مجلة دراسات الانسان و المجتمع
Human and Community Studies Journal
www.stcrs.com.ly
العدد 24 يوليو 2024
Volume 24 July 2024
مجلة دراسات الإنسان و المجتمع
Human and Community Studies Journal
HCSJ
تم استلام الورقة بتاريخ: 10/ 6/2024م وتم نشرها على الموقع بتاريخ: 8/ 7/2024م

The Future of Accounting: Impact of Artificial Intelligence, from Double Entry to Triple Entry Accounting.

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Abstract:
This paper explores the transformative impact of Artificial Intelligence (AI) on the field of business administration and accounting, with a focus on the evolution from double entry to triple entry accounting. The study delves into the incorporation of block chain technology, smart contracts, and crypto currencies, alongside the implications for both business-to-business (B2B) and business-to-consumer (B2C) transactions. By employing an interpretive research philosophy and textual analysis of existing literature, this study aims to offer insights into the future landscape of accounting, highlighting the integration of massive data sets and the potential shifts in accounting practices and financial reporting.
Given the transformative potential of AI and related technologies in accounting, as outlined in the analysis of this paper, it's essential to consider how these advancements could be integrated into the educational curriculum, especially in regions like Libya, where the development of high education in accounting, business administration will be significantly benefit from such integration. This section provides conclusions drawn from the research and offers recommendations tailored to the Libyan context.
Keywords: Accounting from Double Entry to Triple Entry Accounting, Block chain technology, Smart Contracts and Crypto currencies, B2B and B2C Transactions and huge data.

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مستقبل المحاسبة : تأثير الذكاء الاصطناعي من القيد المزدوج إلى القيد الثلاثي

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الملخص:
يستكشف هذا البحث التأثير التحويلي للذكاء الاصطناعي على مجال إدارة الأعمال والمحاسبة، مع التركيز على التطور من القيد المزدوج إلى القيد الثلاثي. ويتناول البحث دمج تكنولوجيا سلسلة الكتل والعقود الذكية والعملات المشفرة، إلى جانب الآثار المترتبة على المعاملات بين الشركات (B2B) وبين الشركات والمستهلكين .(B2C) من خلال استخدام فلسفة بحث تفسيرية وتحليل نصي للأدبيات الموجودة، تهدف هذه الدراسة إلى تقديم رؤى حول المشهد المستقبلي للمحاسبة، مع تسليط الضوء على تكامل مجموعات البيانات الضخمة والتحولات المحتملة في ممارسات المحاسبة والتقارير المالية.
نظرًا للإمكانات التحويلية للذكاء الاصطناعي والتقنيات ذات الصلة في المحاسبة، كما هو موضح في تحليل هذه الورقة، فمن الضروري النظر في كيفية دمج هذه التطورات في المناهج التعليمية، وخاصة في مناطق مثل ليبيا، حيث سيستفيد تطوير التعليم العالي في المحاسبة وإدارة الأعمال بشكل كبير من هذا التكامل. يقدم هذا القسم الاستنتاجات المستخلصة من البحث ويقدم توصيات تتناسب مع السياق الليبي.
الكلمات المفتاحية : المحاسبة ، التقارير المالية ، الذكاء الاصطناعي، القيد المزدوج ، القيد الثلاثي.

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Introduction :

The apperance of artificial intelligence (AI) has pointed to a new era across various fields, with accounting experiencing one of the most significant paradigm shifts. As we navigate through the evolution from double entry to triple entry accounting, this paper examines how AI, alongside block chain technology and digital currencies, is reshaping the landscape of financial transactions and reporting. The integration of these technologies promises enhanced accuracy, security, and efficiency in accounting practices, but also brings challenges and complexities that need careful exploration and understanding. Through an interpretivist research philosophy and a detailed textual analysis of existing literature, this study aims to declare these technological impacts and forecast their implications for the future of accounting. The primary focus is to understand the transition toward triple entry accounting, assess the role of block chain technology in this transformation, and explore the redefinition of business transactions through smart contracts and crypto currencies. By doing so, we hope to provide a comprehensive outlook on the future path of accounting practices in the digital age, particularly in regions like Libya to take proactive steps developing education landscape to be ready and incorporate new technological paradigms.

Research Problem:

To assess the impact of artificial intelligence (AI) and related technologies on accounting, understand the transition towards triple entry accounting, and evaluate the implications for financial transactions and reporting in the digital age.

Research Questions :

1. How is AI influencing the evolution from double entry to triple entry accounting?
2. What role does block chain technology play in the development of accounting practices?
3. How do smart contracts and crypto currencies redefine B2B and B2C transactions?

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4. What are the implications of massive data sets for accounting and financial reporting?

Literature Review :

1 Double Entry Accounting to Triple Entry Accounting

Historically, double-entry accounting has been the cornerstone of financial reporting, ensuring that all transactions are accounted for in two isolated accounts for accuracy and reliability framework for triple entry accounting introduces the concept as an evolution, aimed at adding an additional layer of verification to financial transactions, integrating the trust mechanism inherently provided by block chain technology[1].Block chain is a new technology that was introduced a decade ago, after financial crisis of 2008 [2], and there is still a long way to being accepted and adopted by everyone. Connecting modern accounting ledgers to a public block chain would make accounting records easily verifiable[3]. Block chain can be described as the chronological record of block transactions. To ensure transactions, the cryptography is used, based on a chain of digital signatures. Each block is a group of transactions that are added to the last block by reaching a consensus on its authenticity among users, which is then passed to each network user to update their database. Several studies have explored the theoretical underpinnings and practical implications of moving towards triple entry accounting[4]. For example, [5] provided a comparative analysis of the traditional double-entry system and the proposed triple-entry framework. Their study concluded that triple entry accounting could significantly reduce discrepancies and fraud in financial reporting. In contrast,[6] argued that the implementation complexities and the need for widespread block chain adoption present substantial hurdles.

2 Block chain Technology :

Block chain technology's decentralized nature offers a unique level of transparency and security in transactions, making it a revolutionary tool for accounting practices. [7] explored how block chain could serve as the foundation for triple entry accounting, enhancing trust among parties by providing an immutable record of transactions.

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However, [8] highlighted challenges such as scalability and energy consumption, which could obstruct the adoption of block chain in accounting. Comparative studies have shown varied perspectives on block chain's readiness and efficiency for large-scale adoption in accounting. While [9] are optimistic about block chain's potential to transform accounting practices, While others suggest a more cautious approach, emphasizing the need for further technological advancements.one problem is that all agencies submit their accounts once a year, resulting in seasonal demands and significant lag time between audit and accounting periods. In this study, propose a non-technical framework based on emerging block chain technology that can solve all these problems[10].The block chain as an Distributed Ledger Technology (DLT) offers new possibilities to recording and backing up sensitive and confidential data of accounting information systems[11].

3 Smart Contracts and Crypto currencies :

The integration of smart contracts and crypto currencies into the financial landscape has implications for accounting standards and practices. [12] examined how smart contracts could automate and secure financial agreements without the need for intermediaries. Their findings suggest that smart contracts, coupled with crypto currencies, could streamline accounting processes but also introduce new complexities in terms of regulation and standardization.

Contrastingly, [13] focused on the volatility and regulatory challenges of crypto currencies, arguing that these factors could complicate accounting practices and financial reporting. Both studies recognize the potential of these technologies to redefine transactions but highlight different aspects of the challenges they present.

4 B2B and B2C Transactions :

The confusing lines between B2B and B2C transactions in the context of AI and block chain integration have significant implications for accounting. [14] explored how block chain technology could simplify cross-border B2B transactions, reducing costs and improving efficiency. On the other hand, [15] discussed the

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impact of AI-driven customer personalization on B2C transactions, which bearings new challenges for revenue recognition and customer data management.

These studies collectively underscore the transformative potential of AI and block chain across different transaction types, although highlighting distinct challenges and opportunities within each domain.

5 The Role of Huge Data :

With the beginning of big data, the accounting field is poised for a paradigm shift in how data is integrated, analyzed, and reported. [16]underscored the potential of AI and machine learning algorithms to analyze vast datasets, providing insights that could enhance decision-making and financial reporting. Conversely, [17]cautioned against data privacy and security risks, suggesting that these concerns must be addressed to fully leverage big data in accounting.

The comparative analysis of these perspectives reveals a consensus on the importance of massive data sets in advancing accounting practices, alongside an acknowledgment of the challenges that need to be navigated.

This expanded literature review provides a comparative analysis of existing studies relevant to the future of accounting in the age of AI, focusing on the transition from double-entry to triple-entry accounting, the role of block chain technology, smart contracts, crypto currencies, and the implications of massive data sets. The review highlights a range of conclusions from previous research, reflecting the diverse perspectives and debates within the field.

Research Design and Methodology :

1 Research Philosophy :

This study adopts an interpretive philosophy, aiming to understand the impact of AI on accounting through the interpretation of existing literature and studies.

2 Methods of Data Collection :

Textual analysis of previous studies forms the core method of data collection for this research, avoiding traditional interviews for a comprehensive review and analysis of relevant literature.

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Analysis Research Questions :

Through a detailed examination of the literature, this study analyzes the gradual shift from double entry to triple entry accounting, highlighting the role of block chain technology, smart contracts, and cryptocurrencies. The analysis also covers the implications of these technologies for B2B and B2C transactions, as well as the challenges and opportunities presented by huge data sets in accounting.

1. How is AI influencing the evolution from double entry to triple entry accounting?

- The literature highlighted that triple entry accounting, enabled by block chain, could significantly reduce disagreements and fraud, showcasing AI's role in enhancing the reliability of financial records. This supports the paper's assertion that AI is pivotal in the evolution towards more sophisticated accounting systems.

2. What role does block chain technology play in the development of accounting practices?

- The literature explored how block chain serves as a foundation for triple entry accounting, enhancing trust among parties by providing an immutable record of transactions. This study underpins the paper's discussion on block chain as a revolutionary tool that offers unique transparency and security in accounting.

3. How do smart contracts and crypto currencies redefine B2B and B2C transactions?

- the smart contracts and crypto currencies could streamline accounting processes by automating and securing financial agreements without intermediaries. This aligns with the paper's view on how these technologies are redefining transactional frameworks, influencing both B2B and B2C dynamics.

4. What are the implications of massive data sets for accounting and financial reporting?

- The literature emphasized the role of AI and machine learning in analyzing vast datasets, providing insights that could improve decision-making and financial reporting. This corresponds with the paper's examination of massive data sets' implications, stressing both opportunities and challenges, such as data privacy concerns.

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Results and Discussion :

The findings suggest a significant transformation in accounting practices, driven by AI and technological advancements. Triple entry accounting, supported by block chain technology, offers enhanced transparency and security in financial transactions. Smart contracts and crypto currencies are redefining traditional transaction models, while the integration of massive data sets poses both challenges and opportunities for financial reporting. The future of accounting is poised for substantial changes, with AI and related technologies playing a pivotal role in shaping new practices and standards. This study recommends further research into the implications of these technologies, alongside the development of new accounting frameworks that can accommodate the complexities of the digital age.

Emergence of artificial intelligence technology in accounting has led to prediction on its implications for the profession. AI performs data entry, data matching, categorization, and the like, tasks accounting professionals find difficult. This functionality will provide accountants with more accurate data input, giving more reliable output from which to work. Use of artificial intelligence technology in accounting will evolve the nature of the accountant's work. When routine tasks are automated and software is employed to analyze data.

AI technology will increase the demand for an accounting professional who possess advanced analytical and high skills of computer knowledge. The ability to analyze complex sets of data and present the implications in a clear, concise manner will be a highly required for accountants.

In order to exploit the full potential of AI technology in accounting there needs to be a shift in focus on the nature of the accounting education. This is in contrast to the expectations of the future accounting labor market, the expectation for accounting education is that there will need to be a restructure of accounting programs to develop the skills that will be in demand of future accounting professionals. This involves a stronger focus on the teaching of critical and analytical thinking, an incorporation of technology as

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means of doing and presenting accounting work. As well as this, accounting students will need to become lifelong learners, as the nature of the technology means that changes will be frequent in the ways accounting work is conducted. This will necessitate the continuing education of accounting professionals in the use and development of the new AI technology.

conclusions and Recommendations :

For countries like Libya, where the accounting and business administration education system necessary to be developing, the integration of these new technologies into the curriculum could provide a substantial advantage. It could prepare students for a future where these technologies are universal in the global financial and accounting landscape.

1. Curriculum Development
   - Incorporate AI and Block Chain Modules: Universities and higher education institutions in Libya should consider incorporating dedicated modules on AI and block chain technologies within their accounting and business administration programs. This could include both theoretical understanding and practical applications, such as the use of smart contracts and crypto currencies in financial transactions.
   - Focus on Triple Entry Accounting: Given the potential shift towards triple entry accounting, curriculum developers should ensure that students are well-versed in this area, understanding both its theoretical underpinnings and practical implementations.
2. Faculty Development and Training
   - Professional Development: Educators and faculty members should undergo continuous professional development and training in AI and block chain technologies. This could be achieved through partnerships with international institutions and technology companies specializing in these areas.
   - Research and Development**:** Encourage and support faculty members to engage in research on the impact of AI and block chain on accounting practices. This could enhance the

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academic community's understanding and provide students with cutting-edge knowledge.

3. Infrastructure and Resources
   - Access to Global Networks: Facilitate access to global networks and platforms where students and faculty can exchange ideas, access resources, and collaborate on projects with peers worldwide. This could also involve creating opportunities for student exchanges and internships with international companies.

Implementing these recommendations could position Libya at the forefront of accounting education, tailored to the demands of the digital age. By embracing the potential of AI and related technologies, Libya can develop a team of professionals equipped to navigate the complexities of modern accounting practices, contributing to the country's economic development and integration into the global economy.

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