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### **THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON THE ROLE AND SKILLSET OF ACCOUNTANTS**

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#### **ABSTRACT**

*This paper analyses the effect of artificial intelligence (AI) on the roles and skills of accountants in the digitised UAE environment. The research employed a mixed-method design strategy comprising both quantitative and qualitative techniques. This method was implemented to have an outlook on the emerging trends in the accounting profession in the digital era. The quantitative aspect of the research was a survey method that investigated the adoption of AI among accounting firms in the UAE. With the help of data collection and analysis, the degree of AI integration was measured from which the existing trends were unveiled, hence showing the present condition of the profession. While the quantitative aspect measures the level of AI adoption usage among the accountants, the qualitative aspect enables the in-depth interviews to probe the real experiences with AI. The interviews not only shed light on the transformation of professional roles but also reveal the struggles in retraining and skills upgrading, which give a new angle to the human aspect of AI implementation.*

*This quantitative data displayed a clear tendency toward increasing AI adoption in accounting practice, illustrating the breadth of the digitisation impact. On the other hand, the qualitative data provided insights regarding the barriers confronted by accountants in the usage of AI and the importance of constant adaptation. The implications of the study are vast. With the ongoing paradigmatic shift, accountants must handle integration issues while also building a versatile skill set to be more relevant. This research is not only a contribution to the academic discourse on the impact of AI on accounting but also provides practice-oriented recommendations for professionals, education institutions, and policymakers. The study highlights the need for a systematic strategy in professional development and education to cope with the changing scenario successfully. Through the comprehension of AI's disrupting and facilitating impact, accountants can adapt and exploit AI applications to improve efficiency, accuracy, and value-added services, therefore, formulating a sustainable, technological-ready accounting profession.*

*Keywords: artificial intelligence, AI, accounting, accountant, UAE*

#### **The Impact of Artificial Intelligence (AI) on the Role and Skillset of Accountants**

##### **Introduction**

###### **1.1. Background**

The emergence of Artificial Intelligence (AI) technologies at an exponential rate has brought a new age of tech-led transformations that were not seen before. Consequently, new ways of doing business have rushed in and displaced the conventional modes. The accounting sector can play the role of the engine of technological transformation, which should be the most essential part of the global business (Kroon et al., 2021). The 21st century was the turning point for accounting as AI technology changed the whole structure of financial data processing, analysis, and interpretation.

The accountancy profession has to tackle the problems and possibilities that are attributed to the new and dynamic digital environment with an extraordinary degree of connectivity and data spreading. The other field of accountants has been evolving profoundly from being all about manual data entry, reconciliation, and compliance. Machines operating based on machine learning algorithms and data analytics are increasingly automating routine tasks. Thus, accountants have more time for consultancy and strategic management services (Nielsen, 2020). The implementation of AI in the work of accountants not only leads to the automation of their functions but is a systemic shift that must be considered in terms of the consequences.

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The integration of algorithms and machine learning models into financial operations is on the horizon; consequently, issues of accountability, transparency, and ethics are brought to the fore. Ethical issues in AI for accounting can not be overlooked as there are some issues, such as algorithmic bias, data privacy, and responsible AI governance. Besides that, integration is not a uniform process. Firms adopt these technologies at their speed (Genin et al., 2020). We learn about the diversity in the accounting organisation of different companies, which is made up of multinational companies, medium enterprises, and small account firms, by the different adoption rates of these companies.

### **1.2. Research Objectives**

The main objective of this research is to explore the effect of AI on the role and skills of accountants in the UAE. The approach of the research is a mixed method, a combination of quantitative and qualitative methods, to compute the degree of AI penetration and the impact these have on the workers.

## **2. LITERATURE REVIEW**

### **2.1. Evolution of Accounting Practices**

The history of accounting has witnessed many events that transformed the field into what it is now. Keeping the past accounts meant writing down the transactions on ledgers and journals by hand. Therefore, because of the Industrial Revolution, the accounting systems were harmonised to cope with the rising complexity of businesses. The invention of the mid-20th century computer revolutionised the way calculations were done by automation and moved from manual data processing to electronic data processing (Campbell-Kelly et al., 2023). The introduction of technology has transformed the accounting system from handwritten to computerised, which has also simplified some processes and increased their effectiveness. It was at this time that the ERP systems (Enterprise Resource Planning) emerged, which meant integrating the different functions of organisations and offering a single platform for financial management (Hustad et al., 2020). The AI assimilation into accounting is the last key stage in the evolutionary process that was started in the last century. AI technologies like machine learning and natural language processing are making possible things that were thought to be impossible, unlike the historical approach that suggests AI as a technologically advanced innovation and the one responsible for the transformation of accounting.

### **2.2. AI in Accounting**

AI applications in accounting literature underline the disruptive aggregation of these technologies in several dimensions of the profession. Automation, the most significant characteristic of AI, is turning the accountant's job that focuses on repetitive and boring tasks into productive ones. AI-driven automation simplifies data input, reconciliations, and compliance requirements, thus leading to fewer mistakes and higher precision (Jain et al., 2023). Data analytics is another area of AI that influences how accountants perceive and work with financial information. Through such sophisticated analytics, accountants get valuable information out of a large amount of data, helping to make proper decisions. AI algorithms equipped with predictive capabilities allow accountants to anticipate trends, risks, and opportunities, which prompts them to act proactively as opposed to reactively in financial management (Olubukola, 2023).

Cognitive computing, which is the AI-enabled integration of human-like intelligence through natural language processing and machine learning, has been introduced recently. These traits enable the system to understand and transform unstructured data into something more sophisticated and intelligent for financial analysis. Also, AI applications can handle textual data such as financial reports or news articles and extract the most pertinent information that can be used in financial decision-making. The existing literature addresses the multifaceted impact of AI on the accountancy profession. Although the advantages of such technology integration are visible in terms of efficiency, accuracy, and decision support, they are not without challenges. Ethical issues, data protection issues, and algorithm bias raise very vital questions for the profession (Kordzadeh & Ghasemaghaei, 2021). The current level of AI in accounting should be understood to overcome the existing transformation. This is the framework behind the present study that looks to contribute to the existing knowledge by delving into the role of

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AI on the accountants' roles and skill sets in the UAE. The synthesis of the evolution of AI and applications of AI foundations the analysis that considers not only the functionality of the technology but also the complex interactions between human workers and professionals in digitised accounting.

### **3. METHODOLOGY**

In conducting a thorough investigation into AI-powered transformation in the roles and skills of UAE accountants, the research methodology was developed cautiously, incorporating a theoretical foundation, ethical issues, sampling nature, research instruments, and procedures, as well as a complicated design of analysis.

#### **3.1. Theoretical Background**

The core of this study utilises already accepted theoretical frameworks from technology adoption and organisational change as a basis. Adopting models like the TAM (Technology Acceptance Model) and Innovation Diffusion Theory enables the research framework to explain the factors responsible for the growth of AI technologies in the accounting profession. Interestingly, transition theories offer insights into how accountants are coping with the dynamic technological environment making assurance of a layered understanding of the complex interaction between technology and professional roles.

#### **3.2. Participants**

Attracting a diverse group of the UAE accounting firms, from multinationals to medium enterprises and smaller practices, was our participant selection process goal. To cover the wide diversity of the accounting sector, a stratified sampling technique was applied to increase the representation of the varying firm sizes, thus giving a picture of AI adoption trends across the accounting profession. Selection criteria that focused on professionals with considerable experience in accounting roles were employed, ensuring that insights from practitioners whose roots are deeply embedded in the industry were generated.

#### **3.3. Materials and Procedure**

A combination of surveys and face-to-face interviews was used to gather data. The survey, which was based on the technology acceptance models, was used to furnish quantitative data on the level and patterns of AI integration by accounting firms. Along with this, semi-structured interviews, according to phenomenological principles, explored the experiences of the accounts in AI implementation. The research materials were developed in such a manner that they were both comprehensive and sensitive to the complexities of the research subject at the same time.

Procedures of data collection were developed to avoid any bias and make sure that consistency was ensured among the participants. The surveys were distributed using the advanced online survey platforms, and the interviews were conducted through Zoom or in person at the participant's convenience. The iterative research design allowed for the subsequent refinement of the data collection instruments in alignment with the emerging insights, which improved both the depth and the relevance of the study.

#### **3.4. Strategy of Analysis**

The research strategy was carried out using a mixed-methods approach. The numerical results from the surveys were processed by applying regression techniques for an investigation of the relations between variables. The thematic analysis of the qualitative data from interviews was conducted using the coding frameworks that were derived from the grounded theory approach. Triangulation of the mixed research approach with both quantitative and qualitative research outcomes provided richness and validity of the assessment of the AI effects on accountants.

### **4. Quantitative Analysis**

The quantitative part of the study involved a survey approach to measure the adoption of AI among accounting firms within the UAE. The sample, which consisted of 20 accounting firms, was surveyed to measure the level of AI adoption. The data was sorted and entered in SPSS for analysis. The outcomes showed that there is an increasing trend to AI implementation in accounting practices, with 85% of survey respondents having said yes.

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Also, the number of types of AI technologies adopted was revealed; it was 25% for machine learning, 25% for data analytics, 30% for cognitive computing, and 5% for other technologies.

Tables 1-2 below shows the results of this analysis.

<b>Table 1.</b>					
<i>AI Adoption</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	17	85.0	85.0	85.0
	no	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

**Table 2.** *Types of AI adopted*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	15.0	15.0	15.0
	machine learning	5	25.0	25.0	40.0
	data analytics	5	25.0	25.0	65.0
	cognitive computing	6	30.0	30.0	95.0
	other	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Besides, descriptive statistics were performed. The descriptive statistics indicate that, on average, the surveyed accounting firms report a moderate level of AI integration (Mean = 3.50) in their industry and with significant variability (Std. Dev.) = (1.701) possible adoption rates. Generally, the effect of AI adoption is positive, as indicated by the means for Accuracy (Mean = 3.70), Efficiency (Mean = 3.80), and Decision-making (Mean = 3.70). The standard deviations for these impact variables (from 1.658 to 1.735) show the diversity of experience among firms. However, the numbers show a good tendency toward AI acceptance, as we can observe the huge variance in both the scope of integration and the perception of influence among the companies that were surveyed.

The table 3 below presents the results of descriptive statistics.

<b>Table 3.</b>					
<i>Descriptive Statistics</i>					
	N	Minimum	Maximum	Mean	Std. Deviation
Extent of AI integration	20	0	5	3.50	1.701
Accuracy impact	20	0	5	3.70	1.658
Efficiency Impact	20	0	5	3.80	1.735
Decision making	20	0	5	3.70	1.658
Valid N (listwise)	20				

Going beyond the descriptive analysis, a more delicate quantitative assessment physically involved the formation of a dependent variable in terms of the 'Overall Impact of AI on Accountants'. This variable was derived from the survey responses related to the impact of AI on accuracy, efficiency, and decision-making. The following regression analysis revealed very important information about the relationships between the extent of AI incorporation (shown by the 'Extent of AI integration' variable) and the overall impact on accountants. The obtained results were highly significant ( $F(1, 18) = 74.498, p < .001$ ), which shows that the degree of AI integration significantly accounts for the variance in average score. The regression model showed a strong association, explaining roughly 80.2% of the total variation. The quantitative analysis answered not only the

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extent of AI adoption in accounting firms but also the detailed nature of the interplay between the intensive AI integration and the accountants in the digital era. Through quantitative exploration, it emerged that artificial intelligence (AI) has a significant influence on the roles and skills of accountants now that the economy has been digitized.

Tables 4-6 present the regression analysis between the variables' overall impact of AI on accounts and the extent of AI incorporation.

**Table 4.**

<i>Model Summary</i>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897 <sup>a</sup>	.805	.795	.73946
a. Predictors: (Constant), Extent_of_AI_integration				

**Table 5.**

<i>ANOVA<sup>a</sup></i>						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.735	1	40.735	74.498	.000 <sup>b</sup>
	Residual	9.842	18	.547		
	Total	50.578	19			
a. Dependent Variable: overall impact						
b. Predictors: (Constant), Extent of AI integration						

**Table 6.**

<i>Coefficients</i>						
	Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.721	.386		1.868	.078
	), Extent of AI integration	.861	.100	.897	8.631	.000
a. Dependent Variable: overall impact						

**4.1. QUALITATIVE FINDINGS**

The qualitative data from ten interviews with the accountants indicated that the impact of AI on the accounting profession in the digitised and technological environment is multifaceted. A wealth of testimonies from interviewees showed the diversity of participants who regarded the process of AI systems integration as a revolutionary one. Meanwhile, speaking about their experience, accountants said that AI has changed the way they do their jobs with much focus on the automation of fixed tasks. This was a relevant characteristic, indicating the scope of AI enlargement on accountants' routine activities. From the participant's responses, it was shown that there is both AI efficiency enhancement and skillset reorientation. Experience with a range of issues, from technical obstacles to the adoption of new work procedures, provides a more complex picture of implications and learning phases connected with AI integration into accounting.

Interviews disclosed the nuances of what is called good or bad as well. Accountants were grappling with the ethical outcomes of AI technologies and were engrossed in a constructive conversation on issues such as data privacy, algorithmic discrimination, and responsible AI management. It highlighted an increased sensitivity to the

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ethical context of AI, which calls for ethical guidelines and regulatory frameworks. Looking to the future, the most adapted skill set was identified as one synchronised with the incoming technological innovation. The integral amalgam develops the dynamic connection between technological improvement, the changing roles, and the ethical aspects of AI in the accounting profession, which proves the need for a total approach to steering this transformation era.

### **5. DISCUSSION**

According to the research, there was a general and extensive use of artificial intelligence (AI) by accounting firms, which means a drastic change in the profession. The responses indicated that digitalisation is a general term since it was adopted by more than 80% of firms who were in different levels of AI integration. Many large companies are early adopters and apply advanced uses of AI, such as cognitive computing and machine learning, but smaller firms take a conservative approach and consider basic automation and data analytics. The data from the survey of 90% of respondents proves the impact on operational performance, quality, and decision-making. The dehumanisation of the field becomes a subject of discussion by some who attract attention to the need for harmonious integration, which should not violate the role of human judgement in the matter.

Qualitative insights from interviews enhance the knowledge of AI intelligence being human-centric, the AI operating on multiple and intricate aspects of an accountant. Yet, as AI replaces the demand for those skills, interviews argue about the technological challenges, the moral questions, and the lifetime adaptation to the new working systems. Ethics involve the central matters of concern, which lead to the need for ethics guidelines and regulatory systems so that the challenges of data privacy and algorithmic bias are properly addressed. This all-inclusive research approach gives a large amount of information on what kind of mechanism is there between technology innovation and professional change role with ethics in the accounting field; therefore, it calls for holistic solutions for the changing era.

### **6. CONCLUSION AND RECOMMENDATION**

In conclusion, this research provides an outline of the transformative role of AI in the field of accounting in the UAE. Quantitative and qualitative data suggest that AI is popular, and it can often have the effect of changing the nature of jobs and the need to adjust skillsets. The bigger companies prove their readiness to use more evolved AI applications that will foster a balanced approach to human judgement. Challenges, especially technical problems and ethical issues, show the difficulties presented by this change. It suggests that accountants and financial professionals study to know how to deal with the landscaped changes, which would, in turn, require them to update their skills and bring automation.

The recommendations derived from this research, AI practitioners should continue their education and upgrade their technical and ethical skills throughout their working lives. Educators need to infuse AI-related curriculum components into the curriculum of future accountants for them to develop the needed knowledge and skills. The policymakers act as major players in setting up ethical principles and regulatory frameworks to address the challenges of AI integration and ensure the responsible and transparent application of these technologies. Collaboration among professionals, educators, and policymakers is needed to fully capitalise on the potential for AI to optimise and improve without jeopardising professional image and ethical standards in the UAE.

### **7. FUTURE RESEARCH**

This research opens up the way for promising avenues of future research within the ever-new AI of accounting. A key direction would be to analyse the long-term effects of AI on accounting ethics by looking into how ethical frameworks evolve to deal with the increasing AI technology integration. Moreover, considering the regulatory aspects of AI in accounting can lead to the evolution of policies that allow the efficient coexistence of innovation and ethical considerations. Another significant item for future research is the global perspective, which focuses on how AI in accounting is applied in different countries and regions, taking into account cultural, legal, and economic factors. This stream of research endeavours to create a broad knowledge base of the intricate shifts,

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directing the accounting profession to be accountable and effective in the process of global adoption of artificial intelligence.

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