"A review of the empirical evidence on the relationship between audit firm rotation and sectoral specialization and audit quality- an Applied study"

Extracted from a master thesis titled:

" The effect of sectoral specialization upon the audit firm rotation and the implication upon auditing quality – An Applied Study"

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Abstract:

This research aims to investigate the effect of sectoral specialization on audit firm rotation and its implications for auditing quality. The audit process is a critical component of the financial reporting process, as it helps to provide assurance that an organization's financial statements accurately reflect its financial position and performance. Audit firms may specialize in certain sectors, such as healthcare or financial services, and this specialization may enable them to better understand the risks and issues specific to those sectors. However, audit firm rotation (the practice of switching audit firms every few years) is often implemented as a means of enhancing auditor independence and objectivity, and may be more difficult to implement for firms with sectoral specialization due to the loss of specialized knowledge and resources. By analyzing data on audit firm rotations and auditing quality within different sectors, or conducting case studies of firms that have undergone audit firm rotation, this research will provide insights on the relationship between sectoral specialization and audit firm rotation, and the implications of this relationship on auditing quality.

Keywords: audit process, sectoral specialization, audit firm rotation, auditing quality.

1- Introduction

Sectoral specialization refers to the concentration of a company or industry within a particular sector or industry. In the context of auditing, sectoral specialization may have an impact on audit firm rotation and, as a result, on the quality of auditing.

Audit firm rotation, also known as mandatory audit firm rotation or audit partner rotation, refers to the requirement that companies change their external auditing firms at regular intervals. The purpose of audit firm rotation is to improve the independence and objectivity of the auditing process and to reduce the risk of audit failures.

One of the potential implications of sectoral specialization on audit firm rotation is that specialized audit firms may have a deeper understanding of the industry and specific risks faced by companies within that industry. As a result, these specialized audit firms may be more effective at identifying and addressing potential problems during the auditing process. On the other hand, mandatory audit firm rotation may disrupt the relationships and institutional knowledge built up between the audit firm and the company, potentially leading to a decrease in the quality of auditing.

(Risho, 2013, p. 223) in the study of the compulsory rotation of auditing firms concluded the general framework for the various effects in the Egyptian environment. These factors: the independence of the audit partner, the audit partner's ability to detect deficiencies in the audit client's internal control, in addition to its increased ability to detect and report material misstatement of the financial statements.

Overall, the effect of sectoral specialization on audit firm rotation and the implications on auditing quality is an important area of consideration for both auditing firms and regulatory bodies. A balance must be struck between the benefits of specialized knowledge and the potential drawbacks of audit firm rotation in order to ensure the integrity and reliability of the auditing process.

2- Research Problem

The audit process plays a critical role in the financial reporting process, as it helps to provide assurance that the financial statements of an organization accurately reflect its financial position and performance. One important factor that may affect the effectiveness of the audit process is the sector in which the organization operates. Audit firms may specialize in certain sectors, such as healthcare or financial services, and this specialization may enable them to better understand the risks and issues specific to those sectors. However, audit firm rotation (the practice of switching audit firms every few years) is often implemented as a means of enhancing auditor independence and objectivity, and may be more difficult to implement for firms with sectoral specialization due to the loss of specialized knowledge and resources.

Given these considerations, it is important to understand the relationship between sectoral specialization and audit firm rotation, and the implications of this relationship on auditing quality. Some questions that this research problem aims to address include:

- How does sectoral specialization impact audit firm rotation?
- What challenges do firms with sectoral specialization face when implementing audit firm rotation?

- What are the potential consequences of sectoral specialization on auditing quality?

To address these questions, the research could involve analyzing data on audit firm rotations and auditing quality within different sectors, or conducting case studies of firms that have undergone audit firm rotation to understand the challenges and benefits of the process. By examining the relationship between sectoral specialization and audit firm rotation, and the implications for auditing quality, this research could provide valuable insights for policymakers, auditors, and other stakeholders involved in the financial reporting process.

3- Research objective

The research objective of a study on the effect of sectoral specialization on audit firm rotation and its implication on auditing quality would be to examine the relationship between the sectoral specialization of an audit firm and its likelihood of rotating, or changing, its audit clients. The study would also aim to assess the impact of audit firm rotation on auditing quality.

The research objective of a study on this topic would be to explore these relationships in order to understand the role that sectoral specialization plays in audit firm rotation and auditing quality.

4- Research importance

Understanding the relationship between sectoral specialization and audit firm rotation could help policymakers and regulators develop policies and regulations related to audit firm rotation that take into account the potential impact of sectoral specialization. For example, if it is found that audit firms with a high level of sectoral specialization are less likely to rotate their clients, this could inform policies that seek to increase audit firm rotation in order to enhance auditing quality.

5- Research limitation

Endogeneity: There could be unobserved factors that affect both an audit firm's level of sectoral specialization and its likelihood of rotating its clients. For example, an audit firm that is highly respected and sought after by clients in a particular sector may be more likely to specialize in that sector and also less likely to rotate its clients. If such factors are not controlled for, it could lead to biased estimates of the relationship between sectoral specialization and audit firm rotation.

External validity: The results of a study on this topic may not necessarily be generalizable to all audit firms or all industries. For example, the findings may only apply to a specific country or region, or to audit firms of a certain size or type.

6- Research Methodology

One possible approach could be to use a quantitative method, such as a regression analysis, to examine the relationship between sectoral specialization and audit firm rotation. This could involve collecting data on the sectoral specialization of audit firms, as well as data on the audit firm rotation decisions made by their clients. Overall, the appropriate research methodology will depend on the research questions being addressed and the data available, as well as the strengths and limitations of the different methodologies.

7- Research plan

To achieve research objectives, this research is divided into the following sections:

7.1 The Conceptual Framework of the sectoral specialization strategy

7.2 The conceptual framework of the audit firm rotation

7.3 The conceptual framework of the audit quality

7.4 Applied study

7-1 The Conceptual Framework of the sectoral specialization strategy

The business environment has become increasingly complex and has evolved a lot in recent times, that making it difficult for the auditor to determine whether the information included in the financial statements is of sufficient degree Credibility or not. audit offices have increasingly tended to restructure their departments and industrial lines in proportion for business establishments, with the majority of audit teams dedicated to being specialists in a specific industrial sector area in an effort to improve the efficiency of the jobs offered.

The sectoral specialization of the auditor is the restructuring of internal departments (audit departments) within the audit office to be consistent with the industrial lines of clients. (Green.W, 2004, p3.)

7-1-1 The concept of sectoral specialization

Sectoral specialization is that the auditor's acquisition of experience, professional knowledge and a deep understanding of the nature of the business of the client's industry and the risk factors associated with it, how to apply the different accounting principles and treatments, and the ability to identify all the challenges and risks facing this industry, which is reflected in his performance. It is noted that both (Abd Al-Hadi, 2007, p.504) and (Mujahid, 2005 ,P.355) see that the sectoral specialization of the auditor is considered a strategy that distinguishes its goal in order to create a competitive advantage among auditing firms.

The study of both (Phaiboon ,2011, P4) and (chananda et al.. ,2010 ,p3) indicated that the sectoral specialization is the ability of the auditor to perform his duties in a distinct and varied manner, and this affects the quality and effectiveness of the audit process.

Based on the above and was presented, the researcher concludes that the sectoral specialization is a process that the auditor performs in a specific sector or field based on the experiences, skills, knowledge in that industry and its risks. And the ability to discover fundamental errors in a continuous and permanent manner helps to improve the issuance of its professional judgments in a good way and to gain a competitive advantage to increase the quality of the audit process.

7-1-2 The characteristics of the sectoral specialization

The professional market identifying points that indicate importance Industrial specialization in the audit profession, both from the point of view of the auditors themselves and also from the point of view of the audit clients.

A-From the auditors' point of view:

- Providing the highest levels of assurance in financial statements reports that are free from errors and manipulation, due to the auditor’s sufficient knowledge of the industry and for the reason of the balance of his professional experience about the methods of committing fraud, manipulation and errors and how and where they occur. It provides a high level of effectiveness and plays a major role in reducing audit risks and reaching a decision.

- A specialist auditor is more efficient at accomplishing the audit task, as it requires less implementation time than the target time, Since the specialist auditor has sufficient knowledge of the industry and extensive experience in this field, this contributes to the speedy completion of the audit process and issuance of the appropriate report (Habib & bhuiyan, 2018, P.3)

B- From the audit clients' point of view:

- Sector specialization contributes to enhancing disclosure and transparency policies in the financial statements of clients, increasing the level of accounting disclosure of the financial statements subject to audit, and improving the quality of financial information and information content, which leads to reducing the gap between management and users of reports. Clients who follow the transparency approach will choose auditors who are specialized in their field of work **to raise the efficiency of their investment (Elaoud, 2017, p.616)**

However, the audit market has witnessed a number of rapid changes and developments that have prompted the auditors search for an effective way to confront them and achieve distinction from their main competitors to gain a competitive advantage. Therefore, the auditor has set a combination of limitations and considerations that may make a particular sector attractive for auditors' specialization through a set of determinants:

- **Cost-based specialization :**
  Discrimination on the basis of cost depends on the economic situation and the stability of the work environment activity.
  Therefore, these fees are characterized by (discount Fee), While specialized auditors are called according to this strategy Low Cost Auditors (LC) , so The more the auditors reduce the cost, the more they can increase their market share within a particular sector, so we can say that the reasons for the low cost of the audit are as follows:

1. The auditor can distribute the training costs necessary to acquire skills in a particular sector by dividing the number of working hours on a larger number of clients.
2. The larger the client's size and the multiplicity of its activities, the greater the interest and demand for the auditors.
3. Develop the personal auditor to increase the knowledge related to a particular sector of specialization.

- **Product - based Differentiation :**

  This strategy leads to building specialization in auditing, based on the distinguished service provided by the Office of Auditing for a customer, by developing the necessary techniques to perform the audit service with high quality. When specialized auditors are called upon according to this strategy (Fee Premium) and High Quality Auditors (HQ).Compared to the other strategy.

7-1-3 Methods of measuring sectoral specialization

The sectoral specialization is the firm's possession in a particular sector of a large market share and a large number of clients. The degree of sectoral specialization of the audit office can be measured through the following measures (Garcia & argiles, 2018, p99).

- **Market share scale (MS) :**

This measure is used on the basis of the distinction and difference between audit firms in a specific industrial sector, The auditor who owns a large market share in a particular sector and a large number of clients is distinguished from competitors in terms of providing high quality services at lower fees.

The market share, measured by the customer's sales percentage in a particular activity, is determined as follows:

$$\text{Specialization in an activity of the audit firm} = \frac{\text{Total customer sales}}{\text{Total sales activity}}$$

- **Portfolio Share Approach (PS) :**

This approach focuses on determining the specialization on two bases, one of which is the imposition that there is no sectoral specialization for the audit firms, and therefore audit firms take equal shares from each of the sectors. The second is based on the relative distribution of audit services in the office itself (internal sectoral specialization) by dividing the audit services among its auditors. according to their specialization. This is the approach followed by the BIG four auditing firms.

Portfolio share is measured by =

$$\frac{\text{The fees collected from a customer}}{\text{The total fees of all customers for the same industry}}$$

- **Weighted Market Share approach (WMS):**

The third approach was proposed to measure specialization in sectors with small numbers that do not have opportunities for specialization according to the portfolio approach.

Measurement of specialization from the weighted market share entrance =

cut-off of the share entrance Market* cut-off limit for the entrance to the portfolio (Abu Issa, 2011).

7-1-4 Mechanisms of applying sectoral specialization.

In order to be able to make sectoral specialization a tangible reality, There are a number of means and mechanisms that contribute to this.

The role of professional organizations :

The role of professional organizations can be determined through the following points:

- Issuing the necessary guidelines and recommendations for audit offices that clarify the content of the specialization, its importance and how to apply it.
- Providing a guide that includes the names of audit firms according to their sectoral specialization.

- Preparing training courses to train auditors on specific industrial sectors.
- Requiring large-sized business establishments to contract with auditors specialized in their fields industrial.

1. Audit technology development:

Develop the audit technology applied in auditing companies through the following:

- Using the latest electronic audit methods.
- Applying advanced concepts in auditing, such as total quality management.
- Develop statistical and quantitative methods to implement the audit process.

1. The role of audit offices:

Audit offices have an important role in activating the strategy of specialization in the following points (Mansour, 2013):

The realization of audit firms that following the strategy of specialization is considered vital and necessary, and that it will lead to an increase in the efficiency of their professional performance.

Based on that, there is a necessity of supporting the specializing in a particular sector that can allow audit firms to develop deep expertise and knowledge about the industry, which can enhance the quality of their audit services. On the other hand, audit firms that specialize in a particular sector may be more prone to conflicts of interest, and may also be at risk of becoming too closely tied to their clients. This can potentially reduce the independence of the audit and compromise the quality of the audit.

7-2 <u>The conceptual framework of the audit firm rotation</u>

The role of auditors has always been to provide users of financial statements with an independent opinion and confidence in accordance with the framework and standards for financial reporting. In order to enhance the independence of the auditor and protect investors from the possibility of institutions carrying out fraudulent accounting acts, through a set of mechanisms, the most important of which is changing the auditor as stated in Section No. 203 The need to change the auditor after a maximum period of five years has passed, and as stated in Section No. 207 of the same law that The auditor must be changed after seven years from the date of providing audited services(Abu Jabal, 2017, p.147) .

7-2-1 The concept of audit firm rotation:

The talk about mandatory rotation has become much more than talk about voluntary rotation .Accordingly, it has become necessary to have Fresh Eyes (Kramer et al., 2011) or Fresh look (Harris & Whisenant, 2012) at the financial statements, which is considered one of the most important advantages of the obligatory rotation of the auditor.

As for the American SOX law of 2003, it defined it as “imposing limits on the number of successive years in which registered accounting firms operate, also explained what is meant by the rotation of audit partners is to replace and rotate the partner responsible for the audit process, not the main audit facility, after the passage of a period of time to carry out the audit process (Ahmed & Abdel Halim, 2018,p16).The auditor’s rotation also occurs through two alternatives, either it is internal (internal turnover) or externally (external turnover).

By presenting and analyzing some of the previous definitions of the rotation process, the researcher sees that the auditors’ rotation is represented in the following, which is consistent with what they have reached (Alwakil, 2019, p13; Mansour, 2017,p100 ; Ernst & young, 2013)

- **The period of rotation**
- ❖ temporary rotation : is for the company to change the auditor after a period of time with the possibility of returning to contract again with that auditor after a certain period.
- ❖ Permanent rotation : by changing the auditor, with the inability to return to providing audit services to the same client again.
- **Rotation range**
- ❖ Internal (partial) rotation: is by rotating the audit partner, where the company changes only the audit partner and continues with the same audit office
- ❖ External (entire) rotation: The audit facility is completely rotated and replaced with another audit facility, after the specified number of years has elapsed.
- **Degree of applying rotation**
- ❖ Optional rotation

- Mandatory rotation

7-2-2 <u>Arguments supporting the implementation of the rotation policy</u>.

Regarding the goals of mandatory audit firm rotation In order to address the familiarity threat and therefore reinforce the independence it is important to establish a maximum duration of the audit engagement of an audit firm in a particular audited entity as a means of strengthening the independence of the statutory auditor or the audit firm, reinforcing professional scepticism, and increasing audit quality, The most important benefit of rotating auditors is when the auditor is closely related to the audit client after a long contract period, usually the auditor's effort is less and he is less interested in facing difficult issues in the fields of accounting and auditing, and often tends to management in his reports, so rotating the auditor is mandatory will reduce the risk of process failure Review. (Tolaba, 2000, p. 175).

This policy is the effective treatment to reduce cases of conflict of interest between users of financial reports, and as a result of the importance of this policy, it aims to achieve the following:

- Reinforcing the independence of audit firms and reducing the familiarity threat.
- Reinforcing professional scepticism and Auditor control mechanism
- Improving the audit quality
- Increase investor confidence in financial and audit reports
- Control of monopoly by broadening the choice of statutory auditors and small audit firms (through improving market structure).

7-2-3 <u>Arguments against the implementation of the rotation policy.</u>

Despite the advantages of implementing the mandatory rotation policy, there are some doubts about the disadvantage of this policy.

- It may lead to a loss of institutional knowledge and expertise: When employees are rotated to different departments or positions, they may not have the opportunity to develop deep expertise in any particular area.
- It may disrupt team dynamics and cause morale issues: Employees who are rotated to different departments or positions may have to adjust to new team dynamics and work environments.

- It may be costly to implement: Implementing a mandatory rotation policy may require training and development for employees to prepare them for their new roles. This can be costly for the organization.
- It may not be practical for all types of jobs: Some jobs may require specialized skills or expertise that cannot be easily transferred to other positions. In these cases, a mandatory rotation policy may not be practical.
- It may not be effective in achieving its goals: The goals of a mandatory rotation policy may not be achieved if the new positions or departments that employees are rotated to are not a good fit for them. This could lead to employee dissatisfaction and turnover.

7-2-4 Mechanisms to reduce the negative effects of the mandatory rotation policy:

There are several mechanisms that organizations can use to reduce the negative effects of a mandatory rotation policy:

Offer training and development: Providing training and development opportunities for employees can help them adjust to new roles and responsibilities more easily.

Allow for input from employees: Giving employees a say in the rotation process can help to reduce morale issues and increase buy-in.

Use rotations as a development opportunity: Rather than viewing rotations as a disruption, organizations can use them as an opportunity for employees to learn new skills and gain new experiences.

Communicate the benefits of the policy: Communicating the benefits of the mandatory rotation policy to employees can help to increase their understanding and acceptance of the policy. This could include explaining how rotations can help employees to develop new skills and advance their careers.

7-2-5 Determinants of the obligatory rotation policy for the auditor

The rotation policy for auditors, also known as the "auditor term limit," is the practice of requiring auditors to change after a certain number of years. This is done to ensure independence and objectivity in the audit process. There are several factors that can influence the implementation of an auditor rotation policy:

1- Professional standards: The International Auditing and Assurance Standards Board (IAASB) and the Public Company Accounting Oversight Board (PCAOB) have established standards for auditor independence and objectivity. These standards may require or recommend that auditors rotate after a certain period of time.
2- Legal requirements: Some countries have laws or regulations that require or permit auditor rotation. For example, the European Union has a requirement that auditors of listed companies must rotate every 10 years.
3- Best practices: Many companies and auditing firms believe that rotating auditors is a best practice, as it can help to preserve the objectivity and independence of the audit process.
4- Investor expectations: Investors and other stakeholders may expect or prefer that auditors rotate, as it can provide assurance that the audit process is independent and objective.
5- Cost considerations: Rotating auditors can be costly, as it requires the company to find and on board a new auditor. This can be a factor in the decision to implement an auditor rotation policy.

7-3 <u>The conceptual framework of the audit quality</u>

In recent years, the issue of audit quality has gained great importance for many business institutions, whether service or non-service institutions. This is due to the increase in competition in the markets and the rapid changes in today's world.

7-3-1 The Characteristics of the audit quality

The objective of this is to provide a descriptive analysis of audit quality in relation to the sectoral specialization and audit rotation in the Egyptian banking sector. In order to support this analysis, a number of secondary data sources were utilized (for example, the International Standards for Audit), as well as a number of relevant scholarly articles . The specific research question that will be addressed in this paper is as follows: What are the characteristics of audit quality that are related to the sectoral specialization and audit rotation in the Egyptian banking sector? Based on the review of these secondary data sources, it is apparent that there has been a marked increase in the audit fees charged to the banking sector in recent years. This could be a result of a number of factors, including increased competition in the sector and the increased regulatory burden faced by the banks, which has resulted in the need to invest more resources into auditing activities in order to maintain regulatory compliance. Moreover, the fact that the auditors tend to be relatively more specialised in terms of the type of banks they audit could also be a contributing factor. It has also been noted that the trend in increasing the level of bank concentration has put pressure on banks and their auditors to reduce the complexity of the audits in order to limit the overall time and cost associated with the audits process.

Surveyed partners view mandatory rotation, in general, as improving auditor independence both in fact, relating to the auditor’s independent mental attitude, and in appearance, relating to others’ perceptions of auditor independence, which in turn results in a positive impact on audit quality. However, our participating partners also agree that client-specific knowledge is lost because of rotation (reducing audit quality), and that longer auditor tenures yield higher audit quality. As one partner noted, ‘‘audit quality can be negatively impacted when a key member of the engagement team, who has gained special knowledge of a client, is removed from the team’’ (Daugherty et al. 2012). The partners do not view the acceleration of rotation, or extension of cooling-off periods, required by SOX and the implementing SEC rules as improving auditor independence in fact. Accelerated rotation is perceived to enhance independence in appearance, but extended coolingoff periods have no significant effect on perceived independence.

Audit quality refers to the auditor's ability to detect and publicize material errors and irregularities in the financial statements, in addition to reducing information asymmetries between management and shareholders.

The high quality of the audit is linked to the high quality of the information contained in the financial statements, as the financial statements that are audited by high quality auditors are less likely to contain errors and fundamental irregularities.

In order to reach a specific and comprehensive concept of audit quality, it must include the following dimensions:

- Good planning of the audit process.

- Commitment to accounting and auditing standards issued by professional organizations concerned with the profession.

- Adequate disclosure in the report, while providing a reasonable guarantee of discovering fundamental errors and irregularities with the client.

- Scientific and practical qualification of the audit team.

- Achieving audit objectives for all parties at the specified times and at the required level.

Accordingly, the researcher concluded that there is no consensus or agreement on a specific concept of audit quality.

The importance of the quality of audits lies in the extent to which external use of financial regulations can be expected.

The outputs of the audit process, which were represented in the auditor’s report, are of complete quality because they were taken into account in making their decisions and formulating policies, in order to protect financial regulations, and therefore, the quality of audits is a common interest of all stakeholders in the audit process. The ability to carry out the audits depends largely on the auditors' knowledge, experience and skills in carrying out such tasks as auditing financial statements and preparing financial reports.

And that each party in the audit process looks at quality through the goals that it achieves, and its importance to the different parties is as follows: - (Shalaby, 2008, p. 6) (Gibran, 2010, p. 15, 14).

1. **Auditors:**

Auditors are required to complete the audit process with the highest possible quality, and this is the most important thing to improve his reputation and competitive position in his field of work, as well as his fear of exposure to litigants if he fails in the audit process. For this purpose, auditors need to comply with the legal requirements of the profession, understand the framework of external regulations that apply, and maintain a high level of professional ethics to ensure that their audits.

2. **Company Management(The entity being audited):**

The audit quality is one of the guiding and controlling tools for

(Corporate Governance), through proper evaluation of the internal control systems, accounting systems, expressing an opinion on the risks to which the enterprise is exposed, and the extent of efficiency and effectiveness of the management in managing risks, which ultimately leads to achieving the objectives of the enterprise, and improving the means of communication between it and the shareholders.

Methods of controlling audit quality:

Many countries and professional bodies have paid attention to audit quality control and have concluded that there are methods that can be used to achieve this, and that the issuance of quality control standards does not mean that audit offices are committed to applying them. Therefore, it requires a kind of control over the auditor and the audit office in a way that achieves a reasonable degree of compliance with auditing standards and elements. Quality control.

(a) Peer review method

(b) The Public Company Accounting Oversight Board.

7-4 Applied study

7-4-1 Study of Annual Financial Reports, Proxies and Audit Fees

By studying the annual reports over the financial years 2018 - 2022, assessed which Egyptian listed companies changed from audit firm during this period. In each financial year we examined various proxies that could possibly be an indication of the independence of the audit firm and/or the quality of the audit performed by the auditor. A proxy is a possible indicator that is used when the variable to be assessed is not (easily) operationalized and measured. This is certainly the case with the independence of audit firms and audit quality, as audit quality is considered to be a so-called credence good and because of the lack of publicly available information to assess audit independence and audit quality.

Typically, four different types of proxies are commonly used to study the effect of audit firm rotation on audit quality. These proxies differ from assessing audit and going concern opinions, to measuring audit failures (in retrospect) and the audited company's accrual accounting behaviour. We used a mixture of these types of proxies commonly used to study audit firm independence and/or audit quality.Specifcally, we examined:

1. The return of an audit assignment by the auditor or the withdrawal thereof by the listed company, since this may indicate that the auditor or the company do not agree on the conditions or the execution of the audit assignment;

2. The lack of an unqualified opinion by the auditor since this may form an indication of the level of 'severity' of the auditor;

3. The inclusion of an emphasis of matter in the auditor's report, since this may form an indication of the level of 'severity' of the auditor;

4. A delay in the publication of the annual reports in relation to the statutory period or the earlier announcement by the listed company, since this may be due to the level of 'severity' of the auditor.

5. The issuance of a profit warning or recognition of an impairment by the listed company, since this may be instigated by the auditor.

6. Whether an adjustment of accounting principles was implemented (and whether or not this was reported to the supervisor for the financial markets as 'inside information' by the listed company), since this may be instigated by the auditor;

7. The inclusion of key audit matters in the audit report by the auditor,

Which deviates from the risks mentioned in the report of the management board and the supervisory board of the listed company, since this may suggest that the auditor and the management board and/or supervisory board disagree about the matters that were most significant during the audit of the financial statements. In addition, we examined (the change in) the auditor's fee in connection with the audit of the financial statements (audit fees) during the various financial years. The level (and change) of the audit fees may also give an indication of the quality of the audit, whereby it is assumed that lower fees negatively affect audit quality.

Our considerations for using these proxies and audit fees are that they are measurable and can be distilled from public data. They also tie in with the methodology used in international research discussed above. We did not have access to non-public information during our research. A drawback of (some of) the proxies we used is that they are not perfect measuring instruments, as the occurrence of a certain proxy does not necessarily demonstrate auditor independence or quality. For example, a profit warning (proxy 5) could have been instigated by the auditor, but may also be unrelated to the auditor's behaviour.

The proxies involved in our research always assume a value of 0 ('does not occur') or 1 ('occurs'). Only the examined audit fees are not encoded in our database as a digital 0/1-variable, but as a continuous variable. For our analysis, we compared the proxies in the financial year prior to rotation of the audit firm (last year audit, 'LYA'), the financial year after rotation of the audit firm (first year audit, 'FYA') and the financial year in which the decision for rotation was taken or announced (decision year audit, 'DYA') with the other 'regular' financial years during the analysed period 2018–2022. In other words, we compared the existence of circumstances that trigger one or more of the aforementioned proxies during the financial years LYA, FYA or DYA with the existence of such circumstances during the regular years.

7-4-2 Research Methodology

Survey Research

Within the survey study, we used an online questionnaire.44 the questionnaire was distributed to relevant stakeholders in September and October2022. Among these stakeholders were (with the number of respondents in brackets)

– Regulators and supervisors (8);

– Auditors, authorized to perform statutory audits (73);

– Auditors, not authorized to perform statutory audits (24);

– audited companies or institutions (22);

– Users of annual accounts, including interest groups, which represents institutional investors (64).

The questionnaire could be filled in anonymously, so that stakeholders could feel free to answer truthfully. The questionnaire contained 25 questions relating to the maximum duration for statutory audit engagements, the requirements on the cooling-off period and aspects of the regular and mandatory (re)tenders as included in the Audit Regulation. A total of 278 respondents answered one or more questions.

An obvious way to address these identification issues is to use audit quality measures in conjunction with the pricing model. Earlier we noted two types of non-exclusive differentiation strategies: horizontal and vertical differentiation. Simunic (1980) and Simunic and Stein (1987) provide an example of horizontal differentiation stating that audit quality may consist of three components: the level of assurance provided on financial reports (external reporting quality), the ability to contribute to the reliability of the client's internal control systems (internal reporting quality), and the joint production of audit and non-audit services (economies of scope). Vertical differentiation can apply to each of these audit characteristics individually as auditors may vary the delivered quality of any of these characteristics relative to their competitors.

Development of Research Hypotheses To accomplish the objectives of this research and in the light of the findings drawn from previous studies, together with what have been discussed above under literature review and Egypt auditing environment, we formulate the following research hypotheses for the current study:

H0: There is no significant relationship between mandatory rotation of external auditors and audit quality.

H1: There is a significant relationship between mandatory rotation of external auditors and audit quality.

Population and Sample of Study The population of this study consists of all auditors who are working in audit firms in Egypt and are allowed to practice audit process through Audit Accounts Offices in Egypt. The number of audit firms is about 25. One hundred and two questionnaires were distributed, and 66 questionnaires were filled by the respondents and returned to us.

The response rate is 64.7%. Data Collection To achieve the objectives of this study and in the light of literature review and theoretical background, a questionnaire was developed. The questionnaire comprises three sections. Section one contains some demographic information and the current audit practices; section two includes questions about potential effects of mandatory audit firm rotation upon audit quality; and section three comprises questions about overall opinions on requiring mandatory audit firm rotation.

The questions in questionnaire are measured using a 5-point Likert scale, where 1 refers to "strongly agree", 2 refers to "agree", 3 refers to "indifferent", 4 refers to "disagree", and 5 refers to "strongly disagree" (A copy of the questionnaire is available upon request). Reliability of Study Tool To proof the reliability of the study tool, we gave a copy of the questionnaire to many accounting professors in Egypt University and other universities both in and outside Egypt. Also, some copies of the questionnaire were given to auditing professionals in Egypt. In addition, the questionnaire is given to some academic professors who are specialized in statistics. All their notes and comments were taken into consideration before we finalized the questionnaire.

7-4-3 Internal Consistency of the Questionnaire's Reliability

The internal consistency of the questionnaire's reliability was measured by using Cronbach's coefficient alpha statistical test as shown in Table 1. The analysis provides an indication of the average correlation among all the items that made up the scale. The results in Table 1 demonstrate that all indices obtained were considered to be high (above 0.70). A sample scale that shows an alpha value above 0.70 is considered as reliable (Bryman & Cramer, 2001). Therefore, the indices for the questionnaire's reliability are generally considered as adequate for this research.

Table 1 Reliability Statistics

Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
0.790	0.788	16

Statistical Analysis

Descriptive Analysis

Descriptive analysis regarding demography variables is shown in Table 2.

Table 2 Distribution of Respondents According to Demography Variables

DISTRIBUTION	FREQUENCY	PERCENTAGE (%)
EXPERIENCE		
LESS THAN 5 YEARS	24	36.4
FROM 5 TO LESS THAN 10 YEARS	26	39.3
FROM 10 TO LESS THAN 15 YEARS FROM 15 TO 20 YEARS	8 4	12.1 6.1
MORE THAN 20 YEARS	4	6.1
QUALIFICATION		
B.S.C. 24 36.4	24	36.4
GRADUATE DEGREE 12 18.2	12	18.2
CERTIFIED PUBLIC ACCOUNTANT (CPA)/ CHARTERED ACCOUNTANT (CA)/ ASSOCIATION OF CHARTERED CERTIFIED ACCOUNTANTS (ACCA)/CHARTERED FINANCIAL ANALYST (CFA)/CERTIFIED MANAGEMENT ACCOUNTANT (CMA)	44	66.7
OTHERS	2	3
COMPANY'S AUDITOR		
BIG 4	24	36.4
NON-BIG 4	42	63.6
NO. OF EMPLOYEES		
UP TO 50 46 69.7	46	69.7
ABOVE 50 20 30.3	20	30.3

It is shown in Table 2 that 63.6% of the respondents have five years and over experience, and this result indicates the extent of experience and maturity that may be reflected positively upon the work. Table 2 also shows that the majority of the respondents (66.7%) have professional certificates, followed by B.S.C. with 36.4% and graduate degree with 18.2%. These results indicate the highest academic level that respondents have, and this may be positively reflected upon the importance of the information given by the respondents. It is also noted from the analysis that 36.4% of the audit firms are Big 4, which means that the level of audit service introduced by such firms is high.

Moreover, Table 2 also shows that the number of employees working in audit firms is 50 on average with 69.7% and above 50 with 30.3%. This result indicates that the audit firms are working very well and have established themselves in the market, since they are able to attract a large number of employees (auditors) to their firms. This means that they have a large number of clients to audit their financial statements.

Table 3 shows the distribution of respondents according to their current audit practices. It is apparent from the analysis that the auditors provide other services other than audit services to their clients. The first service provided is accounting services (97%) followed by internal audit services (75.8%), and then by financial system design and legal services with 54.5% for each.

Table 3 Distribution of Respondents According to Current Audit Practices

Distribution	Frequency yes	(%)	Frequency no	(%)
Services provided to audit clients (other than audit)				
Financial system design and implementation	36	54.5	30	45.5
Taxation	12	18.2	54	81.8
Accounting services	64	97	2	3
Internal audit services	50	75.8	16	24.2
Management functions or human resources	26	39.4	40	60.6
Legal services	36	54.5	30	45.5
Other non-audit services	34	51.5	32	48.5
Does your company have a policy that requires the mandatory audit firm rotation rules?				
No	38		57.6	
Yes	10		15.1	
No answer	18		27.3	
How many years should the mandatory firm be permitted to compete again for audit services?				
From 3 to less than 5 years	14		21.3	
From 5 to less than 8 years	8		12.1	
From 8 to 10 years	2		3	
Greater than 10 years	2		3	
No answer	40		60.6	
What should be the limit on the mandatory firm's audit tenure period?				

From 3 to less than 5 years 12 18.2	12	18.2
From 5 to less than 8 years 12 18.2	12	18.2
From 8 to 10 years 4 6	4	6
Greater than 10 years 0 0	0	0
No answer 38 57.6	38	57.6

Do you believe that mandatory firm's rotation should be applied uniformly for audits of all public companies regardless of the nature or size of the public companies?		
No 2 3	2	3
Yes 26 39.4	26	39.4
No answer 38 57.6	38	57.6

Also, the results show that the majority of the respondents (57.6%) do not require the mandatory audit firm rotation rule, while 15.1% of the respondents have a policy that requires the mandatory audit firm rotation rule and 27.3% have no answer.

Table 3 also indicates that the majority of the respondents (60.6%) have no answer regarding the number of years that the mandatory firm should be permitted to compete once again for audit services followed by choices of three to less than five years (21.30%) and then five years to less than eight years (12.1%). The results, regarding the statement "What should be the limit on the mandatory firm's audit tenure period?", also indicate that the choices of "three to less than five years" and "five years to less than eight years" have 18.2% for each. Also, the results, regarding the statement "Do you believe that mandatory firm's rotation should be applied uniformly for audits of all public companies regardless of the nature or size of the public companies?", indicate that the respondents were not in agreement, in which 57.6% have no answer, 39.4% answer yes, and 3% answer no.

Results and Testing of Hypothesis

Table 4 shows the means and standard deviations for each question individually and all questions together that test the hypothesis. The analysis indicates that the means range from 2.1 to 3.11, except for Question 5 where the mean equals 4.27. This means that the null hypothesis is rejected. However, the respondents do not agree with the statement that longer partner tenure makes the auditor loss the most important qualities by which he/she should be characterized, namely, professional audit. Thus, his/her performance lacks the quality in the auditing process. The standard deviations range from 0.68 to 1.09, which means that there is an agreement among respondents about the hypothesis, and the variances are low since the standard deviation of any question is less than half of the related mean, except for Question 5 where the standard deviation is high and equals 7.16, meaning that there is no agreement among respondents regarding this question. However, the average mean, for all questions together, of the hypothesis is 2.73 with the average standard deviation of 0.94, which is less than half of the mean. This means that no dispersion existed among respondents about the questions of the hypothesis. Also, the analysis shows that the t-value is 29.922, which is larger than the table critical value of t (1.66), and the p-value obtained is 0.000, which is less than the value of significance at $p < 0.05$, this means that there is a statistically significant relationship. Thus, the null hypothesis (H0) is rejected, and the alternative hypothesis (H1) is accepted as mentioned above.

Table 4 Means, Standard Deviations, T-value, and P-value Used to Test the Hypothesis

Audit quality					
Question no.	Question	Mean	Std. deviation	t-value	p-value
1	Longer partner tenure has an effect on the quality of auditor performance in the auditing process.	2.18	0.68	26.170	0.000
2	Longer partner tenure makes the auditor with a non-renewable look to examine the accounts of the clients. This leads to decline of the quality of his/her performance in the review process.	2.58	0.99	21.068	0.000
3	Longer partner tenure makes the auditor repeat of earlier engagements which foster the tendency of anticipating the results rather than keeping alert to important changes in circumstances. This may lead to decline in the quality of his/her performance.	2.52	0.75	27.273	0.000
4	Longer partner tenure makes the auditor depend on the same papers and documents prepared by the client, so his/her performance lacks the quality in the auditing process.	2.52	0.90	22.739	0.000
5	Longer partner tenure makes the auditor loss the most important qualities by which he/she should be characterized, namely, professional audit. Thus, his/her performance lacks the quality in the auditing process.	4.27	7.16	22.447	0.000
6	Longer partner tenure leads to the possibility of containing the financial statements with mistakes (he/she did not discover). So, his/her performance lacks the quality in the auditing process.	3.11	0.91	27.690	0.000
7	Longer partner tenure makes the auditor slack in his/her work. This increases the opportunity of not detecting the unintentional mistakes. Thus, his/her performance in the auditing process lacks the audit quality.	2.94	1.02	23.389	0.000
8	Longer partner tenure leads to an increase of the risk that the auditor losses his/her performance and objectivity, which ultimately leads to lower quality of his/her performance in the auditing process.	3.00	1.09	23.157	0.000
9	Longer partner tenure reduces the likelihood that the auditor issues a qualified report.	3.00	1.09	22.482	0.000
10	Longer partner tenure increases auditor’s experience and knowledge of the company’s operations and industry, which results in a higher audit quality.	2.1	0.97	17.470	0.000
11	Longer partner tenure of 5-10 years is perceived as being more likely to discover material errors than those with 0-5 years’ experience with the	2.79	0.92	24.615	0.000

	client.				
12	The fresh perspective brought by a new audit firm could increase the audit quality.	2.45	0.75	26.660	0.000
13	The risk of an audit failure is higher in the early years of an audit tenure period, as the new public accounting firm is more likely to have not fully developed and applied an in-depth understanding of the new client's operations and financial reporting practices.	2.91	0.94	25.138	0.000
14	The risk of an audit failure is higher in the early years of an audit tenure period, because the new public accounting firm is more likely to place a heavy reliance on information provided by client management.	3.36	1.02	26.861	0.000
15	The risk of an audit failure is likely to increase as the audit tenure period increases, as client management becomes too familiar with the auditor's approach and procedures.	2.82	1.07	21.484	0.000
16	16 The risk of an audit failure is higher for specialized industries where the number of audit firms with the requested qualifications is limited, which ultimately leads to lower quality.	2.36	0.85	22.517	0.000
	Average mean and standard deviation for all questions together of the first hypothesis	2.73	0.94	29.922	0.000

Notes. t-distribution with 65 degree of freedom, for level of significance of 0.05. The table critical value is 1.66.

7-5 Summary and Conclusions

The objectives of this study are: (1) to explore current audit appointment practices by audit firms in Egypt; (2) to look into the opinions of audit firms in Egypt on potential effects provided by implementing mandatory audit firm rotation (audit quality); and (3) to investigate their views in implementing mandatory audit firm rotation in Egypt.

To achieve these objectives, a questionnaire was developed and distributed to respondents that consist of all auditors working in audit firms in Egypt. The findings indicated that there is a significant relationship between mandatory audit firm rotation and quality of audit. It also indicated that longer partner tenure makes the auditor's performance lack the quality in the auditing process. The average mean of all questions together of the hypothesis is 2.73 with the average standard deviation of 0.94, which is less than half of the mean. This indicated that there is no dispersion among respondents about the questions of the hypothesis.

Also, the analysis shows that the t-value is 29.922, which is greater than the table critical value of t (1.66), and the p-value obtained is 0.000, which is less than the value of significance at $p < 0.05$. These results confirm that there is a statistically significant relationship. Thus, the null hypothesis is rejected. The current study has a number of limitations. First, the scope of this study is limited to audit firms located in Egypt, and it does not represent the listed companies on the Egyptian financial market. Second, the findings of such a study may not be generalized to different countries at different stages of development or with different business environments and cultures.

A comparative study of MAR practices for different countries with emerging capital markets might also be fruitful. Therefore, it would be interesting to replicate this study in other GCC countries or Middle Eastern countries. Third, as this study focused on the impact of MAR on audit quality in Egypt, further research may be directed towards examining the impact of MAR upon auditor independence and the cost of audit rotation. However, variables other than those included in the questionnaire of the study may affect the MAR.

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