

Research Article

Importance of Accounting Information in Management Decision-Making Process

Mohammed Mahmood Mohammed ^{1,*} 

¹ Accounting and Finance Department, Faculty of Management, Sakarya University, Sakarya, 54100, Turkey

*Corresponding Author: Mohammed Mahmood Mohammed, E-mail: mohammed1991mahmood1991@gmail.com

Article Info	Abstract
Article History	This study aims to identify the role of accounting information in managerial decision-making in general joint-stock companies in Iraqi Kurdistan. To fulfil this study's objectives and answer its questions, the researcher investigated previous literature related to the subject of the study. Through this literature, the researcher was able to get secondary data that constituted the study's conceptual framework. As for the practical framework, the researcher used a questionnaire designed for this purpose. In addition, the researcher used the descriptive-analytical method, conducted the needed statistical analysis, and tested the study hypotheses. As a result, a quantitative research method has been applied, and the results of the statistical analysis confirmed that the contribution to making an administrative decision is necessary for rationalizing and enhancing decision-making and ensuring its effectiveness by 91.5%, which is a substantial percentage—reports based on accounting information.
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1. Introduction

Information is the lifeblood of every business. However, there is a different variety, but the accounting information for this study was selected because some business organizations do not base their decision on the available accounting information, and therefore there is no controlling authority over income and expenses [1].

There is no doubt that the accounting system is the main source for obtaining this information of a financial, economic and other nature, which can be deduced from the numerous data that the accountant records daily, whether through the traditional entry or on the computer memory [2].

Accounting information, like any other information, aims to increase knowledge and reduce the risk of uncertainty for decision-makers, and unlike descriptive or subjective information, accounting information is usually quantitative or objective [3]. This objective or quantitative information helps the decision-maker more effectively than if it is descriptive or subjective [4].

The information prepared helps the different management levels to focus on operational problems, deficiencies, and inefficiencies. This helps prepare managers to focus on important aspects of operations to the point where they can make more effective decisions, whether through good planning or adequate day-to-day supervision [5]. The information prepared in this field is essential for frequent (routine) planning and control processes.

Management needs the accounting information to perform its functions efficiently and effectively, with authority to exercise various decision-making in different managerial situations [6]. For example, the production manager needs to check the efficient use of resources and labour in the production of target goods, and the marketing manager wants to know to what extent the target sales programs and other department needs can be met.

Essentially, the nature of the manufacturing business compels a great deal of bookkeeping based on accounting principles and information provided by the ever-increasing number of consumers of manufactured products [7]. It has become necessary to devise a systematic means of dealing with the resulting accounting and accounting activities. Much criticism has always been levelled about the organization's service; consumers complain about low product quality while employees complain about no promotion, inadequate salaries, lack of training etc. Moreover, the main challenge facing every financial institution/business and organization today is market importance, the fundamental changes in global politics and economics and emerging competitions, in particular, the challenges of appropriate and contemporary accounting information for managerial decision-making [8, 9]. The firm tries to coordinate all these challenges effectively and efficiently to minimize any foreseeable and unforeseen defects [10]. The difference will be obvious if the manufacturing organization properly implements a sound and efficient accounting system [11]. Inappropriate attention to the accounting system and dealing with accounting information led to the emergence of the problems mentioned below, which represent the specific problems of this study:

- The perceived difficulty in generating and using accounting information.
- The accounting information produced by the accounting departments contributes little to decision-making.
- The inability of accounting information to perform the basic functions to reduce cost and maximize profits.

The study's objectives are to determine whether there has been a problem in generating and utilizing accounting information necessary for management decision-making. Then to determine the extent to which accounting information generated by accounts departments has contributed to the decision-making process, and finally, to ascertain the extent to which accounting information has effectively performed the basic roles of cost minimization, proper allocation of scarce resources and improvement in production.

This research attempts to test the following hypotheses:

Hypothesis one

H0: There are problems in generating and utilizing accounting information necessary for management decision-making.

H1: There are no problems in generating and utilizing accounting information necessary for management decision-making.

Hypothesis two

H0: Accounting information generated by the accounts department has not contributed to the decision-making process.

H1: Accounting information generated by the accounts department has contributed to the decision-making process.

This research is divided into five parts. The first part will explain the importance of accounting information. The second part will explain the role of accounting record-keeping in decision-making. The third part will explain the government's role in accounting information. For the organization, the random sampling technique was used in administering the questionnaire. The researcher discovers the advantages of accounting records: performing the government's reporting function, monitoring business activities and making a decision. This research cannot address all aspects and types of accounting information because the field is too broad. Therefore, only those relevant to these studies were dealt with, like need ratio analysis, cost-volume-profit analysis, absorption and marginal cost, contribution margin, standard cost and variance analysis, and linear programming. This study covers the period 2015-2019.

2. Literature Review

With independence, Iraq joined the committee of world nations hoping for a better tomorrow. We were able to feed ourselves and were, of course, almost self-sufficient. Subsequently, our hopes seemed

unattainable. We seem to be going deeper and deeper into the woods. The consensus is that it has been bad for Iraq. Due to the adverse economic condition prevailing in the country, many businesses have closed; shops and even financial institutions are being declared distressed at an alarming rate. Businesses that are yet to be submerged or want to stay afloat employ all kinds of strategies. Some increase prices, adopt promotional tools, engage in aggressive marketing etc., whereas others go for an odd combination of activities and even undergo a different kind of small business to survive. Any business or individual that wants to survive must make the right decision. The era of a mile of thumb is gone [12].

The economy is truly in distress. These compounded and complicated intricacies are the problems of the organization vis-à-vis effective planning and decision-making processes [13]. Other factors such as taxation and economic and political problems are the major problems affecting information and decision-making. The future orientation is what most companies and banks get from making accounting decisions. The computation and interpretation of analytical ratios from financial statements enable the bank to determine its operational trends and provide a basis for management decision-making. Other uses of financial analysis are in making a financial decision, and achieving the goal of sustainability determines compliance with regulatory requirements [14].

Financial analysis is an investment that has a positive return in the future on how a decision will be made and how to manage the finances to achieve the institution's strategic goals through decision making. Many people think that accounting is a highly technical field understood only by professional accountants; actually, nearly everyone practices accounting in one form or the other. Modern management requires various information to accomplish its aim and objectives. This information is mainly determined by uncertainty about the future and a lack of current knowledge. Some of these decisions are of strategic importance, significantly impacting the business. Others are routine operational decisions [15].

Therefore, accounting information is based on laws and regulations governing the handling of financial information in the organization's financial reports. Making the right decision depends on the possession of appropriate, accurate and up-to-date information provided and presented in a meaningful way. This study set out to examine the contribution of a sound accounting system in providing management with financial and another information basis for dealing with decision problems that arise from their organizational operations.

2.1. Meaning of accounting /Accounting information

Accounting information systems and accounting information systems are defined as a science associated with a special system, which has three main sections, as is the case in the rest of the systems: inputs, processing, and outputs [16]. Accounting information systems are subject to several strict policies and procedures that cannot be overlooked. It can be defined as a system consisting of a group of users and accounting data records of various kinds, the implementation of several manual and non-manual operations. These data and information are subject to processing, storage, and distribution to contribute to decision-making and support. The accounting system consists of a set of steps and procedures that start with inputs, then subject these inputs consisting of accounting and financial data to processing, and then present them to the end-user in the form of outputs; and it must be noted that the accounting systems are sequenced in their control steps and procedures [17]. The accountant practices his working life dozens of activities, whether the activity is computerized or manual, and these activities include long-term strategic planning, performance evaluation, accounting systems, financial reports, internal consulting, improving processes, systems, computer activities, and analyzing the profitability of goods and customers.

Accounting is the process of recording financial transactions about a business. The accounting process includes summarizing, analyzing and reporting these transactions to oversight agencies, regulators and tax collection entities. The financial statements used in accounting are a concise summary of financial transactions over an accounting period, summarizing a company's operations, financial position and cash flows [18].

Managerial Accounting Managerial accounting uses much of the same data as financial accounting but organizes and utilizes information differently. Namely, in managerial accounting, an accountant generates monthly or quarterly reports that a business's management team can use to make decisions about how the business operates. Managerial accounting also encompasses many other facets of accounting, including budgeting, forecasting, and financial analysis tools. Essentially, any information that may be useful to management falls underneath this umbrella [19].

2.2. Accounting Information System (AIS)

An accounting information system (AIS) involves internal users' collection, storage, and processing of financial and accounting data to report information to investors, creditors, and tax authorities [20]. It is

generally a computer-based method for tracking accounting activity with information technology resources. An AIS combines traditional accounting practices, such as Generally Accepted Accounting Principles (GAAP), with modern information technology resources [21].

2.3. The flow of information in accounting

Low accounting information in a company is releasing information to internal or external interested parties in monetary language. The variety, depth and presentation of information depend on the interests of those needing it. Some interested parties can be managers, employees, customers, stockholders, banks, debtors, tax authorities and more [22]. The common form of information flow is the publication of an annual report which contains a balance sheet and income statement. In addition, many companies make their financial information available on the net for everyone [23].

Managers of companies always need internal accounting information for their decision-making. Likewise, costing and selling departments depend on the frequent flow of accounting information. Moreover, tax authorities require accounting information on their specially designed blankets and queries. Who is the source of accounting information, and how does it flow?

The source of accounting information is the accounting department. Accountants gather various actual transactions from source documents. They sort, record and process it with the help of accounting software. This process makes each transaction systematically combines to be a part of one big picture in a specific period [24]. We call these outputs accounting information a balance sheet and income statement, from which all other information, like liquidity, solvency, profitability inventory and receivable turnover calculated. Accounting information flows from the source to various interested parties, and the flow is only towards the information once released, never come back and reprocessed. At every time interval, new information flows [25].

2.4. User of accounting information

The main goal of accounting information systems is to generate information, provide it to the beneficiaries, and assist them in making decisions. Accounting information is the basis on which many beneficiaries depend in making decisions [26].

Despite the variety of categories of beneficiaries of accounting information and their different needs for this information, Hall [26] classifies the beneficiaries of accounting information into two basic types:

a. Internal users:

This category is represented by the administration - with its multiple levels - that is in charge of planning, organizing, directing and controlling the establishment's business. The management accounting information system is the main source of accounting information that helps the management perform its various functions. Because the management accounting information system is one of the branches of accounting information systems, including the tools and methods it contains, such as:

- To perform the planning function, planning budgets are highlighted as a significant tool that assists the administration in planning, coordination and delivery
- To perform the control function, the need for systems for measuring and analyzing deviations and for responsible accountability systems appears
- To evaluate performance, the traditional and new accounting approaches that help management measure and evaluate performance are highlighted.
- In order to take multiple administrative decisions, there is a clear need for cost information and management accounting approaches in the field of decision-making.
- In addition, the management practice of production, marketing, financing and human resources activities ... etc., requires a continuous flow of accounting information that helps manage these activities effectively [27].

b. External Users:

Many external categories need accounting information to help them make decisions. Financial accounting information systems are the main source for supplying these categories with the information they need, and the most important external categories that need accounting information are as follows:

Investors:

Investors here mean the current and potential investors, so in order to make an investment decision, the rational investor seeks to obtain information about the financial position of the facility, to know the sources of its funds, its uses, its financing structure, in addition to knowing the profitability of the facility, studying its cash flows from its multiple sources, ... etc.

The reports and financial statements produced by the Financial Accounting Information System are an important source of information that investors need. Officials in many countries have recently

experienced the importance of accounting information for investors. Businesses are obligated to prepare and publish initial financial and sector reports in addition to the annual financial reports [28].

This is in addition to many countries using the extended business reporting language. Extensible Business Reporting Language (XBRL) is one of the new entrances for disseminating financial reports and making it easier for investors to obtain information [29].

Banks and Bond Holders:

Lenders intending to provide loans to the facility need much information; this information is related to the facility's ability to pay interest and debts, assessing risk levels, debts, current obligations, liquidity index, management efficiency, etc. Moreover, often the reports and financial statements prepared by the establishment at the end of the accounting period are the main sources of this information [30].

Creditors

Suppose business establishments follow the policy of term purchase. In that case, the facility's suppliers need sufficient information about the entity's financial position and ability to pay its obligations on the dates of their maturities to make decisions related to the continuity of dealing with the establishment. The financial accounting information system is an important source to provide much of the information it needs Suppliers

Clients

It is certain that the clients of the establishment, especially the companies, are among the groups keen to keep track of the facility from which they buy, so stabilizing the supplier's financial position is an important matter for the customer.

Clients constantly need information about the facility's producers, sales policies, credit status, discount terms, payment methods, etc.

Workers and trade unions

Workers in business establishments need information about wage levels, associated rewards and incentives, and other information related to taxes and insurances, and trade unions also need this information, especially in litigation cases—pay system.

Governmental institutions

Accounting information represents an important source of information that many government agencies need to perform their functions. It is noted that some government agencies are directly related to business establishments. Then they closely follow the results of the establishments' business and their financial centres and their cash flows, such as tax authorities and the stock exchange [31], in addition to There are some government agencies indirectly interested in accounting information, such as the Ministry of Planning.

2.5. Decision making, Types of Decision- and Decision-making process

The decision-making process involves making decisions through collecting data and information and evaluating available and alternative solutions to reach informed decisions and choose the best possible alternative [32]. There are several types of decision-making, including decision-making blindness, which is using some objective criteria to select an alternative from among two or more possible alternatives.

There are many types of decisions taken by managers, and these types of decisions can be classified as follows: Types of decisions according to management functions, types of decisions according to the functions of the organization, types of decisions according to shape, types of decisions according to the degree of uncertainty, types of decisions according to the quality of those who make them, and types of decisions according to the legal aspect [33].

2.5.1. Stages of the decision-making process

The scientific method must be used in making decisions to become effective and rational [34]. To achieve this, the following steps must be taken:

- Defining the problem: identifying the reality of the problem faced by the manager to know the situation he wants to decide about.
- Collecting information and data: Determining an appropriate amount of data and information so that the data differ from one problem to another requires the need to provide the appropriate data for each problem separately.
- The stage of interpreting the information (identifying alternative solutions): This stage means rejecting or accepting the credibility of the information, linking it to each other and giving it a specific meaning related to the situation.

- The stage of searching for alternatives (implementation and follow-up of the decision): the decision-making process does not end with taking the best alternative, but the decision must be put into practice by informing those concerned with it so that everyone is informed of it and each of them adheres to its content immediately upon its issuance [35].

2.5.2. Barriers to making decisions

There are several reasons, all of which can be called obstacles to making decisions, and among these reasons can be identified:

First, the internal obstacles: These obstacles may limit the selection of the appropriate solution and are as follows; financial, human, and technical obstacles.

Second, external obstacles: The organization represents one of the active cells of society, and its effects must directly or indirectly affect this society. Therefore, some units of society oppose taking any decisions that harm them, even if they are minor; examples of external obstacles like country, general opinion, competitors, consumers, and distributors [36].

2.5.3. Factors to take into account when making decisions

When carrying out the decision-making process, some factors are beneficial to consider and remember for the process to occur rationally. These factors include:

- The decision-making process includes both tangible and intangible elements, as well as emotional and rational elements. This requires the necessity of mental flexibility that enables these elements to be considered.
- Every decision must lead to a result that contributes to achieving the goal.
- Not everyone can be satisfied.
- There are usually satisfactory alternatives to choose from.
- Using conflicting thinking in the decision-making process.
- Making decisions is a mental process and must be converted into physical action [37]

3. Methodology

The field study is a practical application of the theoretical framework addressed in the previous chapters. It aims to stand on the importance of accounting information in making administrative decisions and an applied study on the joint-stock companies in the three governorates of Duhok, Erbil, and Nineveh.

The data was obtained from primary and secondary sources, as follows:

- Primary data: The primary sources were obtained by designing a questionnaire as a main tool for the research, and the researcher unpacked and analyzed the questionnaire through the statistical program SPSS
- Secondary data: The data were obtained from representative secondary sources, Arabic and Arabic reference books and references, articles and previous studies related to the subject of the study and relevant websites on the Internet.

Area of the study and data presentation and analysis method. The study population consists of all public shareholding companies in Iraq, specifically in the three governorates of Dohuk, Erbil, and Nineveh, as shown in the following table and graph:

Table 1. The geographical location of the participants

Governorate	Frequency	Percent	Valid Percent	Cumulative Percent
Duhok	74	48.4	48.4	48.4
Erbil	41	26.8	26.8	75.2
Nineveh	38	24.8	24.8	100.0
Total	153	100.0	100.0	

The population of the study

The study population consists of public shareholding companies in the Kurdistan Region in general, especially in the three governorates of Dohuk, Erbil, and Nineveh, which numbered 153 people, divided into four sections including general managers, unit managers, and section managers and accountants.

Table 2. Frequency and percentages of the respondents

Governorate	Frequency	Percent	Valid Percent	Cumulative Percent
General Manger	26	17.0	17.0	17.0
Unit Manger	55	35.9	35.9	52.9
Department Manger	40	26.1	26.1	79.1
Account Manger	32	20.9	20.9	100.0
Total	153	100.0	100.0	

The graph table shows a distribution in the job titles and administrative levels of the sample members, as their administrative level is from general manager and lower to unit manager. This means that most of the sample members are highly experienced decision-makers. Therefore, they can answer the study questions clearly, accurately and more professionally than others. The number of employees reached 153, 26 employees, and 17% are general managers, 55 individuals are unit managers with a ratio of 35.9%, 40 were department managers with a rate of 26.1%, and 32 were accountants with a rate of 20.9%.

4. Results and Discussion

Based on the previous results reached by the researcher through the field study and statistical analysis, accounting information has an important role in making administrative decisions. However, it is intended to improve performance and raise effectiveness, and some recommendations can be formulated.

- The keenness of public, and commercial institutions to increase the quality of the accounting information they provide in terms of increasing its accuracy, speed of access, relevance and quantitative efficiency so that this quality is an incentive for managers to use the information in making their decisions.
- Increasing attention to accounting information helps to make comparisons and future predictions, develop strategic plans to improve job performance, and enable management to discover errors and treat them.
- The need to identify the nature of the information that each administrative category needs, taking into account the different groups used for this information and the multiplicity of their needs, as well as providing the necessary information for decision-making models.
- Direct and control performance by utilizing the accounting information necessary for making administrative decisions are necessary.
- The necessity of expanding the use of information in the planning process, making decisions and drawing up future policies for the institution on scientific bases, information and alternatives, and choosing the best alternative to help them make decisions.
- Developing work methods and tools through modern methods and techniques in the decision-making process, building a modern database and moving to an advanced stage of technology.

- Applying the best and best software capable of analyzing and processing data to produce the information required by management and decision-makers.
- It is necessary to train decision-makers on how to deal with the problems they face in making decisions and how to deal with the conditions of the surrounding environment.

There is a great agreement among the members of the sample to which the study was applied that the contribution of accounting information to making the administrative decision is necessary and thus enables the individual to make a rational decision. Another outcome is the term strategic planning and setting goals. Moreover, a large percentage of the sample members agreed that the accounting information contributing to making administrative decisions could positively affect the safety of administrative decisions.

5. Conclusion

Through our study, we concluded that accounting information plays a significant role in assisting managers in making administrative decisions at every stage of the administrative process. The company's management's interest in accounting information is due to it being the main driver for managing any facility and determining its capabilities and effectiveness in performing its functions. The degree of management's effectiveness depends on the abundance of accounting information needed to make administrative decisions. Therefore, appropriate statistical operations were conducted, hypotheses were tested, results were extracted and presented, and the necessary recommendations and suggestions were made, which would help decision-makers benefit from accounting information in rationalizing their decisions recommendation.

6. Recommendations

The keenness of public and commercial institutions to increase the quality of the accounting information they provide in terms of increasing its accuracy, speed of access, suitability and quantitative efficiency so that this quality is an incentive for managers to use the information in making their decisions. Increasing attention to accounting information helps make comparisons and future predictions, develop strategic plans to improve job performance, and enable management to discover errors and address them. It is necessary to identify the nature of the information that each administrative category needs, taking into account the different categories used for this information, the multiplicity of their needs, and the provision of information necessary for decision-making models.

Declaration of Competing Interest: The author declares that he has no conflict of interest.

References

- [1] L. Turner, A. B. Weickgenannt, and M. K. Copeland, *Accounting information systems: controls and processes*. John Wiley & Sons, 2020.
- [2] E. I. Okoye and D. Gbegi, "Forensic accounting: A tool for fraud detection and prevention in the public sector.(A Study of Selected Ministries in Kogi State)," *International Journal of Academic Research in Business Social Sciences*, vol. 3, no. 3, pp. 1-19, 2013.
- [3] E. Butterfield, "Managerial Decision-making and Management Accounting Information," 2016.
- [4] C. Vercellis, *Business intelligence: data mining and optimization for decision making*. John Wiley & Sons, 2011.
- [5] R. Atkinson, L. Crawford, and S. Ward, "Fundamental uncertainties in projects and the scope of project management," *International journal of project management*, vol. 24, no. 8, pp. 687-698, 2006.
- [6] P. M. Collier, *Accounting for managers: Interpreting accounting information for decision making*. John Wiley & Sons, 2015.
- [7] H. T. Johnson, "Managing by remote control: recent management accounting practice in historical perspective," in *Inside the business enterprise: Historical perspectives on the use of information*: University of Chicago Press, 1991, pp. 41-70.
- [8] A. Chiarini, *Lean organization: from the tools of the Toyota Production System to lean office*. Springer Science & Business Media, 2012.
- [9] G. Dussault and M. C. Franceschini, "Not enough there, too many here: understanding geographical imbalances in the distribution of the health workforce," *Human resources for health*, vol. 4, no. 1, pp. 1-16, 2006.
- [10] M. W. Toffel, "Contracting for servicizing," *Harvard Business School Technology Operations Mgt. Unit Research Paper*, no. 08-063, 2008.
- [11] B. Jørgensen and M. Messner, "Management control in new product development: The dynamics of managing flexibility and efficiency," *Journal of Management Accounting Research*, vol. 21, no. 1, pp. 99-124, 2009.
- [12] S. S. Nissrat, "The impact of accounting information on decision making process," *Socio-economic research bulletin*, no. 4, pp. 120-125, 2014.
- [13] F. Matthews, "The capacity to coordinate—Whitehall, governance and the challenge of climate change," *Public Policy Administration*, vol. 27, no. 2, pp. 169-189, 2012.
- [14] M. Pislaru, I. V. Herghiligi, and I.-B. Robu, "Corporate sustainable performance assessment based on fuzzy logic," *Journal of cleaner production*, vol. 223, pp. 998-1013, 2019.
- [15] S. Uddin, "Management Accounting Control: Contemporary Theories and Issues," 2011.
- [16] B. T. Pentland, "Information systems and organizational learning: the social epistemology of organizational knowledge systems," *Accounting, Management Information Technologies*, vol. 5, no. 1, pp. 1-21, 1995.
- [17] E. Dietzenbacher, B. Los, R. Stehrer, M. Timmer, and G. De Vries, "The construction of world input–output tables in the WIOD project," *Economic systems research*, vol. 25, no. 1, pp. 71-98, 2013.
- [18] J. J. Weygandt, P. D. Kimmel, and D. E. Kieso, *Financial Accounting with International Financial Reporting Standards*. John Wiley & Sons, 2018.
- [19] P. Rikhardsson and O. Yigitbasioglu, "Business intelligence & analytics in management accounting research: Status and future focus," *International Journal of Accounting Information Systems*, vol. 29, pp. 37-58, 2018.
- [20] F. Belfo and A. Trigo, "Accounting information systems: Tradition and future directions," *Procedia Technology*, vol. 9, pp. 536-546, 2013.

- [21] M. C. Kolsi and H. Al Mazroui, "The Determinants of an Accounting Information System Implementation in The Uae: A Case Study of Abu Dhabi National Oil Company (Adnoc)," 2022.
- [22] L. H. Radebaugh, S. J. Gray, and E. L. Black, *International accounting and multinational enterprises*. John Wiley & Sons, 2006.
- [23] E. Bonsón Ponte and T. Escobar Rodríguez, "A survey on voluntary disclosure on the internet: empirical evidence from 300 European Union companies," 2002.
- [24] D. Neogy, "Evaluation of efficiency of accounting information systems: A study on mobile telecommunication companies in Bangladesh," *Global Disclosure of Economics Business*, vol. 3, no. 1, 2014.
- [25] M. Rodrigue, "Contrasting realities: corporate environmental disclosure and stakeholder-released information," *Accounting, Auditing Accountability Journal*, 2014.
- [26] M. Hall, "Accounting information and managerial work," *Accounting, Organizations Society*, vol. 35, no. 3, pp. 301-315, 2010.
- [27] M. Charifzadeh and A. Taschner, *Management accounting and control: tools and concepts in a Central European context*. John Wiley & Sons, 2017.
- [28] R. Ball, A. Robin, and G. Sadka, "Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism," *Review of accounting studies*, vol. 13, no. 2, pp. 168-205, 2008.
- [29] K. Benbouali and M. A. Berberi, "The importance of introducing electronic accounting disclosure using the XBRL language in activating the Algerian stock market," 2018.
- [30] T. Jappelli and M. Pagano, "Information sharing, lending and defaults: Cross-country evidence," *Journal of Banking Finance*, vol. 26, no. 10, pp. 2017-2045, 2002.
- [31] Z. J. Acs and D. B. Audretsch, *Innovation and small firms*. Mit Press, 1990.
- [32] G. Andrienko et al., "Geovisual analytics for spatial decision support: Setting the research agenda," *International journal of geographical information science*, vol. 21, no. 8, pp. 839-857, 2007.
- [33] V. M. Papadakis, S. Lioukas, and D. Chambers, "Strategic decision-making processes: the role of management and context," *Strategic management journal*, vol. 19, no. 2, pp. 115-147, 1998.
- [34] M. Nilsson and H. Dalkmann, "Decision making and strategic environmental assessment," *Journal of Environmental Assessment Policy Management*, vol. 3, no. 03, pp. 305-327, 2001.
- [35] M. Tools, "Root Cause Analysis: Tracing a problem to its origins," available at: www.mindtools.com/pages/article/newTMC_80.htm, 2013.
- [36] P. A. Creed, W. Patton, and D. Bartrum, "Internal and external barriers, cognitive style, and the career development variables of focus and indecision," *Journal of career development*, vol. 30, no. 4, pp. 277-294, 2004.
- [37] M. Adamus and P. Markiewicz, "Psycho-Physical Factors of the Decision Making Process," *Intellectual Economics*, vol. 6, no. 3, pp. 365-376, 2012.