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PREPAREDNESS OF HIGH SCHOOL STUDENTS FOR ARTIFICIAL INTELLIGENCE IN ACCOUNTING: INSIGHTS FROM SCHOOLS IN SOUTH AFRICA

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ABSTRACT

This paper examines how prepared South African high school students are to interact with Artificial Intelligence (AI) in accounting education and potential accounting careers. A quantitative approach was used for this research. Information was gathered through a structured questionnaire distributed to accounting students in chosen South African high schools. Statistical methods, both descriptive and inferential, were utilised to analyse students' awareness, opinions, digital abilities, and readiness for AI integration in accounting education. The results indicate that students generally have positive attitudes toward technology and acknowledge the increasing importance of AI in the accounting field. However, there are notable deficiencies in students' grasp of AI concepts, practical digital competencies, and exposure to AI-related topics in the accounting curriculum (Sikhakhane, MGovender, & Maphalala, 2021). Inadequate digital resources and insufficient teacher readiness were highlighted as significant obstacles to effective AI integration. The outcomes suggest that although students are open to AI-driven learning, they need more educational assistance and technological support to develop relevant skills. This paper adds to the growing body of knowledge on AI preparedness in accounting education by concentrating on high school students, a group that has been relatively unexplored in the South African setting. The findings offer valuable insights for educators, policymakers, and curriculum planners aiming to align accounting education with the requirements of the Fourth Industrial Revolution (4IR) and the upcoming digital work environment.

KEYWORDS: Accounting Education; High School Students; AI Preparedness; 4IR; South African Technology Acceptance.

1. INTRODUCTION

AI is a branch of computer science that primarily deals with imbuing machines with human-like intelligence and cognition to aid people in various tasks (Sari, 2020; Bryman, 2016). Coined by John McCarthy in 1956, AI has gradually emerged and flourished in various domains that contributing to the significant advancements that are currently observing in various fields (PK, 1984; Kanyane, 2023). The 4IR has brought about significant technological advancements that are continuously transforming industries on a global scale (Schwab, 2016; Russell & Norvig, 2021; Thottoli, Ahmed & Thomas, 2022). Among these technological breakthroughs, AI has emerged as a highly impactful innovation influencing business operations and professional practices (Russell & Norvig, 2021). The field of accounting has undergone notable changes due to AI technologies automating repetitive tasks, enhancing financial reporting, improving auditing processes, and facilitating strategic decision-making (Davenport & Ronanki, 2018; Sari, 2020).

Traditionally, accounting education has focused primarily on tasks such as bookkeeping, financial reporting, and regulatory compliance (Cohen, Manion & Morrison, 2021; Kanyane, 2023). However, the incorporation of AI into accounting practices requires the development of fresh skills, such as digital literacy, data analysis, critical thinking, and adaptability to new technologies (Sari, 2020; ICAEW, 2020). As prospective members of the accounting profession, high school students studying accounting need to possess the essential knowledge and abilities to excel in technology-driven work environments (Cohen, Manion, & Morrison, 2018; AICPA & NASBA, 2021; Thottoli, Ahmed & Thomas, 2022).

In South Africa, the Department of Basic Education (DBE) has stressed the significance of preparing students for the digital economy (Sari, 2020; DBE, 2020; Thottoli, Ahmed & Thomas, 2022). Despite these initiatives, concerns remain about students' readiness to engage with emerging technologies, especially in schools with limited resources (Muyambi & Ahiaku, 2025). Current evidence suggests that the readiness of high school students in South Africa for the implementation of AI in education is inconsistent (Maphalala, Mncube & Mkhasibe, 2022). This inconsistency can be attributed to disparities in digital inequality, limited access to technology, limited digital skills, and varying levels of teacher preparedness (Mhlanga, 2023). While there is no comprehensive national study on the percentage of students adequately prepared for AI integration in education, existing literature suggests that significant obstacles persist in developing the digital skills needed to engage in AI-based learning environments and future professions (Olaitan, Issah & Wayi, 2021). Consequently, many students in South Africa might still not be sufficiently prepared, largely due to persistent challenges related to digital inequality, limited access to technology, inadequate ICT infrastructure, insufficient AI literacy, and varying levels of educator readiness. These estimates are derived from existing research on digital readiness, 4IR preparedness, and AI adoption within the South African education system rather than from a nationally representative survey specifically measuring AI preparedness among accounting students (Govender, Maphalala & Sikhakhane, 2021). AI preparedness refers to how well individuals are equipped with the knowledge, abilities, attitudes, and resources needed to interact effectively with AI technologies in educational and work settings (Luckin, 2024). At the core of AI readiness lies AI literacy, encompassing the capacity to comprehend, assess critically, and ethically use AI systems while recognising the moral, societal, and practical consequences (Chiu, Ahmad, Ismailov & Sanusi, 2024). A closely related concept is digital competency, which entails the know-how, skills, and conduct necessary to use digital technologies effectively, securely, and thoughtfully for education, communication, and problem-solving in a digital society (Vrabec & Furtáková, 2024). Moreover, technological readiness refers to an individual's readiness and capability to embrace and employ emerging technologies, influenced by self-assurance, access to technological resources, and favorable attitudes toward innovation (Hermanto, Prasetio & Ariyanti, 2023). All these interconnected principles offer a holistic framework for understanding students' readiness to participate in AI-enhanced learning environments and prospective technology-oriented professional domains, such as accounting, within the context of the 4IR. This paper examines the preparedness of high school students for integrating AI into accounting education and future accounting careers.

1.1. Research Objectives

The main aim of this paper is to examine the preparedness of high school students in AI in accounting education in specific schools in South Africa. To accomplish this goal, this paper is driven by the subsequent specific objectives:

1. To evaluate the extent of high school students' knowledge and understanding of AI in the realm of accounting education.

2. To assess the degree of digital literacy and technological proficiency among accounting students in chosen South African schools.

3. To investigate students' attitudes and viewpoints concerning the integration of AI in accounting and its potential effects on the accounting field.

4. To gauge the level of readiness of students to participate in AI-incorporated accounting teaching and learning settings.

5. To pinpoint obstacles and deficiencies that impede effective readiness for AI-based accounting education in South African schools.

6. To suggest recommendations based on evidence to enhance AI preparedness and fortify accounting education in the South African elementary education system.

2. LITERATURE REVIEW

2.1 AI and Its Impact on the Accounting Field

AI refers to computer systems that can perform tasks typically done by humans, such as learning, reasoning, problem-solving, and decision-making (Russell & Norvig, 2021). In accounting, AI tools are increasingly used for tasks such as automated bookkeeping, fraud detection, financial forecasting, tax compliance, and auditing (Davenport & Ronanki, 2018; Kanyane, 2023). According to Russell and Norvig (2021) reported that the integration of AI into accounting practices has notably boosted operational efficiency, reduced errors, and shortened processing time. Nevertheless, it has also brought about a significant change in the skills accountants need (Sikhakhane, Govender, & Maphalala, 2021). Today's accountants are expected to do more than just routine tasks; they must now interpret complex data, apply professional judgment, and work effectively with intelligent systems (ICAEW, 2020; Kanyane, 2023). The duties of accountants today differ significantly from those of 20 years ago and are expected to evolve further in the next two decades (Gongotha, & Bala, 2025). There will be a significant shift in their responsibilities over the coming years, with a greater focus on consulting, business growth, advisory services, and risk management (Kanyane, 2023). Accountants will need to specialise and use technology more extensively. AI is being developed to replicate human cognitive abilities (Jamal-Mohammad, Khamees-Hamad, Borgi, Anh-Thu, Safdar-Sial & Abdallah-Alhadidi, 2020). Deloitte's research suggests that AI could introduce a new range of products and services tailored for accounting tasks, such as customer service, research, logistics, sales, marketing, and data analysis (Jamal-Mohammad et al., 2020). For professions that involve specific methodologies, data analysis, report generation, and other laborious tasks like bookkeeping and transaction coding, AI has the potential to revolutionise the field analysis (Jamal-Mohammad et al., 2020). The Association of Chartered Certified Accountants' study indicates that automation could alleviate many tedious duties, allowing accountants to concentrate on consulting and other more valuable work (Greenman, 2017; Kanyane, 2023). This transformation is part of the broader shift in the profession driven by digitalisation and automation.

Global academic research has increasingly stressed the significance of AI readiness and AI literacy as crucial skills for students entering technology-focused careers (Liu & Levy, 2026). AI readiness refers to the knowledge, resources, abilities, and attitudes individuals and organisations have to effectively adopt and use AI technologies, whereas AI literacy involves the capacity to comprehend, assess, and use AI systems responsibly and ethically (Gu & Ericson, 2025). An organised examination of AI in higher education revealed that the successful incorporation of AI relies not just on technology access but also on students' digital skills, critical thinking skills, and institutional support systems (Guan, Zhang, Guo, Wang, Fan, Zhuang, Liang, Zeng, Qin, Qu, & Dai, 2026). The examination also underscored the growing necessity for educational institutions to cultivate AI-related skills to equip students for future job opportunities and continuous learning in an increasingly digital economy (Guan et al., 2026). Research by Liu and Levy (2026) provides further evidence of the importance of AI preparation and competence among accounting students. The study shows that students' readiness to use technology, ability to find and evaluate information, and belief in the value of AI have a notable impact on their openness to incorporating AI tools in accounting education.

2.2 AI and the Evolution of Accounting Education

Accounting education is continuously evolving to keep up with rapid technological progress (Tettamanzi, Minutiello, & Murgolo, 2023). Educational institutions are now incorporating digital tools and new technologies into accounting courses to ensure that graduates are competitive in a tech-driven job market (AICPA & NASBA, 2021; Gongotha & Bala, 2025).

Experts argue that future accountants should possess a wider range of skills beyond traditional

accounting knowledge (Tettamanzi, Minutiello, & Murgolo, 2023). These skills include data analytics, digital literacy, critical thinking, problem-solving, adaptability to technology, and an ethical understanding of AI systems and their impacts (ICAEW, 2020; Amin, Hassan, Ghoneim & Abdallah, 2025). These competencies are crucial for graduates to excel in accounting environments enhanced by AI (Tettamanzi, Minutiello, & Murgolo, 2023). If educational institutions fail to include AI-related skills in accounting programs, they risk producing graduates unprepared for the demands of the modern profession (Savić & Pavlović, 2023). The incorporation of AI in accounting education goes beyond just using new tools; it signifies a change in the educational structure itself (Sarea, Alhadrami, & Taufiq-Hail, 2021). Advanced software solutions, digital platforms, and online learning environments have become crucial for teaching and learning accounting, altering not only the approaches but also the essence of accounting practices (Pargmann, Riebenbauer, Flick-Holtsch & Berding, 2023). This digital revolution necessitates a restructuring of the conventional accounting curriculum, giving more importance to digital literacy and IT competencies (Handoyo & Anas, 2019; O'Leary, 2023). Consequently, today's accountants are anticipated to merge traditional accounting expertise with advanced technological skills (Andreassen, 2020; Thottoli, Ahmed & Thomas, 2022). Outdated accounting syllabi, which heavily focus on manual computations and theoretical frameworks, are being tested by the requirement for practical abilities in data analysis, visualisation, and critical assessment of technology-powered financial data (Zhang, Dai & Vasarhelyi, 2018; Wang, 2022). Therefore, revamping the curriculum is seen as a crucial step in transforming accounting education.

2.3 Digital Literacy and Readiness for Students

Digital literacy involves effectively using digital technologies to access, evaluate, create, and share information in different settings (UNESCO, 2018; Pargmann, et al., 2023). It is seen as a basic requirement for engaging in contemporary education systems and tech-driven learning environments (Wang, 2022). Learner readiness is a mix of knowledge, skills, attitudes, and confidence that enables individuals to interact effectively with technological innovations (Pargmann, et al., 2023). Studies suggest that students with higher digital literacy levels are more likely to embrace AI-based learning tools, have positive attitudes toward technology, and adapt better to changing workplace requirements (Ng, 2012; UNESCO, 2018; Wang, 2022). In the age of the 4IR, students from the millennial generation are expected to contribute to creating a prosperous society. It is crucial for students to acknowledge that they possess new literacy skills (Sari, 2020). Literacy, in the student's context, goes beyond just reading and writing abilities; it encompasses using all their talents and competencies in various aspects of life, such as communication, problem-solving, and numeracy skills essential for success in work, family, and society (Pargmann, et al., 2023). Sari (2020) pointed out that the rapid advancement of digital technology significantly impacts the future of adult education. The evolution of digital learning technologies is transforming educational practices across formal, informal, and non-formal settings. An intriguing issue regarding digital literacy is the intersection of internet media literacy, reading literacy, and writing proficiency among college students (Sarea, Alhadrami, & Taufiq-Hail, 2021). Therefore, digital literacy plays a critical role in preparing students for AI-integrated education.

2.4 South Africa's Educational Landscape

South Africa faces significant obstacles in preparing students for the digital economy, including unequal access to technology, insufficient school infrastructure, inadequate teacher training, and disparities between urban and rural schools (DBE, 2020; Muyambi & Ahiaku, 2025). While the government has initiated efforts to promote digital education, the execution is inconsistent, leading to unequal exposure to technologies like AI (Pargmann, et al., 2023). Educators in the digital education field must possess essential skills such as business intelligence, digital transformation, cybersecurity, and cloud computing (Kanyane, 2023). These skills are crucial for reshaping the educational environment and continuously impacting learning, teaching, and research tools (Wang, 2022). The educators lack sufficient preparation to promptly adapt to the evolving digital needs of the workplace (Yende, 2021; Savić & Pavlović, 2023). It is important to note that approximately 24% of the African population has reliable internet access, which creates digital inequalities that challenge effective teaching and learning (Kanyane, 2023). Financial challenges and socio-economic disparities have created obstacles to students engaging in online learning due to the high costs of data required for online education and frequent power outages, known as load shedding, in South Africa (Kativhu, S., 2021).

Certain groups in South Africa, particularly

educational institutions located in isolated regions, face challenges in accessing the internet and may even lack electricity (Savić, & Pavlović, 2023). This lack of connectivity and resources further marginalises these communities in the context of the education sector's shift towards digital transformation. Consequently, many stuedents lack the digital skills needed for future studies and careers in technology-focused fields (Savić, & Pavlović, 2023). Understanding learner readiness in the South African context is vital for shaping curriculum design, educational policies, and targeted interventions to enhance equity and readiness for AI-driven economic engagement.

3. THEORETICAL FRAMEWORK

This paper underpin the Technology Acceptance Model (TAM), developed by Davis (1989), these are useful framework for understanding the factors that influence the adoption of technology among senior citizens (Kativhu, S., 2021). This is especially relevant when creating programs aimed at enhancing digital skills and technology usage among older individuals (Wang, 2022). The paper is based on the TAM and the Digital Literacy Framework, which together provide a comprehensive theoretical framework for examining high school students' preparedness to interact with AI in accounting education (Desmaryani, Soleh & Wiarta, 2024).

3.1 Technology Acceptance Model (TAM)

The TAM, developed by Davis (1989), is widely used to explain individuals' acceptance and use of technology. The model suggests that users' intention to adopt a technology is mainly influenced by two main factors: perceived usefulness and perceived ease of use (Wang, 2022). The TAM demonstrates the preparedness for technology and highlights the advantages and ease of using technology (Desmaryani, Soleh & Wiarta, 2024). It describes the capacity to implement IT in a professional setting. As per the model, an individual's willingness to embrace technology is affected by their intent, which is influenced by the belief in the benefits and simplicity of using technology for work tasks.

In this paper, perceived usefulness refers to how much students believe that AI will improve their learning outcomes in accounting and enhance their future job prospects in the accounting field (Davis, 1989; Wang, 2022). It reflects students' views on the value and significance of AI in aiding academic success and career development.

On the other hand, perceived ease of use refers to the extent to which students perceive AI technologies as simple to comprehend, learn, and apply in accounting tasks (Davis, 1989; Wang, 2022). This aspect is crucial in determining students' willingness to interact with AI tools, especially in educational settings where exposure to advanced technologies may be limited.

TAM is pertinent to this paper as it offers a theoretical foundation for understanding students' attitudes towards AI and their intentions to participate in AI-incorporated accounting education.

3.2 Digital Literacy Framework

Apart from TAM, this paper is influenced by the Digital Literacy Framework, initially introduced by Gilster (1997) and further developed by Ng (2012). Digital literacy is the capability to access, evaluate, use, and communicate information effectively using digital technologies in a meaningful and ethical manner.

Digital literacy involves the capacity to comprehend, acquire, and utilize information using tools like computers linked to the web (Desmaryani et al., 2024). Being digitally literate necessitates being open to embracing technology, having proficiency, and feeling self-assured to establish a feeling of safety.

Ng (2012) describes digital literacy as consisting of three interconnected aspects: technical, cognitive, and socio-emotional competencies. The technical aspect involves proficiency in operating digital devices and software applications. The cognitive aspect includes the ability to critically assess and interpret digital information. The socio-emotional aspect relates to engaging responsibly, ethically, and confidently in digital environments. In this paper, digital literacy plays a crucial role in determining students' readiness to engage with AI in accounting education. It impacts not only their proficiency in using AI technologies but also their perceptions of ease of use and overall confidence in interacting with digital systems.

3.3 Theoretical Integration

By combining TAM (Davis, 1989) and the Digital Literacy Framework (Gilster, 1997; Ng, 2012; Sarea, Alhadrami, & Taufiq-Hail, 2021), a strong basis is established for understanding students' readiness for AI in accounting education. While TAM elucidates students' attitudes and intentions towards AI adoption, the Digital Literacy Framework clarifies the fundamental skills necessary for effective interaction with AI technologies. Together, these theories provide a comprehensive understanding of the factors influencing AI readiness among high

school accounting students, particularly concerning perceived usefulness, perceived ease of use, digital competencies, and technological assurance.

4. RESEARCH METHODOLOGY

4.1 Research Design

The research design serves as a plan for a study, outlining the techniques, processes, and approaches used to collect and analyse data to address research questions or test hypotheses (Takona, 2024). It is a well-structured framework that helps the researcher systematically pursue the study's objective while ensuring results are accurate, reliable, and significant. In this paper, a quantitative research design was employed, specifically a questionnaire cross-sectional survey, to explore the preparedness of high school accounting students to interact with AI (Creswell and Creswell, 2017). A quantitative design was chosen as it enables the structured collection and statistical analysis of numerical data to recognise patterns, connections, and trends within the paper's variables (Archer, 2023). The cross-sectional approach enabled data collection at a specific point in time, offering a snapshot of students' current levels of AI awareness, digital skills, attitudes, and preparedness.

4.2 Population and Sample

The target population is the complete set of individuals, occurrences, or objects that the researcher aims to study (Naseri, Hussin, Esa, Aziz & Nordin, 2021). The paper's target group consisted of 100 Grade 12 accounting students from selected secondary schools in South Africa. This group was chosen because Grade 12 students are in their final year of secondary education, a crucial period when they make important decisions about their future paths, whether to pursue higher education or to start a career in accounting or related fields. In the South African context, Grade 12 students are also significant for evaluating their preparedness for future skills, such as digital proficiency and new technologies like AI, which are increasingly shaping the landscape of accounting education and practice during the 4IR (Mhlanga, 2023).

Sample Size Justification

Infinite: $n_0 = \frac{Z^2\, p\,(1-p)}{e^2}$

the minimum sample size becomes 385 participants when you have done the substitutions

Probability random sampling is a commonly recommended practice in quantitative research to enhance representativeness and minimise sampling bias. Sampling involves selecting a subset of a population from an individual or a large group for a specific research purpose (Makwana, Engineer, Dabhi & Chudasama, 2023). Employing sampling has a range of advantages and disadvantages.

To ensure diverse representation from urban and rural schools and to improve the generalisability of the results, this paper utilised stratified random sampling to ensure that high schools from various socio-economic backgrounds were proportionally represented. Stratified random sampling is a statistical method in which a population is divided into subgroups, or strata, according to specific characteristics, and a random sample is selected from each stratum (Makwana et al., 2023). This approach is frequently employed in research to ensure the sample accurately represents the population and to enhance the accuracy of estimates (Naseri et al., 2021). Initially, schools were divided into well-resourced, moderately resourced, and under-resourced categories, as is common in the South African education system. This categorisation aligns with existing evidence showing ongoing inequalities in access to technology, digital learning resources, and teaching quality among different types of schools in South Africa (Muyambi & Ahiaku, 2025). Subsequently, schools were randomly selected within each category, and students studying Accounting were then chosen randomly from these schools. This strategy aimed to ensure diversity in the sample group and enhance the representation of students' experiences regarding digital access and readiness for artificial intelligence. Once the sample size is decided, researchers calculate the percentage or ratio of each stratum compared to the total population size. Once the proportions of each stratum are known, researchers can then set a sample size for each stratum. The necessary sample size was calculated using Cochran's (1977) finite population correction formula for finite populations. This formula offers a suitable way to determine sample sizes that are representative, taking into consideration the total population size.

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Finite:

The sample size was determined using Cochran's formula, a widely accepted method for estimating sample sizes in large or unknown populations within quantitative social science and educational research. The initially calculated sample size was adjusted to account for expected nonresponses and incomplete surveys, ensuring the results would be statistically reliable. This adjustment strengthened the dataset's reliability and ensured the final sample size was adequate for meaningful statistical analysis and for generalising the findings to the intended population of high school accounting students.

4.3 Data Collection

Data were collected through a well-organised survey aligned with the study's research goals, theoretical basis, and variables highlighted in the existing literature. The survey aimed to gather insights into learners' attitudes and preparedness concerning the incorporation of AI in accounting education. Structured surveys are commonly acknowledged as valuable tools for obtaining standardised quantitative data from extensive participant pools, ultimately improving the dependability and comparability of answers (Creswell & Creswell, 2023; Saunders, Lewis, & Thornhill, 2023). The questionnaire consisted of five sections:

1. Demographic details
2. Familiarity with AI
3. Levels of digital literacy
4. Perceptions of AI in accounting
5. Preparedness for AI-integrated accounting education

Participants rated their responses on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The Likert scale is widely used in quantitative social science research due to its structured and reliable approach to measuring attitudes, opinions, and behavioral inclinations (Mardia, Kent & Taylor, 2024). Likert-style scales also support various statistical analyses, such as descriptive analysis, correlation assessment, and reliability evaluation, making them suitable for investigations focused on technology acceptance and educational preparedness (Bougie & Sekaran, 2025).

4.4 Data Analysis

The structured questionnaire yielded quantitative data that were coded, checked, and processed using the Statistical Package for the Social Sciences (SPSS) (Field, 2024). Before analysis, the dataset was reviewed for missing values, outliers, coding errors, and data completeness to ensure data accuracy and quality. Data screening is a crucial part of quantitative research as it enhances the credibility and dependability of statistical results (Pallant, 2020). To achieve the study objectives, a combination of descriptive and inferential statistical methods was utilised to analyse the data. Descriptive statistics were used to examine participants' demographic characteristics, understanding of AI, digital skills, opinions on AI in accounting, and preparedness for AI-incorporated accounting enducation (Pandey, 2020). Table 4.1 illustrates the statistical methods used in the research.

Table 4.1: Overview of Data Analysis Approaches.

Study Objective	Variable(s)	Statistical Method	Purpose of Analysis
Describe the characteristics of survey participants	Sex, Grade, School Area	Frequencies and Percentages	To summarise the demographic profile of the participants.
Evaluate students' understanding of AI	AI Awareness	Frequencies, Mean, and Standard Deviation	To assess students' level of awareness and comprehension of AI.
Assess students' proficiency in digital skills	Digital Literacy	Mean and Standard Deviation	To gauge students' abilities in digital skills
Investigate students' viewpoints on AI in accounting	Perceptions of AI	Mean and Standard Deviation	To establish students' attitudes towards AI in accounting education and practice.

Evaluate students' readiness for AI-integrated accounting education	AI Readiness	Mean and Standard Deviation	To determine students' overall readiness for AI integration.
Assess the questionnaire's reliability	All questionnaire constructs	Cronbach's Alpha	To evaluate the internal consistency and reliability of the measuring tool.
Analyze connections among the research variables	AI Awareness, Digital Literacy, Perceptions of AI, and AI Readiness	Pearson Correlation Analysis	To ascertain the strength and direction of relationships among the research variables.
Compare responses based on school location	Urban and Rural Schools	Independent Samples t-test	To identify if there are significant differences between students from urban and rural schools

Source: Researcher's compilation (2026).

Initially, descriptive statistics were calculated to summarise the participants' demographic characteristics and the distribution of responses across the study variables. Frequencies and percentages were utilised to depict categorical aspects, while means and standard deviations were computed to summarise continuous aspects measured on the five-point Likert scale. The mean values were interpreted based on the subsequent guidelines in Table 4.2:

Table 4.2:

Mean Score	Interpretation
1.00–1.80	Very Low
1.81–2.60	Low
2.61–3.40	Moderate
3.41–4.20	High
4.21–5.00	Very High

These statistical summaries provided comprehensive insights into students' knowledge of AI, digital literacy, attitudes towards AI in accounting, and preparedness for AI-integrated accounting education (Saunders, Lewis & Thornhill, 2023).

After the descriptive analysis, the measurement instrument's reliability was assessed using Cronbach's alpha coefficient. Barrett, Leech, Gloeckner, Morgan & 2025 stated that a Cronbach's alpha of 0.70 or higher signifies satisfactory internal consistency for research tools measuring hidden constructs. This coefficient gauges how consistently the questionnaire items measure the same concept. According to Barrett et al., 2025, the reliability coefficients were understood as follows in table 4.3:

Table 4.3:

Cronbach's Alpha (α)	Interpretation
≥ 0.90	Excellent reliability
0.80–0.89	Good reliability
0.70–0.79	Acceptable reliability
0.60–0.69	Questionable reliability
< 0.60	Poor reliability

Correlation coefficient (r) was used to examine the strength and direction of relationships among AI awareness, digital literacy, perceptions of AI in accounting, and readiness for AI-integrated accounting education (Pandey, 2020). The interpretation of correlation coefficients followed established statistical criteria to gauge the strength of relationships (Pallant, 2024). The correlation coefficient (r) ranges from -1 to +1, with positive values indicating a positive association and negative values indicating an inverse association. Significance in statistics was determined by p-values; associations

were deemed statistically significant at $p < 0.05$. The magnitude of the associations was explained based on (Nikitina & Chernukha, 2023) interpretation in Table 4.4 below:

Table 4.4 below:

Correlation Coefficient (r)	Interpretation
0.00–0.19	Very weak
0.20–0.39	Weak
0.40–0.59	Moderate
0.60–0.79	Strong
0.80–1.00	Very strong

Furthermore, an independent-samples t-test was conducted to compare the average scores of students from urban and rural schools. This evaluation helped determine whether the school's location significantly affected AI awareness, digital literacy, perceptions of AI, and readiness for AI-integrated accounting education. Lastly, a multiple linear regression analysis was conducted to examine how AI awareness, digital literacy, and perceptions of AI predict students' readiness for AI-integrated accounting education. Regression analysis is suitable for examining the predictive relationship between several independent variables and a single dependent variable (Barrett et al., 2025). All statistical analyses were conducted at the 95% confidence level, and statistical significance was set at $p < 0.05$ (Chatterjee, 2021). The integration of descriptive and inferential statistical methods enabled a thorough examination of the data, facilitated hypothesis testing, and provided empirical evidence on the factors influencing the preparedness of South African high school students to embrace Artificial Intelligence in accounting education.

5. RESULTS

In this section, the study results are outlined, using data collected from 100 accounting students in Grades 12 from selected secondary schools in South Africa. The outcomes are structured based on the research objectives, employing descriptive and inferential statistical methods. The descriptive findings encapsulate the participants' background details and their views on AI, digital skills, attitudes towards AI, and preparedness for AI-inclusive accounting education. Inferential analysis was employed to identify connections between the study parameters and to contrast students from urban and rural schools.

5.1 Demographic Profile

Table 5.1 displays the demographic traits of the participants.

Table 5.1: Demographic Overview of Participants (N = 100).

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	45	45.0
	Female	55	55.0
Grade	Grade 12	52	52.0
School Location	Urban	60	60.0
	Rural	40	40.0

The research involved 100 accounting students, with a gender split of 55% female and 45% male individuals. Regarding school location, 60% of participants attended urban schools, while 40% attended rural schools. This distribution enabled a comparison of potential differences in access to digital resources and exposure to new technologies such as AI, aligning with the stratified sampling method used in the paper (Mölder, Jablonski, Letcher, Hall, Van Dyken, Tomkins-Tinch, Sochat, Forster, Vieira, Meesters, & Lee, 2025). The demographic breakdown shows that the research included participants from diverse educational backgrounds, ensuring a fair portrayal of accounting students.

5.2 Awareness of AI

Despite the majority of students recognising AI as a concept, a smaller proportion reported

understanding its practical application in accounting. Exposure to AI-related subjects in schools was relatively limited, suggesting a scarcity of formal education on AI (Mölder, 2025).

Table 5.2: Students' Familiarity with Artificial Intelligence.

Statement	Average	Standard Deviation	Interpretation
I am aware of Artificial Intelligence.	4.28	0.71	Significantly High
I comprehend the utilization of AI in accounting.	3.24	0.92	Moderate
My educational institution has integrated AI principles.	2.43	1.10	Limited
I am knowledgeable about the potential impact of AI on future accounting professions.	3.41	0.86	Considerable

Overall Average = 3.34 (Moderate Understanding).

The results show a moderate level of AI awareness among students. 72% of participants reported familiarity with AI, indicating general exposure to the concept. However, only 48% claimed to comprehend how AI is utilised in accounting, and 35% stated they had received formal education on AI-related technologies during their schooling. These findings suggest that while students recognise the term "AI," their understanding of its concepts and applications is limited, particularly in relation to its significance in accounting. This underscores a gap between general awareness of technology and specific knowledge of AI in the subject.

5.3 Digital Literacy

The results suggest that students have sufficient fundamental digital competencies essential for academic tasks. However, proficiency in specialised digital tools such as AI applications and data analytics software was notably lower, highlighting the necessity for increased exposure to advanced digital technologies (Ng, 2012; Thottoli, Ahmed & Thomas, 2022).

Table 5.3: Levels of Digital Skills.

Statement	Average	Standard Deviation	Interpretation
I am able to confidently operate a computer.	4.19	0.73	High
I can utilize online educational platforms.	4.11	0.76	High
I am knowledgeable about data analysis programs.	2.74	1.02	Moderate
I am familiar with the operation of AI programs.	3.41	0.86	Moderate

Average Overall = 3.48 (High Digital Literacy).

The outcomes reveal that most students have basic digital skills, especially concerning computers, smartphones, and internet-based tools (Thottoli, Ahmed & Thomas, 2022). This indicates a general capacity to use fundamental digital resources commonly found in educational environments. Nonetheless, fewer students demonstrated familiarity with advanced digital skills such as data analytics software, automation tools, and AI applications. This implies that while students are active digitally, their competencies are mostly restricted to basic operations rather than the advanced skills needed in AI-driven accounting contexts.

5.4 Perceptions of AI in Accounting

Students, in general, showed favourable attitudes toward AI in accounting. The majority believed that AI would enhance efficiency, precision, and job prospects. However, a significant number also had reservations about the potential loss of accounting positions due to automation (Rehman, Naz & Razzak, 2020).

Table 5.4: Students' Views on AI:

Statement	Mean	SD	Interpretation
AI will enhance accounting efficiency.	4.31	0.69	Very High
AI will enhance accounting precision.	4.18	0.76	High
AI expertise will boost future job prospects.	4.10	0.81	High
AI might decrease job opportunities.	3.55	0.52	High

Overall Mean = 4.04 (High Positive Perception).

Overall, students displayed positive attitudes towards AI in accounting. A substantial percentage (81%) agreed that AI could boost efficiency in accounting processes, while 76% believed that acquiring AI skills would improve future career prospects. Additionally, 69% expressed interest in learning about AI applications in accounting education. Despite these optimistic views, 52% of students expressed concern that AI could diminish job opportunities for accountants, reflecting uncertainties about the long-term impact of automation on the profession. This indicates a mixed perception of AI, both as an opportunity and a potential challenge.

5.5 Readiness for AI Integration

Even though students showed keen interest in incorporating AI into accounting education, their overall readiness level remained at a moderate level. Limited exposure to AI in the curriculum and insufficient practical opportunities to engage with AI technologies seem to hinder learner preparedness (Rehman, Naz & Razzak, 2020).

Table 5.5 displays the AI Readiness scores:

Statement	Mean	SD	Interpretation
I am open to acquiring knowledge about AI in the field of accounting.	4.18	0.69	High
I feel ready to explore AI applications.	3.29	0.90	Moderate
My educational institution offers satisfactory AI learning chances..	2.48	1.05	Low
I have enough digital skills to utilize AI.	3.46	0.81	High

The overall mean score is 3.35, indicating a moderate level of readiness for AI integration.

In general, students demonstrated a moderate level of readiness for integrating AI into accounting education. While students showed positive attitudes towards technology and a willingness to engage with AI, their technical knowledge and practical experience with AI tools were limited. A significant discovery was the notable differences between urban and rural students, with urban students showing higher levels of AI awareness, digital literacy, and readiness. This implies that unequal access to digital resources and educational opportunities continues to influence student preparedness, reinforcing existing digital disparities within the South African education system (DBE, 2020; Muyambi & Ahiaku, 2025).

6. DISCUSSION

The study examined how prepared high school accounting students in South Africa are to interact with AI in their accounting education and future careers. The results showed that while students had a positive attitude towards AI and understood its importance in accounting, their readiness was hindered by a lack of AI knowledge, insufficient digital skills in advanced technologies, and limited

exposure to AI in the curriculum. The study suggests that educational interventions are necessary to equip students for accounting environments driven by technology.

The findings revealed that students had a basic understanding of AI, with most being familiar with the concept but having limited knowledge of its practical use in accounting. This aligns with Alam and Mohanty's research (2024), indicating that students are generally aware of AI but lack specific knowledge in their field due to limited exposure in school. Similarly, to OECD (2023), while global awareness of AI is increasing, many education systems, especially in developing countries, have yet to incorporate AI literacy into secondary education. These results underscore the importance of updating the curriculum to introduce AI concepts at an earlier educational stage.

The research also discovered that students exhibited relatively high levels of overall digital skills, particularly in using computers, smartphones, and online educational platforms. However, their proficiency in more advanced digital tools like AI technologies and data analysis software was somewhat limited. These results confirm earlier research conducted by UNESCO (2023), which suggests that digital literacy goes beyond basic tech skills and should encompass abilities in computational thinking, data analysis, AI usage, and ethical technology practices. As the field of accounting shifts towards data-driven decision-making, these advanced digital skills are becoming increasingly crucial for future accountants.

Regarding students' views of AI, the study found predominantly positive attitudes towards incorporating AI into accounting education. Most participants felt that AI could enhance efficiency, improve accounting accuracy, and create more job opportunities in the future. However, many students expressed concern that AI could replace traditional accounting roles. Similar results were found by Kokina, Mancha, and Pachamanova (2021) and IFAC (2022), indicating that accounting students generally view AI as a beneficial technological advancement while also harboring uncertainties about its impact on future employment. These attitudes reflect the changing landscape of the accounting field, where routine tasks are increasingly automated, while higher-level analytical, advisory, and strategic roles still rely on human expertise.

The results also indicated that students' overall preparedness for AI-incorporated accounting education was moderate rather than high. While participants showed eagerness and interest in learning about AI in accounting, they noted a lack of practical experience with AI technologies at their educational institutions. These outcomes align with forecasts from the World Economic Forum (2023), indicating that being ready for the future workforce requires not only a positive outlook on technology but also ongoing opportunities for skill development and hands-on learning. Therefore, schools should progress from theoretical teaching to integrating practical AI applications, simulations, and technology-based learning activities into accounting education.

The analysis illustrated significant positive connections between AI awareness, digital skills, attitudes towards AI, and student readiness. These results imply that improvements in AI understanding and digital proficiency are associated with greater readiness for AI-integrated accounting education. Similar findings have been documented by Chiu, Ismailov, and Yuan (2024), who determined that digital proficiency strongly influences students' willingness to embrace AI-supported learning technologies.

The substantial discrepancies observed among students from urban and rural schools highlight the ongoing educational inequality in South Africa. Urban students showed notably higher levels of AI awareness, digital skills, and preparedness compared to their rural peers. These results support the findings of the Department of Basic Education (2023) and the OECD (2023), which point to unequal access to digital tools, internet connections, and educational resources as significant obstacles to digital progress in South African schools. Failure to invest specifically in schools with limited resources may lead to a widening of existing disparities as AI becomes more prevalent in academic and career settings.

The outcomes strongly back the Technology Acceptance Model (TAM) introduced by Davis (1989). Students who saw AI as beneficial for enhancing accounting education and future career prospects exhibited a greater willingness to interact with AI-based learning. This validates the TAM theory that perceived usefulness positively impacts technology acceptance. While the study did not directly assess perceived ease of use, students with better digital skills expressed more confidence in using AI technologies, indicating that digital proficiency could improve perceptions of technological usability.

The results also correspond with the European Digital Competence Framework (DigComp) devised by Vuorikari et al. (2022). DigComp stresses that

successful engagement in digitally transformed environments necessitates skills in information literacy, digital communication, content generation, problem-solving, and responsible use of technology. The moderate preparedness seen in this study implies that while students have basic digital skills, further enhancement of advanced digital capabilities is needed to ready them for AI-driven accounting education and professional settings.

Overall, the research indicates that effectively incorporating AI into accounting education necessitates a comprehensive strategy involving updating the curriculum, enhancing teacher training, upgrading digital systems, and ensuring fair availability of new technologies. These measures are crucial for preparing accountants to address the challenges of the Fourth Industrial Revolution.

The outcomes of this research suggest that South African accounting students generally acknowledge the growing significance of AI in the field of accounting. The optimistic attitudes displayed by students indicate a favourable inclination towards technological advancements and show a potential willingness for the future incorporation of AI into accounting education. This is in line with the Technology Acceptance Model (TAM), which argues that having positive views on the usefulness and ease of using technology significantly impacts its acceptance (Davis, 1989). In this scenario, students' acknowledgment of AI as a tool for enhancing efficiency and career prospects reflects perceived usefulness, which plays a crucial role in determining behavioural intention. Nevertheless, the readiness for integrating AI is not solely influenced by attitudes. The paper uncovered a limited comprehension of AI concepts and inadequate exposure within the current accounting syllabus. This discovery corresponds with earlier studies indicating that educational systems often fall behind technological progress, resulting in a mismatch between industry needs and student readiness (ICAEW, 2020; AICPA & NASBA, 2021; Kativhu, S., 2021). From a theoretical perspective, this gap also underscores deficiencies in developing digital literacy, as students need not only awareness but also cognitive and technical skills to effectively interact with AI technologies (Ng, 2012; UNESCO, 2018; Kativhu, S., 2021).

Furthermore, the contrast observed between urban and rural students underscores enduring structural disparities in accessing digital resources. Urban school students exhibited higher levels of preparedness, likely due to better infrastructure, more exposure to technology, and enhanced learning environments. This discovery aligns with national data on educational inequality in South Africa, highlighting unequal access to ICT resources and uneven implementation of digital learning initiatives (DBE, 2020; Muyambi & Ahiaku, 2025). These inequalities could exacerbate the digital divide if not tackled through targeted policy measures.

7. LIMITATIONS

Although this research offers valuable insights into the preparedness of high school accounting students in South Africa for AI-integrated accounting education, there are several constraints that need to be recognised:

1. The study utilised a cross-sectional survey method, capturing students' views and readiness at a specific moment. This prevented the examination of changes in students' knowledge, attitudes, and digital abilities over time. Long-term studies would offer a more detailed insight into how student readiness changes as AI technologies are more integrated into education.

2. The research depended on self-reported questionnaire responses, which could be influenced by response bias, such as social desirability and an overestimation of digital skills. Future studies should include objective evaluations of students' AI knowledge and digital competencies alongside survey data.

3. The study was carried out with Grade 12 accounting students from chosen South African high schools, limiting the applicability of the results to all regions, schools, and educational settings. More extensive national studies involving a more varied group of participants would enhance the generalizability of the results.

4. Lastly, the research primarily concentrated on students' viewpoints and did not involve input from accounting teachers, curriculum developers, school administrators, or industry experts. Incorporating diverse perspectives from various stakeholders would offer a more comprehensive understanding of AI readiness in accounting education.

8. RECOMMENDATIONS

Future studies should address the limitations outlined in this research by using longitudinal designs to observe changes in students' preparedness for AI over time as educational policies and technological advancements evolve.

Researchers should also consider using mixed-methods strategies that combine quantitative surveys with qualitative interviews or focus groups to gain a deeper understanding of students'

experiences, obstacles, and expectations regarding AI in accounting education.

Comparative research involving students from diverse provinces, socio-economic backgrounds, and educational systems would offer a more comprehensive view of contextual factors that affect AI readiness. Additionally, future investigations could compare public and private schools or examine distinctions among urban, peri-urban, and rural educational environments.

Further research should involve teachers, school administrators, curriculum planners, higher education institutions, and accounting experts to develop a thorough understanding of institutional preparedness for integrating AI. Assessing educators' AI skills and instructional readiness would help in creating more successful professional development programs.

Lastly, forthcoming studies should explore the efficacy of AI-based teaching methods, virtual accounting labs, intelligent tutoring systems, and AI-driven simulations in enhancing students' accounting knowledge, digital skills, critical thinking, and career preparedness. Experimental and quasi-experimental studies assessing these interventions would offer valuable evidence for educational policies and curriculum enhancements.

9. CONCLUSION

AI is fundamentally reshaping the accounting profession by transforming processes, skills, and professional expectations. This paper indicates that although South African high school accounting students exhibit positive attitudes towards AI and acknowledge its importance in future accounting careers, their overall preparedness remains moderate due to gaps in knowledge, digital literacy, and curriculum exposure. The paper underscores that effective readiness for AI-driven accounting environments necessitates more than just positive perceptions; it requires structured curriculum adjustments, improved digital accessibility, and targeted skills enhancement. Addressing these challenges demands coordinated efforts among policymakers, educators, and industry stakeholders. Integrating AI education into secondary school accounting programs is thus crucial for cultivating a future-ready accounting workforce capable of excelling in the digital era.

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