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الجوانب القانونية والعملية لاعتماد برمجيات الذكاء الاصطناعي في مكاتب المحاسبة

في المملكة الأردنية الهاشمية

Legal and Practical Aspects of Adopting Artificial Intelligence Software in Accounting Offices in the Hashemite Kingdom of Jordan

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Abstract

This study deals with addressing the entry of AI in accounting offices in Jordan, by explaining the mechanism of work of this smart accounting software, which works with a limited presence of the human element, therefore, it explains the impact of the work of these elements with smart accounting software to increase its efficiency by reducing bias and the presence of continuous human supervision and working transparently and accurately. It also shows the advantages of introducing smart software (smart accountant) in accounting work compared to traditional accounting. Finally, in the absence of specialized legislation to determine the responsibility of smart software in the event of its errors, we will try to rely on the Jordanian laws in force for this work, such as, the Jordanian Civil Law and the Electronic Transactions Law.

Key words: AI, Smart accountant, Software, liability, Smart application, Human Elements

المخلص

تتناول هذه الدراسة معالجة دخول الذكاء الاصطناعي في مكاتب المحاسبة في الأردن، وذلك من خلال شرح آلية عمل هذا البرنامج المحاسبي الذكي الذي يعمل بحضور محدود للعنصر البشري، وبالتالي فإنه يوضح تأثير عمل هذه العناصر مع برامج المحاسبة الذكية لزيادة كفاءتها من خلال تقليل التحيز ووجود إشراف بشري مستمر والعمل بشفافية ودقة. كما يوضح مميزات إدخال البرنامج الذكي (المحاسب الذكي) في العمل المحاسبي مقارنة بالمحاسبة التقليدية. وأخيراً، وفي ظل عدم وجود تشريعات متخصصة تحدد مسؤولية البرمجيات الذكية في حال حدوث أخطائها، سنحاول الاعتماد على القوانين الأردنية المعمول بها في هذا العمل، مثل القانون المدني الأردني وقانون المعاملات الإلكترونية.

الكلمات المفتاحية: الذكاء الاصطناعي، المحاسب الذكي، البرمجيات، المسؤولية، التطبيق الذكي، العناصر البشرية

1. Introduction

The emergence of artificial intelligence has brought about a technological revolution in all sectors, as it is an evolution of computer systems and software and is distinguished from it in that it makes its decisions independently and has predictability and continuous learning. One of the areas that the world of artificial intelligence has introduced is the development of the work of the traditional accountant, which relies on traditional accounting software into smart accounting software.

The presence of smart applications in accounting is an organizational process that is carried out in smart technological ways to make accounting work more accurate, faster and less expensive. Therefore, it is a process to rearrange the work of the traditional accountant and arrange its new responsibilities, as smart applications deal with big data through hidden patterns and linkages. This enables accountants to assess risks in unprecedented details, so artificial intelligence becomes a vigilant partner, showing risks in accounting operations, auditors are directed towards areas most vulnerable to fraud or error (Deloitte, 2023).

Some argue that artificial intelligence has a significant impact on the accounting profession, a subfield of computer science that aims to create computational systems that can carry out activities that previously required human cognition. AI can analyze financial data, automate various activities, and provide vital insights to improve decision-making. (Stancu, & Duțescu, 2021)

This research discusses the repercussions of introducing artificial intelligence to carry out accounting work, so we will call this smart accounting software (Smart Accountant). Also, during the work of the smart accountant, this software will need human elements and these elements may be specialized that will be represented (Traditional Accountant). Sometimes, ordinary employees such as programmers, data entry operators, secretaries and others we will call them (Human Elements).

Research problem

Although the accountant's work has evolved from manual work to working through electronic accounting software, yet this enhanced by working through smart electronic software (based on artificial intelligence), therefore, this research deals with the legal and practical aspects of adopting artificial intelligence software in accounting offices under the laws in the Hashemite Kingdom of Jordan.

Importance of research

This research exams the regulation of AI accountant software , it address the legal and practical aspect through demonstrating the impact of human accountant intervention on such application in terms of input bias, supervision, transparency and the advantages of the smart accountant compared to the traditional accountant, it also discuss under the Jordanian legislation how transforming ethical considerations into legal rules governing the work of the smart accountant, the extent to which the smart accountant possesses legal personality and the legal responsibility of the human accountant for the work of the smart accountant.

Research Objectives

This research aims to: -

- 1 - Identify the optimal handling of human elements dealing with smart accounting applications
- 2 - Benefit from the advantage of the smart accountant compared to the traditional accountant
- 3 - The possibility of applying (smart accountant) in the presence of the relevant traditional laws
- 4 - The legal liability resulting from the use of (Smart Accountant)

2. The impact of human accountant intervention on the application of smart accounting software

Although the smart software represented by the smart accountant works independent, but it still needs the intervention of the human element,:

1.2 Input bias

The work of smart software begins after entering the data required from the human element, however there could be human bias when entering information. Therefore, this bias in the information may reflect a similar bias to the outputs. To solve these problems, it is possible to increase the entries from more than one person and from different sources, as well as purchasing smart programs from specialized companies that enter data automatically according to Latest releases. Al Abadi, H., (2023)

Algorithmic bias is an illegal business, so it is necessary to address and eliminate biases in artificial intelligence software proactively, and to conduct continuous monitoring of smart systems and input processes to ensure their adherence to the principles of justice (Ahmad, A, 2024) To address potential biases, it is essential to carefully review the data used to train algorithms and take steps to mitigate potential biases. Accountants can play a role in addressing these challenges by ensuring that companies are transparent and accountable and by helping to identify and mitigate any biases in the data and algorithms used. (Perdana, 2024).

Some believe that to achieve the success of the smart accountant, protocols must be created for the security of the input data, and adherence to basic data protection laws and consumer privacy laws. Thus, the ethical use of artificial intelligence in the field of accounting requires a careful examination of possible biases. Consequently, those who work in this aspect must have experience in both accounting and artificial intelligence, in addition to impartiality (Soori, 2023)

However, there are still many questions about the professional use of AI remain unanswered. Protecting data privacy is critical to protecting people's rights. Data quality and features affect AI bias. Biased data may lead to biased outcomes in AI, which distrusts AI. (Van Bekkum& Borgesius, 2023)

2.2 The need for a human accountant supervisor

Despite the advantages of using smart accounting programs without human intervention, and the fact that this software analyzes and thinks about everything presented to it separately from other operations and independently of the human element, but the presence of the human accountant remains an important element in helping this smart software. As smart software does most of the work of the traditional accountant and traditional software, but the human element has a limited role represented in entering public data represented by accounting

theories, research, accounting standards and accounting laws such as Labor Law and Social Security Law, Commercial Law, Companies Law, Tax Laws and other approved and applicable laws. In addition to entering the personal information of each customer and sometimes entering accounting elements such as daily sales if they are not directly linked with the merchant's store. As well, the supervisory role of the human accountant in terms of supervising and auditing the outputs of the smart accounting program for fear of any defect in these outputs.

Some argue that the ability of a smart accountant to issue accounting data independently and at the same time under human supervision makes it complicated . (Carter & Nielsen, 2017) Some may prefer that the smart accountant work independently without human intervention. Also, autonomous intelligent systems can learn from the surrounding environment and perform dangerous or impossible tasks. Compared to the smart accountant, they give an example that intelligence is used in drones (UAVs), without human intervention. (Munoko et al. 2020). Some may argue that the presence of human supervision will increase the cost of implementing and maintaining accounting artificial intelligence, and therefore it requires highly qualified accountants if they perform the task of human supervision and auditing, which increases costs .(Staszkiwicz, 2024) Moreover, the element of experience is required in the human accountant, some believe that errors may be due to the lack of experience of the data entry human supervisor, (Totschnig, 2020)

The authors consider that the presence of the human accountant when using (smart accountant), is mandatory to do some work supporting this smart software, and there must be legislative regulation that requires accounting offices that adopt smart accounting applications to have a human accountant in them who has specialized courses in this field approved by the official authorities that serve as a license to work with smart systems. The enforceability of Human supervision shall be applied in terms of inputs for smart programs as well as supervision of outputs and ensuring their integrity. Therefore, the presence of human supervisory acts as a preventive element when there is an error to address it before sending the accounting entries to the official authorities or relying on them internally with subsequent work.

On the other hand, the authors deem that introducing this smart software to the Hashemite Kingdom of Jordan is a new era of accounting, so there should be intensive control over this software in order to prove its existence. However, launching the work of the smart accountant without human control may be currently unattainable, as the applications of the smart accountant are modern and cannot be launched without control, guidance or follow-up of the results of its work. The matter may develop in the coming years to complete the accounting process in a fully smart way, with the availability of a smart environment that starts from sales to stores, money transfers and dealing with banks. Thus, linking this data with the accountant's software becomes possible. In addition to linking this software to sites for legal legislation, such as Jordanian sites that publish judicial rulings and laws, such as Qararatak , Adalah, Qistas, and others, to provide the smart accountant with judicial rulings and laws issued and amended to enter the smart accounting system to apply them when carrying out arithmetic work.

Thus, the authors believe that no matter how the smart accountant works in an independent manner, the user of the smart accountant system will follow up on any weaknesses that arise from this system and confront them with solution.

2.3 Traditional accountants' doubts of losing their jobs

It is natural to enter smart systems represented by the smart accountant to do most of the calculation tasks, financial proposals, lists and other work, which will raise the fears of the traditional category working in this field by losing their jobs related to accounting work. Some argue that a traditional accountant will resist the work of a smart accountant, due to concerns about the potential layoffs of human workers due to automated systems (Alshurafat, 2023).

On the other hand, there is the ability of a smart accountant to analyze vast amounts of data for accountants – valuable insights that were previously difficult or impossible to obtain manually. It also reveals hidden connections and linkages that traditional methods may have ignored. (Goh & Seah, 2022).

The authors believe that technological development cannot be stopped just because of doubt of losing the job, as the entry of traditional accounting software did not stop the work of the traditional accountant, but rather enhanced itself to deal with these programs, Moreover the

entry of smart software create new works, such as the work of the data entry for the smart system or the supervisor of the outputs of the smart system and others.

Some add that having a smart accountant could benefit business processes by leveraging AI-assisted automation (the goal is to create an automated system that is responsible and efficient and at the same time prevents accountants from losing their jobs. (Ahmad, 2024)

2-4 Transparency in the work of the human element supervising the smart accountant

One of the main features of working with artificial intelligence software in general and smart accountant applications in particular, dealing transparently with the work of the smart accountant to remove ambiguity about his work because it is considered modern in the accounting field. Moreover, transparency eliminates any doubt of bias in the inputs of the smart program. However, one of the outputs of smart applications is to improve credibility, transparency, and even independence from unwanted internal and external interferences. (The China Story, 2020)

On the other hand, best practices Developers must make AI systems more transparent by providing access to training data, algorithms, and decision-making processes, facilitating auditing, identifying bias, and building trust. (Schweitzer, 2024)

The authors suppose that the concept of transparency for the smart accountant is intended to mean that this smart system must do its work within the legal standards adopted in accounting and to ensure its work in this way, the supervising human accountant must be able to understand the smart software used and the mechanism of data entry for the smart accountant and the way it learns and follows up the results, all of which must be compatible with the accounting legal principles to achieve transparency in these works. Therefore, the audit of the smart accountant may be in two stages, the first is from the human supervisor accountant, which is similar to (internal accountant) and also the work of the smart accountant can be audited by a neutral human party, which is similar to (auditor), and all these audit work to achieve smart accounting work with high transparency, reliable and tight.

2.5 The impact of the input of the human element on the outputs of the smart accountant

In the past, accounting operations were carried out manually, and the matter has evolved to become generally through special accounting software and human intervention by entering and analyzing data. But compared to offices that use artificial intelligence software, the differences in work may be large, and in favor of artificial intelligence software, as the smart accounting program can be provided with a number of accounting information, accounting and auditing methods and other accounting systems. At the same time, it is possible to enter data on customers and companies accredited to the accounting office. The more data input the more the accuracy of the results and outputs. Thus, when the accounting office requests any accounting process, the smart system will use the best options based on accounting science, and output the results in a record time compared to traditional computers and their software, and it does not require human intervention except for general supervision.

Some believe that smart software deals with the inputs it is provided professionally and is able to deal with any new situation, because it has a will independent of the human supervisor, and without the need for his intervention. (Abul Fotouh & Hassan. 2022)

3. The advantages of the smart accountant compared to the traditional accountant

The presence of the smart accountant and its applications have produced many advantages that the traditional accountant lacks. So, this smart software will act as supporting and developing elements for accounting work, and these advantages include: -

3.1 AI Accounting works with prediction

Human brains suffer from the sheer volume of data generated by the modern financial world. This is where AI shines. Its ability to analyze large data sets and predict future trends provides accountants with invaluable insights they can never derive. (Agrawal, 2019) AI advantages is the exclusivity of decisions, forecasting and analysis, and this is what distinguishes it from traditional accounting software, which is limited to the approved software aspects.

The degree of accuracy of AI software appeared better than the accuracy of prediction of human specialists and more than the predictive accuracy of jurists, with practical experiments. (Zichun, 2022)

3.2 Accounting AI works with self-learning

Smart accounting software capable to develop itself through its potential for self-learning and thus develop its accounting outputs. It relies mainly on two aspects. First, the theoretical basis entered into it from statistics, software, algorithms and tax research. Second, what was presented to it from real accounting operations that have been processed in the smart accounting system. “the smart accountant learns all the time, so someone must control it, and control how these data algorithms learn because they are constantly learning, because the smart accountant feeds on this data.” (Staszkiwicz, 2024) On the other hand, a smart accountant can learn fraud detection systems through data related to past financial crimes, enabling them to identify suspicious transactions. This proactive approach strengthens the auditor's shield against financial irregularities, and protects stakeholders from potential losses. (Xero, 2023)

3.3 Faster accounting AI

AI's ability to quickly perform repetitive and time-consuming tasks has become a hallmark of its adoption in accounting. (Ahmad& Higgins, 2021) the speed of access to data and processing by smart software is not related to its all images via the basic work, but it can access Internet , various reports and etc.if the smart program needs for that. On the other hand, to support the principle of speed, smart applications do not need rest in holidays, festivities and humanitarian excuses. (Caner, 2022)

3.4 Accounting AI is the safest and most reliable

Smart accounting operations are automated without the intervention of human elements. Such non-intervention secure the customer data confidentiality. on the other hand, the accounting data stored in smart systems is more secure and protected than traditional electronic software in terms of exposure to hacking, and these smart systems rely on hard-to-penetrate blockchain technologies.

This transformation enables accountants to engage in activities that require higher-level decision-making and expertise, such as financial analysis, tax planning, and business advisory services. Thus, improving the accuracy of accounting work, reducing errors, and ensuring compliance with financial regulations AI algorithms can identify and correct errors in financial statements,

tax returns, and other accounting documents, enhancing the overall quality and reliability of financial reporting (Bui, 2020)

3.5 Accounting AI supports the automation of accounting data

Using big data, computing, and data science, the assistant AI automates simple tasks to aid decision-making. (Munoko,2020). A I used in accounting allows companies and individuals to tackle previously unachievable goals, helping to make decisions rather than trying to rely on human intelligence, achieves these goals. (Al-Qudah, 2023) AI can also automate tasks in auditing as well, such as data mining and analysis. However, accountants must ensure that the use of AI maintains the independence and objectivity of the audit process. (Bui, & Jaradat, 2020) Furthermore, AI-based automation is also used to review and compare internal and external sources of information, processing paperwork, conference calls, emails, press releases and news media. (Ahmad, A, 2024)

3.6 AI accountant supports the implementation of laws related to accounting

The accountant may not have legal experience, as he does his work based on his experience in accounting and the implementation of special laws, such as trade, companies, tax and other laws. On the other hand, the accountant may be unfamiliar with bylaws that are important in accounting procedures, which negatively affects the implementation of his work, and expose him to legal or administrative penalties. Unlike the presence of smart accounting software, where these risks are negated, the laws and their branches are preserved in the memory of the smart accountant through the initial inputs, therefore smart accounting programming will deal directly with these laws and apply their provisions without even human intervention.

4- Transforming ethical considerations into legal rules governing the work of the smart accountant in the Jordanian legislation

The widespread use of AI in accounting is leading to many ethical concerns including the protection of personally identifiable information, algorithmic bias, transparency, and accountability. AI systems are responsible for managing sensitive data, such as personal and financial information. This situation has raised concerns about the confidentiality and security of these systems. (Bankins& Formosa, 2023)

To address these challenges effectively, a comprehensive strategy that encompasses emerging technology, organizational structures and ethical guidelines is required. The efficient use of this methodology is pivotal to the optimal and effective integration of AI into accounting protocols (Ahmad, 2024)

The authors believe that the ethical aspects can be independent rules and can be turned into legal rules, especially since the regulation of the responsibility of the smart accountant is one of the topics that are not legally regulated. The ethical rules are varied, some of which are general as ethical rules for the uses of artificial intelligence, or general ethical rules for the accounting profession, whereas some of them are private, such as the ethical rules for the smart accountant exclusively. However, any ethical rule that is legally regulated in the Jordanian legislation becomes binding and transforms from an ethical norm to a legal norm. Therefore, it must be entered as an important part of the smart accountant's input to rely on it and not violate it, and the human supervisor must monitor the application of these ethical rules by the smart accountant during the implementation of his duties. On the other hand, there must be legal penalties for those who violate these legislatively regulated ethical rules. These works can be audited by the impartial external auditor, and since the smart accountant is capable of machine learning, he must be provided with advanced and up-to-date programs on the evolution of the ethical rules regulated by law.

Indeed, Jordan has codified ethical rules by issuing the National Charter of Ethics for the Use of Artificial Intelligence Technology based on Article 21 of the Jordanian Policy for Artificial Intelligence issued (2020). The charter set out in its (Fourth) item the ethical principles for the responsible use of artificial intelligence techniques, and addressed various issues, including privacy, justice, transparency, responsibility, non-forgery and other principles. The charter also showed the risks of Lack of commitment to AI ethics.

5 -The extent to which the smart accountant possesses legal personality in the Jordanian legislation

Artificial intelligence software works independently and makes private decisions away from humans. Therefore, if it conducts any accounting, auditing or tax operations, and the results are not accurate, this raise legal liability, including, for example, punitive measures imposed on auditors, or failure to adopt the accounting books set out by law as mandatory books, thus it shall

be treated as unorganized commercial legal books. Consequently, it loses its authority in proof, which loses the concerned person his evidence based in proof, and other issues.

The important question arises here, who bears the responsibility to compensate for the damages caused by the smart accountant? It is necessary to search for the legal personality to hold responsibility. Does a smart accountant have this personality to gain rights and assume obligations? The authors deem that the Jordanian law does not grant this personality to all smart applications, as the explicit provisions in the National Charter for Artificial Intelligence (2022), provide that the smart technical system are not responsible for damages, however the natural persons. This indicated that Jordanian legislator does not recognize the legal personality of the smart accountant implicitly.

Some believe that the responsibility of the smart accountant in audits arises a distributed responsibility. This is also referred to as the "problem of many hands", as the smart accountant lacks a recognized legal personality. Therefore, the burden of accountability for actions or decisions taken by artificial intelligence (smart accountant) falls solely on human entities. However, responsibility for AI may be assigned to the programmer, operator or ultimate beneficiary of this intelligent software. The majority of jurists support that human should be held accountable for the results of AI-based actions. (Bracci, 2022)

Acknowledging that accountability for AI systems is an evolving view without a single definite answer is crucial. However, the adoption of shared responsibility between developers, publishers, users, regulators and individuals is the first step towards ensuring that AI systems are strong, ethical, responsible, and beneficial to all. (Schweitzer, 2024)

Others argue the system of civil liability for personal fault is an inappropriate system for reparations for AI in the strict technical sense, those techniques that are independent acts, therefore no notion of personal fault is conceivable. Artificial intelligence does not accept the idea of judicial control and prosecution in its prevailing physical sense, due to its lack of material character and functional independence" (Sakhraoui, Kaouther & Almi. (2024)

Some also believe that smart software has independence to make decisions where this increases with its development, therefore will do different work than what has been addressed by traditional rules regardless of the nature of the responsibility to be based on according to the

general rules. Consequently, the whole thing with smart software needs rules and legislation that are not found in these general rules because they have unprecedented privacy.

Al abady, H., Smart Robots (2022)

The authors support opinions that do not give the smart accountant legal personality similar to the natural or legal person, but it can be said that this personality can be granted after passing through legal legislative stages, starting with relying on the legal legislation in force in Jordan and close to the treatments of traditional electronic technologies such as the Electronic Transactions Law or laws that showed the general rules of responsibility and others, and then supporting legislation with various laws that address smart technologies specifically. Eventually, we may reach a stage in which the smart accountant is granted legal personality similar to legal persons, but of a special kind, taking into account the characteristics of artificial intelligence software. This gradation, however, is necessary because technological developments, including artificial intelligence applications, are faster than the issuance of legislation regulating the difference in the two environments, as the technological environment is rapidly evolving, the legal environment and the enactment of laws are slow, but in any case, the stage of granting legal personality to the smart accountant at this stage we do not support it.

Some argue that the smart accountant makes independent decisions, so considering the natural person responsible for all the independent results and decisions of the smart accountant may be impractical, also the excessive burden of legal liability can lead to programmers not wanting to reveal their identities publicly, leading to reluctance to program the smart accountant's programming work. (Čerka, Grigienė, and Sirbikytė, 2017)

6- The legal responsibility of the human accountant for the work of the smart accountant in the Jordanian legislation

To implement the work of the smart accountant in Jordan, it requires the existence of legislation regulating its work and determine responsibility and damage compensation. This section examines the possibility of relying on the legal legislation in force and the extent of its application to the smart accountant.

There are two jurisprudential trends in this area, the first opinion consider the possibility of applying these general rules with simple amendments. While the second opinion opposes the

application of general rules and that this responsibility for smart applications is of a special legal nature. (Al-Hamrawi, 2021)

The authors believe that the nature of smart accountant liability requires special legislation. As the rules of liability set in the civil law, for instance, that adoption of (the average man standard) in the presence of an error in accordance with Article (358). The application of this standard on the supervising accountant who manages the smart accountant, he shall have fulfilled the obligation if he exerts in its implementation of care all the efforts of the average man. Where an ordinary person is similar to a human accountant with his experience and circumstances, even if the intended purpose has not been achieved. On the other hand, the Jordanian Electronic Transactions Law can not be relied upon as this law shows most of the legal provisions of electronic transactions. However, since the work of the smart accountant is a special type of electronic business and because it is carried out in smart ways, so the Jordanian electronic transactions laws are not sufficient to address them, as this (smart) feature of these electronic applications gave them additional provisions as it was explained in this research when talking about the characteristics of the smart accountant distinct from the traditional accountant.

Among the general rules that determine liability is what is stated in the Jordanian Civil Code for defective products in articles 193-198, that is, who's the person who is responsible and shall compensate in the event of an error by the smart accountant that caused damage to others. As well as the rules contained in the guarantee of hidden defects in articles 512-521 of the Jordanian Civil Code, as well as the rules of the Jordanian Consumer Protection Law No. 7 of 2017. All of the above are considered as general rules for addressing the responsibility of the smart accountant.

However, the Jordanian legislator has begun the first steps in issuing legislation supporting artificial intelligence systems (of course, its provisions include the smart accountant), including: artificial intelligence policies (2020), the National Charter for Artificial Intelligence (2022), the Jordanian Strategy for Artificial Intelligence, the Jordanian Policy for e-participation (2021), and the executive plan (2023-2027), the National Strategy for Digital Transformation and the Executive Plan (2021-2025). On the other hand, The Jordanian government also sought to

complete the measurement of the readiness of 18 public institutions to adopt artificial intelligence technology.

As for the issue of determining liability for the damages resulting from artificial intelligence technologies, which include the smart accountant, the Jordanian legislator gave a general ruling, in Paragraph (5) of Clause (Fourth) in the National Charter of Ethics for Artificial Intelligence, that the issue of the damage of these technologies does not concern the smart technical system. But on the natural persons concerned with it, and from this paragraph it becomes clear that the Jordanian legislator did not address smart technologies (including the smart accountant), and also the general treatment of artificial intelligence was not sufficient, as we can say that it considered smart technologies as a “thing” or “product” and does not recognize personality. Legal responsibility for him, because he placed responsibility on the people supervising him.

The transformation of legal treatments for smart applications will not succeed without going to build infrastructure for this modern topic, as diverse and in-depth research on this subject in accordance with the Jordanian legislation in force and proposing draft laws regulating this work based on solid scientific and research legal foundations as well as the use of international expertise. In addition, the development of local expertise through holding supporting conferences and courses Foreign and internal, as well as proposing an ethical system parallel to the legal system. (Al abady, 2022)

7. Conclusion

7.1 Results

1. The ability of AI to quickly perform repetitive and time-consuming tasks has become a hallmark of its adoption in the accounting field
2. human bias inputting information into intelligent software reflects a similar bias in the output.
3. The presence of a human expert accountant is an important element in assisting smart software, to supervise and audit the outputs of the smart accounting program may prevent any defect in these outputs.

4. The Jordanian legislator treats smart technologies as a “thing” or “product” and does not recognize its legal personality, because it places responsibility on the people supervising it.
- 6 . The nature of the intelligent accountant's responsibility must be addressed by special legislation

7.2 Recommendations

1. Biases in artificial intelligence software are addressed by ensuring that companies are transparent and accountable, that the data entry person has experience in accounting and artificial intelligence, is trustworthy, and that basic information is entered with high transparency and integrity.
2. The presence of a human supervisor serves as a preventive element when there is an error to address it before sending the accounting entries to official bodies or relying on them internally in subsequent work.
3. The smart accountant must be audited in two stages, the first of which is done by the human supervisory accountant, which is like the (internal accountant). Also, the work of the smart accountant can be audited by a neutral human party, which is like the (auditor), and all of this auditing work is to achieve smart accounting work with high transparency and reliability.
4. The nature of the intelligent accountant's responsibility must be addressed by special legislation.

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