into account changing environmental conditions.¹

Strategic management accounting, according to Guilding, Cravens, and Tayles, is a mirror of management accounting, with information arranged for strategic decisions and controls. They also stress the importance of rivals in the development of the notion of strategy and the significance of strategic decisions.² Strategic management accounting, in a broad sense, is an accounting system that provides data for formulating business strategies, aids in the adaptation of strategies to business processes and employees, and aids management in cost reduction, performance measurement, strategic planning, and implementation. In addition to providing an analysis and view of an enterprise's financial situation, strategic management accounting also provides information about the market in which the enterprise operates, as well as the cost structures, competitive situations, and strategies of competitors. To put it another way, strategic management

¹ Shah, H., Malik, A., and Malik, M. S. (2011). Strategic management accounting—A messiah for management accounting. *Australian Journal of Business and Management Research*, 1(4), 1-7.

² Guilding, C., Cravens, K. S., and Tayles, M. (2000). An international comparison of strategic management accounting practices. *Management Accounting Research*, 11(1), 113-135.

accounting has a structure for collecting, recording, processing, and analyzing both internal and external data.³

Strategic management accounting is the providing of data to aid in the making of strategic business choices. Long-term decisions that have a substantial impact on the firm are referred to as strategic decisions. Furthermore, they might be used for the enterprise's internal or external environment.⁴ Firm investment methodologies, strategic planning and budgeting processes, product mixtures, and other essential data that can effect the business in the long run should all be included in the information expected to aid strategic decisions. The company also delivers a considerable cost and competitive advantage with all of these facts. Using information technology, strategic management accounting procedures develop an effective competitive strategy for the business in this example.

Although the term strategic management accounting was not widely used in businesses before, some companies were comparing accounting data and qualitative data about competitors in line with the organization's strategic goals, following the cost advantages that emerged from the value chain, and using customer/marketing data. All of these applications can be included under the strategic management accounting idea. To put it another way, these behaviors continued even after the term was not commonly used.⁵ When considered in its traditional sense, management accounting accumulates and delivers financial and non-financial data to corporate managers. Managers have begun to collect data from outside the firm, and they have begun to make more effective decisions in line with the competitive factor, according to the concept of strategic management accounting. Strategic management accounting, in this scenario, delivers financial and non-financial data to managers not only from within the organization, but also from the enterprise's external environment.⁶

³ Ward, K. (2012). *Strategic management accounting*. Routledge.

⁴ Cescon, F., Costantini, A., and Grassetti, L. (2019). Strategic choices and strategic management accounting in large manufacturing firms. *Journal of Management and Governance*, 23(3), 605-636.

⁵ Cadez, S., and Guilding, C. (2012). Strategy, strategic management accounting and performance: a configurational analysis. *Industrial Management and Data Systems*.

⁶ Ahmad, K. (2014). The adoption of management accounting practices in Malaysian small and medium-sized enterprises. *Asian Social Science*, 10(2), 236.

Strategic management accounting is used in two ways by enterprises. The first is the utilization of data provided by strategic management accounting for planning purposes by management. The other is to keep track on the market and competitors in general, as well as to assess the competitors' competition strategies. When looking at the evolution of strategic management accounting in recent years and the elements that have triggered it, the technological element is the first thing that comes to mind. Business managers have begun to acquire more and more detailed data that they may utilize in their judgments and future planning as a result of evolving technology and globalization.⁷ Furthermore, the external environment, competitors, and customers have become increasingly vital for the long-term viability of a corporation. Customers now have more options because to technology advancements, and their awareness has grown even more. Similarly, the element of competition has become more prominent, and competitive advantage has become more important. In order to make informed decisions in the midst of all of these advancements and changes, business managers must develop their management strategies and management accounting tools. Management strategies such as just-in-time manufacturing and comprehensive quality management are examples of application tools that have arisen in response to the demands of this new era.⁸

The integration of external and internal financial and non-financial data acquired from the enterprise's external environment is offered by strategic management accounting. In addition, within the purview of strategic management accounting, methodologies such as lifetime costing, value chain analysis, activity-based management, and the balance scorecard approach, which are all part of the cost management approach, are applied. Standard costing, cost-volume-profit analysis, responsibility accounting, and activity-based accounting are examples of strategic management accounting techniques that can be designed and used for strategic goals based on the needs and requirements of the company.

Traditional management accounting systems must have certain elements in order to gain a strategic dimension and fulfill the business's strategic goals. The addition of internal data as well as data about the enterprise's external environment into the system is the first phenomena that

⁷ Nixon, B., and Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research*, 23(4), 229-244.

⁸ Shah, H., Malik, A., and Malik, M. S. (2011). Strategic management accounting—A messiah for management accounting. *Australian Journal of Business and Management Research*, 1(4), 1-7.

elevates management accounting to a strategic level.⁹ Another essential issue is to look at data for future periods in the same way that the company's past data is looked at.

Traditional management accounting approaches place a greater emphasis on competition than strategic management accounting practices. The strategic strategy is focused on competition and customers, whereas the traditional method is centered on production and finance. This improves the accuracy of performance measurement for strategic management accounting. Strategic management accounting focuses on evaluating and managing business process performance.¹⁰ In their study on the use of strategic management accounting application techniques in Romanian businesses, AlMaryani and Sadik (2012) found that, in addition to traditional management accounting tools, businesses have begun to value strategic management accounting tools, and as a result, they have been able to achieve their strategic goals.¹¹ In a research of Iranian manufacturing businesses by Ghasemi et al. (2019), it was discovered that, contrary to AlMaryani and Sadik's conclusions, Iran has yet to adopt to strategic management accounting techniques. The analysis of solely financial performance data has improved, but the analysis of non-financial data has not, which can be explained by the fact that the country is less developed in terms of development and technology use.¹²

Some key application tools that appear to be used by strategic management accounting are really employed by traditional management accounting. Traditional management accounting uses these instruments to deliver corporate information to managers so they may build strategy. The concept of strategy gives management accounting the potential to supply external data. For in-

⁹ Talha, M., Raja, J. B., and Seetharaman, A. (2010). A new look at management accounting. *Journal of Applied Business Research (JABR)*, 26(4).

¹⁰ Cadez, S., and Guilding, C. (2012). Strategy, strategic management accounting and performance: a configurational analysis. *Industrial Management and Data Systems*.

¹¹ AlMaryani, M. A. H., and Sadik, H. H. (2012). Strategic management accounting techniques in Romanian companies: Some survey evidence. *Procedia Economics and Finance*, 3, 387-396.

¹² Ghasemi, R., Habibi, H. R., Ghasemlo, M., and Karami, M. (2019). The effectiveness of management accounting systems: evidence from financial organizations in Iran. *Journal of Accounting in Emerging Economies*.

house information and analysis, however, the most extensive methods of classical management accounting can be applied.¹³

1.1.1 **Just-in-Time Manufacturing and Management**

Just-in-time production is a strategic production method that reduces stocking costs and wait times for construction equipment while also avoiding waste of leisure time, particularly in manufacturing enterprises. It is used to reduce stocking costs and wait times for construction equipment while also avoiding waste of leisure time. The manufacturing phases are calculated, and the inputs required for each stage are included in the process at the scheduled time, eliminating the expense of stocking by producing in response to demand.¹⁴ The goal of a just-in-time production system is to boost productivity and lower costs by ensuring that the necessary resources are only available when and where they're needed, with no inventory. Management's most significant weapon for gaining a competitive advantage and growing profitability is cost reduction. This, however, is not a simple task. One of the most important applications for cost reduction is just-in-time production.

1.1.2 **Kaizen Costing**

Kaizen Costing is a cost-cutting approach for largely technology-intensive businesses that originated in Japan and can be described as a target-costing procedure. The goal of Kaizen costing is to eliminate expenditures associated with procedures that do not add value to the final product and to aim to minimize production costs at all stages. With Kaizen costing, the company aspires to complete the process of lowering expenses in order to gain a competitive edge. It will raise its income while also giving it a competitive advantage in this way.¹⁵

1.1.3 **Activity Based Costing (ABC)**

¹³ Cinquini, L., and Tenucci, A. (2010). Strategic management accounting and business strategy: a loose coupling?. *Journal of Accounting and organizational change*.

¹⁴ Javadian Kootanaee, A., Babu, K. N., and Talari, H. (2013). Just-in-time manufacturing system: From introduction to implement. Available at SSRN 2253243.

¹⁵ Sani, A. A., and Allahverdizadeh, M. (2012). Target and kaizen costing. *World academy of science, engineering and Technology*, 6(2), 40-46.

In order to stay up with changing competitive situations, businesses prioritize keeping costs low. As a result, managers implement a variety of apps in order to maintain effective cost control. One of the cost-control strategies employed is activity-based costing. This method can be used to establish which phase of the goods or services produced in the firm is a cost, with the goal of reducing costs by interfering in the costly phases with the use of technology or other strategies.¹⁶ Activity-based costing is a management accounting application tool that allows businesses to calculate product costs in more precise and close values, track all activities in the value chain more closely and meticulously, make more accurate management decisions, and keep track of operating overheads. ABC can also be used in enterprises to calculate product costs and measure customer profitability.

With ABC, the costs of a business's product, service, or customer-based costs are precisely calculated, and considerations are given to the components that form the basis of the cost in relation to the expenses. The goal of activity-based costing is to identify the sources of expenses incurred in the enterprise's production processes. The fundamental subject of the activity-based costing method in this situation is the costs. The mechanisms that result in these costs are then explored. The relationship between procedures and costs is then discussed, as well as other cost-related topics. Under other words, in this system, general production expenses are predominantly paid to the activities, which are then reflected to the product and the product's eventual purchasers through these activities.¹⁷

1.1.4 **Balanced scorecard**

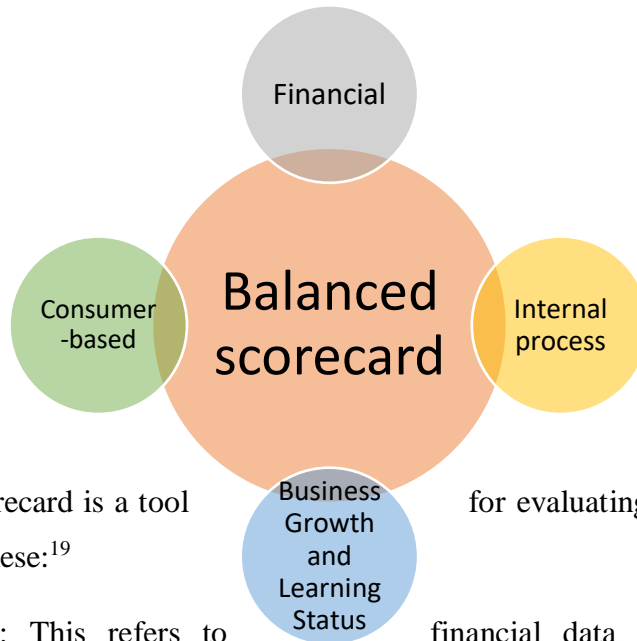
A balanced scorecard is a management accounting tool that creates a framework for adhering to business strategies and measuring performance within the boundaries of the company's mission

¹⁶ Cardos, I. R., and Pete, S. (2011). Activity-based costing (ABC) and activity-based management (ABM) implementation—is this the solution for organizations to gain profitability. *Romanian Journal of Economics*, 32(1), 151-168.

¹⁷ Özkan, S., and Karaibrahimoğlu, Y. Z. (2013). Activity-based costing approach in the measurement of cost of quality in SMEs: a case study. *Total Quality Management and Business Excellence*, 24(3-4), 420-431.

and strategy. The balancing scorecard is structured in such a way that it prioritizes and measures both financial and non-financial business issues.

Figure. Balanced scorecard key aspects



The balance scorecard is a tool for evaluating four key aspects of a company's success.¹⁸ These:¹⁹

- Financial Dimension: This refers to financial data such as a company's profitability and financial standing.
- Consumer-Based Dimension: These are apps that are designed to learn about customer wants, expectations, and opinions, which are important variables for firms to consider.
- Internal Processes Dimension: These measurements reflect the enterprise's efforts to improve internal processes such as management, communication, activities and information systems, and performance evaluation.
- Business Growth and Learning Status Dimension: This dimension encompasses business innovation and adaptation processes, as well as adaption training activities.

When considering the balancing scorecard application in terms of lodging businesses, for example, the following factors come to mind:

¹⁸ Awadallah, E. A., and Allam, A. (2015). A critique of the balanced scorecard as a performance measurement tool. *International Journal of Business and Social Science*, 6(7), 91-99.

¹⁹ Perkins, M., Grey, A., and Remmers, H. (2014). What do we really mean by "Balanced Scorecard"? *International Journal of Productivity and Performance Management*.

- Financial Dimension: How the hospitality industry is seen by its stakeholders.
- Business Process Dimension: Activities in which the hospitality industry should excel - Learning and Growth Dimension of the Business: Methods by which the hospitality industry can produce and improve value
- Customer Dimension: The perspective through which guests evaluate the lodging business.

Because financial and non-financial data are combined in the approach utilized, the term balanced scorecard is based on the expression of balance. The business's short-term plans using financial data, as well as its long-term initiatives with non-financial data, are discussed. In this situation, a balance between financial and non-financial data is established for the enterprise's long- and short-term plans.²⁰ The Balanced Scorecard is a management accounting model that aids in the evaluation of business performance by balancing financial performance, learning abilities, innovative activities, and operational units. Although various performance measuring methods have been developed, the balanced scorecard has emerged as the most popular in recent years. The reason for this is that it considers both financial and non-financial variables.²¹

To successfully achieve their long-term plans, businesses use a four-stage strategic management approach. That is, for its short-term actions, management develops a four-stage strategy. The first of these stages is to identify the strategies' vision and mission, which will lead the enterprise's plan, strategy, goals, and objectives. To attain these aims and objectives, the second stage is to create communication and incentive within the company. The financial and organizational planning for the business's long-term success is the third stage. The fourth step involves comparing the outcomes of short-term actions to the expected outcomes and providing timely input for long-term initiatives. Instead of being a performance measurement tool, using the balance score card to achieve success in this process cycle helps to the enterprise's strategic management and can make the balance score card an integral aspect of the enterprise's long-term strategies.

²⁰ Tayler, W. B. (2010). The balanced scorecard as a strategy-evaluation tool: The effects of implementation involvement and a causal-chain focus. *The Accounting Review*, 85(3), 1095-1117.

²¹ Quesado, P. R., Aibar Guzmán, B., and Lima Rodrigues, L. (2018). Advantages and contributions in the balanced scorecard implementation. *Intangible capital*, 14(1), 186-201.

1.1.5 Cost-Volume Profit Analysis

When a business decides to enter a new commercial activity, when there is a need for a change in its actively continuing activities or when it wants to make financial planning for the coming years with the current capacity, cost-volume-profit analysis including the determination of the elements consisting of profit functions. can reach a decision. With this analysis, which focuses on the future profit level of the business, it is possible to determine how much sales volume and how much cost and profit the business will make. With this analysis, the profit potential of the business and the sales volume and the point where it will not lose, that is, the break-even point, can be easily determined.²²

In short, cost-volume-profit analysis is an application that determines the effect of changes in production volume and costs on the profitability of the enterprise. Cost-volume-profit analysis is very important for profit planning. In this case, the product that determines the profit is also of great importance in determining the sales price and in creating the production components that will create this price with minimum cost.²³ Businesses that will make cost-volume-profit analysis perform this analysis under certain assumptions. These assumptions can be explained as follows:²⁴

Figure. Assumptions for cost-volume-profit analysis

²² Stoenoiu, C. E. (2018). Sensitivity of indicators used in cost-volume-profit analysis. In MATEC Web of Conferences (Vol. 184, p. 04003). EDP Sciences.

²³ Ibid

²⁴ Abdullahi, S. R., Bello, S., Mukhtar, I. S., and Musa, M. H. (2017). Cost-volume-profit analysis as a management tool for decision making in small business enterprise within Bayero university, Kano. *Iosr Journal Of Business And Management (Iosr-Jbm)*, 19(2), 40-45.

Changes in operating incomes and costs arise only from changes in the units of products and services that the business produces and sells.

Total cost consists of two basic elements: fixed cost and variable cost, which varies depending on the production level.

When a graph of costs and production is prepared, total revenue and total costs must be linear for a given production range and a certain period.

Unit selling price, unit variable costs and fixed costs are known and do not change over the period

With the cost-volume-profit analysis, businesses can determine how much production and sales volume, how much profit they can make and what their cost situation will be. This situation is important not only for the cost structure of the enterprise, but also for strategic production planning and profit targeting. Along with strategic management accounting analysis, CVP analysis for the internal processes of the enterprise is important for the successful conclusion of the business strategic plans.

1.1.6 Product Life Cycle Analysis

The product life cycle is the period from the first time a good or service is introduced to the time when it will complete its anticipated useful life. The term refers to a time period. For an engine part, this lifetime may be between 5-10 years, while for some pharmaceutical products, this period may be between 3-5 years. For an outfit, a period of 1 year or less can be foreseen. Product life cycle is of great importance for pricing decisions. This situation indirectly affects profitability. Therefore, this analysis is of great importance in management decisions. The manager makes use

of this analysis in his strategies for production, costs and pricing.²⁵ The product life cycle can also be expressed as the phases of the period in which a product or service will take place in the market. The processes that continue from the market entry stage to the withdrawal stage of a product or service can be listed as the stages of introduction to the market, promotion, maturity and withdrawal. Since there will be different return expectations and pricing strategies in each process, good evaluation of the analysis of these processes by the management directly affects the strategic decisions of the business.

1.2 Performance measurement models

Although performance measurement and assessment have been utilized in the decision-making phases of businesses for many years, it only gained prominence in the 1990s. In the past, profit maximization was related with performance measurement, as profit was the fundamental goal of businesses.²⁶ Apart from revenue growth, profit maximization, and cost reduction, it is recognized and taken into account that performance evaluation is no longer solely financial and is influenced by elements like as staff turnover and motivation, as well as consumer expectations. With the usage of digital technologies and the effects of globalization, business production processes are evolving. This necessitates taking into account a variety of elements in performance evaluations. The Balanced Scorecard, created by Kaplan and Norton in 1992, is a performance measuring model that is widely used by businesses today and mainly fits the standards.²⁷

In essence, performance measurement may be defined as assessing the level of efficiency and effectiveness of an organization's actions. Performance measurement, in a broad sense, refers to the control and valuation studies conducted to observe the activities carried out in the enterprise, to determine and report the level of success, and to determine the degree of achievement of the enterprise's strategic goals. In the control and planning stages of an organisation, performance measurements give the most critical data. Business managers monitor compliance with the planned situation based on performance data and create new plans for future periods. Performance measures also reflect how well the company's goals are accepted by employees and how

²⁵ Ward, K. (2012). Strategic management accounting. Routledge.

²⁶ Nixon, B., and Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research*, 23(4), 229-244.

²⁷ Perkins, M., Grey, A., and Remmers, H. (2014). What do we really mean by “Balanced Scorecard”? *International Journal of Productivity and Performance Management*.

successfully management and employees work together. It also ensures the identification of problematic processes and places inside the company, as well as laying the groundwork for future plans.²⁸

The value of the outputs obtained as a result of the procedures carried out by businesses in accordance with their strategic plans is referred to as business performance. For the efficiency of business processes, these parameters must be measured and reported. When developing their firm strategy plans, senior executives aim for a specific result value. It is possible to determine how accurately and at the target level the planning is progressing using performance measurement. Processes, as well as individual and collective employee performance, are evaluated in this way by offering an effective control system.

For the entire enterprise and its units, performance values, which express the data most needed by the management unit for the purpose of control and planning in enterprises, are collected through several measuring methods. For corporate strategic planning, each of the financial and non-financial factors is vital and crucial. As a result, numerous approaches can be utilized to accurately assess the status of all components. Many approaches are used to evaluate the financial and non-financial success of businesses, as well as the performance of personnel. Employees can use the following methods:

- The 360-degree performance evaluation approach is a means of evaluating employees from a variety of perspectives.
- Evaluation center techniques are the ways for discussing and evaluating an employee's future performance projections.
- A purpose-based evaluation is a performance-improvement process that develops via periodic meetings between the supervisor and the employee, in accordance with the employee's goals defined for a certain period and agreed upon by the supervisor.

²⁸ Bititci, U., Garengo, P., Dörfler, V., and Nudurupati, S. (2012). Performance measurement: challenges for tomorrow. *International journal of management reviews*, 14(3), 305-327.

- In addition, performance assessment phases may include procedures such as ranking, comparison, and registry evaluation, which are traditionally characterized and whose use has been significantly reduced due to high error rates.

Financial methods that will display financial performance data such as business profitability, cost status, and income-expenditure status are the first methods that firms that adopt the mission of profit purpose and value increase and sustainability use when measuring performance. These strategies overlook the employee, customer, or supplier channel in favor of evaluating performance on the basis of numerical data collected by the company. They are crucial tools for assessing a company's financial status and financial stability. However, given the inevitability of the effects of numerous aspects in a company's internal and external environment on its success, financial approaches alone are no longer sufficient. Responsibility accounting and economic added value are two examples of comprehensive financial performance review systems that are commonly employed in enterprises.²⁹

1.2.1 Financial performance measuring

One of the basic performance evaluation and control parts of the accounting unit is responsibility accounting, which is a financial performance measuring tool. This method, which in some ways includes delegation of authority, is critical for unit performance evaluation. The review of the authority and responsibilities provided to unit managers, as well as the performance accomplished by the units and managers at the end of the period, is referred to as responsibility accounting. Performance can be evaluated on a unit-by-unit basis, and the success of unit managers can be determined in this fashion.

Performance measurement is the process of measuring the efficiency and effectiveness of previous enterprise actions. Determining the efficiency levels of the activities is critical for the

²⁹ Cadez, S., and Guilding, C. (2012). Strategy, strategic management accounting and performance: a configurational analysis. *Industrial Management and Data Systems*.

enterprise's future procedures. In management accounting reports, performance data can be found under a variety of titles.³⁰

1.2.2 Economic Added Value (EVA)

EVA is the most extensively used of them. EVA can be used to see corporate financial performance in management accounting reports. The real value of the gap between return on capital and cost of capital is calculated using EVA. Traditional financial performance assessments include approaches such as residual profit and return on investment. EVA, on the other hand, removes the restrictions of these methodologies and makes it easier for the company to improve performance on a unit and overall basis.³¹

The firm benefits from the high value obtained as a result of EVA calculations. In other words, the higher the determined EVA value, the greater the enterprise's value generating capacity. Because EVA calculations are of a direct financial nature, the data is derived from accounting records, resulting in extremely dependable conclusions. EVA is no longer sufficient for businesses because it just measures financial performance. Business success is measured by taking into consideration all financial and non-financial aspects, in keeping with the expanding competition conditions and factors.³²

When a company's primary inputs and outputs are raw materials and finished goods, financial methods of performance monitoring can yield faultless results. However, it is vital to back financial measurements with non-financial data if it is not forgotten that not all business types are production companies and that production enterprises have employees. In their performance evaluations, businesses should examine the profit impact of the people who supply it, as well as product and service quality, revenues, and costs. The performance values of costs and the returns they generate in terms of employee jobs in businesses can't always be quantified directly by financial means. Non-financial measurement methods are used in this scenario. Non-financial

³⁰ Cocca, P., and Alberti, M. (2010). A framework to assess performance measurement systems in SMEs. *International Journal of Productivity and Performance Management*.

³¹ Mamun, A. A., and Mansor, S. A. (2012). EVA as superior performance measurement tool.

³² Sharma, A. K., and Kumar, S. (2010). Economic value added (EVA)-literature review and relevant issues. *International journal of economics and finance*, 2(2), 200-220.

approaches, according to Weetman, make it easier for employees to understand financial procedures and set financial goals. In other words, it encourages the use of financial methods.

Apart from internal financial data, non-financial performance measurement methodologies are richer in terms of delivering information on issues outside the business structure and successful in the business continuity. Stakeholders, managers, investors, suppliers, and customers can all benefit from these measurement methods. Businesses gain more trustworthy data for their long-term activity plans, especially in the service sector, when non-financial performance measurements are shaped inside the framework of financial procedures. Managers employ financial performance values directly in their planning, but they also use non-financial performance data to construct long-term strategic plans. As a result, performance evaluation models like the balanced scorecard, which are especially popular in the hotel industry, are popular strategic planning and management tools since they include financial and non-financial performance evaluations.³³

While financial data and performance evaluations, as well as short-term company status evaluations, might be improved, non-financial measurements are also required for longer-term planning and evaluations. Benchmarking and balancing are shaped on the scorecard's axis when non-direct financial performance data are evaluated as a model. Despite the fact that these models have a standard, any firm or industry can customize them to meet their specific needs.

Financial performance measurement tools are important for firms, but they only provide access to past period information, according to McLaney and Atrill, but non-financial approaches can provide indicators for the future period.³⁴ To put it another way, financial techniques give the data about the current financial status of the business as it is compiled from accounting data. However, using non-financial approaches, it is possible to obtain the data required for strategic goals for future periods. As a result, managers that use non-financial approaches take steps to promptly make the changes or arrangements they need to make in the future. There are two types of scenarios that give rise to non-financial measuring methods. These:

³³ Haron, N. H., Rahman, I. K. A., and Smith, M. (2013). Management accounting practices and the turnaround process. *Asian Review of Accounting*.

³⁴ Atrill, P., McLaney, E., and Harvey, D. (2014). *Accounting: An Introduction*, 6/E (Vol. 6). Pearson Higher Education AU.

- Quantity Calculation

In order to analyze the performance of products production firms, the findings can be acquired by calculating the costs per unit and other cost channels. In service-producing enterprises, however, the position is more difficult. The cost data must be tailored to the employees rather than the unit produced. However, this is insufficient for performance evaluation. Managerial accounting, for example, will mostly be dependent on the number of students when measuring performance in a school. The cost is primarily a fixed expense because the teaching personnel is hired on long-term contracts. Depending on the number of students, the cost of teaching staff will vary slightly in terms of cost per student. Indeed, a rise in student numbers appears to be a factor that lowers the cost of teaching staff. This strategy may be the most appealing performance method for the accountant, but it is insufficient for instructors and others who consider exam success to be a performance criterion. Teachers' key performance measure is student exam success, and they are concerned that changes in the number of pupils would impair this rate. As a result, exam success will be primarily measured in terms of performance at this institution, which is a service business, and the success rate will be tied to costs. That is, the measurement of non-financial parameters takes precedence. Then, for an accurate performance rating, a common and balanced evaluation including financial data is required.

- Measuring Quality

Customer expectations are the most basic point of quality measurement in businesses. The company's goods and services are of high quality, and they perform to the extent that they meet customer expectations. As a result, business personnel' principal purpose is to understand client expectations and direct their work. The quality certificates gained by objective foreign institutions are the second quality indication. The difference between the inputs and outputs of the business processes is the final quality indicator. To put it another way, obtaining correct and high-quality inputs and error-free outputs is a quality indicator. Time wastage or a manufacturing fault, for example. Raw material waste, which occurs for a variety of reasons, has a detrimental impact on production and performance, as well as product quality.

1.2.3 Benchmarking

Benchmarking is a critical approach for gaining a competitive advantage by comparing an enterprise's production and service processes to those of market-leading competitors. Businesses begin benchmarking by choosing which departments or activities they want to compare. Then, competitive businesses that are market leaders or good are identified. Businesses' measurement methodologies for determining their performance levels are determined. The competitor's strengths are then determined, and records are kept so that the company can apply them to its own procedures. The procedure comes to a close with the creation and implementation of new activity plans based on the information provided by the benchmarking firm. Benchmarking also helps to make sense of a company's income level. The level of success of a department manager's income can be plainly established by comparing it to that of his peers.³⁵

Except under exceptional circumstances, comparing historical and current data gives beneficial results. Budget comparisons can produce contradictory results when compared to past period data, but they are necessary for benchmarking applications that can be performed within the company. The compatibility of the companies to be benchmarked is the most essential factor in company comparisons. Businesses' accounting tools, as well as their sizes and types of production, must be similar to a great extent. Benchmarking may not yield a favorable result if this is not the case. Sector statistics, on the other hand, are aggregated data derived from data collected from businesses in the same industry. Making comparisons based on this information also yields favorable results in the industry.³⁶

Through comparisons between managers and departments of similar units within the same organization, performance improvement can be employed as a benchmarking approach. In this situation, managers' cooperation might paint a favourable picture of the company's overall success. However, there are times when managers who are focused on individual unit performance avoid collaboration and sharing knowledge. Furthermore, because an impartial judgment cannot be performed during information exchange because it is a closed benchmarking, the other unit

³⁵ Cinquini, L., and Tenucci, A. (2010). Strategic management accounting and business strategy: a loose coupling?. *Journal of Accounting and organizational change*.

³⁶ Akimova, L., Osadcha, O., and Akimov, O. (2018). Improving accounting management via benchmarking technology. *Фінансово-кредитна діяльність: проблеми теорії та практики*, (1), 64-70.

manager may take into account bad conditions and behaviors. The entire firm could be harmed in this situation. As a result, it is possible to conclude that this style of benchmarking does not guarantee any immediate benefit or performance improvement for the company. For many years, service businesses in the lodging industry have used benchmarking to evaluate performance. For more than 30 years, Smith Travel Research, an international comprehensive company with a long history in this field, has provided benchmarking services to the lodging industry.³⁷

A balanced scorecard is a performance evaluation model that evaluates and explains the relationship between the enterprise's strategic and short-term plans, as well as financial and non-financial performance indicators, and so helps to build strategy. Both the past and current data of the firm are examined using financial and non-financial indicators, and the chance to develop a long-term strategy with future forecasts occurs. The technique, which was established by Kaplan and Norton in 1992, combines financial and non-financial factors to achieve strategic goals and internal communication. By evaluating the current financial situation of the business with the financial aspect of this model, the customer portfolio and expectations of the enterprise with the non-financial dimensions, the excellence in internal processes, and the approach and development of the enterprise to innovations, a multidimensional performance measurement is provided.³⁸ There are four dimensions in this approach, which is based on combining financial and non-financial metrics. Each dimension has its own measurement and valuation criteria. Financial, customer, internal procedures, and learning and development factors are summarized. There are several criteria for each dimension that are important for its measurement and application. Basically, in order to apply this method and examine the main dimensions, the business asks the following questions:

- How do our customers evaluate us? (Customer Size)
- How do our stakeholders evaluate us? (Financial Dimension)
- How do we evaluate ourselves as a business? (Internal Processes Dimension)

³⁷ Assaf, A. G., and Magnini, V. (2012). Accounting for customer satisfaction in measuring hotel efficiency: Evidence from the US hotel industry. *International Journal of Hospitality Management*, 31(3), 642-647.

³⁸ Hernaus, T., Bach, M. P., and Vukšić, V. B. (2012). Influence of strategic approach to BPM on financial and non-financial performance. *Baltic Journal of Management*.

- Can we learn and develop value creation and application? (Learning/Innovation and Development Dimension)

Because accommodation enterprises are located in the service sector, Atkinson emphasizes that financial performance measurement methods alone are insufficient for the accommodation sector.³⁹ As a result, the balanced scorecard model, which was developed and adapted, became the necessary model for measuring the performance of lodging establishments. This strategy is known as a balanced scorecard for various reasons. The main reason for this is that both internal and external influences are taken into account. The second reason is that financial data (past and present) and non-financial data (data about future decisions) are compared. As a result, this strategy provides a balanced assessment of exact financial and more abstract non-financial indicators.

Cranfield University researchers developed the performance prism as an alternative to the balanced scorecard model. It focuses on five key factors that affect business performance. The most distinguishing feature that sets this model apart from others is that, in addition to stakeholder expectations and satisfaction, it also considers stakeholders' contributions to the business's overall performance. This approach can be used in conjunction with the balanced scorecard to improve corporate performance because of the stakeholder perspective.⁴⁰ Because strategy formation is suggested by taking into account all stakeholders' expectations, satisfaction, and contributions, the performance prism, which has flaws on its own, can help a business succeed by combining it with other models, as it provides comprehensive data on various stakeholder types. In addition to these models, new ones have appeared in recent years, such as the Integrated Performance Measurement System and Integrated Dynamic Performance Measurement System, Dynamic Performance Measurement System, and Organizational Performance Measurement System. Financial centrality is avoided in these models, which are developed in accordance with the needs and structures of businesses, and non-financial elements are also evaluated. However, because these models do not

³⁹ Wadongo, B., Odhuno, E., Kambona, O., and Othuon, L. (2010). Key performance indicators in the Kenyan hospitality industry: a managerial perspective. *Benchmarking: An international journal*.

⁴⁰ Najmi, M., Etebari, M., and Emami, S. (2012). A framework to review Performance Prism. *International Journal of Operations and Production Management*.

meet the needs as well as other commonly used models, combining them with models like the balanced scorecard or performance prism will yield more effective results.⁴¹

When looking at the development process of performance appraisals in the accommodation sector, it is clear that financial-based measurements are taken and performance is evaluated in the same way that it is in other production sectors. Non-financial methods and performance evaluations have become vital for the accommodation sector in recent years, as the effect of globalization has increased the usage of information technology and customer-oriented approaches in company plans. Because of its service production and human-oriented working structure, non-financial data, as well as financial data, are critical for enterprises in the accommodation industry. In comparison to the manufacturing industry, the service sector requires performance measuring tools that encompass both non-financial and financial data. The balance scorecard technique, which includes non-financial data and is approved by all sectors, is frequently found while looking at performance measuring methods for lodging businesses. The balance scorecard is the most commonly used approach for performance measurement and control by accommodation firms, with several sectoral variations.

1.3 **Integration of information systems in enterprises**

Although traditional production and management systems were accepted and began to be employed in many organizations around the turn of the century, the rapid advancement of technology in the last 50 years, which ushered in the computer age, forced firms to computerize their processes. In the age of technology, businesses must adapt to technology and refresh and improve their processes in line with technological systems in order to advance and gain a competitive advantage. All segments of society have made it a priority to obtain timely and accurate information. Customers favor businesses that can do this, and businesses that can do so gain a competitive advantage. An integrated information system is a collection of systems that enable businesses to produce by ensuring that information flows effectively, quickly, and reliably within them. Accounting information systems and management information systems have

⁴¹ Taticchi, P., Tonelli, F., and Cagnazzo, L. (2010). Performance measurement and management: a literature review and a research agenda. Measuring business excellence.

emerged as subsystems of the integrated information system and the interface that businesses experience.⁴²

Customer preferences, interests, and communication methods have begun to shift as a result of the increased use of technology in daily life and technological breakthroughs like as the Internet and social media. Customers have gotten more choosy in their tastes since they can more readily obtain and disseminate information. The value of information systems is highlighted in this case. Changing client expectations have a direct impact on organizations, and this condition affects the company's destiny. This societal impact of information systems and technology forces firms to develop and implement new information systems in order to stay competitive. The concept of a system can be defined as a framework made up of many diverse elements with various functions, applications, and features. To put it another way, each system has multiple sub-systems, each with its own unique set of functions. The efficacy of these subsystems in a process, on the other hand, is dependent on their coordinated interactions with one another. In essence, systems have a framework that is organized around a goal and comes to a conclusion after analyzing a set of data. In this scenario, the information system is revealed by the process of arranging and storing data utilizing technology in order to use it in appropriate regions and times.

Information systems were first developed in the 1970s. Information systems, which began to create infrastructure in the disciplines of computer systems, economy, and management during these years, achieved remarkable growth in a short period of time. Today, it is still the most extensively used business system in the sectors of accounting, finance, management, and marketing.⁴³ Businesses' survival in today's competitive environment is dependent on their ability to work in harmony with evolving technology and information systems. Furthermore, effective information system use in management and marketing processes provides organizations with a competitive advantage and a high percentage of strategic decision success. The information system is a complementary information network used by enterprises or individuals in operations such as data production, storage, data processing, classification, and decision making, coordination, analysis, and control. It is an inherent component of hardware and software. In the corporate world,

⁴² Panetto, H., & Cecil, J. (2013). Information systems for enterprise integration, interoperability and networking: theory and applications. *Enterprise Information Systems*, 7(1), 1-6.

⁴³ Romero, D., & Vernadat, F. (2016). Enterprise information systems state of the art: Past, present and future trends. *Computers in Industry*, 79, 3-13.

information systems are used for a variety of purposes. Responding to changing consumer expectations, growing the market or operating in worldwide marketplaces, and giving cost advantages and so increasing customer potential at an accessible price level are just a few examples. In addition, the proper use of information technology provides flexibility and superior quality in terms of service in the company, as well as a competitive advantage and the ability to make successful strategic decisions.⁴⁴

When the use of information systems in businesses and the rates at which they affect businesses are investigated, it is discovered that, first and foremost, it is cost-effective in terms of investment and business value, and that it is employed for these purposes.⁴⁵ Analyses can be made using information systems by giving useful data in the fields of investment, return, and enterprise value. Second, it is frequently employed in the management and organization of businesses. It has numerous advantages in areas like management strategies, strategic decisions, and resource planning. Third, it is commonly employed in the corporate world to provide data. Information systems are required to store both internal and external data and to utilise it for analysis and decision-making. Finally, the use of information technologies in business communication with the outside world has become commonplace. To compete and maintain their long-term viability, businesses must evaluate all of these elements and circumstances. This is a complicated procedure. Businesses should capture data about the items or services they create, as well as data about their employees, customers, suppliers, competitors, and a variety of other important elements, and use that data in their planning by continually analyzing it. Information systems allow for the entry and utilization of these data within the company.

As a result, information systems are systems that may be described as the backbone of an organization and are effective across the board. Furthermore, the adaptability of these systems in terms of business needs and worldwide developments enables firms to employ information systems as a lifetime information system. Despite the fact that establishing such a system is costly and demanding, the return and benefit to the organization after it is established are critical.

⁴⁴ Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. *MIS quarterly*, 463-486.

⁴⁵ Hall, J. A. (2015). *Accounting information systems*. Cengage Learning.

Businesses that use this system benefit greatly from the established information system's flexibility in meeting needs throughout the corporate life cycle.⁴⁶

Only by getting the right information in the quickest and most reliable methods can businesses achieve a competitive advantage and management make the best strategic decisions in the information age. Information systems give precise, reliable, and lean data to corporate management, allowing them to establish the company's goals and develop strategic plans to attain them. Based on daily business activities, there is a serial flow of information collected from internal and external sources. This information flow occurs on a unit-by-unit basis, as well as between units and management, and with data from both inside and outside the company. To put it another way, there is a multidimensional flow of data.⁴⁷

There are raw data records in the first stage, the data generation stage, such as records of guest checks given to guests and cash records, for example, in an accommodation business. The second stage is one of the most crucial, as it classifies the raw data, sends it to the appropriate units, organizes it, and transforms it. For instance, the classification of monthly or weekly issued guest checks. The knowledge generation stage is the third stage. While raw data can be used as information in some production enterprises, it is critical that data from many units, particularly in service enterprises and management units, be turned into usable information. In the production of knowledge, these stages emphasize the relevance of computerization and the establishment of an information system. Finally, there is the period of decision-making. At this point, management must make decisions based on the information that has been delivered to them in the proper manner via the information system. The information system is a critical structure for strategic planning and decision-making, which are the most critical stages in any firm.⁴⁸ The information system is made up of five major components.⁴⁹

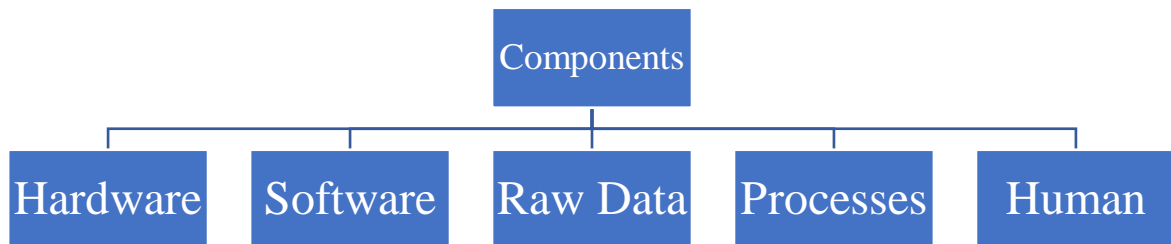
⁴⁶ Zafar, A., Almaleh, A. I., Alshahri, S., Alqahtani, S. S., & Alqahtani, N. D. (2015). Role of information systems in KSA small and medium enterprises (SMEs). *International Journal of Advanced Research in Computer and Communication Engineering*, 4(5), 6-11.

⁴⁷ Ghobakhloo, M., & Fathi, M. (2019). Corporate survival in Industry 4.0 era: the enabling role of lean-digitized manufacturing. *Journal of Manufacturing Technology Management*.

⁴⁸ Popovič, A., Hackney, R., Coelho, P. S., & Jaklič, J. (2012). Towards business intelligence systems success: Effects of maturity and culture on analytical decision making. *Decision Support Systems*, 54(1), 729-739.

⁴⁹ Laudon, K. C., & Laudon, J. P. (2011). *Essentials of management information systems*.

Figure. Major components of information system



Hardware refers to the physical structures that make up an information system, such as computers. Software is the recording and virtual usage environment, which varies depending on the hardware companies. Packages and systems tailored to the type and structure of the firm, such as the accounting data package, can be employed. Raw Data are real-time events about the enterprise's relevant units that are captured in the information system. Knowledge develops from the accumulation and transformation of elements into a meaningful totality. Processes refer to the entire set of steps that begin with data entry in an information system and end with the conversion of that data into useful information and distribution to the appropriate unit management. Human is the information system's operator, follower, and user.

Functional information systems are generated when these components are combined, and they are a crucial component of business success. Information systems and integrated information systems emerge as a result of companies producing or adopting the most appropriate software for their business structures and scales with the appropriate hardware devices. These systems record and classify business data in the quickest and most accurate manner, perform the necessary analyses in the quickest and most accurate manner, and present them to the unit managers. In this approach, a business-integrated information system is the most important tool for a company's success and strategic decisions. With the fast, trustworthy, and thorough information and analysis it provides, it plays a vital role in management choices.

In environments, there are two basic systems that are separated by information systems but related to each other. The first is OLTP (On-Line Transaction Processing Systems), which is commonly used for data entry, recording, and storage, and the second is OLAP (On-Line Analysis

Processing Systems), which is used in analysis processes and processes large-scale and complicated data.⁵⁰

1.3.1 OLTP (On Line Transaction Processing Systems)

OLTP (On Line Transaction Processing Systems), also known as atomic business processing systems and referring to the act of recording data directly on a computer, is a system that offers great convenience in today's businesses by quickly processing, saving, and storing data and, in general, ensuring the execution of daily transactions. It is a convenient system that is widely utilized in all industries. It can be utilized for order entry in the manufacturing of commodities, as well as hotel reservation records in the manufacturing of services. It is not well suited for complex transactions and data kinds, despite the fact that it gives significant convenience when used frequently in daily life. Online analytical data processing systems, or OLAP, are another system built for long-term analysis (On Line Analytical Processing Systems). Analysts prefer this method because it is ideal for large data sets and complicated linked analyses. It's also appropriate for and widely used in strategic infrastructure operations. Only OLTP is sufficient for the execution of daily office tasks. While OLTP is useful for day-to-day operations, OLAP is a strategic system that feeds data to management and is useful for long analytical processes where management may act on the data due to its flexibility and speed.⁵¹ In a business, the manager is constantly challenged with daily and long-term strategic decision-making and planning. The manager will need a lot of information to make these judgments in a healthy manner. For example, a manager who wants to apply the approach of providing free breakfast to his customers in addition to the hotel price need a lot of data at once. First and foremost, he should have a wealth of knowledge on his customers, including the categories of customers (group/individual), their gender, and whether they are traveling for business or pleasure. The kitchen unit should then be aware of the number of staff and the amount of breakfast stuff used. Finally, he should calculate the cost of all of these components and assess whether or not this strategy will be profitable. All of these steps of data

⁵⁰ Reddy, G. S., Srinivasu, R., Rao, M. P. C., & Rikkula, S. R. (2010). Data Warehousing, Data Mining, OLAP and OLTP Technologies are essential elements to support decision-making process in industries. *International Journal on Computer Science and Engineering*, 2(9), 2865-2873.

⁵¹ Sadoghi, M., Bhattacharjee, S., Bhattacharjee, B., & Canim, M. (2016). L-store: A real-time OLTP and OLAP system. arXiv preprint arXiv:1601.04084.

transfer and integration between units are only required for the management to make a tactical application decision swiftly and simultaneously. In this scenario, having a system that can deliver this information is critical for organizations, and it has begun to become a requirement. An integrated information system (IIS) is a technology-based and interactive system that uses information and communication technologies to offer effective data flow and interchange between business units. The most essential aspect is that it combines the enterprise's sub-systems by allowing them to interact and exchange data.⁵²

A management package that provides the required translation and harmonization of common data within the organization for the use of units and management can be described as an integrated information system. Management accounting has been influenced by integrated information systems. It has enabled management accounting to accomplish its tasks more quickly, as well as assisting the firm in presenting more dependable and straightforward information for decision-making. It also aided in the development of the strategic management accounting concept and its rapid incorporation into the corporate system. The term "integrated information system" can also refer to a system that combines the terms "integrated system" and "management information system." The business's organizational structure and operations are the most critical factors in the development and configuration of an integrated information system. The organization chooses information systems modules specific to its units through this structure and processes, and by combining these modules, an integrated information system for use by the business emerges. Even though they operate in the same industry, the integrated information systems that businesses will utilize may differ. The cause for this is the enterprise's organizational structure and processes.

The enterprise resource planning (ERP) system, which first appeared in the 1990s, was designed to weed out the redundant data that occurs in multiple departments of businesses at the same time. As a result, it was planned to establish this technology throughout the sales and production departments, but no effective reaction was received. As a result, the accounting department has been deemed appropriate to administer this system, given the accounting unit's

⁵² Nicolaou, A. I. (2011). Integrated Information systems and interorganizational performance: the role of management accounting systems design. In *Advances in Accounting Behavioral Research*. Emerald Group Publishing Limited.

data sorting and categorization feature, which is the primary data source. This system develops and demonstrates the concept of an integrated information system while also providing a fast, easy, and reliable data flow. An integrated information system (IIS) is a system that selects unneeded data in the company, combines useful data from relevant units, organizes it in a logical manner, and provides it to management. It facilitates the flow of information between units as well as between management and sub-units. The integrated information system arose from the enterprise resource planning system, but it has since developed and supports all planning and control stages, as well as contributing to corporate management through a larger information network. It gets its name from the fact that it collects data from all units in order to carry out an inter-unit mission.⁵³

It would be correct to identify the enterprise as a system if we want to make the integrated information system understandable for an enterprise when evaluated in terms of systems approach. The sub-systems are made up of the business's sub-units, and an integrated information system is created by compiling the data in these sub-systems, sending it to each other, and making it fulfill the management's purposes. The display of interdepartmental operations, information, records, and any data that may be used in management decision and planning in a systematic way to internal and external users as the enterprise's language is known as an integrated information system. An enterprise's integrated information system is a blend of that company's specific structure and operations. While it is viewed as the language that conveys the business to external users, it also expresses the business's underlying technological structure to internal users in this approach. In terms of its integrated information system structure, it both necessitates superior technical infrastructure and permits the organization in which it is utilized to enhance its technology level.

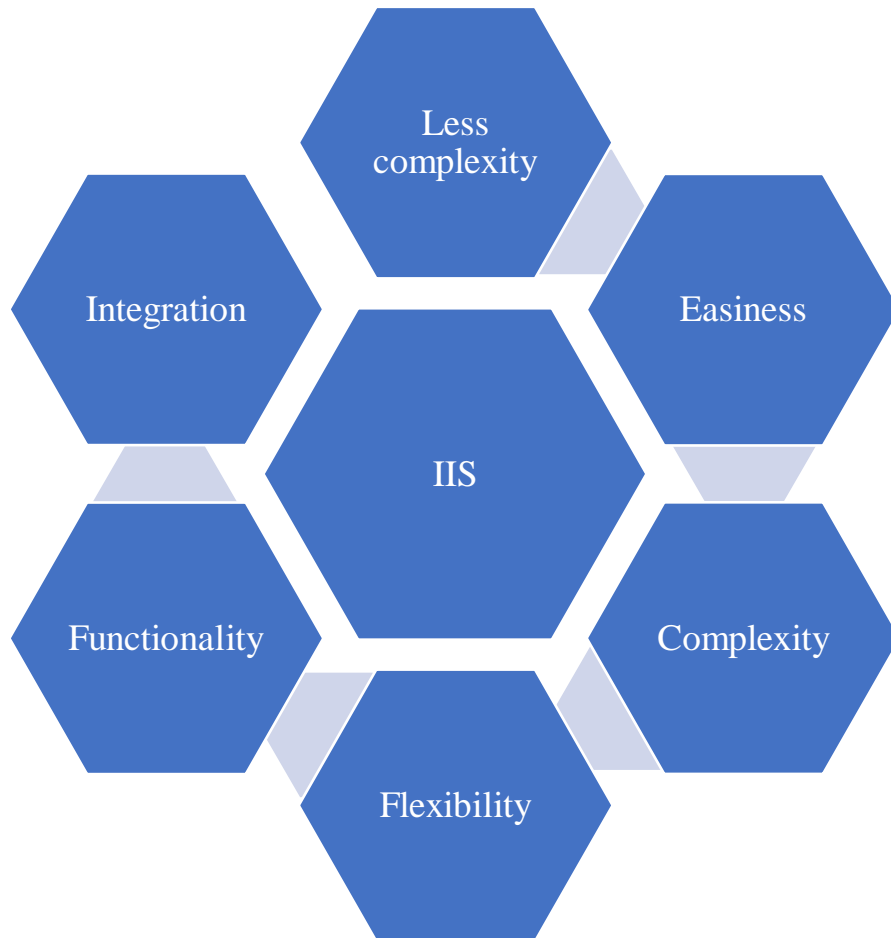
An integrated information system is critical to a company's long-term viability and performance. Despite the fact that the integrated information system was previously employed manually in organizations, it may be considered as a product and helpful result of computerization and technology. Because of its inter-unit structure and ability to span the entire organization, an integrated information system would be unimaginable without a technology foundation. However, the expense of establishing this system is small when compared to the benefits it will give to businesses.

⁵³ Yigitbasioglu, O. (2016). Firms' information system characteristics and management accounting adaptability. *International Journal of Accounting and Information Management*, 24(1), 20-37.

With the advancement of technology and to make it more relevant to accounting and management information, Osama (2011) aims to increase the use of Fidelio Hotel System, which was created by Microsoft in 1988 for hotel businesses and organizes accounting and management information systems together and makes it available to hotel employees. did a study with the goal of In this work, he focused on systems that allow accounting information and information about all other units, particularly in hotels, to be integrated with the management information system, hence allowing management applications and their benefits.⁵⁴ Integrated information systems are becoming increasingly crucial and valuable in enterprises. Information systems have emerged as a natural unit of business as a result of technology advancements and harmonization. This results in a major improvement in corporate performance and operational skills among managers. The following are the primary characteristics of the integrated information system are described below in the figure.

⁵⁴ Osama, S. (2011). Integrated Information System for reserving rooms in Hotels. IJACSA Editorial.

Figure. Primary characteristics of the integrated information system



- Integration is the process of bringing together data from many divisions within an organization.
- Flexibility means that it has a structure that can quickly adjust to changes in the business's organizational structure.
- Functionality refers to the system's depth and the absence of flaws.
- Complexity denotes that the system's structure, independent of its functionality, is complicated. It has a complicated structure between units, yet this does not hinder its functionality; rather, it enhances it.
- Reducing the user-friendly system's complexity to a level that is easier for users to understand and implement.
- Ease of implementation, cost-effectiveness, and installation and adaptation to the business.

- It has a broad scope, which means it encompasses the entire business and has a framework that can be used by any company.

1.3.2 Computer-based management system

A computer-based management system that pulls together elements such as sales, marketing, manufacturing, and planning is known as an integrated information system. The integrated information system necessitates the use of a computer network. It is possible to construct a communication and information network between units in this manner. The term "manual system" only refers to information systems, whereas "computer-based system" refers to the structure of an integrated information system. The term "integrated information system" refers to the combination of three dimensions. These include:⁵⁵

- Data integration, which is the gathering of all data in one location.
- Hardware-software integration is the technical unification of a company's systems as well as the consistent use of technical hardware and software.
- Information integration means that data from several divisions and departments is brought together for a single goal in keeping with the company's vision and mission, and a meaningful appearance is created.

When an enterprise's integrated information system is properly positioned and utilised by management, it gives the company a significant competitive edge. Accelerating operations, removing extraneous data and repetitions, and evaluating and displaying information that should not be focused allows companies to cut expenses, improve quality, and gain a competitive edge. There are numerous definitions available, including numerous terms for an integrated information system. It's natural for a notion to be conveyed in a variety of ways depending on the systems and businesses in which it's applied. The integrated information system is defined as an upper system that is formed by the combination of sub-systems in the enterprise and that ensures the coordination of these sub-systems with one another in its simplest and most concise form. An integrated

⁵⁵ Nicolaou, A. I. (2011). Integrated Information systems and interorganizational performance: the role of management accounting systems design. In *Advances in Accounting Behavioral Research*. Emerald Group Publishing Limited.

information system is made up of three main components: technology, people, and processes. Technology underpins the integrated information system. Man controls, directs, and serves it. Furthermore, this system is a process that uses and processes data from other business processes. It has a variety of purposes in addition to these structural properties. We can list the structure and functions of the integrated information system by looking at the common points in the definitions established while explaining the components:⁵⁶

- Assist with data integration
- Assist with process orientation
- Data production in real time
- Data sharing in collaboration
- A unit-based structure
- Having the ability to service all business units
- Using client/server technology
- Constructing a data network area that is integrated
- Adaptive to the user's preferences

These components make up the integrated information system's building blocks. The integrated version of the footer information system, which is used in two ways as an accounting information system and a management information system, is known as an integrated information system. A set of systems in which the information flow is organized and provided by a mix of many sub-systems within the organization, which is commonly used by management in its decisions and operations, and has begun to become a requirement today.

The accounting unit is defined as an information system that captures financial events connected to a firm, organizes them by classifying them according to internal and external needs, and reports them to the appropriate users in a systematic manner. Essentially, it is appropriate to

⁵⁶ Oztemel, E., and Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. *Journal of Intelligent Manufacturing*, 31(1), 127-182.

refer to it as an information system because it performs a number of operations on critical business data.

The fact that information systems help firms with accounting has paved the way for the development of an integrated information system. Every department has its own data management system. The accounting department benefited from the fact that numerical data is relevant to all departments, and the requirement for the accounting department to have greater relationships with other units and management aided the construction of an integrated information system. The accounting information system is an integrated information system that offers and interacts with data from the enterprise's internal and external environments and, as a result of this interaction and data, significantly contributes to business decisions.

Accounting department employees are primarily responsible for gathering and processing financial data about the company for internal and external consumers. However, as globalization and technology have increased the complexity of competing circumstances, it is now important to store and process non-financial data that may affect financial decisions, as well as financial data, in the accounting unit. As a result, an accounting information system has formed, which delivers financial and non-financial data to internal and external users of the organization by methodically reporting it using technology.

To put it simply, the management information system is the information system that the business uses in its daily operations and that focuses on information and reports about its activities. This system is set up in such a way that business management can access daily, monthly, and longer-term statistics as well as offer information on all of the company's units. The management information system creates a link between personnel and processes in the company and guarantees that data is stored, separated, analyzed, and evaluated in a timely manner so that management can make strategic decisions. Data collection, storage, and classification are the most critical functions of a management information system. This allows management to rapidly access the data they require. The management information system can be used efficiently in all business kinds and by all departments, and gives a significant competitive advantage for all business types, thanks to its functionality and speed.

The term "information system" refers to the act of taking raw data and organizing it in a way that benefits the appropriate units. The management unit is the one that makes the most use

of this system and incorporates it into its strategic decisions. The management information system refers to the management's preparation and presentation of all data and information pertaining to the entire enterprise, both on a unit and overall basis. Enterprise resource planning refers to the software that is created and utilized to ensure the coordination and harmonization of an organization's existing information flow. Enterprise resource planning and management information system are two terms that are used interchangeably in this context.

A management information system is a system for collecting, sorting, correcting, and reporting data that is utilized by one or more managers in an organization to carry out their responsibilities. It's also an information system that managers utilize to design strategy and implement tactics. Computer-based information system or management system are other terms for management information system. There are five steps to implementing a management information system. Research, analysis, design, implementation, and maintenance are the steps involved. The first stage entails conducting research and making decisions about the type of information system that is best suited for the management system and its goals. During the system analysis phase, the emphasis is on the system's information demands and functional requirements. Technical details such as hardware, software, data, people, and network to be employed in the system are planned during the system design phase. Furthermore, this is the stage at which the information system is established. The system implementation phase is when the information system is first utilized, tested, personnel are adapted to and trained on the system, and the enterprise's existing information system is totally replaced with the new information system. The final stage, information system maintenance, relates to the business functions' continued usage of the new information system following necessary harmonization.

Chapter 2. Strategic management accounting and integrated information system applications in hospitality businesses

2.1 Management accounting unit and its importance in hospitality business

Particularly in large-scale hotel chains, the accounting department plays an essential role in the overall operation of the company. Even though the accounting unit is essential for any size of company, it may not be able to locate a distinct department for accounting in smaller-scale accommodation enterprises. This is despite the fact that the accounting unit is essential. This procedure is often carried out by the front desk staff. On the other hand, the accounting department of large-scale accommodation firms is often housed in a distinct department and reports to the general management in direct fashion.

Because accommodation establishments are considered to be service-providing enterprises, the accounting transactions that take place there may be analyzed using a variety of different accounts and responsibility areas. Responsibility centers are the individual units within an accommodation company that play an active role in the business's overall operational revenues and expenditures. Departments such as restaurants and rooms are examples of responsibility centers. These responsibility centers are responsible for the activities involving the recording and analysis of accounting data that take place in enterprises that provide accommodation. In organizations that provide accommodation, conducting an audit of the daily operations, as well as the revenues and client accounts, may be a highly arduous and multifaceted task. In order to carry out this audit, activity reports need to be collected from all of the units that bring in revenue and have expenses associated with their operations.⁵⁷

Because of this, these inspections are performed throughout the night, and the procedure that encompasses them is known as night inspection. During the night audit, any and all income-related and expense-related actions, as well as accounting, are scrutinized in relation to the accommodation business. Because it requires evaluating and comparing the data from all of the units, this procedure is fairly complicated. Information technologies also serve to make night auditing, which is one of the most critical steps in the accounting of accommodation transactions, easier and more reliable to do.

⁵⁷ Jagels, M. G. (2006). Hospitality management accounting. John Wiley and Sons.

The Uniform Accounting System for the Hospitality Industries is the foundation for the bookkeeping procedures used by a great number of hospitality-related companies. The ability to monitor the income and cost status as well as the financial performance of each department in an accommodation facility on its own is the most significant advantage offered by this system.⁵⁸ The following is a list of the responsibilities that fall under the purview of the accounting department in hospitality establishments:⁵⁹

- The creation of financial statements on a monthly basis;
- Being in charge of all of the actions that take place across the company by utilizing the many accounting functions;
- Putting together the operational budget for the coming year and planning investments;
- Deriving an estimate of the weekly earnings and costs of employees based on an analysis of financial statements;
- Offering guidance on financial matters to the management of the hotel;
- To guarantee that all of the enterprise's regional and institutional entities are properly coordinated with one another;
- Compiling all of the company's financial accounts and distributing them to the appropriate stakeholders in the business;
- To keep track of the money made;
- Ensuring the safety of the hotel;
- To monitor the payments and to calculate appropriate discounts;
- Being responsible for the payment of the employees' paychecks.

Because of the unique structural requirements of their operations, firms that provide accommodation may make use of a variety of accounting accounts. The client accounts that are opened at the front cash register are the accounts that contain the most extensive information in the hotel and accommodation industry, and it is crucial to follow up on such accounts. These accounts are used to record all financial transactions that occur for a certain client, beginning with the moment they enter the firm and continuing through the time they leave. With the help of

⁵⁸ Harris, P. J., & Brown, J. B. (1998). Research and development in hospitality accounting and financial management. *International Journal of Hospitality Management*, 17(2), 161-182

⁵⁹ Seal, W., & Mattimoe, R. (2011). Management Accounting Research in the Hospitality Sector. *Review of Management Accounting Research*, 497-520.

information systems, it is feasible to carry out these transactions in a manner that is both comprehensive and free of errors.⁶⁰

As a result of the fact that accommodation businesses engage in the production of services, there may be variations in the accounting operations that are carried out. The occupancy or demand rates of accommodation firms cannot be expected out of season, which presents a challenge for accounting methods. This is in contrast to the situation in many industrial organizations. There are negative repercussions for an organization's effective financial efficiency during periods of excess idle capacity.⁶¹

Aside from this, the kinds of expenditures incurred and how they are structured change from one manufacturing firm to the next. High fixed costs are incurred as a result of the fact that there is typically an investment in a facility, in addition to the cost disparities that exist between the various divisions of the accommodation industry. Since establishments that provide accommodation are, by definition, in the service industry, the long-term viability of their offerings is not in dispute. The procedure for providing accommodation services begins when the client checks in and continues until the moment the customer checks out. There is no storing of supplies. Accounting methods that are tailored to the hospitality industry must be developed, implemented, or adapted in order to ensure the continued economic viability of the sector. This is because accommodation firms have distinct organizational structures.

Management accounting is comprised of the most efficient instruments that managers may utilize for the management of businesses and the planning of their companies' futures. When the management of a company makes optimal use of the data and tools provided by management accounting, they are able to make choices with a long-term perspective and plans for the company's future. It is essential to the accomplishment of the decisions made that these data be generated in a strategic manner, which means that the analysis of these data should take into account the external environment in which the organization operates.⁶²

In the service industry, many people have the impression that the accounting unit is not really connected to the operational procedures. When it comes to operational procedures, dealing

⁶⁰ Cote, R. (2001). Accounting for hospitality managers. Educational Institute of the American Hotel & Accomodation Association.

⁶¹ Jagels, M. G. (2006). Hospitality management accounting. John wiley and sons.

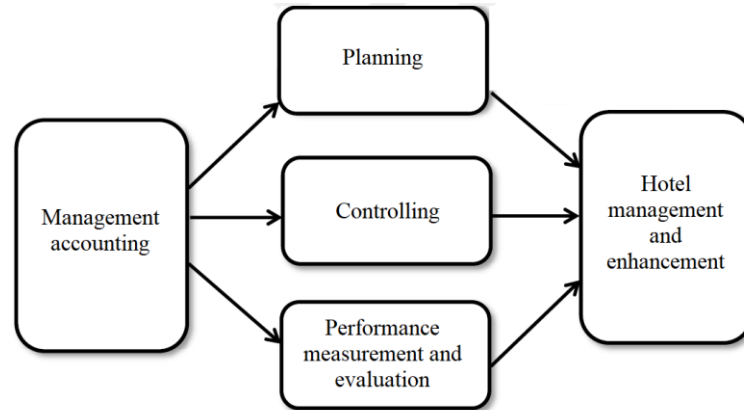
⁶² Kotas, R. (2014). Management accounting for hotels and restaurants. Routledge.

with numbers and financial reports in the service industry is not something that occurs very frequently. In spite of this, the essence of the accounting unit and the service procedures are not nearly as dissimilar as one may believe they are. In point of fact, the data and information that must be given by the accounting unit serve as a compass for all of the service procedures. The data that is captured by the accounting unit, after being categorised, arranged, and reported, serves as a guidance for company managers on the procedures. In management accounting, the raw accounting data are arranged in accordance with the requirements of company managers, and then the results of this organization are reported to management. With this information, managers are able to formulate strategies by settling on decisions regarding the operations of the companies.

Due to the fact that the hospitality industry falls within the service sector, the procedures and instruments used for management accounting in the hospitality industry are not as effective and efficient as those used in manufacturing organizations. In this particular scenario, making a clear reference to management accounting procedures that, when used by manufacturing organizations, allow accommodation enterprises to achieve success may have unintended negative implications. After conducting an efficient analysis process, the accommodation businesses need to decide on and put into place the management accounting tools that are appropriate for their particular systems in order to prepare for the next steps in the development of the company. On the other hand, it is clear that management accounting procedures have evolved to the point where they are no longer an option for improving the performance of a firm or ensuring its ongoing viability, regardless of the type of organization or the mode of production it employs. It is common knowledge that all sorts of businesses may profit from the utilization of management accounting tools at several crucial phases, including but not limited to planning, the development of strategies, budgeting, performance assessment, and cost analysis.⁶³

Figure 1. Management accounting function in hospitality businesses

⁶³ Mia, L., & Patiar, A. (2001). The use of management accounting systems in hotels: an exploratory study. *International Journal of Hospitality Management*, 20(2), 111-128.



If the significance of management accounting and the responsibilities it plays in the context of accommodation firms are described using a more generic approach:⁶⁴

- The most essential function of management accounting, which is applicable to any type of business, is to provide assistance to managers in the process of decision-making on behalf of the organization. When taking into account the current state of affairs in the accommodation industry, management accounting provides information to management in the form of internal and external analyses and calculations. This enables management to arrive at a conclusion regarding whether an accommodation business should make an investment or whether it should buy or construct a new building. With all of this information in mind, management conducts an analysis of the company's profitability and continuity before settling on an investment strategy.
- The provision of control over the operations and procedures of an organization is yet another significant function that management accounting plays for firms. An efficient accounting system allows for the management and control of the kitchen department, which is the unit with the highest mobility among the departments of an accommodation business and has an effective share in the revenues. This is because the kitchen department is responsible for the preparation of food for guests. Accounting information is necessary for the management of the company in order to perform operating appraisals. Management accounting is the process of compiling all of this information, reporting it to management, and establishing controls based on that information.

⁶⁴ Kotas, R. (2014). Management accounting for hotels and restaurants. Routledge.

- One further essential function of management accounting is to assist in the measurement of performance throughout the entire organization as well as on a departmental level. An establishment that provides accommodation has the ability to determine, in light of the information and reports that will be offered by the management accounting system, which room type generates the most money as well as which food item has the highest demand. Success assessments allow for the elimination of variables that contribute to increased costs for the company, which in turn makes it possible to support those aspects that have a good impact on the performance of the organization.

2.2 Reports of strategic management accounting

In contrast to manufacturing companies, service companies have reports that are uniquely tailored to each of its divisions, which are utilized by management. The accounting unit is responsible for preparing standard reports such as income statements, balance sheets, and cash flow statements that are utilized by all organizations. On the other hand, distinct reports are compiled for the several operational divisions that make up hotel enterprises:⁶⁵

- Daily reports on the income of the accommodation establishment (balance sheet, income statement, cash flow statement);
- Daily reports on the payments made to employees in terms of their salaries This report is significant for enterprises in the hospitality sector since both the number of employees and their remuneration are subject to cyclical fluctuations.
- Estimates of revenue from rooms; it is vital to have this report when establishing the number of persons who will be employed in accommodation businesses and when making arrangements about the rooms;
- Anticipated items on the dining and beverage menus; Using this report, the management of the accommodation institution may develop menu arrangements that are in line with their profitability by determining the meals and beverages that are most loved and the ones that are least favored in the restaurant of the establishment. In this manner, the contribution to the operating income and

⁶⁵ Al-Wattar, Y. M. A., Almagtome, A. H., & Al-Shafeay, K. M. (2019). The role of integrating hotel sustainability reporting practices into an Accounting Information System to enhance Hotel Financial Performance: Evidence from Iraq. *African Journal of Hospitality, Tourism and Leisure*, 8(5), 1-16.

profitability of the restaurant unit, which is the most important income and cost element for the accommodation business, can be increased while its costs can be reduced. This is because the restaurant unit is the most important income and cost element for the accommodation business.

There are two primary kinds of reports that are utilized by management in the operation of accommodation organizations. These are historical reports that show the outcomes of operations from the day or week before, and these are prediction reports that indicate the forecasts for the day or week after that.⁶⁶ These are the reports that are used internally by the hotel management. The fact that they provide the hotel management with information on the activities and outcomes that take place in all of the hotel's units is the reason why they are referred to in this manner. While daily and weekly reports are employed as management tools, the majority of the information contained in monthly financial reports is generic in nature (such as income statement, balance sheet and cash flow statement). The daily reports, much like the previous reports, are quite thorough. From these reports, the managers of each unit monitor the data pertaining to their respective units, including the state of their income and expenditures, payments, and staff productivity. Additionally documented and displayed in these reports are the daily payments that are given to the employees. The majority of the information contained in weekly reports is used for forecasting and quality control. These reports take on a more meaningful strategic role when they are analyzed over a longer time period than daily reports and when they include projections for the future. On the other hand, monthly reports are broad financial reports that may be evaluated and watched by both internal management and external parties (Hales, 2005).

As a result of the fact that accommodation establishments were established with the intention of turning a profit and ensuring their continued financial viability, these businesses are in a position to conduct efficiency improvement studies using strategic management accounting approaches. When looking over the available research on the topic, one may see that there have been a few academic studies conducted in this area. Taking all of these factors into consideration, it has been determined that large-scale businesses have their own specialized accounting units, and that several hotels have begun to implement strategic management accounting technologies.

The research that was carried out by Vrdoljak and Bukvic (2004) on the Excelsior hotel that was operating in Croatia revealed that modern management accounting tools had begun to be

⁶⁶ Gil, M. A., Jiménez, J. B., & Lorente, J. C. (2001). An analysis of environmental management, organizational context and performance of Spanish hotels. *Omega*, 29(6), 457-471.

applied in this hotel, and that very positive results had been obtained. Additionally, the researchers discovered that the effectiveness of modern management accounting techniques was increased with the effective use of technology. The Excelsior hotel, which began utilizing strategic accounting tools that were still in the development stage at the time of the research, had highly significant outcomes, particularly in the areas of control and planning, and set the framework for effective management.⁶⁷

It was a goal of the research that Pavlatos and Paggios (2009) carried out in Greece about the hospitality industry to ascertain the percentage of establishments that make use of the activity-based costing system, which is one of the management accounting instruments. Based on the findings of the study, it has been shown that current management accounting approaches are given great priority, in addition to the fact that these techniques are accepted. Traditional management accounting tools are also found to be highly accepted.⁶⁸

A study was carried out in India by Chand and Ambardar (2013) with the intention of determining the degree to which management accounting application tools for service organizations differ from those used by manufacturing businesses. The findings of this study indicate that the application tools of management accounting are somewhat different in the hospitality industry compared to those used in other service-oriented businesses. They explain this phenomenon by pointing to the structural disparities that exist among the various kinds of companies that operate in the same market.⁶⁹

According to the findings of a study that was carried out by Abadi and colleagues (2013) on the level of application of management accounting tools in the planning, control, and pricing decisions made in hotels in Tehran, it was discovered that the use of management accounting tools in hotels in Tehran is common, but the only limiting point in this regard is technology.⁷⁰

⁶⁷ Vrdoljak, I., & Bukvić, I. (2004). New management practice in the hotel business—The case of the hotel Excelsior. *Management: Journal of Contemporary Management Issues*, 9(1), 93-112.

⁶⁸ Pavlatos, O., & Paggios, I. (2009). Management accounting practices in the Greek hospitality industry. *Managerial Auditing Journal*.

⁶⁹ Chand, M., & Ambardar, A. (2013). Management Accounting Practices In Hospitality And Service Enterprises: A Comparative Research. *Journal of Commerce & Accounting Research*, 2(3).

⁷⁰ Abadi, A. H. T. N., Kermani, N. K., Hafez Mollaabbasi, A., Ojaki, A., Shokri, S. T., Soltani, M., ... & Rafipour, S. (2013). An investigation of the level of using the management accounting methods in the process of planning, controlling and pricing the hotel industry. *International Research Journal of Applied and Basic Sciences*, 4(6), 1587-1595.

According to the findings of the study that Enoch (2015) carried out on hotels in Nigeria, management accounting studies and reporting have a direct role in the growth of the hospitality sector. This finding was reached after the researcher found that such a function was both beneficial and direct. In this scenario, it is possible to draw the conclusion that the right management accounting practices and strategies created on the basis of the firm have a beneficial impact on the growth of the sector as well as the economy of the country as a whole throughout the nation.⁷¹

When the studies are analyzed throughout the course of time, it has been shown that contemporary accounting tools, in addition to the more conventional accounting tools, have recently begun to be utilized more frequently in recent years. In addition, it has been seen that the presence of an accounting unit is most likely to be questioned in large hotels, and that the likelihood of there being a distinct accounting unit drops as the number of stars in a hotel falls.

2.3 Integrated information system and software usage

Every company, regardless of whether it was founded with the intention of making a profit or not, must generate some level of revenue in order to be able to carry on with their operations. The maximization of profits and the fulfillment of the requirements imposed on the business by its many stakeholders should be the top priorities of businesses that were founded with the intention of making a profit. Businesses that provide lodging are also enterprises that are started with the intention of generating a profit, and the major objective of these businesses is to generate a profit at the conclusion of the accounting period.⁷²

In the 1960s, firms in the hospitality industry had their first encounters with computers. In the years that followed, there was a gradual progression toward harmony and growth that was seen. However, the expansion of the tourist industry's influence on the economy, globalization and technical advancements, and the growing prevalence of computer use all contributed to a faster pace of computerization and the development of associated software in the hospitality industry. In today's world, a great number of lodging establishments make extensive use of technology and information systems in both their internal and exterior operations. They are able to accomplish both the provision of timely and trustworthy information as well as the collection of the essential

⁷¹ Enoch, O. K. (2015). Management accounting reports and hospitality industry development in Nigeria. *European Journal of Applied Business Management*, 1(2), 83-99.

⁷² Osama, S. (2011). Integrated Information System for reserving rooms in Hotels. *IJACSA Editorial*.

data for their internal systems thanks to this method. Due to the increased speed and increased level of security that information systems give, hotel firms now have an advantage over their competitors.

According to Medlik and Ingram (2000), information systems and technologies provide accommodation firms electronic equipment that are quick, dependable, and affordable. These electronic gadgets may be found in the following areas:⁷³

- Administrative tasks include spreadsheets, process software, and administration and storage of data
- Means of communication include telex, email, telephone, texting, and radio.
- Management of the following: reservations, advertisements, phone charging stations, and in-room entertainment options (hospitality)
- Budgeting, accounting, and calculating taxes are all aspects of finance.

Management: Management information systems and decision making, developing management information system
Internal Systems: Property and Energy Management, Security and Fire Control
Management:

- Marketing: sales on the internet and demographic profiling of customers

Technology and the information systems it provides are currently one of the most significant aspects that influence the hotel and hospitality industries in a variety of locations. Information systems have had an impact on enterprises that provide lodging, not only in terms of the satisfaction and potential of their customers, but also in terms of the improvement in efficiency and performance that information systems have brought to their internal operations. The information systems that businesses that provide accommodations develop for their clientele are what ultimately lead to increased levels of customer satisfaction. At the same time, the information systems that businesses that provide accommodations develop for their management teams are what ultimately lead to increased levels of efficiency and profitability within the businesses.

⁷³ Medlik, S., & Ingram, H. (2000). *The business of hotels*. Routledge.

Computerization, which integrated information systems provide to accommodation firms, boosts income and profits while simultaneously lowering transaction costs. Integrated information systems also reduce operational expenses. Because of the computer network, the business's many department managers who want access to vital data and information may have it instantly delivered to them all at the same time. This prevents the waste of time and money associated with transaction costs and makes it possible to make judgments that are efficient, prompt, and dependable. Since the creation of services takes place in enterprises that provide lodging, there is a strong emphasis on human-oriented procedures. In this scenario, the company's possession of a system that is capable of continuously compiling and analyzing data pertaining to both the personnel and the quality of the service is a significant competitive advantage for the company. Managers are able to access data on the kitchen, front office, and rooms simultaneously, and by establishing a link between them, they are able to assess the production and activity rate of the hotel. This guarantees that transactions are carried out quickly while also providing these three units with simultaneous access to information.

There is a routine that occurs at places that provide lodging that begins before the guest arrives at the institution and continues after the guest has left the establishment. Without the assistance of an information system, neither the management nor the control of these operations is conceivable. Because it is essential for all of these activities to achieve quick development, the utilization of an integrated information system is very close to being obligatory.

In the hospitality industry, there are a variety of different systems that may be utilized for conducting financial and non-financial transactions. A reservation system is an example of the type of information-providing system that each individual unit may have. However, the primary function of the integrated information system in hotels and other lodging businesses, as it is in other types of organizations, is to store information and data for hotel management and make management choices based on that information and data.

The integrated information system enables accommodation establishments to not only store data for all units on a single system but also to ensure that the service is produced quickly, without interruption, in a manner that is commensurate with the customer's expectations by effectively providing communication between units. When it comes to production of services and production that is focused on people, speed is the single most critical aspect for efficiency. Integrated

information systems are what allow firms that deal with accommodations to operate at such a rapid pace.

When examining the expansions and uses of information technologies in lodging facilities, one thing that stands out is the preparation of information systems for both clients and management. Because the lodging industry is a subsector of the tourist industry, which is a dynamic industry that continually interacts with consumers within the framework of service, information systems and technical advances that are connected to customers are significant in the accommodation industry. Applications for customers include things like online reservation, business-related wireless communication and applications, applications made with personal passwords given to customers like self-service, and e-commerce technologies. Some examples of applications for customers are based on technology, like online reservation. There are additional apps that have been developed specifically for management, including as programs for managing client relationships, storing data, managing income, and controlling costs (Zhao and He, 2008). These systems can be thought of as individual applications in their own right. The integrated information system that the business utilizes is a holistic system that not only contains the data from all of these applications but also develops the basis for these applications.

The restricted use of technology that is compatible with the organizational structure of lodging establishments is the one and only element that impedes the usage and expansion of integrated information systems in these establishments. For this reason, while integrated information system software and usage are encountered especially in large-scale accommodation enterprises, the existence of unit-based information systems may be in question in small-scale enterprises. This is because integrated information system software and usage are encountered especially in large-scale accommodation enterprises.⁷⁴

Internal information systems and external information systems are the two categories that may be found in lodging establishments that use information systems. computerized reservation systems, global distribution channels, and the internet are all components of this external information system. It is possible for a firm that provides accommodations to build its own own separate system. It is also possible for it to have the goal of playing an active part in the market by

⁷⁴ Pizam, A., & Holcomb, J. (2010). *International dictionary of hospitality management*. Routledge.

incorporating a number of different systems that have been built in this respect. The strategic choices made by the firm itself will determine how this option plays out. The term "Lodging Management Systems" refers to computer-based systems that an organization is able to employ in its own operations related to the operation of accommodation businesses. A number of different subcomponents can make up an Accommodation Management System when it is utilized in a hotel or similar establishment. These subcomponents can either be run independently or connected into the larger system in order to offer the management of the company with information that will assist them in making strategic choices, cut expenses, and enhance connections with customers.

The utilization of information management systems in hotels and other lodging companies is of utmost significance. The information system that is going to be used should have a structure that satisfies the expectations of the business, adapts to the complex and multi-functional structure that is going to emerge as a result of its size, and provides easy use and quick service, particularly for the front office unit where a lot of data are recorded.

Table 1. Accommodation Business Information System Selection Criteria

Criteria	Description
Functionality of the System	The services provided within the scope of the accommodation business and the sub-items related to these services can find a response in the system to be used.
Availability of the System for Development	The accommodation business adopts new services and processes, and the system they use is easy to adapt to these innovations and to be flexible.
Data Storage Capacity and Duration of the System	For the data to be recorded regarding the accommodation establishment, the size of the storage capacity is as long as the storage period of the recorded data.
Analysis and Reporting Capability of the System	Ability to prepare reports and analyzes to be used in strategic and daily decisions from the data recorded through the system.

System Access	It is the time and ability to adapt to a multi-use environment that allows use within the scope of the entire accommodation business.
Internal Integration of the System	Ability to be integrated with other information systems, databases or decision-making tools used in the hospitality business.
External Integration of the System	Having features that enable information exchange with relevant databases outside the accommodation business.

The hospitality industry makes use of a wide variety of information systems and software in their operations. This variety is a direct result of the fact that hotels and other lodging facilities each have their own unique organizational make-up. In other words, companies are allowed to develop and deploy an information system that is suited to their own internal structures and levels of operation as they see fit. The following is a list of some of the software that is widely used in enterprises that deal with accommodations:

2.3.1 External Information Systems

The 1960s marked the beginning of the widespread implementation of third-party information systems. In these years, the use of computerized reservation systems was the first step toward what would later become known as an external system. In the 1980s, the adoption of global distribution networks marked the beginning of this system's expansion. The term "central reservation systems" refers to reservation-oriented systems that are only used and developed by airline companies. On the other hand, "global distribution systems" refer to the systems that have emerged as a result of bringing together under one holistic roof the various reservation systems that are used by hotels, car rental services, travel agencies, and airline companies. Because the internet is now fully integrated into both everyday life and the operations of enterprises, these systems have been redesigned, and the internet has begun to provide increasingly sophisticated chances for communication mediation on a daily basis. The first computerized reservation system to be used in this region was called Sabre, and it was utilized by American Airlines in the 1960s.

In the not too distant future, the manufacturing of such programs gathered momentum, and other kinds of software like Amadeus and Galileo came into being. The tourist and hospitality business may benefit from external information systems in a number of ways, the most common of which are improved reservation services and recognition. Customers benefit from increased convenience and speed when many types of information and services related to bookings can be accessed through a single link. In addition, the stability of the system is one of the selling points that encourages clients to do business via the internet. A further significant advantage that the hotel industry has is that clients have a high degree of familiarity and preference for certain firms.

- **Amadeus Global Distribution Systems:** One of the external distribution systems known as Amadeus is home to one of the most technologically advanced civil computer facilities found anywhere in the world. It is a centralized reservation system that caters to a wide variety of companies working in the travel industry all over the world. More than a hundred hotel chains and thousands of other accommodation companies are contained inside its system, and the information pertaining to each of these establishments is accessible.⁷⁵

In 1987, Amadeus, Air France, Iberia, Lufthansa, and SAS came to an agreement to establish a new worldwide distribution system. This is where it all began. Amadeus has achieved its goal of being a significant worldwide distribution system that demonstrates its presence in all stages that are necessary for the travel industry. It is one of the comprehensive global distribution channels that was produced in Europe after Sabre, the first computerized reservation system that emerged in the USA, and that brings together all of the touristic services by including a variety of accommodation options as well as transportation options. This channel was developed after Sabre, which was the first computerized reservation system that emerged in the USA.

- **Galileo Global Distribution Systems:** The Galileo Global Distribution system was established in 1993 by 11 North American and European airlines. It has a worldwide service network and can be said to be a leader in technology development. One of the most important reasons why the Galileo system is preferred by the agencies is that it contributes greatly to the acceleration of the services of the agencies thanks to the technologies it has developed. Although not as ambitious as Amadeus and Sabre, it is an important global distribution system that comes after these two

⁷⁵ Radulović, L. (2013). The role and potential of Global Distribution System Amadeus for Tourism development at the global level. *The European Journal of Applied Economics*, 10(1), 28-38.

systems in the industry. The fact that it operates all over the world and focuses on technology ensures the recognition of the system and the continuity of its activities.⁷⁶

- **Worldspan Global Distribution Systems:** It was founded in 1990 as a consequence of the merging of Delta and Northwest airlines. It does not display typical features in terms of its corporate structure and instead markets its services through distributors. In terms of both breadth and market share, it is ranked fourth among the many worldwide distribution systems. This platform offers efficient information technology services for intermediate services such as sales, ticketing, and departure control in the airline industry. These services include the design and development of dependable reservation and payment systems for businesses that provide tourism-related services. Because of this, airline firms are able to direct their attention to the most important aspects of their businesses, including the lowering of costs.⁷⁷

The framework of the customer-focused, collaboration-based, and unique operational model of the global distribution system Worldspan is what sets it apart from other systems. It is a global distribution system that has been able to keep its existence as a separate system in the industry thanks to its innovative structure, positive attitude towards cooperation with other businesses and systems, and customer-oriented understanding of the system. All of these factors contributed to its success.

2.3.2 Internal Information Systems

Information systems that strive to bring together the internal units connected to the administration of accommodation establishments in order to execute data recording and processing functions are known as internal information systems. These systems can be prepared for different units by changing according to the scale and needs of the accommodation establishments, or they can be prepared in a holistic structure with comprehensive modules for all of the important main units in an accommodation establishment. Either way, they can be organized in one of two ways: either they can be prepared for different units, or they can be prepared in a holistic structure. In particular,

⁷⁶ Falko, Y. (2016). Analysis of the global distribution systems on the international market of tourist services. *European Journal of Management Issues*, 24(6), 15-22.

⁷⁷ Budiasa, I. M., Suparta, I. K., & Nadra, N. M. (2018). Factors that influencing the usage of global distribution system. In *Journal of Physics: Conference Series* (Vol. 953, No. 1, p. 012053). IOP Publishing.

the front office and accounting divisions, who are responsible for the majority of the data recording and computation operations, should use some software to assist these activities.

It is possible that the use of information system software limited to the front office of the majority of small-scale accommodation enterprises will be adequate to make the operations of such facilities more manageable. On the other hand, it can be seen that the front office, restaurant, human resources, customer relations, and any other significant units at bigger size and luxury accommodation enterprises all use the same software, which allows for data exchange and reporting to be produced.

Among these several applications for internal administration, Fidelio, Opera, Suite8, and Athena are well-known and widely used pieces of software that have the most extensive structure. Accommodation business information systems like as Fidelio and Suite8 are both capable of being characterized as integrated systems. Both Opera and Athena are examples of information system software that are continuously working toward the creation of an all-encompassing framework. This is accomplished through their development on a modular scale, and new versions are continuously being created.

- Fidelio Version 8 Integrated Hotel Management System: The Fidelio system is a web-based application that allows for the entry of data through the use of a web page. In this particular system, the Oracle database is utilized. The Fidelio system is an all-encompassing integrated information platform that possesses the majority of the features necessary for the hotel and lodging industry. For this reason, it is a technique that is desired and utilized by the management in the majority of large-scale accommodation firms.⁷⁸

With the release of its most recent iteration, Fidelio Suit 8, it has achieved a fully integrated structure, which is in accordance with the requirements and advancements in technology. This version satisfies all of the criteria, whether they pertain to the everyday service needs of a hotel or the more remarkable luxury service demands that a hotel should have. It has a framework that encompasses and integrates all of the different elements, including customer relations, front office

⁷⁸ Kraguljac, V., & Milašinović, D. (2017, June). Information and communication technologies in hotel management and tourism education. In Tourism International Scientific Conference Vrnjačka Banja-TISC (Vol. 2, No. 1, pp. 430-447).

operations, and restaurant services. It is now possible to say that the system as a whole is fully integrated thanks to this.

This system, which has been developed to satisfy the requirements of the rapidly developing tourist industry as well as the structure of specialization and boasts a stable structure made possible by the Oracle database, was created to fulfill these criteria. Multiple distinct departments, including customer relations, asset management, restaurant services, online reservation, and personnel control, are brought under the purview of a single system in order to facilitate smooth communication and provide broad reporting choices.

- Opera Hotel Management System: This system is a hotel management system that consists of modules designed according to business purposes and may thus be used for accommodation businesses of various scales. Since the modules were developed according to business functions, the system can also be used for hotel chains. Opera provides the option to supply uniform data, set standard rates, and manage from a single center, which is a significant benefit, particularly for enterprises who are involved in the operation of chain hotels. One of the characteristics that sets apart this system is the fact that it is adaptable to a variety of purposes. In addition, one of the additional benefits of using this system is that it generates all of the reports that may be required for hotel management in a quick and dependable manner. This is one of the other advantages of using this system. Reports that provide the ability to do statistical comparisons and assessments are of utmost significance for the decisions that may be made regarding the future of the organization. Because of this, transforming the processed data into the proper reports gives the management with a great deal of ease and aids in the process of decision making.⁷⁹

This system's primary benefit is that it enables the integration of a large number of modules. This, in turn, makes it possible to perform data storage and reporting across the entirety of the hotel by making use of the necessary modules and the Oracle database. Even while it primarily satisfies the requirements of the front office, it has the potential to expand into an integrated system inside the company if it is used in conjunction with additional modules.

⁷⁹ Maria, N. N., Thecla, O. K., Chukwu, S., & Ifenyinwa, O. (2018). An analysis on the impact of the usage of Fidelio OPERA property management system in Transcorp Hilton Hotel Abuja. *European Journal of Computer Science and Information Technology*, 6(2), 1-19.

- Suite8 Automation and Reservation Systems: Suite8 is a program that places an emphasis on the needs of the client at every stage of the process, beginning with the search for a hotel to meet lodging requirements and continuing through post-check-out communication. It is possible to effectively direct and manage a wide variety of activities that are a part of the hospitality industry. These activities include the development of healthy customer relations with the services that are provided, as well as restaurants, sales and marketing, housekeeping, and banquet event management. The information gathered at the center demonstrates that it has a holistic structure since it makes it possible to fulfill the needs and facilitate the interactions of customers, as well as to coordinate personnel and manage internal units and infrastructure. In addition to this, it gives the option to generate reports using data that are in accordance with the requirements. These reports make it possible for the management of the company to conduct evaluations and make decisions in a timely and efficient manner. This system is a significant one that was developed relatively recently and demonstrates an integrated structure. It offers a management opportunity for all significant performance control points and units of enterprises that provide lodging. This method addresses all aspects of running a business, from bookkeeping to sales and marketing, from people to housekeeping, and so on, which is one of its many strengths. Other strengths include the fact that it is not one-sided. It is possible to say that it may cover a large gap among information systems in the lodging sector thanks to the integrated structure that it possesses, and that it also satisfies the notion of an integrated information system.⁸⁰

⁸⁰ https://docs.oracle.com/cd/E65581_01/docs/Suite8 Software Description Version 8.9.5 June 2014.pdf

Chapter 3. Empirical research

3.1 Research purpose

The primary objective of this research is to assess the effects that firms' strategic management accounting methods and integrated information systems have on the industry as a whole, specifically with regard to accommodations businesses. When taking into account the sectoral and economic implications of lodging firms, the methods that these businesses employ are of utmost significance in terms of recruiting clients on a worldwide scale and contributing to the economic viability of the sector as a whole. In addition, given that the accommodation businesses create services rather than tangible goods, a distinction between them and the manufacturing businesses is to be anticipated in terms of the systems that are utilized. It is unknown whether or not the establishments that provide lodging make use of the appropriate application tools and whether or not these tools are compatible with the organizational structure and operational procedures of the businesses.

For this reason, in addition to the primary purpose of this study, strategic management accounting tools, which are utilized by the management and accounting units of accommodation enterprises, were determined, and their compatibility with the business structure and strategies was examined. This was done in light of the fact that the primary purpose of this study was to determine strategic management accounting tools. In addition, studies have been conducted on the use of information systems and integrated information systems, both of which are extremely significant both inside the internal units of the businesses and in their relationships with their clients. As a consequence of this, the significance of utilizing strategic management accounting tools and integrated information systems in the service sector, as well as the effects these tools and systems have on the performance values of lodging businesses, were analyzed.

3.2 Research methodology

3.2.1 Research approach

Quantitative research is chosen as a research approach which is an empirical research approach that involves the collection and analysis of numerical data to address research questions and hypotheses. This approach is widely used in the social sciences, including business and management, to study relationships between variables and test hypotheses. The quantitative research approach is appropriate for this thesis because it allows for the collection and analysis of

large amounts of data from a large number of participants, which is essential for this study as the sample size is large and data is required from a significant number of hospitality businesses in Azerbaijan. Quantitative research is characterized by its rigorous and systematic design and data collection methods, which increase the accuracy and reliability of the results. The structured questionnaire survey used in this study is an example of a standardized data collection method that ensures that all participants are asked the same questions in the same way. This standardization helps to reduce researcher bias and increase the reliability and validity of the data collected. The quantitative research approach also allows for the use of statistical analysis techniques to test hypotheses and establish relationships between variables. In this thesis, the regression analysis will be used to determine the effect of strategic management accounting practices and integrated information systems on business performance in hospitality businesses. The use of statistical analysis techniques provides a robust and rigorous method for testing hypotheses, making the results of this study more reliable and generalizable.

Quantitative research is also useful for making inferences about large populations based on a sample of the population. This is particularly relevant for this thesis, as the study population is made up of all 4- and 5-star hotels in Azerbaijan, and a sample of 40 hospitality businesses will be used to represent the population. Another advantage of quantitative research is that it provides a systematic and structured approach to data collection and analysis. This makes it easier to compare results between studies and to replicate results, which is important for the advancement of knowledge in a particular field. The structured questionnaire survey used in this thesis is an example of this systematic and structured approach, as it ensures that all participants are asked the same questions in the same way.

3.2.2 Sampling

The sample size and sampling method used in a research study play an important role in determining the representativeness and generalizability of the results. In this master thesis, a sample size of 40 hospitality businesses in Azerbaijan will be used, and the sample will be determined using a convenient sampling method. Convenient sampling is a non-probability sampling method that involves selecting participants based on their availability and willingness to participate in the study. This method is suitable for this thesis because it is relatively easy to

implement and does not require a complex sampling design. It is also cost-effective as it does not require a lot of time and resources to select the participants.

One of the main advantages of convenient sampling is that it allows for the rapid collection of data. This is particularly important for this thesis, as the sample size is relatively small, and it is necessary to collect data from a significant number of participants in a relatively short amount of time. The use of convenient sampling makes it possible to collect data from the participants quickly and efficiently, which is essential for the completion of this thesis within the given timeframe. Another advantage of convenient sampling is that it is suitable for exploratory research, which is often the case in master's theses. This thesis aims to explore the relationship between strategic management accounting practices, integrated information systems, and business performance in hospitality businesses in Azerbaijan. The use of convenient sampling makes it possible to collect data from a sample of the population that is representative of the larger population of interest, which is essential for this exploratory research. However, it is important to note that convenient sampling has some limitations that must be taken into consideration when interpreting the results. For example, the sample may not be representative of the larger population of interest, as participants may self-select to participate in the study based on their level of interest or knowledge about the topic. This may lead to a sample that is not representative of the larger population, which could affect the generalizability of the results.

3.2.3 Data collection

The data collection method used in the master thesis was a structured questionnaire survey. The survey was personally distributed to the participants between 20 September 2022 and 10 December 2022. The questionnaire consisted of questions that aimed to gather information about the participants' positions, years of experience, education levels, operating time of their business, number of rooms, number of employees, and their evaluation of different aspects of accounting and performance management. The questionnaire also covered the use of internal and external information systems and the participants' evaluations of their performance measurement tools. The participants were asked to indicate their level of agreement or usefulness for different statements and their business performance evaluation period. The questionnaire was designed to collect data that could help in evaluating the impact of different accounting and performance management tools on business sustainability and profitability.

3.2.4 Data analysis

The collected data in the study will be analyzed using a combination of descriptive and statistical methods to gain insights into the relationships and patterns present in the data. The following methods will be employed:

- Frequency Distributions: This method involves organizing the data into categories or classes and counting the number of observations that fall into each category. Frequency distributions help to understand the distribution of the data and identify any outliers or anomalies.
- Percentages: This method calculates the proportion of observations that fall into each category as a percentage of the total number of observations. Percentages help to understand the distribution of the data in a relative sense
- Pearson Correlation: Pearson Correlation is a statistical method used to measure the linear relationship between two continuous variables. It calculates the correlation coefficient (r), which is a value between -1 and 1 that represents the strength and direction of the linear relationship between the two variables. A value of 1 indicates a strong positive linear relationship, a value of -1 indicates a strong negative linear relationship, and a value of 0 indicates no linear relationship.

3.2.5 Ethical considerations and limitations

The study will be conducted in accordance with ethical principles and standards. The participants will be informed about the purpose of the study and will be asked for their consent to participate. The collected data will be kept confidential and will only be used for research purposes.

This study has several limitations, including a potential self-report bias, limited generalizability to other countries and industries, and the potential for omitted variable bias. The results should be interpreted in light of these limitations.

3.2.6 Research Hypotheses

H₁1: Strategic management accounting application tools and integrated information systems have an impact on business performance.

H₀1: Strategic management accounting application tools and integrated information systems do not have an impact on business performance.

H₁₂: There is a positive relationship between competition conditions of the market and the use of strategic management accounting tools.

H₀₂: There isn't significant relationship between competition conditions of the market and the use of strategic management accounting tools.

3.3 Findings

Under this heading, the answers and ratios of the demographic questions asked of the participants by the survey method within the scope of the study, the scale questions and their ratios, and the results of the analysis made within the scope of the study's main and sub-hypotheses were examined and evaluations were made. All of this information can be found in the table that can be found under the heading "Results." The first step was to conduct descriptive analyses that included demographic information and then to assess the outcomes of those analyses. Tests of dependability, which are essential in order to guarantee the accuracy of the analyses, were carried out. For the purpose of determining whether or not the research exhibited a normal distribution, the Kolmogorov Smirnov test, which is a normality test, was carried out.

It is vital to do this test so that subsequent analyses may be determined that will fit within the parameters of the research. In the event that the data exhibit a normal distribution, analyses are carried out making use of parametric approaches. However, parametric tests can't be used on data since they require a normal distribution to work properly. In this situation, nonparametric approaches are the ones that should be used to identify the relevant analyses. The Mann–Whitney U test and the Kruskal–Wallis H test, both of which are nonparametric, were utilized in the investigation of the hypothesis since it was established that the data from this study did not exhibit normal distribution after the Kolmogorov–Smirnov test was conducted.

Table 1 displays the responses of the applicants to the questionnaire on their current occupations, which was produced in preparation for the application.

Table 1. Occupations

Job position in hotel	N	%
General manager	5	12.5
Assistant Accounting Manager	7	17.5

Accounting staff	14	35
Accounting Manager	10	25
Other	4	10
Total	40	100

The questionnaire for the study was targeted at the accounting unit as this was determined to be the most pertinent unit. As a consequence of this fact, the participants are all situated in different roles inside the accounting unit. Table 1 demonstrates that forty percent of the participants work in accounting, and the remaining fifty percent of the questions and responses were provided either directly by the general manager, the assistant accounting manager, or the accounting manager. It was anticipated that the replies would be provided by the general manager, the assistant manager, or the accounting unit due to the fact that the subject of the research is more closely tied to the accounting unit. It is possible to say that the majority of the responses offered this dependability. This is due to the fact that the most trustworthy data will be received from the general manager as well as the accounting unit managers and assistant managers. Because the study questionnaire was only sent to the relevant unit, the findings should be considered credible. The accuracy of the data was further strengthened by the fact that nearly half of the responses were provided directly by the unit managers or authorized people such as the general manager and assistant manager.

Table 2. Experience durations

Experience	N	%
less than 1 year	4	10
1 to 5 years	16	40
6 to 10 years	12	30
more than 11 years	8	20
Total	40	100

According to Table 2, fifty percent of the respondents had worked in the industry for six years or more (those with six to ten years of experience plus those with more than eleven years). When it comes to being able to grasp the culture and functioning of a business, seniority is an essential component that must be present. The responses provided by individuals who hold higher

seniority within that business and unit are likely to be more dependable since they have a greater degree of influence over the running of the firm. When done in this manner, the dependability of the results of the analysis will also be increased. As a result of the study, it is feasible to reach the conclusion that the participants have an enough command of the corporate culture and strategy to provide replies that are both accurate and healthy. Information on the education levels of the participants is given in Table 3.

Table 3. Education level

Latest educational level	N	%
Bachelor	12	30
Master	19	47.5
PhD	5	12.5
other	4	10
Total	40	100

Information on the operating periods of the enterprises is given in Table 4.

Table 4. Business activity periods

Period	N	%
1 to 5 years	4	10
6 to 10 years	7	17.5
11 to 15 years	17	42.5
16 years and above	12	30
Total	40	100

While 4% of the participating enterprises are composed of newer enterprises, enterprises with 6-10 years of experience and between 11-15 years of experience have a ratio of 60%. 30% are relatively more corporate businesses operating for more than 15 years. The fact that the majority of them have been operating for 6 years or more is also important in terms of the reliability of the survey data. Since an institutional structure will directly affect the methods used in management and strategies, the length of the activity period is important for the reliability of the

results of the data. Information on the number of rooms and permanent employees in the enterprise is shown in Table 5.

Table 5. Business activity periods

Permanent employees	N	%
1-25	0	0
26-50	8	20
51-75	9	22.5
76-100	10	25
101 and above	13	32.5
Number of rooms	N	%
between 100-150	11	27.5
between 151-200	22	55
201 and above	7	17.5
Total	40	100

According to the statistics presented in the table above, the bulk of the participating businesses are large-scale operations. The magnitude of an organization, the number of personnel it employs, and the institutional structure it maintains all become more robust in direct proportion to the number of available rooms in that establishment. Large companies are likely to have more diverse software applications and computer systems since their organizational structures will be more complicated as a result of the greater number of workers and variety of services they provide. When the results from the survey are analyzed, it is found that the number of rooms is often between a medium and high level when compared to the four and five star categories. As a direct result of this, there are a significant number of staff members. This needs a higher diversity and stability in the tactics and systems that are employed, both internally and while interacting with customers. It is possible to draw the conclusion that the data collected from the results of the study are the approaches that are the most dependable and widely utilized.

All of the analyses utilized in this study have a 95% confidence interval. For questionnaire replies, the confidence interval offers a likelihood. In its simplest form, reliability analysis may be defined as the consistency of the questionnaire replies across multiple samples. Applying the same questionnaires to multiple sample groups or to the same sample at various periods is one of the

strategies to be used for reliability analysis. This might not always be achievable, though. The third approach is to use Cronbach's Alpha, a measure of how consistently the survey questions are worded. In assessing the same construct, it is the consistency of expressions (like the likert) that is important. The dependability of the survey questions is satisfactory if the Cronbach's Alpha coefficient for the entire evaluation of the survey questions is 0.70 or higher. Table 6 contains information on the benefit level of strategic management accounting tools used in accommodation businesses.

Table 6. Benefit level of strategic management accounting tools

	Med.	Std dev	Cronbach alfa
<i>Cost-Based Strategies</i>			
Activity Based Costing	3,89	1,46	0.881
Kaizen Costing	2,56	1,85	
Life Cycle Costing	3,05	1,99	
Quality Costing	3,73	1,70	
Target Costing	3,61	1,56	
Value Chain Costing	3,38	1,82	
Just In Time Production	3,14	1,99	
<i>Strategies Based on Planning, Control and Performance Measurement</i>			
Benchmarking	3,57	1,73	0.956
Balanced Scorecard	3,06	1,93	
Cost Volume Profit Analysis	3,70	1,62	
Integrated Performance Measurement	3,14	1,98	
Strategic Costing	3,73	1,49	
Strategic Pricing	3,85	1,52	
Brand Value	4,23	1,32	
<i>Competitor-Centered Strategies</i>			
Evaluating Competitors' Costs	3,83	1,51	0.760

Market Positions of Competitors	4,10	1,12	
Competitors' Performance Values	4,25	1,12	
<i>Customer Centric Strategies</i>			
Customer Profitability Analysis	4,43	0,49	0.561
Product Lifecycle Analysis	3,41	1,82	

Strategic management accounting tools used in accommodation businesses are listed under four main headings as cost-based strategies, strategies based on planning control and performance measurement, competitor-centered strategies and customer-centered strategies. When examined respectively, activity-based costing, quality costing and target costing methods are the methods preferred and seen as beneficial by the accommodation enterprises. The variables in the study include different cost-based strategies and their ratings on a scale of 1 to 5, as well as the mean (Med) and standard deviation (Std dev) of the ratings. The Cronbach alfa is a measure of the internal consistency or reliability of the ratings.

The strategies are grouped into three categories: cost-based strategies, strategies based on planning, control and performance measurement, and competitor-centered strategies. The ratings for each strategy are presented in the form of the mean (Med) and the standard deviation (Std dev). The mean values for the strategies range from 2.56 (Kaizen Costing) to 4.43 (Customer Profitability Analysis), with higher values indicating higher ratings. The standard deviation values show the spread or variability of the ratings, with lower values indicating more consistent ratings and higher values indicating more variability. For some of the strategies, the Cronbach alfa is also reported. A high value of Cronbach alfa (close to 1) indicates that the ratings are reliable or consistent, while a low value indicates that the ratings are unreliable.

In general, the data suggests that the customer-centric strategies have higher ratings, with the highest rating being for Customer Profitability Analysis (4.43). The cost-based strategies and the strategies based on planning, control, and performance measurement have lower ratings, with the lowest rating being for Kaizen Costing (2.56). The standard deviations for most of the strategies are relatively high, indicating that there is significant variability in the ratings.

Among the customer-centered strategies, customer profitability analysis emerges as the method used by all accommodation businesses with an average of 4.43. At the same time, it is seen that the intense competition conditions in the service sector manifest themselves in the selected

accounting tools. However, financially significant methods are of low use. This situation can be expressed as the reason for the abstaining positions of the accommodation businesses in terms of cost and price. Customer expectations are of vital importance for all businesses in the service sector. However, financial indicators are also important for the financial sustainability of the enterprise. Reducing costs and reflecting them on prices will have a positive effect on customer expectations. Table 7 shows the participants' evaluations of the benefits and costs of integrated information systems used in businesses.

Table 7. Integrated information systems

	Mean	Std dev	Cronbach alfa
The installation cost of the system is very high.	3,87	0,99	0,944
Long training processes are required for the introduction and use of the system by the personnel.	3,64	1,26	
The costs of software related to personnel training constitute the largest part of the total costs of these software.	3,49	1,35	
Changes in business processes due to software cause confusion in activities.	3,56	1,12	
When evaluated as a whole, the benefits of integrated information system software are more than their costs.	4,01	1,03	
The use of integrated information systems reveals the need for knowledgeable new personnel in this field.	4,03	1,10	
The use of integrated information systems leads to a decrease in the number of employees.	3,76	1,06	
Using internal and external information systems together is more beneficial in terms of business activity processes.	4,10	0,85	
Integrated information systems can meet the required information completely.	4,28	0,71	
Integrated information systems allow to prepare various and fast reports with a single data entry.	4,21	0,91	

Integrated information systems are flexible enough to keep up with technological and global changes and innovations.	4,08	0,77	
The data obtained from the integrated information system is accurate, reliable, fast and timely accessible.	4,05	0,80	
Integrated information system provides cost advantage by reducing the margin of error in data and transactions.	4,08	0,77	
The integrated information system facilitates the operations of the employees and provides an increase in productivity.	4,14	0,77	
The integrated information system can be easily understood and used by the employees.	4,04	0,79	
The integrated information system you use has directly contributed to the profitability of the business and the acceleration of business processes.	4,03	0,85	
The use of an integrated information system increases the qualifications of the personnel to be employed.	4,05	0,73	

When Table 7 is examined, the highest mean scores (4.28) were given for the statement "Integrated information systems can meet the required information completely" and the lowest (3.49) for "The costs of software related to personnel training constitute the largest part of the total costs of these software". The standard deviation values range from 0.71 to 1.35, with the lowest values given to the statements "Integrated information systems can meet the required information completely" (0.71), "The use of internal and external information systems together is more beneficial in terms of business activity processes" (0.85), and "The data obtained from the integrated information system is accurate, reliable, fast and timely accessible" (0.80). The only statement for which the Cronbach's alpha value is provided is "The installation cost of the system is very high", with a value of 0.944, indicating that the responses for this statement are consistent and reliable.

According to the results, although integrated information systems are costly methods, their benefits and benefits to the business prevent these costs and provide advantages in the medium and long term. In addition to increasing the quality of employees, they also have an easy-to-understand structure. Short trainings are sufficient to understand these systems. Integrated

information systems are important in terms of internal communication and customer satisfaction. Customers whose demands and expectations are fulfilled quickly have a positive judgment about the business. This is very important for the customer-centered structure of accommodation businesses. The communication speed required for customer satisfaction can be easily achieved with integrated systems. On the other hand, the ability of administrators to take quick decisions and gain an advantage in intense competitive conditions can be achieved by fast and reliable evaluation of internal data.

Comprehensive reports that can be obtained rapidly through these systems are important tools used by management in business strategic decisions. The fact that integrated systems are beneficial for businesses has been confirmed by the results of the analysis. However, it is clear that they have a costly structure. These costs are one-time additional expenses that occur as system installation, employee training and qualified employee recruitment costs. For this reason, the acquisition of these systems by bearing these partial and non-continuous costs provides advantages to the enterprises in the medium and long term.

Table 8, Table 9 and 10 show the effects of strategic management accounting and integrated information system usage on business performance, respectively.

Table 8. Strategic management accounting tools impact on business performance

	Mean	St dev	Cronbach Alfa
Return on Investment Increased	3,88	0,82	0,987
Return on Assets Increased	3,73	1,04	
Growth Rate of Sales Increased	3,82	1,01	
Cash Flow from Operations Increased	3,81	0,99	
Inspection Cost Decreased	3,76	1,11	
Business Profitability Increased	3,67	1,05	
Market Share Increased	3,99	1,08	
Customer Complaint Rate Decreased	3,81	0,99	
The Number of New Products and Services Offered Has Increased	3,76	0,88	
Increased Customer Satisfaction	3,87	0,85	

Service Quality Has Increased	3,81	0,91	
Service Delivery Speed Has Increased	4,11	0,79	

Factors are listed in Table that describe how well the company is performing. The averages are often 3.50 and above, and there is a positive effect when the impact of using strategic management accounting methods on these factors is analyzed. The enterprise's financial and non-financial performance measures are positively impacted by the strategic management accounting instruments that are in use. Customer satisfaction and service delivery are seen to be affected more strongly. This is a result of the customer-focused organizational structure of the lodging industry. The data produced in Table 6 using the strategic management accounting tools typically displayed a structure that was focused on the customer. Because of this, knowing that the approaches employed are accurate and successful is demonstrated by the positive effects observed in the performance criteria defined on the customer axis. The finding that financial performance metrics are less significantly impacted supports the idea that lodging businesses do not select the most appropriate and efficient financial techniques.

Table 9. Integrated information systems impact on business performance

	Mean	St dev	Cronbach Alfa
Return on Investment Increased	3,85	0,75	0,988
Return on Assets Increased	3,43	0,86	
Growth Rate of Sales Increased	3,76	1,07	
Cash Flow from Operations Increased	3,87	1,14	
Inspection Cost Decreased	3,78	0,99	
Business Profitability Increased	3,66	0,92	
Market Share Increased	3,60	1,19	
Customer Complaint Rate Decreased	3,67	0,95	
The Number of New Products and Services Offered Has Increased	3,88	1,13	
Increased Customer Satisfaction	3,95	0,99	
Service Quality Has Increased	3,93	0,95	

Service Delivery Speed Has Increased	3,88	0,87	
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The same performance metrics described in Table 8 are reviewed in Table 9 in relation to the outcomes of the integrated information system. Examining the findings reveals that integrated information systems have a favorable impact on the enterprise's financial and non-financial performance measures. Since the averages are once more 3.50 or above, it is generally believed that the integrated information system has a beneficial impact on business performance. Customer satisfaction and the speed of service delivery are the two areas where the application of strategic management accounting solutions has the most impacts. Although there is a general favorable effect, customer-centricity makes the most contribution. This outcome is consistent with the typical activity arrangements of lodging facilities. It may be claimed that integrated information systems function in line with their goals since one of its top aims is to satisfy consumer requests and expectations more rapidly and efficiently.

Table 10. Strategic management accounting tools and integrated information systems impact on business performance (together)

	Mean	St dev	Cronbach Alfa
Return on Investment Increased	3,86	0,95	0,988
Return on Assets Increased	3,92	0,98	
Growth Rate of Sales Increased	3,75	1,12	
Cash Flow from Operations Increased	3,91	0,99	
Inspection Cost Decreased	3,76	1,22	
Business Profitability Increased	3,69	1,19	
Market Share Increased	3,66	1,09	
Customer Complaint Rate Decreased	3,80	1,10	
The Number of New Products and Services Offered Has Increased	3,81	0,97	
Increased Customer Satisfaction	3,85	0,78	
Service Quality Has Increased	3,96	0,95	
Service Delivery Speed Has Increased	3,89	0,89	

The information in Table 10 is organized to demonstrate how employing integrated information systems and strategic management accounting tools affects business performance. When used together, applications that are shown to have a favorable impact when considered independently also have a beneficial impact on performance values. Since they are looked at independently, the total impact is focused on customer satisfaction and service delivery speed. This scenario is directly tied to how the service industry functions and is structured around the needs of the lodging businesses. Performance information in this direction draws greater attention as consumer policies are given more consideration. To attain the same effectiveness and success in the financial performance metrics of lodging places, it can be argued that some research in this area is necessary. Table 11 shows the rates of exposure to environmental changes and market competition intensity rates of accommodation establishments.

Table 11. Environmental changes and market competition intensity ratios of enterprises

	Mean	St dev	Cronbach Alfa
Product/Service development and innovation investments	3,82	0,78	0,923
Customer requirements	3,84	0,81	
Activities of competitors	3,84	0,77	
Market share	3,97	0,91	
Political and economic factors surrounding the business	4,19	0,94	
Promotion and advertising competition	4,38	0,48	0,788
Product and service development	4,36	0,77	
Customer requirements	4,23	0,67	
Price competition	4,58	0,49	
Distribution channels and market share	4,49	0,72	

Because they are part of the service industry, lodging facilities frequently interact with their surroundings. Because of this, any changes to the external environment have a direct impact on the internal environment and plans. On the other hand, political and economic variables are at the

top of the list of elements that open the door for the development of these consequences. Businesses that provide lodging benefit from increased demand. The country's security status is one of the key requirements for being favoured by foreign clients. Foreign visitors can prefer visiting nations that provide a secure atmosphere and peaceful politics. The demand for international tourists is also impacted by a stable economy and the level of foreign currency rates.

The country's currency's higher-than-average value might have a negative impact on the demand that lodging facilities experience. Due to difficulties in covering local expenses, a currency that is overly undervalued can both raise demand and decrease profitability. This makes a foundation of trust that is protected by legislation and a sound economic system the most crucial drivers of tourism demand. The service industry is very competitive. Due to the presence of a high rate fixed cost structure, there might be intense rivalry on variable cost components like distribution channels and product and service development. The service-based organizational structure of lodging facilities can be directly linked to intense rivalry.

When the industry is analyzed in terms of environmental change and market competitiveness, it is clear that the latter has a greater impact. In reality, the sector's preference for a market-oriented competitive approach and its conviction that it would defeat rivals by utilizing elements of a customer-oriented approach, such as advertising, distribution channels, and addressing consumer wants, become abundantly obvious. This demonstrates more emphatically the preference for a customer-oriented approach over a system-oriented one.

According to the findings of the Kolmogorov-Smirnov test, the data from the study do not demonstrate normal distribution. This conclusion was reached based on the investigation of normality. The statistical outcome of this test, as well as the fact that it does not show a normal distribution, is broken down and explained in Table 12.

Table 12. Kolmogorov simirnov normality test result

	Kolmogorov Smirnov Z	Asymp. Sig. (2 tailed)
Cost-Based Strategies	3,445	0
Strategies Based on Planning, Control and Performance Measurement	2,974	0
Competitor-Centered Strategies	3,660	0
Customer-Centered Strategies	3,879	0

Strategic Management Accounting Implementation Tools	2,792	0
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As a result of Kolmogorov Smirnov Z test, it has been determined that Cost Based Strategies, Planning Control and Performance Measurement Based Strategies, Competitor Centered Strategies, Customer Centered Strategies, Strategic Management Accounting Implementation Tools are not normally distributed. Pearson correlation was used to test the hypotheses. Table 13 explains the main hypotheses of the study, H1 and H0.

Table 13. The relationship between strategic management accounting application tools and integrated information systems and business performance

		Integrated Information System	Business Performance
Strategic Management Accounting Implementation Tools	Pearson Correlation	0,541	0,662
	Sig. (2 tailed)	0,000	0,000
Integrated Information System	Pearson Correlation		0,312
	Sig. (2 tailed)		0,000

There is a positive moderate (0.542) relationship between strategic management accounting application tools and integrated information systems. There is a positive moderate (0.662) relationship between strategic management accounting application tools and the business performance of these tools. There is a positive low level (0.312) relationship between integrated information systems and business performance.

When these results are evaluated collectively, Table 13 shows that strategic management accounting application tools and integrated information systems affect business performance. According to the answers of the participants, both systems have a positive effect on business performance separately, at different levels. The overall effects are also positive. However, although there is a positive effect, the intensity of this effect is low. In other words, the strategic management accounting application tools and integrated information systems used;

1. It cannot be used effectively.

2. Wrong methods are preferred.

Business performance is expected to be affected more by these factors. However, the rates of exposure were statistically low or moderate. The reason for this is that the right tools are not preferred as listed above or that the selected tools cannot be used correctly and effectively. Accounting tools and information systems used more effectively and efficiently will have a more positive effect on business performance increase.

Table 14. The relationship between the use of strategic management accounting tools and environmental uncertainty and competition intensity of the market

Strategic Management Accounting Implementation Tools		Effects of changes in the business environment	Competition Intensity of the Market
Cost-based strategies	Pearson Correlation	0,534	0,477
	Sig. (p)	0,000	0,000
Strategies based on planning, control and performance measurement	Pearson Correlation	0,248	0,589
	Sig. (p)	0,000	0,000
Competitor-centric strategies	Pearson Correlation	0,489	0,590
	Sig. (p)	0,000	0,000
Customer-centric strategies	Pearson Correlation	0,534	0,690
	Sig. (p)	0,000	0,000
Strategic management accounting implementation tools	Pearson Correlation	0,478	0,565
	Sig. (p)	0,000	0,000

When Table 14 is analyzed, it is shown that there is a substantial positive correlation between the strategic management accounting application tools and sub-dimensions and the impacts of changes in the company environment, the level of market competitiveness.

This finding suggests that the application tools for strategic management accounting may change depending on how the environmental risks in the lodging industry are impacted. Since environmental uncertainties may impact businesses' performance and strategic choices, the approaches to be applied in this area may also alter as a result of these modifications. This shows that the environmental sensitivity of the lodging companies affects all units that have an impact on

the strategic decisions of the lodging enterprises. The tools that are thought to be most impacted are those that are used for cost- and customer-based applications. The most significant challenge with uncertainty that lodging firms currently face relates to client needs, expectations, and the overall economic climate. Additionally, systems for planning, controlling, and performance measurement have the weakest association (0.248). This finding indicates that participants demonstrate a structure that is focused on the client rather than a system.

Strategic management accounting methods are more impacted by competition circumstances when the issue is assessed in terms of the level of market competitiveness. Although customer-centered application tools once again take precedence, in line with the strategic frameworks of the businesses, it can be argued that all accounting application tools are generally developed by being influenced by the level of competition.

Table 15. The relationship between strategic management accounting practices and business financial performance

Strategic Management Accounting Tools		Business Performance Financial
Cost-based strategies	Pearson Correlation	0,590
	Sig. (p)	0,000
Strategies based on planning, control and performance measurement	Pearson Correlation	0,367
	Sig. (p)	0,000
Competitor-centric strategies	Pearson Correlation	0,487
	Sig. (p)	0,000
Customer-centric strategies	Pearson Correlation	0,554
	Sig. (p)	0,000
Strategic management accounting implementation tools	Pearson Correlation	0,589
	Sig. (p)	0,000

When Table 15 is examined, it can be said that strategic management accounting application tools have a moderate positive effect on the financial performance indicators of the enterprise. In the survey, business financial performance indicators are listed as Return on Investment, Return on Assets, Growth Rate of Sales, Cash Flow from Operations, Cost of

Auditing, Business Profitability and Market Share. Participants were asked about the effects of the strategic management accounting tools they used on these performance indicators. When evaluated according to the table, it is concluded that strategic management accounting application tools have a positive effect on the financial performance of the enterprise.

When the data in Table 15 are analyzed, a significant, moderate, and positive connection is found. It is anticipated that this effect will be more pronounced. The accuracy of the systems employed in lodging facilities or whether the system is utilized correctly or incorrectly are connected to the fact that this has not been accomplished at a high level. The profitability of the company, cost, or price policies will be impacted by the accounting tools utilized since they will have a direct financial impact. In terms of fulfilling client expectations, this will produce brand-new sectors that are really effective, like low pricing or high-quality services. Taking this into consideration will highlight the significance of strategic management accounting application solutions utilized in the lodging industry. The efficient use of financial instruments, however, might be hindered by customer-centered rules and practices alone. A moderate influence in this table can be explained in this manner.

Table 16. The relationship between strategic management accounting practices and non-financial performance indicators of the enterprise

Strategic Management Accounting Tools		Business Performance non-Financial
Cost-based strategies	Pearson Correlation	0,680
	Sig. (p)	0,000
Strategies based on planning, control and performance measurement	Pearson Correlation	0,387
	Sig. (p)	0,000
Competitor-centric strategies	Pearson Correlation	0,543
	Sig. (p)	0,000
Customer-centric strategies	Pearson Correlation	0,559
	Sig. (p)	0,000
Strategic management accounting implementation tools	Pearson Correlation	0,590
	Sig. (p)	0,000

Table 16 explains the impact of strategic management accounting tools used in businesses on non-financial performance indicators such as Customer Complaint Rate, Number of New Products and Services Offered, Customer Satisfaction, Service Quality, Service Delivery Speed. When the table is examined, it can be stated that the strategic management accounting application tools used in the enterprise have a positive effect on the non-financial performance of the enterprise.

Table 17. The relationship between integrated information systems and business financial performance

		Evaluations of the benefits and cost of Integrated Information System software
Business Performance - financial	Pearson Correlation	0,392
	Sig. (p)	0,000

Table 17 has been prepared for the analysis of the impact of integrated information systems on the financial performance of the enterprise. According to this table, it can be said that there is a positive relationship with an average of 0.38 between integrated information systems and financial performance indicators of the enterprise such as Return on Investment, Return on Assets, Growth Rate of Sales, Cash Flow from Operations, Cost of Auditing, Business Profitability and Market Share.

A larger percentage is anticipated given the benefits of integrated information systems in terms of speed and safe data transfer. In reality, outcomes that meet such a theoretical assumption are of poor value. However, since integrated information systems represent a technique that business personnel utilize for data input, their actual effects cannot be accurately assessed. Additionally, as it doesn't offer a tool for application that directly boosts revenue or performance for customer interactions, its effects on performance are difficult to assess or appear to be less significant. In this situation, albeit not directly, integrated information systems can be considered to have an indirect impact on the company's financial performance.

Table 18. The relationship between integrated information systems and non-financial performance indicators of the business

		Evaluations of the benefits and cost of Integrated Information System software
Business Performance – non-financial	Pearson Correlation	0,261
	Sig. (p)	0,000

Table 18 explains the impact of integrated information systems on non-financial performance indicators such as Customer Complaint Rate, Number of New Products and Services Offered, Customer Satisfaction, Service Quality, Service Delivery Speed. According to the table, it can be stated that integrated information systems have a positive effect on the non-financial performance of the enterprise with a low intensity of 0.26. Since accommodation companies place a high priority on non-financial performance metrics, they concentrate on strategies that have a large positive impact in this area. Even while integrated information systems have a framework that works well in terms of customer satisfaction, it is clear that they fail to provide participants with any observable, palpable benefit. This circumstance might be viewed as an indication that the lodging businesses are either unaware of the potential of integrated information system software or are unable to make effective use of it.

When the values realized as a consequence of the analyses are considered, it is possible to conclude that integrated information systems and strategic management accounting application tools have less of an impact on company performance than was anticipated. The study's findings demonstrate a favorable but low-to-moderate level effect. The customer-centered structure of the lodging operations, which was arrived at as a consequence of the study, comes to the fore when the causes of this conclusion are studied. Businesses in the lodging industry neglect financial factors and procedures when developing customer satisfaction initiatives. Because of this, accounting instruments do not produce the expected results. It might be inferred that integrated information systems are not properly utilized since they are perceived as a system that employees use for rapid data entry and recording.

Conclusion

The purpose of this research was to investigate the impact that strategic management accounting techniques and integrated information systems have on the operational efficiency of businesses operating in the hotel sector in Azerbaijan. For the purpose of collecting and analyzing numerical data from a sample of forty hospitality organizations, a quantitative research strategy was selected as the appropriate method. A structured questionnaire survey was used to collect the data, and it was personally sent to the participants between the dates of 20 September 2022 and 10 December 2022. The data that was gathered were put through a series of analyses, both descriptive and statistical, such as frequency distributions, percentages, Pearson correlation, and regression analysis.

The study analyzed the relationship between strategic management accounting application tools, integrated information systems and business performance, environmental uncertainty and competition intensity of the market, and business financial performance. The results showed that strategic management accounting application tools and integrated information systems had a positive moderate impact on business performance, while their effect on environmental uncertainty and market competition was substantial. Furthermore, the results showed that the strategic management accounting application tools had a moderate positive effect on the financial performance of the enterprise. The study concluded that the more effectively and efficiently the accounting tools and information systems are used, the more positive impact they have on business performance. The study also showed that the application tools for strategic management accounting may change based on environmental risks, the level of competition, and client needs and expectations.

According to the findings, there is a statistically significant and favorably correlated link between the utilization of strategic management accounting methods and integrated information systems and the level of business performance in the hospitality industry in Azerbaijan. The findings also demonstrated that the use of strategic management accounting methods and integrated information systems in Azerbaijani hospitality firms has a beneficial effect on the businesses' ability to remain profitable and sustainable in the long run. The findings of this study provide important insights into the importance of strategic management accounting practices and integrated information systems for the performance of hospitality businesses. Additionally, the

findings of this study can inform the development of policies and strategies aimed at improving the performance of these businesses.

However, it is essential to keep in mind that the study employed a convenient sampling approach; as a result, this method has some drawbacks, and the results of the study may not be representative of the target group as a whole. In the future, researchers might want to try to reproduce this study, but with a different type of sampling or a larger sample size so that they can more thoroughly validate the results. In addition, the research only looked at the hospitality industry in Azerbaijan; other studies could investigate the impact of strategic management accounting techniques and integrated information systems on the success of businesses in other sectors or in other nations.

The list of references

- Abadi, A. H. T. N., Kermani, N. K., Hafez Mollaabbasi, A., Ojaki, A., Shokri, S. T., Soltani, M., & Rafipour, S. (2013). An investigation of the level of using the management accounting methods in the process of planning, controlling and pricing the hotel industry. *International Research Journal of Applied and Basic Sciences*, 4(6), 1587-1595.
- Abdullahi, S. R., Bello, S., Mukhtar, I. S., and Musa, M. H. (2017). Cost-volume-profit analysis as a management tool for decision making in small business enterprise within Bayero university, Kano. *Iosr Journal Of Business And Management (Iosr-Jbm)*, 19(2), 40-45.
- Ahmad, K. (2014). The adoption of management accounting practices in Malaysian small and medium sized enterprises. *Asian Social Science*, 10(2), 236.
- Akimova, L., Osadcha, O., and Akimov, O. (2018). Improving accounting management via benchmarking technology. *Фінансово-кредитна діяльність: проблеми теорії та практики*, (1), 64-70.
- AlMaryani, M. A. H., and Sadik, H. H. (2012). Strategic management accounting techniques in Romanian companies: Some survey evidence. *Procedia Economics and Finance*, 3, 387-396.
- Al-Wattar, Y. M. A., Almagtome, A. H., & Al-Shafeay, K. M. (2019). The role of integrating hotel sustainability reporting practices into an Accounting Information System to enhance Hotel Financial Performance: Evidence from Iraq. *African Journal of Hospitality, Tourism and Leisure*, 8(5), 1-16.
- Assaf, A. G., and Magnini, V. (2012). Accounting for customer satisfaction in measuring hotel efficiency: Evidence from the US hotel industry. *International Journal of Hospitality Management*, 31(3), 642-647.
- Atrill, P., McLaney, E., and Harvey, D. (2014). *Accounting: An Introduction*, 6/E (Vol. 6). Pearson Higher Education AU.
- Awadallah, E. A., and Allam, A. (2015). A critique of the balanced scorecard as a performance measurement tool. *International Journal of Business and Social Science*, 6(7), 91-99.

- Bititci, U., Garengo, P., Dörfler, V., and Nudurupati, S. (2012). Performance measurement: challenges for tomorrow. *International journal of management reviews*, 14(3), 305-327.
- Budiasa, I. M., Suparta, I. K., & Nadra, N. M. (2018). Factors that influencing the usage of global distribution system. In *Journal of Physics: Conference Series* (Vol. 953, No. 1, p. 012053). IOP Publishing.
- Cadez, S., and Guilding, C. (2012). Strategy, strategic management accounting and performance: a configurational analysis. *Industrial Management and Data Systems*.
- Cardos, I. R., and Pete, S. (2011). Activity-based costing (ABC) and activity-based management (ABM) implementation—is this the solution for organizations to gain profitability. *Romanian Journal of Economics*, 32(1), 151-168.
- Cescon, F., Costantini, A., and Grasseti, L. (2019). Strategic choices and strategic management accounting in large manufacturing firms. *Journal of Management and Governance*, 23(3), 605-636.
- Chand, M., & Ambardar, A. (2013). Management Accounting Practices In Hospitality And Service Enterprises: A Comparative Research. *Journal of Commerce & Accounting Research*, 2(3).
- Cinquini, L., and Tenucci, A. (2010). Strategic management accounting and business strategy: a loose coupling?. *Journal of Accounting and organizational change*.
- Cocca, P., and Alberti, M. (2010). A framework to assess performance measurement systems in SMEs. *International Journal of Productivity and Performance Management*.
- Cote, R. (2001). Accounting for hospitality managers. Educational Institute of the American Hotel & Accomodation Association.
- Enoch, O. K. (2015). Management accounting reports and hospitality industry development in Nigeria. *European Journal of Applied Business Management*, 1(2), 83-99.
- Falko, Y. (2016). Analysis of the global distribution systems on the international market of tourist services. *European Journal of Management Issues*, 24(6), 15-22.
- Ghasemi, R., Habibi, H. R., Ghasemlo, M., and Karami, M. (2019). The effectiveness of management accounting systems: evidence from financial organizations in Iran. *Journal of Accounting in Emerging Economies*.

- Ghobakhloo, M., & Fathi, M. (2019). Corporate survival in Industry 4.0 era: the enabling role of lean digitized manufacturing. *Journal of Manufacturing Technology Management*.
- Gil, M. A., Jiménez, J. B., & Lorente, J. C. (2001). An analysis of environmental management, organizational context and performance of Spanish hotels. *Omega*, 29(6), 457-471.
- Guilding, C., Cravens, K. S., and Tayles, M. (2000). An international comparison of strategic management accounting practices. *Management Accounting Research*, 11(1), 113-135.
- Hall, J. A. (2015). *Accounting information systems*. Cengage Learning.
- Haron, N. H., Rahman, I. K. A., and Smith, M. (2013). Management accounting practices and the turnaround process. *Asian Review of Accounting*.
- Harris, P. J., & Brown, J. B. (1998). Research and development in hospitality accounting and financial management. *International Journal of Hospitality Management*, 17(2), 161-182
- Hernaus, T., Bach, M. P., and Vukšić, V. B. (2012). Influence of strategic approach to BPM on financial and non-financial performance. *Baltic Journal of Management*.
- https://docs.oracle.com/cd/E65581_01/docs/Suite8_Software_Description_Version_8.9.5_June_2014.pdf
- Jagels, M. G. (2006). *Hospitality management accounting*. John Wiley and sons.
- Javadian Kootanaee, A., Babu, K. N., and Talari, H. (2013). Just-in-time manufacturing system: From introduction to implement. Available at SSRN 2253243.
- Kotas, R. (2014). *Management accounting for hotels and restaurants*. Routledge.
- Kraguljac, V., & Milašinović, D. (2017, June). Information and communication technologies in hotel management and tourism education. In *Tourism International Scientific Conference Vrnjačka Banja TISC* (Vol. 2, No. 1, pp. 430-447).
- Laudon, K. C., & Laudon, J. P. (2011). *Essentials of management information systems*.
- Mamun, A. A., and Mansor, S. A. (2012). EVA as superior performance measurement tool.
- Maria, N. N., Thecla, O. K., Chukwu, S., & Ifenyinwa, O. (2018). An analysis on the impact of the usage of Fidelio OPERA property management system in Transcorp Hilton Hotel Abuja. *European Journal of Computer Science and Information Technology*, 6(2), 1-19.

- Medlik, S., & Ingram, H. (2000). *The business of hotels*. Routledge.
- Mia, L., & Patiar, A. (2001). The use of management accounting systems in hotels: an exploratory study. *International Journal of Hospitality Management*, 20(2), 111-128.
- Najmi, M., Etebari, M., and Emami, S. (2012). A framework to review Performance Prism. *International Journal of Operations and Production Management*.
- Nicolaou, A. I. (2011). Integrated Information systems and interorganizational performance: the role of management accounting systems design. In *Advances in Accounting Behavioral Research*. Emerald Group Publishing Limited.
- Nixon, B., and Burns, J. (2012). The paradox of strategic management accounting. *Management Accounting Research*, 23(4), 229-244.
- Osama, S. (2011). Integrated Information System for reserving rooms in Hotels. *IJACSA Editorial*.
- Özkan, S., and Karaibrahimoğlu, Y. Z. (2013). Activity-based costing approach in the measurement of cost of quality in SMEs: a case study. *Total Quality Management and Business Excellence*, 24(3-4), 420-431.
- Oztemel, E., and Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. *Journal of Intelligent Manufacturing*, 31(1), 127-182.
- Panetto, H., & Cecil, J. (2013). Information systems for enterprise integration, interoperability and networking: theory and applications. *Enterprise Information Systems*, 7(1), 1-6.
- Pavlatos, O., & Paggios, I. (2009). Management accounting practices in the Greek hospitality industry. *Managerial Auditing Journal*.
- Perkins, M., Grey, A., and Remmers, H. (2014). What do we really mean by “Balanced Scorecard”? *International Journal of Productivity and Performance Management*.
- Pizam, A., & Holcomb, J. (2010). *International dictionary of hospitality management*. Routledge.
- Popovič, A., Hackney, R., Coelho, P. S., & Jaklič, J. (2012). Towards business intelligence systems success: Effects of maturity and culture on analytical decision making. *Decision Support Systems*, 54(1), 729-739.

- Quesado, P. R., Aibar Guzmán, B., and Lima Rodrigues, L. (2018). Advantages and contributions in the balanced scorecard implementation. *Intangible capital*, 14(1), 186-201.
- Radulović, L. (2013). The role and potential of Global Distribution System Amadeus for Tourism development at the global level. *The European Journal of Applied Economics*, 10(1), 28-38.
- Reddy, G. S., Srinivasu, R., Rao, M. P. C., & Rikkula, S. R. (2010). Data Warehousing, Data Mining, OLAP and OLTP Technologies are essential elements to support decision-making process in industries. *International Journal on Computer Science and Engineering*, 2(9), 2865-2873.
- Romero, D., & Vernadat, F. (2016). Enterprise information systems state of the art: Past, present and future trends. *Computers in Industry*, 79, 3-13.
- Sadoghi, M., Bhattacharjee, S., Bhattacharjee, B., & Canim, M. (2016). L-store: A real-time OLTP and OLAP system. arXiv preprint arXiv:1601.04084.
- Sani, A. A., and Allahverdzadeh, M. (2012). Target and kaizen costing. *World academy of science, engineering and Technology*, 6(2), 40-46.
- Seal, W., & Mattimoe, R. (2011). Management Accounting Research in the Hospitality Sector. *Review of Management Accounting Research*, 497-520.
- Shah, H., Malik, A., and Malik, M. S. (2011). Strategic management accounting—A messiah for management accounting. *Australian Journal of Business and Management Research*, 1(4), 1-7.
- Shah, H., Malik, A., and Malik, M. S. (2011). Strategic management accounting—A messiah for management accounting. *Australian Journal of Business and Management Research*, 1(4), 1-7.
- Sharma, A. K., and Kumar, S. (2010). Economic value added (EVA)-literature review and relevant issues. *International journal of economics and finance*, 2(2), 200-220.
- Stoenoiu, C. E. (2018). Sensitivity of indicators used in cost-volume-profit analysis. In *MATEC Web of Conferences* (Vol. 184, p. 04003). EDP Sciences.

- Talha, M., Raja, J. B., and Seetharaman, A. (2010). A new look at management accounting. *Journal of Applied Business Research (JABR)*, 26(4).
- Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. *MIS quarterly*, 463-486.
- Taticchi, P., Tonelli, F., and Cagnazzo, L. (2010). Performance measurement and management: a literature review and a research agenda. *Measuring business excellence*.
- Taylor, W. B. (2010). The balanced scorecard as a strategy-evaluation tool: The effects of implementation involvement and a causal-chain focus. *The Accounting Review*, 85(3), 1095-1117.
- Vrdoljak, I., & Bukvić, I. (2004). New management practice in the hotel business—The case of the hotel Excelsior. *Management: Journal of Contemporary Management Issues*, 9(1), 93-112.
- Wadongo, B., Odhuno, E., Kambona, O., and Othuon, L. (2010). Key performance indicators in the Kenyan hospitality industry: a managerial perspective. *Benchmarking: An international journal*.
- Ward, K. (2012). *Strategic management accounting*. Routledge.
- Yigitbasioglu, O. (2016). Firms' information system characteristics and management accounting adaptability. *International Journal of Accounting and Information Management*, 24(1), 20-37.
- Zafar, A., Almaleh, A. I., Alshahri, S., Alqahtani, S. S., & Alqahtani, N. D. (2015). Role of information systems in KSA small and medium enterprises (SMEs). *International Journal of Advanced Research in Computer and Communication Engineering*, 4(5), 6-11.

Appendix 1

1. QAFQAZ BAKU CITY HOTEL & RESIDENCES
2. 12 INN BULVAR
3. AF HOTEL AQUA PARK
4. ABSHERON
5. ALP INN
6. AMBIANCE
7. AMBASSADOR
8. ANATOLIA
9. AUSTIN
10. AYF PALACE HOTEL
11. BAKI BAY HOUSE
12. BALION
13. BOUTIQUE PALACE
14. BOYUK GALA
15. BUTA GUEST HOUSE
16. CASPIAN PALACE HOTEL
17. CHIRAG PLAZA
18. COMFORT INN
19. DAYS HOTEL
20. EXCELSIOR HOTEL BAKI
21. HIGH PARK
22. HOLIDAY INN BAKI AIRPORT
23. HYATT REGENCY BAKI
24. JUMEIRAH BILGAH BEACH HOTEL
25. KING PALACE
26. LANDMARK
27. MERIDIAN
28. METROPOL HOTEL
29. OLD CITY INN
30. TOWN GATES

31. SUN RISE
32. OLD GATES
33. OLIMPIK NOVKHANI
34. PARK HYATT BAKI
35. PARK INN
36. PREMIER
37. QAFQAZ POINT
38. RADISSON BLU PLAZA HOTEL BAKI
39. RAMADA
40. THE CROWN HOTEL

Appendix 2

Questionnaire

1. Please indicate your position.

General manager

Assistant Accounting Manager

Accounting staff

Accounting Manager

Internal Auditor

Other

2. How many years have you been working in this position?

less than 1 year

1 to 5 years

6 to 10 years

more than 11 years

3. What is your education level?

Bachelor

master

Phd

other

4. Operating time of your business?

1 to 5 years

6 to 10 years

11 to 15 years

16 years and above

5. What is the number of rooms in your business?

between 120-200

between 201-299

300 and above

6. Number of permanent employees in your business?

1-25

26-50

51-75

76-100

101 and above

7. How many people work in the accounting department?

1-3

between 3-5

between 5-10

more than 10

**8. Indicate the degree of benefit of the strategic management accounting tools listed below.
(1- Totally Useless, 2- Useless, 3 – Neutral, 4- Useful, 5- Totally useful, X- Not used)**

	Totally Useless	Useless	Neutral	Useful	Totally useful	Not used
<i>Cost-Based Strategies</i>						
Activity Based Costing						
Kaizen Costing						
Life Cycle Costing						
Quality Costing						
Target Costing						
Value Chain Costing						
Just In Time Production						
<i>Strategies Based on Planning, Control and Performance Measurement</i>						
Benchmarking						
Balanced Scorecard						
Cost Volume Profit Analysis						
Integrated Performance Measurement						
Strategic Costing						
Strategic Pricing						
Brand Value						
<i>Competitor-Centered Strategies</i>						
Evaluating Competitors' Costs						
Market Positions of Competitors						
Competitors' Performance Values						
Customer Centric Strategies						
Customer Profitability Analysis						

Product Lifecycle Analysis						
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9. Does your hotel use Internal Information Systems (integrated and/or partial information system)?

Yes

No

10. Does your hotel use External Information Systems?

Yes

No

Please indicate your evaluations regarding the integrated information system. (1-Strongly disagree, 2-Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
11- The installation cost of the system is very high.					
12- Long training processes are required for the introduction and use of the system by the personnel.					
13- The costs of software related to personnel training constitute the largest part of the total costs of these software.					
14- Changes in business processes due to software cause confusion in activities.					
15- When evaluated as a whole, the benefits of integrated information system software are more than their costs.					
16- The use of integrated information systems reveals the need for knowledgeable new personnel in this field.					
17- The use of integrated information systems leads to a decrease in the number of employees.					
18- Using internal and external information systems together is more beneficial in terms of business activity processes.					
19- Integrated information systems can meet the required information completely.					

20- Integrated information systems allow to prepare various and fast reports with a single data entry.					
21- Integrated information systems are flexible enough to keep up with technological and global changes and innovations.					
22- The data obtained from the integrated information system is accurate, reliable, fast and timely accessible.					
23- Integrated information system provides cost advantage by reducing the margin of error in data and transactions.					
24- The integrated information system facilitates the operations of the employees and provides an increase in productivity.					
25- The integrated information system can be easily understood and used by the employees.					
26- The integrated information system you use has directly contributed to the profitability of the business and the acceleration of business processes.					
27- The use of an integrated information system increases the qualifications of the personnel to be employed.					

28. What is your business performance evaluation period?

Daily

Weekly

Monthly

Yearly

Seasonal

29. Do you think that performance evaluations contribute to business sustainability and profitability?

Yes

No

Evaluate the level of utility of the following performance measurement tools. (1- Totally Useless, 2- Useless, 3 – Neutral, 4- Useful, 5- Totally useful, X- Not used)

	Totally Useless	Useless	Neutral	Useful	Totally useful	Not used
30. EVA (Economic Value Added)						
31. Balanced Scorecard						
32. ROI Rate						
33. benchmarking						
34. Performance Prism						
35. Customer Satisfaction Studies						
36. Team Performance						
37. Financial Performance Indicators						
38. Integrated (Financial + Non-Financial) Measurements						

Evaluate the impact of Strategic Management Accounting tools on the following performance criteria. (1-Strongly disagree, 2-Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<i>Financial</i>					
39. Return on Investment Increased					
40. Return on Assets Increased					
41. Growth Rate of Sales Increased					
42. Cash Flow from Operations Increased					
43. Inspection Cost Decreased					
44. Business Profitability Increased					
45. Market Share Increased					
<i>Non-Financial</i>					
46. Customer Complaint Rate Decreased					
47. The Number of New Products and Services Offered Has Increased					
49. Increased Customer Satisfaction					
50. Service Quality Has Increased					
51. Service Delivery Speed Has Increased					

Evaluate the impact of Integrated Information systems on the following performance criteria. (1-Strongly disagree, 2-Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<i>Financial</i>					
52. Return on Investment Increased					
53. Return on Assets Increased					

54. Growth Rate of Sales Increased					
55. Cash Flow from Operations Increased					
56. Inspection Cost Decreased					
57. Business Profitability Increased					
58. Market Share Increased					
<i>Non-Financial</i>					
59. Customer Complaint Rate Decreased					
60. The Number of New Products and Services Offered Has Increased					
61. Increased Customer Satisfaction					
62. Service Quality Has Increased					
63. Service Delivery Speed Has Increased					

Evaluate the impact of Strategic Management Accounting tools and Integrated information systems (together) on the following performance criteria. (1-Strongly disagree, 2-Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<i>Financial</i>					
64. Return on Investment Increased					
65. Return on Assets Increased					
66. Growth Rate of Sales Increased					
67. Cash Flow from Operations Increased					
68. Inspection Cost Decreased					
69. Business Profitability Increased					
70. Market Share Increased					
<i>Non-Financial</i>					
71. Customer Complaint Rate Decreased					
72. The Number of New Products and Services Offered Has Increased					
73. Increased Customer Satisfaction					
74. Service Quality Has Increased					
75. Service Delivery Speed Has Increased					

Please indicate the changes in your business due to the following factors by grading.

Effects of changes in the business environment

	1	2	3	4	5
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76- Product/Service development and innovation investments					
77- Customer requirements					
78- Activities of competitors					
79- Market share					
80- Political and economic factors surrounding the business					

Evaluate the intensity of competition in the following situations.

Market Competition Intensity

	1	2	3	4	5
81- Promotion and advertising competition					
82- Product and service development					
83- Customer requirements					
84- Price competition					
85- Distribution channels and market share					