



Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP: Investigating Egyptian Auditors Perceptions

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Abstract

This study examines the perceptions of external auditors operating in Egypt regarding technical reserves audit challenges and opportunities with the emergence of Enterprise Resource Planning (ERP). All audit firms that are specialized in reviewing insurance companies' financial statements and are working in Egypt were surveyed to ascertain if there is a notable discrepancy in auditors' perceptions of challenges and opportunities of technical reserves audit with the emergence of ERP. The final sample consists of 126 auditors who work in Big 4 auditing firms, and non-Big 4 auditing firms. Through hypotheses testing the main findings reveal that the auditors' perceptions differ significantly from one another regarding challenges and risks encountering them in auditing the general insurance companies and the impact of ERP systems on the producers they carry out. In addition, the abovementioned perception differences were explained through engaging in auditors' psychological counterpart (i.e., Gender, educational level, audit firm size and experience in auditing insurance companies) throughout the analysis. To the best of the authors' knowledge, this is the first study to investigate the auditors' perception regarding the technical reserve audit while using an ERP in emerging markets. Hence, the current study touches a blind spot in literature as the current investigation and results bring new evidence regarding technical reserve audit which enrich the ongoing debate on technical reserves audit and the challenges and opportunities related to the increased use of software packages like the ERP.

Keywords Technical reserves audit, Enterprise Resource Planning (ERP), Emerging market, External Auditors, Egypt.

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1. Introduction

This paper investigates the perceptions of external auditors operating in Egypt regarding technical reserves audit challenges and opportunities with the emergence of Enterprise Resource Planning (ERP). Moving to more sophisticated technologies for handling operational and financial matters has been an obsession by many businesses recently. Insurance companies is not an exception as the teleworking mode associated with covid-19 pandemic needed massive digital transformation by all the sectors in the market (Metwally *et al.*, 2022). This change was crucial for insurance companies in the pandemic time as many polices especially health and travel insurance needed very quick actions in the covid-19 time and insurance companies that were having proper systems (e.g., ERP, and Enterprise Risk Management) prior to the pandemic were more flexible in moving to telework and were more stable and profitable in the pandemic time as their recovery plans were implemented more efficiently and effectively (Naseeb *et al.*, 2020; Naseeb and Metwally, 2022). Most of the large companies around the world are currently deploying enterprise systems like ERP, while these systems are helpful to the company, the sophisticated IT environment adds many constraints and obstacles in front of external auditors in one hand, while on the other hand it opens many opportunities for faster audits, better internal control, greater coverage in the audit samples and many other benefits which are still a gray area in the auditing literature (Kanellou and Spathis, 2011; Shin *et al.*, 2013; Silva *et al.*, 2023).

Auditors work has changed dramatically because of these transformations in business models, as auditing became more risk based recently as moving to these systems entails many risks especially cyber and other security issues (Metwally and Diab, 2023; Naseeb *et al.*, 2020; Naseeb and Metwally, 2022). Moreover, SAS No.94 states that external auditors should take into account the IT infrastructure in the audited company while preparing their audit strategy, design, evidence collection methods and procedures, evaluating this IT system before all this to check the internal control strength and weaknesses. Having said this, modern days external auditors must have many skills and knowledge of these changing systems to be able to do their job properly (Kanellou and Spathis, 2011; Shin *et al.*, 2013; Silva *et al.*, 2023).

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Most of the studies that investigated the external auditors role in insurance companies in general or the role of the external auditors in technical reserves manipulations and calculations as it was found to be used implicitly as a way of earning management by many companies (Alhassan, 2018; Beaver *et al.*, 2003; Berry-Stölzle *et al.*, 2018; Gaganis *et al.*, 2016; Gaver and Paterson, 2000, 2001, 2004; Martinez and Carvalho, 2022; Nwoye *et al.*, 2021; Song, 2018). While other studies concentrated on external auditors' role in the process of reviewing ERP systems (Kanellou and Spathis, 2011; Shin *et al.*, 2013; Silva *et al.*, 2023).

The current study poses one central research question as follows: ***Do external auditors' personal characteristics and work experience affect their perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP?*** Accordingly, the current study represents – to the best of the researcher knowledge - one of the first studies that investigates the perceptions of external auditors operating in Egypt regarding technical reserves audit challenges and opportunities with the emergence of ERP. Furthermore, the results documented substantial differences among the auditors' perceptions regarding technical reserves audit challenges and opportunities with the emergence of ERP. These differences were explained through engaging in auditors' psychological counterpart (i.e., gender, educational level, audit firm size and experience in auditing insurance companies) throughout the analysis.

The paper is organized as follows. Section 2 illustrates the auditing of technical reserves, challenges and opportunities that face the auditors in the ERP era literature, auditors' perceptions psychological impulsion and develop the study hypothesis and sub-hypotheses. Section 3 presents the contextual ramifications including insurance development and auditor's role in this sector. Section 4 illustrates the study statistical and procedural methods as a research methodology. Section 5 includes results and discussion. Finally, the last section discusses the conclusion, implications, limitations, and future research directions.

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2. Literature Review

2.1 External auditors' engagement in technical reserves

Insurance companies represent one of the key pillars in any economy. It helps companies and individuals to transfer risks of their activities through its processes of insurance, takaful and reinsurance (Benyoussef and Hemrit, 2019; Caporale *et al.*, 2017; Nissim, 2010; PEREŞ *et al.*, 2012). They contribute to financial stability by spreading risk among multiple parties (Caporale *et al.*, 2017; Metwally and Diab, 2021). Insurance companies are unlike banks as they do not collect deposits, which may make sudden liquidity problems. Moreover, insurers are subject to very strict capital requirements (Metwally and Diab, 2023), which entails more stability when compared to banks, as insurers' reserves with different kinds if calculated in the right manner will help in the financial stability of the company (Berhe and Kaur, 2017; Plöckinger *et al.*, 2016). However, recently and after the global financial crisis it was apparent that this point of view is not totally true as insurers were impacted by bank problems directly which entails insolvency and capital adequacy problem to insurers (Caporale *et al.*, 2017; Mohamed Metwally, 2017)

Having said this, the accuracy of calculating technical reserves represent an important issue in insurance industry as Gaver and Paterson (2004) reported that loss reserves represent around 53 percent of insurers average liabilities. In that sense, it is one of the most important items to regulators and stockholders, as any misestimation could jeopardize the insurer's financial strength and potentially lead to insolvency (Weiss, 1985). While, estimating technical reserves seem to be very technical process, the truth is that it is a subjective and debatable gray area in insurance and auditing literature due to many factors (Alhassan, 2018; Gaganis *et al.*, 2016; Sriram and Shi, 2021; Weiss, 1985).

These factors include the claim time and the uncertainty associated with the payment and reporting of this claim which can vary in amount and be delayed for years. Insurers are required to align claims with premiums according to the matching principles, ensuring profitability reporting within specific timeframes. Although premiums are recognized in the year they are incurred while many claims remain unrecognized or settled at the same year the premiums were recognized. Actuaries employed by insurers predict future loss payments and

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expenses to estimate individual claim costs, providing a recommended range for management to determine reported loss reserve levels. This unique nature of loss reserves sheds light on potential reserve bias. For example, financially weak insurers may underestimate reserves to avoid regulatory scrutiny (Petroni, 1992). Empirical evidence from Beaver *et al.* (2003) suggests that property-liability insurers manipulate reported earnings through reserve estimation practices. Further studies build upon these findings, demonstrating that weak insurers adjust loss reserves to evade regulatory intervention and to conceal financial distress (Sun *et al.*, 2012).

Accordingly, there is a growing debate in the literature that relates technical reserve manipulations with earnings management (Berry-Stölzle *et al.*, 2018; Gaver and Paterson, 2000, 2001; Martinez and Carvalho, 2022; Nwoye *et al.*, 2021; Song, 2018). Insurance companies, including notable examples like the American International Group, Inc (AIG), have not been immune to accounting scandals involving manipulations aimed at meeting earnings targets (Eckles and Halek, 2010; Gaganis *et al.*, 2016). The auditing process (external and internal), in theory, serves as a monitoring mechanism to mitigate management's incentives to manipulate reported earnings, detect earnings manipulation, and identify misstatements (Abass *et al.*, 2022; Nwoye *et al.*, 2021; Puzić, 2020). Numerous studies investigated the association between earnings management and audit quality, as earnings manipulation represent one of the most debated topics in academia and practice (Alhassan, 2018; Berry-Stölzle *et al.*, 2018; Gaganis *et al.*, 2016; Gaver and Paterson, 2004; Martinez and Carvalho, 2022; Nwoye *et al.*, 2021; Song, 2018).

All the abovementioned problems in technical reserves audit were in the traditional manual or half-computerized systems. Currently, the progress in IT and digital transformation around the world represent a new environment that the auditors must cope with (Silva *et al.*, 2023). In such environment auditors are required to rely more on computer-assisted auditing techniques (CAATs) to be able to cope with the ERP systems deployed in the companies (Vasarhelyi *et al.*, 2018). However, this has many advantages to auditors it also has limitations, as fully automated and seamlessly integrated information technology cannot be applied in complex ERP environments (Shin *et al.*, 2013).

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The implementation of an CAATs along with ERP system can enhance auditing practices in several instances. Firstly, it improves auditors' capacity to spot irregularities and uncover fraud, leading to more effective and efficient audit procedures. Additionally, it reduces the audit report latency and contributes to the prevention of fraud through continuous audit functions. Finally, empirical studies have consistently observed the positive impact of current ERP systems on business performance (Silva *et al.*, 2023). On the contrary, such systems also have great vulnerability to cybersecurity which needs some outsourcing by insurers in many instances, this also leads to more complex audit environment (Naseeb and Metwally, 2022).

As a result, the current inquiry adds to the literature on ERP and auditing in the context of Egypt. Due to the fact that the majority of studies focused on auditing in a changing environment and the use of technologies generally rather than the insurance sector's issues with technical reserves or auditors' perceptions of the opportunities and challenges they actually face when auditing technical reserves while a company has an ERP system in place. Having said this, it is clear that there is a research gap in the technical reserves auditing in general and with the ERP existence in specific. This gap is the scarcity of research on the technical reserves audit in the Egyptian and MENA context. In addition, the literature was concerned with issues like earning management through technical reserves and what is the role of the auditor in detecting such behavior, loss reserves audit, and auditing using complex technologies like computer-assisted audit tools (CAATs). However, this literature includes many insights, it was noticed that there is ignorance to the role of external auditors in technical reserves audit and how they perceive the technical reserve audit with the emergence of ERP deployment, what are the opportunities and challenges associated with this massive change. To fill this gap, the current study focuses on investigating the perceptions of external auditors operating in Egypt regarding technical reserves audit challenges and opportunities with the emergence of ERP. In the next subsection, the authors will illustrate the theoretical framework and the psychological role of demographic factors in shaping auditors' perceptions then the study hypothesis is developed.

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2.2 External Auditors' Perceptions Regarding Disclosures

Individuals and their actions are products of their culture. Accordingly, comprehending their behavior requires knowledge in anthropology, sociology, or even psychology. Concerns about neoclassical economics theories' capacity to describe the current issues that develop during decision-making processes have recently grown (Metwally, 2016). This call for a revival of psychological and sociological research that aims to comprehend and explain human behavior (Diab and Metwally, 2020; Diab and Mohamed Metwally, 2019).

The fields of finance and accounting research encompass both neoclassical and agency perspectives, which generally assume that management behavior is primarily rational (Abdelazim *et al.*, 2022; Diab *et al.*, 2023; Diab and Mohamed Metwally, 2019; Mohamed Metwally, 2017). These viewpoints give minimal opportunity for judgement, peculiarities, or illogical behavior and its influence on the results of decisions. However, research in the fields of psychology and sociology has shown that personal traits do have an impact on how decisions are made (Diab and Metwally, 2020, 2021; Diab and Mohamed Metwally, 2019; Metwally *et al.*, 2022). In line with this viewpoint, Hambrick and Mason (1984) propose that an important factor in business decision-making at the individual level is personal traits. They contend that senior managers' traits have a substantial impact on the strategic decisions taken by businesses and, consequently, on business performance.

Hambrick and Mason (1984) were the first to combine numerous ideas on the effect of "values and cognitive bases of powerful actors in the organization" with the origins and reasons of organizational action and results. The upper echelons hypothesis, which is based on the idea of bounded rationality, asserts that people who are presented with complicated strategic decisions tend to simplify them because of their constrained understanding and processing abilities. The view of the real-world scenario is filtered by this simplification, which is comparable to a lens or a slanted screen. It is influenced by the decision-makers' cognitive underpinnings, ideals, and unique personal traits (Plöckinger *et al.*, 2016). Psychological factors are often challenging to measure empirically. To mitigate ambiguity and enhance measurability and validation, Hambrick and Mason (1984) suggest equating psychological personality traits with demographics as a

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substitute (i.e. age, education and experience). Moreover, according to Hambrick and Mason (1984), the characteristics and strategic choices of upper echelons can be affected by situational factors within the organization. These situational characteristics include aspects like the external environment and firm-specific attributes (i.e., firm size and international operations) (Hiebl, 2014).

Regarding the auditors' perceptions, numerous studies in accounting literature have focused on examining the disparities between males and females in various aspects such as decision making, personality traits, risk tolerance, aversion, communication styles, and transparency (Abdelazim *et al.*, 2022). The findings of many studies suggest that female members offer an alternative perspective that deserves significant attention. Previous research has indicated that women in leadership positions relative to their male counterparts, women tend to be more risk-averse (Adams and Ferreira, 2009; Aribi *et al.*, 2018). They are often more conservative, potentially due to lower confidence levels (Barber and Odean, 2001). As a result, When women are selected as CEOs or CFOs, their judgements on finance and acquisitions are frequently sensible, cautious, and result in stable growth, which is preferred in such positions (Huang and Kisgen, 2013). Furthermore, Mittelstaedt and Wiepcke (2014) illustrated through their study that men generally exhibit greater familiarity and interest in financial matters compared to women. The discrepancy between women and men might be explained by the fact that women often experience higher levels of anxiety while working with difficult mathematical computations (Hill *et al.*, 2016; Malaquias and Zambra, 2019). Moreover, Schubert (2006) study concluded that, in comparison to males, women tend to have a more negative attitude on gains. They also thrive at risk diversification and have good communication abilities. Based on these results, the study hypothesized that, while women may be more suitable for risk management posts due to their higher degrees of risk aversion, males may be favored for risk analysis roles due to their greater propensity for taking risks. Webster and Ellis (1996) concluded that men tend to report higher levels of self-confidence, which provides evidence for this idea. Women are typically thought of as being less risk-taking than males. Watson and McNaughton (2007) further emphasized this by observing that women exhibit a greater tendency for conservatism in investment decisions and long-term planning, such as pension plans. This suggests that women often approach their decisions in a more rational

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manner. In contrast, Olsen and Cox (2001) hypothesized and assured that women may take a more conservative approach to investing, which might result in lesser profits. However, Sonfield *et al.* (2001) study concluded no significant differences between men and women in innovative planning and actions, or risk management planning and practices.

Many studies in the auditing literature have focused on auditors' individual characteristics and how they influence their decisions and judgements (Cheng *et al.*, 2009; Metwally, 2022; Nelson and Tan, 2005; Nelson, 2009; Ye *et al.*, 2014). Much research has clarified that the audit work performance is determined by an individual's experience, aptitude, and knowledge (Koh *et al.*, 2009; Metwally, 2022; Ye *et al.*, 2014). The audit quality was linked to the adequacy of knowledge and skills (Koh *et al.*, 2009; Libby and Tan, 1995; Metwally, 2022; Ye *et al.*, 2014). Adequate knowledge and abilities are acquired through practice and experience, workshops, official teaching via rules, and, lastly, education (Libby and Tan, 1995; Metwally, 2022). The efficiency and efficacy of auditors, their professional judgement, and the likelihood of an audit failure, are all directly influenced by education, direct knowledge, and experience, among other factors (Koh *et al.*, 2009; Libby and Tan, 1995; Metwally, 2022). As a result, this study contends that auditors' perceptions of technical reserves audit, opportunities and challenges related to the emergence of ERP are influenced by auditors' personal qualifications.

The predominant topic in the literature on auditors' perception and judgement was work and professional experience (Kertarajasa *et al.*, 2019; Moradi *et al.*, 2011; Nehme *et al.*, 2019). Work and professional experience psychologically influence personality, which makes a person smarter and more cautious in their actions. Studies in the literature have also linked the experience of the auditors with audit quality, and those studies have demonstrated a positive relationship between work and professional experience and audit quality (Kertarajasa *et al.*, 2019; Moradi *et al.*, 2011; Nehme *et al.*, 2019; Zahmatkesh and Rezazadeh, 2017). As a result, the auditor's ability to perform better in terms of audit quality and judgement will rise with experience as the number of jobs completed over time will increase and more abilities are acquired. Additionally, it is anticipated that auditors' perceptions of various technologies and techniques will vary

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because not all technologies and procedures are equally complex and because some internal control procedures in the ERP, in particular, may have hidden messages or hidden backdoors (Nehme *et al.*, 2019; Zahmatkesh and Rezazadeh, 2017).

One of the key issues in the literature, along with experience, expertise, and educational level, was the size of the audit firms. The relationship between audit firm size and audit quality was extensively researched in the literature, with contradictory findings (Al-Ajmi, 2009; Beisland *et al.*, 2018; Khurana and Raman, 2004). However, these variations in outcomes were noted. The majority of studies have found that Big 4 firms produce higher-quality audits for a variety of reasons, including: they have adequate resources compared to smaller audit firms (DeAngelo, 1981); better control systems (Al-Ajmi, 2009); greater independence than smaller firms because their reputation would be at risk (DeAngelo, 1981); and they charge higher audit fees, allowing them to devote more time and effort to each client (Abdelazim *et al.*, 2022). According to some studies, the Big 4 audit firms implement varying degrees of strictness depending on the country they are located in and how much the country protects its investors, in contrast to the main strand, which claimed that Big 4 companies always enforce and implement strict controls to yield higher quality audits (Beisland *et al.*, 2018; Metwally, 2022). In light of the numerous studies linking audit firm size to audit quality, the current study makes the case that the Big 4 in Egypt should be expected to view challenges and opportunities of the ERP impact on auditing technical reserves differently from non-big 4 auditors due to their international exposure, resources, and differences in training and qualifications.

Based on the above discussion, the following hypothesis have been formulated:

H1 "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to their personal characteristics, workplace and audit procedures of auditing such technical reserves".

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As the personal and functional characteristics include several factors, the main hypothesis can be divided into four sub-hypotheses as follows:

H1.1 "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to Gender".

H1.2 "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to qualifications (educational level)".

H1.3 "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to the auditor firm size".

H1.4 "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to the auditors' experience in auditing insurance companies".

3. Contextual Ramifications

The insurance industry and capital market in Egypt is one of the oldest established industries in the MENA region and Africa (Abdelazim *et al.*, 2022; Diab *et al.*, 2023; Metwally and Diab, 2021). The origins of Egypt's insurance industry are in "Mohamed Ali's" 1805 modernization reforms, especially when he started exporting cotton and wheat to Europe and marine insurance emerged through insurance agents from Britain, France, and Italy. This encouraged foreign companies to open branches, though for foreigners insurance contracts were confined to fire, marine, theft, and life insurance (Alhamalway, 2009). When the Suez Canal opened in 1869, the need for insurance contracts increased and about fifty foreign insurance companies' branches opened within two years (Hakim, 1955; Mohamed Metwally, 2017).

The Egyptian insurance industry flourished during British colonization. In the mid-nineteenth century Egypt was a main source of cotton for Great Britain's textile mills. It also became a main market for selling British goods as a result insurance was needed to secure trade and foreign capital, and this economic exploitation initiated new insurance types like fire, inland, and cargo (EFSA, 2014).

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The geopolitical ramifications in the Egyptian context affected Insurance industry, its control, and how the provisions are calculated and audited overtime. As risk factors regarding these provisions change overtime and are affected by the sociopolitical factors surrounding the insurance industry (Diab *et al.*, 2023; Diab and Metwally, 2021; Metwally and Diab, 2021, 2023; Metwally *et al.*, 2022; Naseeb *et al.*, 2020). One of these major changes was in 1994 when Egypt joined the General Agreement on Trade in Services (GATS), so the government modified some laws and regulations to reflect subsequent market competition. In February 1995 law No.91 was issued to amend old laws (Abobakr, 2003). The most important change that is connected to this research is that the external auditor was Egyptian and registered as accepted by EISA; and tightening sanctions on any company that violates the law (Alhamalway, 2009).

Since early 2000s, Egyptian authorities changed many regulations to control and govern the insurance and capital market in general (Metwally, 2022; Metwally *et al.*, 2021). The most important laws and standards are shown as follows:

- Corporate scandals like Enron and World Com meant the Egyptian Insurance Supervisory Authority (EISA) made market reforms by issuing compulsory corporate governance regulations. In addition to applying specified risk assessment methods and implementing actuarial assessment outsourcing (EISA, 2004; Naseeb and Metwally, 2022). Moreover, listed companies had to develop a good internal control system and define the previous terminologies in a manual the EISA sent companies' chairman. At the end of the manual the EISA determined that companies' should report these reforms and developments on a quarterly basis (ALshabasy, 2011; Mohamed Metwally, 2017).
- Early in 2008, Law No.118's issuance started risk based supervisory procedures. The law enforced insurance companies that merged both insurance activities (life and non-life) to separate them within 2 years, though this could be extended according to EISA approval (Wagdi, 2014). The law concentrated on underwriting procedures and insurance producers' commissions, registration, qualifications, and training.

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- In accordance with Law No. 10, EFSA was established in 2009 and has its own legal status. It is in charge of overseeing and regulating non-banking financial markets and instruments, such as the capital market, exchange market, and all activities pertaining to insurance services, mortgage financing, and financial leasing. It has taken the place of several former regulatory agencies, including EISA, the capital market authority, and the mortgage finance agency (Metwally and Diab, 2021; Mohamed Metwally, 2017).
- Egyptian Standards on Auditing (ESA No. 3400) mandates that an external auditor to review the information that was anticipated and submit a report with his or her assessment of the material's readability, understandability, and reliability. (FRA, 2008).
- Lastly, the Egyptian Capital Market Authority introduced new regulations in 2018 that mandate external and governmental auditors to provide a separate audit report on their view on corporate governance report prepared by listed businesses.

4. Methodology

4.1 The Sample Composition and Selection

Scholars suggest that when no other approach is practical or productive, experts advise conducting surveys to get reliable findings. (Bouwman *et al.*, 1987; Cooper and Schindler, 2003; Johansen and Plenborg, 2013). Based on the related prior literature, the Egyptian regulation, and the guidelines issued by the Financial Regulatory Authority, the authors developed a pre-survey containing a list of items that are relevant to understand the nature of auditing the insurance companies and the problems that arise from using ERP systems when auditing the technical reserves in these companies. To ensure the relevance of items included in the questionnaire, the survey was distributed in a pilot survey composed of ten auditors randomly selected to ensure the accuracy and the relevance of the questions. Thus, the authors made the necessary revisions and changes to increase the survey's effectiveness and understandability.

The modified version of the questionnaire included thirty closed-ended Likert-based questions divided into six parts, in addition to four general questions. Likert scale is adopted for all questions included in the survey (based on a five-point scale), where the score of one point means "strongly disagree" to five points that refers to "strongly agree". Table (1) shows the main parts of the survey.

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To identify the targeted participants, the authors collected the financial statements of the general insurance companies working in Egypt under the Financial Regulatory Authority's (FRA) supervision. The financial statements are available at FRA. The authors then identified the audit firms that audited the financial statements of general insurance companies. The auditors of Misr for insurance company were eliminated because they have expertise only for such a public business sector that uses one ERP system, and the auditors are supposed to be very familiar with that specific system. Eleven public audit firms were engaged in auditing the financial reports of the general insurance companies in Egypt. However, no official information was available on the number of auditors who have engaged in this audit in each audit firm; therefore, the authors decided to target all members of the financial audit teams in all eleven audit firms. Printed questionnaires were delivered by hand to the auditors. A total of 185 questionnaires were distributed, while the returned and completed ones were 126.

Table 1: The questionnaire's sub-sections

	Sub-sections	Number of questions
	Part one: Personal Questions (4 questions)	4
	Part Two: the questionnaire main questions:	
1	Difficulties encountering auditing the financial statements in general insurance companies	7
2	Requirements of auditing the financial statements in general insurance companies	9
3	Challenges of calculating the technical reserves in general insurance companies	6
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	3
5	Risks of using ERP systems in general insurance companies subject to the audit	3
6	Impact of the actuarial report on Carrying out additional audit procedures	2
	Total	30

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The statistical analysis of the current study uses both parametric and non-parametric tests. The parametric one-sample t-test is used to examine if the mean of the whole sample differs significantly between different responses based on the mean, while the nonparametric one-sample Wilcoxon test examines the significance of variances based on the median that is not relevant to the current study. Therefore, the one-sample t-test is more relevant for the current study as it is used in this regard as an initial test before performing the nonparametric tests. In the second step, the statistical analysis used nonparametric tests namely the Mann-Whitney test and the Kruskal-Wallis test. Using non-parametric tests because they give more accurate results when the sample includes unequal size groups compared with parametric tests, as such tests do not require the collected data to be normally distributed (Dancey and Reidy, 2007). Those tests help us to obtain evidence if there are significantly relevant differences between the two selected ranks from the same sample regarding the difficulties encountered in auditing the technical reserves as measured by the general insurance companies.

As Table 2 illustrates, roughly 75% of respondents are males, which is not a surprise in the audit sector in an emerging market such as Egypt due to the cultural aspects regarding the difficulties of the auditing work that may not be relevant to a high percentage of the females in the Egyptian society. All the respondents graduated with a major in accounting, which strengthens the results of the current study from the auditors' point of view regarding the study subject.

The respondents' qualifications illustrate that ninety of them are bachelor's degree holders (71.4%), and thirty-six respondents held a professional certification such as CPA or ACCA. Almost two-thirds of the sample (81 participants) work in one of the big-four firms. In comparison, forty-five participants are local audit firms affiliated with a foreign audit firm otherwise the big four. The experience in audit work shows that more than 16% of the participants have more than 15 years of expertise, while 68.3% of the sample have joined the audit firms for five years or less. Furthermore, 91% of the respondents have worked in auditing insurance companies for five years or less, while roughly 10% of the sample have expertise in that area for more than 15 years, and 18.3% have moderate expertise in that field. The variety of expertise in the audit field in general and auditing the insurance sector is expected to be reflected in the familiarity with using the ERP systems in the audited company and the problems that arise from that use. Table 2 provides an overview and descriptive statistics of the sample composition.

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We employed the test of Cronbach's α to ensure the internal consistency and the reliability of the questions included in the questionnaire. The results of the overall sample test are 0.852, which confirms good internal consistency.

Table 2: Sample composition

Characteristics	Category	Frequency	Percentage
Gender	Females	31	24.6%
	Males	95	75.4%
	Total	126	100%
Graduation	Accounting	126	100%
	IT Specialized	0	0
	Other	0	0
	Total	126	100%
Qualification	Bachelor	90	71.4%
	Professional Certificate (e.g.: CPA, ACCA)	36	28.6%
	PhD	0	0
	Other	0	0
	Total	126	100%
Working Place	Big 4	81	64.3%
	International audit firm not Big4	45	35.7%
	Local audit firms	0	0
	Total	126	100%
Expertise in auditing insurance companies	< than 5 Years	91	72.2%
	5 - < 15 Y	23	18.3%
	15 - < 25 Y	12	9.5%
	More than 25 years	0	0
	Total	126	100

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5. Results and Discussions

5.2 Initial indicators

In this section of the study, the responses received from the auditors regarding auditing the technical reserves in the insurance companies and the impact of ERP systems on the producers the auditors carry out in performing the audit will be discussed and explained. Table 3 below shows the mean and standard deviation for the sample. Furthermore, the significance of the differences between the overall means of respondents' opinions about these items on the one hand and the default test value means on the other hand, which equals three as the middle of a five-point Likert scale itself equals this value.

Table 3: The participants' responses to the study questions

No.	The Questionnaire Items	Mean	STD.	The default means.	t. value	sig t.
1	Difficulties encountering auditing the financial statements in general insurance companies	3.9830	.48508	3	92.169	0.000***
2	Requirements of auditing the financial statements in general insurance companies	4.0917	.45435		101.088	0.000***
3	Challenges of calculating the technical reserves in general insurance companies	3.7368	.48459		86.559	0.000***
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	3.9127	.49203		89.262	0.000***
5	Risks of using ERP systems in general insurance companies subject to the audit	3.7540	.87654		48.073	0.000***
6	Impact of the actuarial report on carrying out additional audit procedures	1.7739	.34872		57.099	0.000***

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The above table illustrates the main parts of the questionnaire. The current study mainly concerns the auditors' viewpoint on the challenges of auditing the technical reserves in the general insurance companies and whether the insurance company's use of an ERP system significantly affects the audit producers, positively or negatively. T-test was used to examine if there were significant differences in the perceptions of auditors regarding items included in the survey. To perform the one-sample t-test as the first step, the analysis relies on measuring the significance of the differences between the overall means of the respondents' opinions and the default means test value which equals (3), which represents the middle of a five-point Likert scale. The highest means for the first five subsections in the questionnaire (more than 3 points), reflects high agreement between the auditors regarding the impact of challenges encounter in auditing the financial information that is prepared using ERP Systems in the insurance companies. Notable that for the sixth subsection the lowest mean (less than 3 points) reflects high agreement between auditors about their doubts regarding estimating the technical reserves as the actuarial expert concludes. According to table (3), the mean for the last subsection was 1.7739, which suggests that auditors do not trust the actuarial report and its estimations. The auditors know clearly that performing the audit is their personal responsibility, and they are in charge of any risks related to the audited financial reports even if they rely on formal reports from experts like the actuaries.

Table (3) shows significant differences in the auditors' perceptions of the challenges encountered in auditing the general insurance companies and the impact of ERP systems on the producers they carry out for the audit. The means for all items ranged between (3.7368) for challenges of calculating the technical reserves in general insurance companies and (4.0917) for requirements of auditing the financial statements in general insurance companies. At the same time, all means are more than (3). Also, the significance of the T-test indicates that all differences are significant at level $P < 0.01$. Hence, further analysis is required to explain the effects of auditors' characteristics on the challenges of auditing the technical reserves that the accountants estimate and report using ERP systems.

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5.3 Hypotheses Test

Based on the results of the T-test, this part is dedicated to further statistical analysis to examine the study's hypothesis:

H1: "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to their personal characteristics, workplace and audit procedures of auditing to such technical reserves". For the accuracy of the analysis, each factor included in the main hypothesis is examined in a particular hypothesis as follows:

5.2.1 The first Sub-Hypothesis:

As it mentioned earlier, H1.1 assumes that: "There are significant differences among auditor's perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to Gender". The range of means of responses is between the higher two options, "Agree" and "Strongly agree," for the first five subsections, while the last subsection is between "Disagree" and "Strongly disagree". Notwithstanding the females' responses represent higher means than males', the Mann-Whitney test results show different significance levels in parts of the survey. The results of the test are shown in table (4).

The table illustrates that the females agree with the first five categories of questions higher than the males. The females' responses at averages higher than four points for the first four parts of the questionnaire (4.346, 4.233, 4.108, and 4.011, respectively), while the males responded to the same categories were less than four points except for the second part regarding the requirements of auditing the financial statements in the general insurance companies (3.865, 4.046, 3.616, and 3.881 respectively). Mann-Whitney test shows significant differences for all the questionnaire parts. Differences regarding parts one and three are significant at a P-value < 1%, as the differences for part four are significant at a P-value < 5%. However, the responses to part six of the questionnaire show significant differences regarding the auditor's dependence on the actuarial report as being prepared by a specialized expert. Mann-Whitney test indicates that the respondents do not fully trust the actuarial report that estimates the technical reserves in light of the ongoing regulations and rules. Results of the test show that the females have less trust than men in that actuarial report (means 1.613 and 1.8945, respectively) with a P-value less than 1%.

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Table 4: Impact of Gender on auditors' perceptions:

No.	Items	Female		Male		Mann–Whitney test	
		Mean	STD.	Mean	STD.	Z. Value	Sig. z
1	Difficulties encountering auditing the financial statements in general insurance companies	4.346	0.3014	3.865	0.4758	-4.468	0.000***
2	Requirements of auditing the financial statements in general insurance companies	4.233	0.2787	4.046	0.4909	-1.672	0.094
3	Challenges of calculating the technical reserves in general insurance companies	4.108	0.1584	3.616	0.4941	-5.706	0.000***
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	4.011	0.4752	3.881	0.4956	-2.470	0.014**
5	Risks of using ERP systems in general insurance companies subject to the audit	3.989	0.2787	3.677	0.9863	-1.797	0.072
6	Impact of the actuarial report on carrying out additional audit procedures	1.613	0.2432	1.8945	0.3336	-4.992	0.000***

The abovementioned results suggest that female members offer an alternative perspective that deserves significant attention (Abdelazim *et al.*, 2022). Through reading the results we can argue that there is consistency with the results of some studies in this regard. As they agrees with results reached by Mittelstaedt and Wiepcke (2014) that men generally exhibit greater familiarity and interest in financial matters compared to women. This difference may be attributed to higher levels of anxiety experienced by women when dealing with complex mathematical calculations (Hill *et al.*, 2016; Malaquias and Zambra, 2019), and

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by Schubert (2006) who reported that women tend to be more pessimistic regarding numbers when compared to men. And the results of Watson and McNaughton (2007) who reported that women exhibit a greater tendency for conservatism in investment decisions and long-term planning, such as pension plans, risk management, and judgement, this suggests that women often approach their decisions in a more rational manner. Finally, the results agree with the literature in that women in leadership positions tend to be more risk-averse compared to their male counterparts (Adams and Ferreira, 2009; Croson and Gneezy, 2009). Therefore, the first sub-hypothesis can be accepted for subsections one, three, four, and six, namely, Difficulties encountering auditing the financial statements in general insurance companies, Challenges of calculating the technical reserves in general insurance companies. Impact of ERP systems on improving audit of technical reserves in general insurance companies, and Impact of the actuarial report on carrying out additional audit procedures. The hypothesis is rejected for subsections two and five, namely, Requirements of auditing the financial statements in general insurance companies and Risks of using ERP systems in the general insurance companies subject to the audit.

5.2.2 The Second Sub-Hypothesis:

As it mentioned earlier, H1.2 assumes that “There are significant differences among auditor’s perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to qualifications (educational level)”.

Although the survey included four options for this factor, the respondents' qualifications were limited to two educational certificates. Therefore, Mann-Whitney test is employed to examine the second hypothesis. Similar to the previous hypothesis, the range of means of responses is between the higher two options, "Agree" and "Strongly agree," for the first five subsections, while the last subsection is between "Disagree" and "Strongly disagree". However, according to table 5, the analysis indicates no significant differences in the auditors' perceptions regarding the challenges they encountered when auditing the insurance companies.

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Table 5: Impact of auditors' qualifications on auditors' perceptions:

No.	Items	Bachelor		Professional Certificate		Mann-Whitney test	
		Mean	STD.	Mean	STD.	Z. Value	Sig. z
1	Difficulties encountering auditing the financial statements in general insurance companies	3.984	0.5011	3.980	0.449	-0.077	0.939
2	Requirements of auditing the financial statements in general insurance companies	4.104	0.4506	4.062	0.468	-0.265	0.791
3	Challenges of calculating the technical reserves in general insurance companies	3.722	0.4441	3.773	0.578	-1.405	0.160
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	3.907	0.4662	3.926	0.558	-0.081	0.936
5	Risks of using ERP systems in general insurance companies subject to the audit	3.707	0.8978	3.870	0.8215	-0.645	0.519
6	Impact of the actuarial report on carrying out additional audit procedures	1.7832	0.3586	1.7499	0.327	-0.245	0.807

This result suggests that the nature of auditing such companies requires high awareness of possible difficulties that require special attention when auditing such companies, no matter the qualification of the personnel who perform the audit. Therefore, the second sub-hypothesis can be rejected for all parts of the questionnaire as all six parts have no significant differences in the auditors' perceptions due to their educational level.

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From reading the abovementioned results, we can argue that there is an inconsistency with the results of the previous studies in this regard. As almost all the previous studies found an impact of the educational level, and background on auditors and managers perceptions (Koh *et al.*, 2009; Metwally, 2022; Ye *et al.*, 2014). Having said that, the results of this study has not found any significant differences in auditors' perceptions of technical reserves audit, opportunities and challenges related to the emergence of ERP because of the change of the educational level or background.

5.2.3 The third Sub-Hypothesis:

As mentioned earlier, H1.3 assumes that *“There are significant differences among auditor’s perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to the auditors’ audit firm size”*.

The responses generally show high agreement for the questions included in the first subsections of the survey, while the last subsection was largely rejected from the whole sample. The Mann–Whitney test results were used to verify this hypothesis, as table (6) illustrates.

The analysis shows no significant differences exist for the five subsections, which suggests high agreement amongst the auditors regarding the difficulties and challenges emerging when auditing the technical reserves in the insurance companies along was using ERP systems at the client place. Results of the test show significant differences between the respondents regarding the risks that arise when auditing those insurance companies which use ERP systems (P-value < 5%), suggesting that auditors who are working at one of the big four have higher awareness regarding risks that treat the financial information (including the technical reserves) that is produced and extracted from an ERP system.

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Table 6: Impact of audit firm size on auditors' perceptions:

No.	The items	Big4		Non-Big4		Mann–Whitney test	
		Mean	STD.	Mean	STD.	Z. Value	Sig. z
1	Difficulties encountering auditing the financial statements in general insurance companies	4.023	0.4847	3.911	0.4828	-1.482	0.138
2	Requirements of auditing the financial statements in general insurance companies	4.118	0.4515	4.044	0.4608	-0.358	0.720
3	Challenges of calculating the technical reserves in general insurance companies	3.716	0.5086	3.774	0.4412	-0.003	0.998
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	3.926	0.5191	3.889	0.4438	-0.134	0.893
5	Risks of using ERP systems in general insurance companies subject to the audit	3.955	0.6867	3.393	1.0572	-2.498	0.013**
6	Impact of the actuarial report on carrying out additional audit procedures	1.7223	0.3718	1.8666	0.3044	-0.589	0.556

Reading the abovementioned results, reveals it is partially consistent with early studies as it seems that the auditor firm size had no significant difference in most of the studied items which contradicts with studies that found that Big 4 firms produce higher-quality audits compared to smaller audit firms (DeAngelo, 1981); better control systems (Al-Ajmi, 2009); greater independence than smaller firms because their reputation would be at risk (DeAngelo, 1981); and they charge higher audit fees, allowing them to devote more time and effort to each client (Abdelazim *et al.*, 2022; Al-Ajmi, 2009; Fuerman, 2004; Goodwin-Stewart and

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Kent, 2006). While it agrees with studies that reported problems in the ERP and the risks associated with its usage (Kanellou and Spathis, 2011; Shin *et al.*, 2013; Silva *et al.*, 2023).

Therefore, the third hypothesis can be accepted for the fifth subsection of the questionnaire, namely, risks of using ERP systems in the general insurance companies subject to the audit but will be rejected for the remaining subsections of the questionnaire.

5.2.4 The Fourth Sub-Hypothesis:

As it mentioned earlier, H1.4 assumes that *“There are significant differences among auditor’s perceptions regarding Technical Reserves Audit Challenges and Opportunities with the Emergence of ERP due to the auditors’ expertise in auditing insurance companies”*.

Table 7 below shows the descriptive statistics and results of the Kruskal–Wallis Test on the six subsections included in the questionnaire. The table illustrates that the expertise in auditing the insurance companies in the environment of the ERP system has positively increased the auditors' awareness regarding the challenges they may encounter in auditing the electronic records of those companies.

Table 7 shows that significant differences arise in the auditors' perceptions of the challenges of auditing the technical reserves and the impact of ERP systems on facilitating the audit of technical reserves (P-value < 5%). Also, the experience has a negative but not significant impact on the dependence of auditors on the actuarial report on estimating the technical reserves; that is, the auditors have some doubts that managers of the insurance company may stress the actuarial expert to manipulate the estimation of the technical reserves as a tool for earnings management. From reading the mentioned results, we can ensure that these results agreed with the results partially agree with previous studies in this regard. The results agree with previous studies in that work and professional experience psychologically influence personality, which makes a person smarter and more cautious in their actions. As a result, the auditor's ability to perform better in terms of audit quality and judgement will rise with experience as the number of jobs completed over time will increase and more abilities are acquired (Metwally, 2022). Additionally, as the current study results confirmed auditors' perceptions of various technologies and techniques will vary because not all technologies and

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Table 7: Impact of auditors' expertise in Auditing Insurance Companies on auditors' perceptions:

No.	Items	5 Y or Less		5 to 15 Years		15 to 25 Years		Kruskal–Wallis	
		Mean	STD.	Mean	STD.	Mean	STD.	Chi-Square	Sig.
1	Difficulties encountering auditing the financial statements in general insurance companies	3.845	0.5598	3.987	0.4841	4.214	0.1776	2.405	0.300
2	Requirements of auditing the financial statements in general insurance companies	3.812	0.8154	4.149	0.3144	4.194	0.0691	5.447	0.066
3	Challenges of calculating the technical reserves in general insurance companies	3.535	0.3508	3.866	0.2667	4.292	0.1443	64.745	0.000***
4	Impact of ERP Systems on improving audit of technical reserves in general insurance companies	3.857	0.2817	3.957	0.976	4.25	0.2072	12.416	0.002***
5	Risks of using ERP systems in general insurance companies subject to the audit	3.670	0.887	3.789	0.965	3.917	0.2887	1.251	0.535
6	Impact of the actuarial report on carrying out additional audit procedures	1.8132	0.3207	1.6956	0.5069	1.6251	0.1443	0.606	0.739

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procedures are equally complex and because some internal control procedures in the ERP, in particular, may have hidden messages or hidden backdoors (Azza, 2021; Nehme *et al.*, 2019; Yuniati and Banjarnahor, 2019).

Therefore, the fourth sub-hypothesis can be accepted for subsections three and four, namely, the Challenges of calculating the technical reserves in general insurance companies and the Impact of ERP systems on improving the audit of technical reserves in general insurance companies but will be rejected for the remaining subsections of the questionnaire.

6. Conclusion, Limitation, and Future Research

The aim of this study was to investigate the perceptions of external auditors operating in Egypt regarding technical reserves audit challenges and opportunities with the emergence of Enterprise Resource Planning (ERP). All audit firms that are specialized in reviewing insurance companies' financial statements and are working in Egypt were surveyed to determine whether there is a significant difference between auditors' perceptions regarding challenges and opportunities of technical reserves audit with the emergence of ERP. Hypotheses testing revealed there are significant differences in the perceptions of respondents regarding the challenges and risks encountering them in auditing the general insurance companies and the impact of ERP systems on the producers they carry out. In addition, the abovementioned perception differences were explained through engaging in auditors' psychological counterpart (i.e., Gender, educational level, audit firm size and experience in auditing insurance companies) throughout the analysis.

The current investigation contributes to literature and practice in two main areas. First, To the best of the authors' knowledge, this is the first study to investigate the auditors' perception regarding the technical reserve audit while using an ERP in emerging markets. In that sense the current study brings new evidence regarding technical reserve audit which enriches the ongoing debate on technical reserves audit and the challenges and opportunities related to the increased use of software packages like the ERP. Second, focusing on the psychological component of the auditing process adds a new level of comprehension to how auditors view the world, as demonstrated by the current findings, which demonstrate how demographic considerations play a significant role in altering

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auditors' perceptions about technical reserve audit with the emergence of ERP systems (Cheng *et al.*, 2009; Elder and Allen, 1998; Kanellou and Spathis, 2011; Kleffner *et al.*, 2003; Libby and Frederick, 1990; Libby and Tan, 1995; Nelson and Tan, 2005; Nelson, 2009; Silva *et al.*, 2023; Ye *et al.*, 2014).

The current study makes some theoretical and practical suggestions to deepen our comprehension. These repercussions relate to the necessity of a full assessment of the present methodology of technical reserves calculations, standards and laws in Egypt should be clearer with regard to the auditor's role in reviewing these reserves in order to meet the requirements of the auditors. According to the study's findings, gender and experience have great impact on how auditors perceive the technical reserve audit opportunities and challenges as a result, the authors conclude that gender diversity and female representation in formulating audit team is very crucial as they will provide the audit team with different perspective regarding technical reserve audit and will be more conservative and risk averse in the process which entails risk assessment and judgements in general. Further the authors suggest that the Egyptian Society of Accountants and Auditors (ESAA) hold additional workshops to encourage knowledge sharing among auditors about technical reserves, their calculations, their auditing best practices. This is because direct knowledge and experience were found to have notable discrepancies in perceptions.

The current study has some limitations. First, this study deployed a self-reported survey as its main methodology to understand auditors' perceptions regarding the opportunities and obstacles in auditing technical reserves with the emergence of ERP, which may include some biases. Hence, taking this into consideration is crucial when reading our results. Second, the current study is a cross-sectional study that included data collection at the same point in time, in that sense, further analysis is needed in future studies especially longitudinal case studies is required to overcome this limitation. Finally, the results of the current study were based on the auditors working in the Egyptian context and these conclusions cannot be generalized to all other auditors working in the MENA region due to the difference in the regulations control estimating the technical reserves.

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Finally, the current study results would be helpful for HR team in audit firms as the educational background and level of education were not found to affect the perception of auditors regarding technical reserves calculation, risks, opportunities and challenges relating to the emergence of the ERP. However, the HR departments of audit firms should work heavily on training and retaining experienced auditors since, according to the present study's findings, they are more apt to see complicated information as being more beneficial when making auditing decisions.

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تحديات وفرص مراجعة الاحتياطات الفنية مع ظهور نظم تخطيط موارد المؤسسات (ERP): استقصاء آراء المراجعين العاملين في مصر

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ملخص البحث

استهدف البحث التعرف على تصورات المراجعين الخارجيين العاملين في مصر فيما يتعلق بالتحديات والفرص المتعلقة بمراجعة الاحتياطات الفنية مع ظهور تخطيط موارد المؤسسات (ERP) بشركات التأمين. وقد تم استقصاء جميع شركات المراجعة المتخصصة في مراجعة القوائم المالية لشركات التأمين لتحديد ما إذا كان هناك فروق معنوية ذات دلالة إحصائية بين بين تصورات المراجعين فيما يتعلق بالتحديات والفرص في مراجعة الاحتياطات الفنية التي تلزم شركات التأمين بتكوينها، وذلك في ظل استخدام نظم تخطيط موارد المؤسسات (ERP)، وتكونت العينة النهائية للدراسة من ١٢٦ مراجعاً للحسابات يعملون في شركات المراجعة الأربعة الكبار Big-4 وكذلك شركات المراجعة من غير الأربعة الكبار. وتمثلت أبرز نتائج البحث في وجود فروق ذات دلالة إحصائية في تصورات المستقضي منهم فيما يتعلق بالتحديات والمخاطر التي تواجههم في تدقيق شركات التأمين العامة وتأثير أنظمة تخطيط موارد المؤسسات على إجراءات المراجعة الذين يقومون بتنفيذها. بالإضافة إلى ذلك، فقد أظهر التحليل الإحصائي للاستبيان أن الاختلافات في تصورات المراجعين يمكن تفسيرها من خلال فهم الاختلافات في الخصائص الشخصية للمستقضي منهم (النوع، والمستوى التعليمي، وحجم شركة المراجعة، والخبرة في مراجعة شركات التأمين العامة). وعلى حد علم المؤلفين، تعد هذه الدراسة الأولى من نوعها على مستوى الأسواق الناشئة والتي سعت لاختبار تصورات مراجعو الحسابات بشأن مراجعة الاحتياطات الفنية لأنشطة التأمين وذلك في ظل استخدام نظم تخطيط موارد المؤسسات. ومن ثم، فإن البحث الحالي يلقي الضوء على مشكلة بحثية لم تتطرق إليها الدراسات السابقة، حيث تقدم النتائج أدلة مهمة فيما يتعلق بمراجعة الاحتياطات الفنية والآثار المتوقعة لتبني شركات التأمين لأنظمة تخطيط الموارد على إجراءات المراجعة، وهو ما يثري النقاش المستمر حول مراجعة الاحتياطات الفنية والتحديات والفرص المتعلقة بزيادة استخدام حزم البرامج مثل تخطيط موارد المؤسسات (ERP) على عمل المراجعين بشكل عام وفي شركات تأمينات الممتلكات والمسئوليات بشكل خاص.

الكلمات المفتاحية:

مراجعة الاحتياطات الفنية، نظم تخطيط موارد المؤسسات، الأسواق الناشئة، مراجع الحسابات الخارجي، مصر.