**Title:** ChatGPT: Reflections from the UK higher education institutions, accountancy bodies and BIG4s

**ABSTRACT**

**Purpose:** This study explores ChatGPT in the context of the UK higher education and accountancy profession.

**Design:** Narrative research that applies deductive thematic analysis to investigate secondary data produced by the UK HE governing bodies, the ancient UK universities, accountancy bodies, and BIG4s.

**Findings:** Discussions held by the governing bodies of higher education in the UK follow the advice found in the literature on how to acknowledge contributions from artificial intelligence. However, these discussions are informal. Universities provide guidance on the use of ChatGPT; however, these documents differ, compromising a consistent approach across institutions. Similarly, accountancy researchers lack uniform guidance. This is concerning, because the data analysis indicates that ChatGPT’s limitations may have a detrimental impact on compliance with the UK Concordat to support research integrity. Moreover, accountancy bodies are predicting major changes in the accountancy profession due to automation, which will potentially change the job market and the content of qualification examinations. BIG4s have begun automating, with some negative impacts already evident. Thus, the field should be ready for future challenges.

**Originality/Value:** This study explores ChatGPT in the context of the UK higher education and accountancy profession. It provides a detailed analysis of the risks and opportunities associated with the use of ChatGPT, while also providing suggestions for risk mitigation to assist accountancy students, researchers, and practitioners.

**Keywords:** ChatGTP, academic misconduct, research integrity, and accountancy profession.
1. Introduction
ChatGPT became available in November 2022, and it attracted 100 million users just two months after (The Guardian, 2023). In the context of accountancy profession, ChatGPT is useful for increasing efficiency and productivity (KPMG, 2023a, 2023c; PwC, 2023a; EY, 2023c; Deloitte, 2023a, 2023c). ChatGPT can assist in automating the elaboration of financial statements, supporting the timely analysis of historical data, and answering frequent questions in a personalised manner (KPMG, 2023a, 2023c; PwC, 2023a; EY, 2023c; Deloitte, 2023a, 2023c). However, using ChatGPT also involves challenges that can impact on issues related to data protection, copyrights, and data reliability (KPMG, 2023a, 2023c; PwC, 2023a; EY, 2023c; Deloitte, 2023a, 2023c; De Villiers et al., 2024; Zhao and Wang, 2024). Thus, human involvement and knowledge are essential to ensure that using artificial intelligence (AI), such as ChatGPT, in accounting generates trustworthy and ethical outcomes (Alshurafat, 2023; Hacker, 2023; Street and Wilck, 2023).

In accounting education, ChatGPT improved the scores of accounting profession examinations (e.g. CPA, CIA and CMA) (Eulerich et al., 2023; ICAEW, 2023b; Abeysekera, 2024). However, Wood et al. (2023) found that ChatGPT is unable to answer all types of accounting questions because some are designed for students to identify nuanced issues not captured by ChatGPT. Thus, there are concerns that ChatGPT can disrupt the process of learning and knowledge creation if not used within a learning framework, designed to encourage students to develop critical analysis (Wood et al., 2023).

Regarding research, Van Dis et al. (2023) stressed that a Large Language Model (LLM), such as the one that powers ChatGPT, can produce convincing texts, but are sometimes unreliable because it might include incorrect and misleading information. Several authors have used innovative technologies to write different types of texts (e.g., literature reviews, essays and talks) (Stokel-Walker, 2023). It is predicted that AI applications will develop further and towards designing of experiments and/or support of editorial decisions (vanDis et al., 2023).

Moreover, considering the broader literature on Business and Management on ChatGPT, most disruptions caused by ChatGPT are related to accountability and ethics issues (Dwivedi et al., 2023; Ameen et al., 2023; Liebrenz et al., 2023; Wolkovich, 2024). Currently, rules on
accountability, integrity, and ethics are vague and applied to the context of information systems, being considerably different from AI (Akter et al., 2023). Thus, it is crucial to identify the risks involved using ChatGPT because mitigation actions can be applied to prevent, ameliorate, and/or address these issues (Dwivedi et al., 2023). Therefore, this study aims to explore the specific context of the UK higher education (HE) and accountancy profession on issues related to ChatGPT.

The remainder of this paper is organised as follows. Section 2 presents a literature review on ChatGPT in the areas of Business, Management, and Accounting. Section 3 provides the research methods and methodology. Sections 4 and 5 show the documental analysis, highlighting issues related to ChatGPT in the context of the UK HE and accountancy profession. Finally, Section 6 presents the concluding remarks.

2. Literature review
2.1 Brief introduction on ChatGPT
ChatGPT was created by OpenAI, a US organisation dedicated to innovating useful AI systems, that was formed in 2015 by Elon Musk, Sam Altman, and others (Ray, 2023). ChatGPT is categorised as an AI tool because it performs activities that are normally performed by humans. The name ChatGPT has also a meaning. For example, ‘chat’ refers to the fact that ChatGPT is a chatbot or a software/platform for establishing conversations with humans (Dwivedi et al., 2023). ‘GPT’ stands for Generative Pre-trained Transformer which involves language models programmed to imitate human conversations (Beerbaum, 2023; Hacker, 2023). ChatGPT involves a LLM which is formed by parameters of texts powered by self-learning system which are trained to perform a range of tasks including generation of new content (vanDis et al., 2023). Thus, ChatGPT can replicate human language, but cannot replicate the complexities of human language and thinking because it is a trained model with no experience of human life (Skavronskaia et al., 2023).

2.2 ChatGPT’s internal characteristics
The internal characteristics of ChatGPT offer relevant opportunities for efficiency, wider public engagement, and broader access to information. ChatGPT has high levels of analysis and synthesis (Nautiyal et al., 2023) which can assist research, especially when conducting
literature reviews and meta-analyses (Burger et al., 2023; Dwivedi et al., 2023). It also provides the possibility of working with many languages (Nautiyal et al., 2023), supporting grammar/spell checking and proofreading (Dwivedi et al., 2023). Furthermore, ChatGPT is predicted to be integrated into well-used platforms such as Word, PowerPoint, and Outlook (Dwivedi et al., 2023).

However, understanding the internal limitations of ChatGPT is important when making informed decisions regarding its use. First, the models used by ChatGPT contain errors that lead to false and misleading information (Nautiyal et al., 2023; Dwivedi et al., 2023). Second, the training of ChatGPT is restricted to some types of information; therefore, its outcomes can prevent timely and complete communication which are essential attributes of a text’s quality and reliability (Dwivedi et al., 2023). Third, because ChatGPT is based on models, it lacks of critical thinking, particularly, a deeper understanding of ethical and legal repercussions (Skavronskaya et al., 2023). Fourth, ChatGPT uses material produced by others without proper acknowledgement, causing plagiarism issues (Loh, 2023; Skavronskaya et al., 2023; Dwivedi et al., 2023). Fifth, ChatGPT can perform many complementary tasks, making it difficult to clearly establish authorship (Maciel, 2023; Polonsky and Rotman, 2023; Skavronskaya et al., 2023; Peres et al., 2023; Dwivedi et al., 2023). These drawbacks have caused disruptions, especially concerning research ethics and integrity (Ameen et al., 2023; Dwivedi et al., 2023) which are discussed in more details in the following sections.

2.3 ChatGPT: Broader implications

Notably, ChatGPT can facilitate the automation of many tasks and provide 24/7 personalised services (Ameen et al., 2023). For example, students and clients can tailor their requests on certain subjects and levels of difficulty. Tourists can provide specific guidance to restaurants in different locations, depending on their dietary constraints. Furthermore, ChatGPT provides the possibility of simultaneously attending many users (Ameen et al., 2023).

However, significant social and environmental risks are associated with ChatGPT. The literature provides examples of these risks classified into three groups: (i) security, (ii) inclusion and (iii) legal/financial. Regarding security, data provided to ChatGPT are not safeguarded, so information provided to the chat can be accessed by others (Dwivedi et al., 2023). Thus,
ChatGPT can use and disseminate personal and sensitive information provided directly by a user or make the use of available online data without permission (e.g., information available on social media, such as blogs) (Loh, 2023; Peres et al., 2023; Dwivedi et al., 2023). Furthermore, private information can be used to facilitate criminal activities (Dwivedi et al., 2023). These criminal activities can include the impersonation of people and cybercrimes, as ChatGPT can be applied to support the design of malware and phishing (Loh, 2023). The dissemination of fake and misleading information can also disrupt security (Dwivedi et al., 2023). Finally, AI has been used to support the surveillance of individuals, and ChatGPT can increase these activities, which can negatively impact on society if not within certain protocols and/or codes of ethics (Dwivedi et al., 2023).

Regarding inclusion, ChatGPT cannot be accessed by all since many have no tools nor knowledge to use it, for example, the poor, older adults, and those in locations with no access to ChatGPT (Dwivedi et al., 2023). This inequality can increase if ChatGPT is charged per user, raising concerns about AI democratisation (van Dis et al., 2023). Thus, studies also stress on the importance of keeping the use of LLM widely accessible, and preventing big tech companies from controlling advances in technology (van Dis et al., 2023). Additionally, the use of ChatGPT will spread quickly within some economic sectors, such as tourism and education, causing redundancies and the loss of relevant skills (e.g., conducting literature reviews) (Dwivedi et al., 2023). Furthermore, ChatGPT was trained considering information available online, the origins of which can be biased because it can concentrate on those produced in the Western countries and by white men. Therefore, outputs from ChatGPT were also found to be biased toward sexism, racism, agism, ableism, and other types of discrimination (Loh, 2023; Nautiyal et al., 2023; Paul et al., 2023; Peres et al., 2023; Dwivedi et al., 2023). Thus, these characteristics of ChatGPT represent risks to equality, cultural identity, and diversity (Dwivedi et al., 2023).

Regarding legal and financial risks, ChatGPT can misuse the work produced by others, and the credits for the authorship of a work produced by ChatGPT are unclear and under debate (Dwivedi et al., 2023). Therefore, ChatGPT can disrupt copyrights legislations (Dwivedi et al., 2023). Moreover, OpenAI uses low-paid workers who have become traumatised when classifying offensive contents from the Internet (Dwivedi et al., 2023), calling for a more
serious approach to social responsibility (Dwivedi et al., 2023). Finally, regarding environmental risks, the literature highlights that ChatGPT is energy-intensive to run (Loh, 2023). This problem tends to worsen if the data processing increases (Loh, 2023). Considering the climate change crisis, the creation and commercialisation of these types of platforms require a more responsible approach towards preserving the environment.

3. Research methodology and methods
This study applies a narrative research (Eriksson and Kovalainen, 2010), and contributes to the literature by exploring ChatGPT in the context of the UK HE institutions and accountancy profession. More specifically, this study answers the three following research questions:

**RQ1**: Does the position of HE institutions with respect to ChatGPT align with the advice/guidance from the existing literature on the topic?

**RQ2**: How can the limitations of ChatGPT be analysed in the context of research ethics and integrity?

**RQ3**: What are the perspectives of accountancy bodies and BIG4s regarding to ChatGPT?

Secondary data related to four different, but complementary, samples of organisations were analysed to answer these questions. First, UK HE governing bodies such as Advanced HE and the UKRI. Second, ancient universities in England and Scotland, as these are high-ranked institutions with influential power over the sector (iNews, 2023). These universities are: University of Oxford, University of Cambridge, University of Edinburgh, University of St. Andrews, University of Glasgow, and University of Aberdeen. Third, the following accountancy bodies were included because they operate in the UK (FRC, 2022): ACCA, CIMA, CIPFA, ICAEW, CAI, ICAS, and AIA. Fourth, material from the BIG4s audit firms (Deloitte, EY, KPMG, and PwC) were also analysed since they audit the majority of the regulated organisations in the UK (FRC, 2022).

The documents gathered and analysed in this study can be classified into two main datasets. The first dataset included a range (n=60) of non-academic sources, such as newspapers, guidance, policies, and blogs, up to June 2023. However, with the rapid development of the topic, additional material had to be included throughout the review process to update
information provided. This first dataset was selected based on its relation to ChatGPT, as well as its implications for ethics and integrity in the context of UK HE and the accountancy profession. The second dataset included materials published in academic sources. This material was gathered by a search made on the 5th June 2023 in the Scopus database, considering ChatGPT as a keyword in title, abstract and keywords of the articles published during the years 2022 and 2023 in English in journals classified as of Business, Management, and Accounting. A total of 23 contributions were found in this search, but one contribution was not available for download from the library the author is affiliated with and was excluded from this study. These contributions can be classified as: Journal articles ($n=10$), editorials ($n=8$), commentary ($n=2$), viewpoints ($n=1$) and article history ($n=1$).

This study applied deductive thematic analysis (Boyatzis, 1998; Joffe and Yardley, 2004; Berg, 2004). The themes on Tables 1 and 2 were applied to answer RQ1. These themes were based on guidance from Advance HE (Advance HE, 2023b), Polonsky and Rotman (2023) and Halaweh (2023). Themes to answer RQ2 were gathered from the UK Concordat to support research integrity (Universities UK, 2019) and the UKRIO representation of research integrity. Finally, themes to answer RQ3 were be based on the risks and opportunities related to ChatGPT identified in the literature, which are summarised in Tables 3 and 4.

4. ChatGPT in higher education: The UK context

4.1 Teaching (RQ1)

4.1.1 Advance HE’s position on ChatGPT

Advance HE plays a leadership role in improving HE activities in the UK; therefore, the following paragraphs present an analysis of the material that Advance HE produced in ChatGPT. Generally, Advance HE suggests that institutions attempt to understand AI tools (such as ChatGPT) beyond malpractice/misconduct, and as a tool to support students’ experiences (e.g., recruitment, retention, pastoral care and library services) (Advance HE, 2023c), as well as a relevant skill for employability (Advance HE, 2023b). However, Advance HE also recognised that ChatGPT brings many challenges to quality assurance (QAA, 2023). For example, Advance HE recognises that assessment is an important part of students’ experiences (Advance HE, 2023b). Thus, to understand the potential impacts of ChatGPT on
assessments, Advance HE analysed many tasks that ChatGPT could perform against academic dishonesty (Advance HE, 2023b).

Advance HE suggested many shades of dishonesty, but Advance HE made clear that these suggestions were not a general consensus across the sector. In the view of Advance HE, there are many possibilities between very strong academic dishonesty (e.g., copy of outputs) and authentic learning (e.g., asking ChatGPT for key themes to develop the text). In Table 1, this particular classification provided by the Advance HE is contrasted with the advice found in the literature on the acknowledgement of AI contributions to avoid misconduct (Polonsky and Rotman, 2023: 94).

For example, very strong dishonesty can occur if ChatGPT is not declared as the author of a work copied directly from ChatGPT. The literature has identified several undeclared assistances received from AI which can lead to plagiarism or cheating (Conroy, 2023; Kohnke et al., 2023). Platforms used for similarity detection and analysis by humans are still unable to identify all types of AI assistance (Conroy, 2023; Casal and Kessler, 2023; Wang et al., 2023). Thus, AI assistance is mostly found voluntarily or through the identification of some AI limitations such as the use of fake references (Conroy, 2023). Uncertainties in the use of AI can drive the end of essays as a form of assessment (Sallam, 2023).

Next, strong dishonesty can happen on occasions where a substantial support from ChatGPT is received and ChatGPT is not recognised as a co-author. Examples of substantial assistance include using ChatGPT for writing the literature review (and other parts of the work), and generating ideas and statistical analysis. Using ChatGPT may lead to false, incorrect, unreliable, and biased results owing to its limitations (Conroy, 2023; Sallam, 2023). Thus, the declaration of assistance is important for making informed decisions while assessing the work. Moreover, developing technical knowledge on AI foundation models is essential to evaluate pedagogical compatibility in the context in which AI is applied (Kohnke et al., 2023). Finally, raising social awareness about potential AI ethical issues is important (Kohnke et al., 2023).

Regarding moderate, low dishonesty, and authentic learning, the literature supports some AI applications, such as spelling checks, writing abstracts, and summaries to the public (Casal
and Kessler, 2023). However, AI users should be trained in the AI rules applied to their context to transparently disclose the level of AI support received through quotations, citations, or acknowledgements (Wang et al., 2023).

The interpretations and advice in Table 1 do not cover all potential limitations of ChatGPT; therefore, further and continuous discussions are necessary to fully understand ChatGPT potential and to take preventive actions against its risks (Advance HE, 2023a).

4.1.2 Universities’ policy on ChatGPT

This section evaluates the policies provided on ChatGPT by the English and Scottish ancient universities. This information was analysed considering the AI levels of contributions suggested by Polonsky and Rotman (2023: 94) in Table 1, as well as the strategies and techniques to support ChatGPT in education suggested by Halaweh (2023) in Table 2.

The initial reaction from the University of Cambridge and University of Oxford was to consider very strong academic misconduct using ChatGPT in exams and assessments. Recently, these universities adopted the Russell Group’s Principles on Generative AI Tools in Education, designed to ensure generative AI literacy in the UK research-intensive universities. To implement these principles, the University of Oxford prepared a statement on AI tools (Universities of Oxford, S/N), delegating guidance on the use (or non-use) of these tools in specific assessments to academic staff and departments. The unauthorised use of AI, and the lack of its acknowledgement, is considered misconduct (related to audit trails; Table 2). The University of Oxford has also provided examples of how to use AI for academic writing, which can be classified into different levels of AI contribution (see table 1) if misinterpreted by students.

The University of Cambridge took a different approach and set up a general guidance, establishing more clearly what was allowed and prohibited (Universities of Cambridge, S/N-a). For example, using 100% of the material produced by generative AI for publication is banned, and it is compulsory to acknowledge the use of generative AI (related to audit trails; Table 2). Specific guidance on AI in education has also been disseminated (Universities of Cambridge, S/N-b). This guidance included further examples of allowed tasks using AI for
‘personal study, research and formative work’, establishing clear boundary between formative and summative work. This guidance also requires critical analysis of assessments and frequent refreshments of assessment questions. Reliance on AI detectors was discouraged (related to AI detectors; Table 2), and discussions with others on generative AI tools were encouraged.

The University of St. Andrews, though not part of the Russell Group, recently updated its policy on good academic practice which includes guidance on the use of AI (University of St. Andrews, 2024). It maintained the use of AI in assessments only when authorised and with acknowledgement (related to audit trails; Table 2). It also included some examples of unauthorised use of AI. Reliance on AI detection was also discouraged (related to AI detectors; Table 2). Therefore, staff members should report any suspicious material to the School’s academic misconduct officers.

The University of Edinburgh and University of Aberdeen were the two universities that set specific guidance on the use of AI, such as ChatGPT, early in 2023. The University of Edinburgh is a member of the Russell Group and has maintained the guidance set in March 2023. This guidance delegates the decision and guidance on the use of ChatGPT to those in charge of teaching. The University of Edinburgh highlighted that students may be asked to use AI and critically reflect on the content it generates (related to the swap role; Table 2). The University of Edinburgh requires citations and acknowledgements when support is received from ChatGPT, such as the generation of ideas and development of a plan (related to audit trails; Table 2). Guidance to staff members (University of Edinburgh, 2023) also stressed the need to keep updated with the new developments and not rely on AI detectors (related to AI detectors; Table 2).

The University of Aberdeen is not a member of the Russell Group but, in September 2023, the university updated its ‘AI’ guidance to focus on ‘generative AI’ (University of Aberdeen, 2023). It also delegated the decision on the use of generative AI in assessments to staff members but required clear guidance to be set on its use. The university suggested that the generative AI content should not be assessed, but rather the process by which students arrived at the product. Staff should ask students to keep notes on the process to justify the originality of their work (related to audit trails; Table 2). The unauthorised use of generative AI and lack of
acknowledgement are considered misconduct. The University of Aberdeen also called for a review of assessment guidelines to ensure integrity by asking students to represent their ideas using diagrams and videos and requiring the use current reference sources or events (related to reflection notes; Table 2). Finally, the university also stressed that there are no reliable AI detectors and described the procedures to follow in cases of suspected misconduct (related AI detectors; Table 2).

Recently, and perhaps because of its Russell Group’s membership, the University of Glasgow published an extensive policy on the use of generative AI (University of Glasgow, 2024). The main message of the policy was that the university would not prevent the use of generative AI. However, students should provide evidence of their own creation. The use of generative AI should be backed by critical analysis, acknowledgement and reference (related to audit trails; Table 2). Students and staff members were recommended to receive constant updates and discussions on the limitations of generative AI and rules in place.

In summary, this analysis shows that universities are influenced by normative factors such as the Russell Group’s Principles. Even the most conservative institutions now embrace literacy on generative AI within certain boundaries. All universities require audit trails and provide an overview of AI’s limitations. However, the guidance in place is still very broad and inconsistent across institutions. For example, a lack of clear and consistent discussions on the allowed levels of AI contribution remains (Table 1). Moreover, many institutions discouraged reliance on AI detectors and trusted on judgements from staff members who received different instructions and levels of training. This can reflect a fragile control and monitoring, opening space for inconsistencies that can compromise the quality of learning and rigour of assessments.

4.2 Research integrity: The Concordat vs Chat GPT (RQ2)

The UK Concordat to support research integrity is a national policy statement that includes five commitments to research conduct and governance\(^x\) to support the quality of research.\(^x\) In its role as an advisory board, the UKRIO has developed a self-assessment tool to help institutions implement the Concordat.\(^x\) This tool highlights the following five areas as the core of research integrity: (i) honesty, (ii) rigour, (iii) transparency and open communication, (iv)
care and respect, and (v) accountability. The scope of the UK Concordat goes beyond scholarship, involving an area for ‘care and respect’ in research. The area of ‘care and respect’ includes responsibility to all participants, subjects, users, and beneficiaries of the research, embracing humans, animals, environment and culture.

Table 3 compares these five areas (presented in capital letters and bold in Column 3) with detrimental risks related to the use of ChatGPT found in the literature. For example, ChatGPT can affect the honesty and rigour of research owing to its potential to generate copied, fake, incomplete, and incorrect content (Ifelebuegu et al., 2023). Moreover, overreliance on ChatGPT may have serious implications for originality, the quality of contextual analysis, and development of critical thinking in research (Ifelebuegu et al., 2023). The risks of accountability and transparency are also well-debated in the context of ChatGPT. For example, transparency of authorship is crucial, especially because ChatGPT is limited in scope and it cannot take responsibility for the outcomes provided, so the support received by ChatGPT should be declared appropriately to secure accountability in research (Haman and Školník, 2023; Sallam, 2023; Wang et al., 2023). Considering these risks, retractions of published work can also occur as a result of plagiarism due to issues related to the validity and reliability of the disseminated content (Conroy, 2023; Wang et al., 2023). Finally, the literature shows the potential risks of ChatGPT in the area of the UK Concordat called ‘care and respect’ in research which can be related to infringements on copyrights, breaches of data privacy, discrimination, and social and environmental impacts (Ifelebuegu et al., 2023; Sallam, 2023; Wang et al., 2023). These risks have serious legal, security, and financial implications.

The literature provides suggestions for mitigating the risks discussed above while using ChatGPT. Table 3 shows the mitigation measures, ranging from evaluation and open debate on AI risks to opportunities for AI bans and restrictions. A middleground prevention action was also discussed as an overarching policy to support this technological challenge.

The findings in Table 3 are consistent with the online guidance provided by the UKRIO on the use of AI. In this guidance, the following examples are highlighted as chatbots’ limitations that are detrimental to research integrity: (i) lack of the author’s responsibility; (ii) breaches of confidentiality; (iii) discriminatory, inaccurate, and biased outcomes; (iv) copyrights
 infringements; and, (v) environmental and social impacts of AI data centres. The UKRIO has suggested actions to mitigate some of these risks; for example, supporting all facts and statement with the literature; checking for internal consistency and accuracy; retaining the records of the author’s input by archiving the original and tracking changes in the versions of texts; and applying critical thinking to avoid plagiarism.

5. Accountancy bodies and BIG4s engagement with ChatGPT’s (RQ3)

5.1 Perspectives from the accountancy profession

The following paragraphs include a summary of online materials on ChatGPT found on the ACCA, CAI, CIMA and ICAEW webpages. Most of the material from accountancy bodies centres on the opportunities and limitations of ChatGPT, which are summarised on Table 4.

Regarding professional body engagement with professionals and academics, the CAI published a range of testimonies from ChatGPT users in the context of accountancy firms, highlighting the limitations of ChatGPT in accounting, such as the lack of analytical skills and ethical issues involved (CAI, 2023b). The CIMA explored ChatGPT in a classroom context in a forum with global academics (CIMA, 2023). This discussion involved the pros and cons of ChatGPT as well as a discussion on misconduct. The ICAEW published a podcast on the impacts of ChatGPT on the accountancy profession (ICAEW, 2023b). Regarding the qualification examination, ChatGPT passed the qualification exams well, but ICAEW reassured that their exams were proctored to guarantee their integrity. The content of the ICAEW examinations is being reviewed because there are many current automated accounting tasks that count outside the scope of professional examination.

Thus, understanding the changes driven by ChatGPT in accountancy firms is important because it can potentially drive significant changes in many aspects of the profession. The ChatGPT material found on the BIG4s webpage can be categorised into three main groups: (i) ChatGPT limitations and opportunities (summarised in Table 4), (ii) advice on AI challenges, and (iii) partnerships to implement AI. Regarding advice on AI challenges, regulatory requirements have been predicted to oversee its use (Deloitte, 2023a, 2023c). For example, there were discussions on the EU regulations on AI (EY, 2023b), which were adopted in March 2024. However, some BIG4’s have also called for an internal normative approach. For
example, KPMG highlighted the necessity of generating a responsible design for AI, making its use safe and ethical (KPMG, 2023a, 2023c). KPMG advised on the relevance of training, as well as internal guidance and norms on the use of AI (KPMG, 2023a). PwC also stressed organisations’ responsibilities to support workers in keeping up with AI changes (PwC, 2023a).

The BIG4s are rapidly implementing chatbot technologies. For example, KPMG has worked on a private version of ChatGPT with Microsoft (KPMG, 2023b). Deloitte introduced a chatbot called PairD to its workforce in the UK, EU, and Middle East. This tool was developed by Deloitte’s AI Institute and was designed to help employees perform day-to-day tasks. EY announced a partnership with Microsoft to develop a payroll chatbot (EY, 2023a) and created its own LLM platform, called EY.ai. Finally, PwC announced an alliance with an AI start-up to provide tax and legal services (PwC, 2023b) and is working with Microsoft Corp. and Open AI to automate services in the US.

Thus, relevant changes should be expected in the accountancy profession, especially in the areas of payroll, tax and legal services. The practical implications of accountancy firms’ use of chatbots are already emerging, and examples are included in Table 4. The risks associated with the use of chatbots varies from job loss, issues with data security, use of misleading information, to changes in expectations of employees’ skills. Table 4 also includes suggestions to mitigate these risks which involve risk management plans, monitoring of data accessed via chatbots, development of employees’ capacity, and implementation of a norm on the use of AI for accountancy students, researchers, and practitioners.

5.2 Potential implications for accredited accountancy degrees

The literature shows that accreditation of accountancy degree by professional accounting bodies is crucial for student recruitment (Ellington and Williams, 2017). This is because of reasons, such as that it allows exemptions from professional training, signals quality, and conveys professional context to accounting which is perceived as an applied science (Ellington and Williams, 2017; Al Mahameed et al., 2022). However, accreditation in higher education also presents many challenges (Ellington and Williams, 2017; Al Mahameed et al., 2022): (i) it limits the content and didactic teaching methods applied; (ii) it focuses on techniques rather
than critical thinking; and (iii) it maintains certain types of assessments, limiting the scope for skills development.

Thus, broadening the accounting education curriculum is necessary to avoid imitation of professional training (Paisey and Paisey, 2004; Paisey and Paisey, 2010; Hopper, 2013). The literature stresses the development of reflective accountants who can criticise the underlying fundamentals and subjective nature of accounting to drive changes in the rules disseminated by accreditation (Sikka et al., 2007; Ellington and Williams, 2017). Other studies have explored the gap between higher education and employers’ expectations (Lee, 1995; Jackling and DeLange, 2009; Howcroft, 2017). These studies stressed the need to equip students with generic skills such as communication, teamwork, and leadership.

Thereby, the control of professional accounting bodies in accredited accountancy degrees can prevent accountancy students from engaging critically with issues outside the pre-established technical curriculum. However, a clear indication exists that accountancy firms are changing to engage with AI. Changes in the accountancy profession can drive changes in the examinations of professional accounting bodies. If so, changes in the content and examination of accountancy-accredited degrees will be required. Thus, HE could embed these changes, equipping students with employability skills and preparing them to make informed, professional, and ethical decisions while using AI tools such as ChatGPT.

6. Concluding comments
This study is one of the few to explore ChatGPT in the UK HE and accountancy profession. This paper begins with a literature review of ChatGPT in Business, Management, and Accounting, which investigates the opportunities and risks of ChatGPT, considering its internal and broader characteristics. The study then contrasted the findings of the literature review with discussions held at governing bodies in the UK HE, accountancy bodies and the BIG4s accounting firms. Some of the findings of this study are concentrated in the context of the UK HE therefore, generalisations are difficult to obtain. Despite this limitation, the UK HE has unique characteristics that can be useful if considered as a basis for establishing comparisons with other locations in future research. Moreover, the analysis involving ChatGPT in the
accountancy profession considered a broader perspective and it can inform the accounting literature, practitioners, and regulatory bodies.

Our results show that a lack of clear approach on generative AI in HE may prevent the ethical use of tools, affecting the quality of education and rigour of assessments. A similar situation was found regarding research, where ChatGPT’s limitations to the observance of the UK Concordat for research integrity were uncovered. The relevance of mitigation actions in place while using generative AI is also highlighted when analysing the impact of ChatGPT in accountancy profession, with consequences for the job market and broader profession. BIG4s began the process of automation with the assistance of chatbots having already negative consequences, making this issue a promising area for future research. Thus, future research can answer the following questions: What are the expectations of accountancy students in terms of generative AI literacy? Which tasks are accountancy researchers and lecturers willing to perform using generative AI? What are the perceptions of BIG4s’ staff members on the use of generative AI to perform day-to-day tasks? By addressing these questions, researchers will be able to gain a broader understanding of generative AI from the users’ perspective.
### Table 1: Levels of AI contribution vs academic dishonesty

<table>
<thead>
<tr>
<th>ACTIVITIES (i and ii)</th>
<th>ACADEMIC DISHONESTY (Shades of grey from Advance HE1)</th>
<th>AI CONTRIBUTIONS (i)</th>
<th>DESCRIPTION ON AI INVOLVEMENT (Context/practical implications/ethical dilemmas) (i, ii and iii)</th>
</tr>
</thead>
</table>
| Copy output from ChatGPT | Very strong dishonesty | Author | • It is still challenging to, accurately, detect AI content.  
• The decision on authorship is made by the scientific community, publishers, and other norms, so observance of the guidance available is crucial to avoid plagiarism. |
| Substantial writing, synthesis, and analysis from ChatGPT. Humans edit the outputs. | Strong dishonesty | Co-author | • People may overestimate the AI’s potential. Even AI users question the AI’s reliability.  
• Users should also understand the implications on the extensive use of AI material to secure originality. |
| Compilation of various ChatGPT answers. | Moderate dishonesty | Quote and/or cite (e.g., statement in methodology) | • Training is necessary along with reviews of policies and practices. This will improve judgement on board line decisions. |
| Improve grammar and style (e.g., editing or improving writing). | Low dishonesty | Acknowledged | • AI will be soon integrated in many platforms. Thus, detection will be increasingly difficult. For example, the use of Grammarly, Google, Google Scholar are, normally, not acknowledged. |
| Humans write the text but ChatGPT assists with key themes. | Authentic learning | Acknowledgement and/or cite (e.g., statement in methodology) | • Having some themes to start writing a text can help those who struggles to write in the beginning of the creative process. |

(i) Polonsky and Rotman (2023); Wang et al. (2023) and Sallam (2023).  
(iii) Advance HE webinar held on the 14th March 2023 by Dr Charles Knight and invited speakers - Cecelia Chan, Tim Fawns and Liam Brady ( [https://www.advance-he.ac.uk/membership/all-member-benefit-projects/Authentic-Assessment-in-the-era-of-AI?_cldee=c9fOFLmznMiMb…](https://www.advance-he.ac.uk/membership/all-member-benefit-projects/Authentic-Assessment-in-the-era-of-AI?_cldee=c9fOFLmznMiMb…))
Table 2: Strategies and techniques to support ChatGPT in education

<table>
<thead>
<tr>
<th>THEME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection note</td>
<td>A document in which students can demonstrate the process used while utilising the support of ChatGPT. This document should include, for example, a reflection of the challenges students faced to produce authentic learning (e.g., lack of references, bias/prejudice, and inaccuracies).</td>
</tr>
<tr>
<td>Audit trail</td>
<td>Students could be asked to provide records of interactions with ChatGPT (e.g., screenshot of questions made and answers received).</td>
</tr>
<tr>
<td>AI detectors</td>
<td>Use of AI detector tools in order to identify similarities/plagiarism (e.g., TurnitIn).</td>
</tr>
<tr>
<td>Swap roles</td>
<td>Design assessments by giving ChatGPT-generated texts to students and asking them to evaluate it critically.</td>
</tr>
</tbody>
</table>

Source: Halaweh (2023).
Table 3: ChatGPT vs UKRIO representation of research integrity

<table>
<thead>
<tr>
<th>ChatGPT</th>
<th>OPPORTUNITIES EXAMPLES(^{(i)})</th>
<th>RISKS/LIMITATIONS EXAMPLES(^{(i)})</th>
<th>PRACTICAL IMPLICATIONS</th>
<th>MITIGATION SUGGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNAL CHARACTERISTICS</td>
<td>• Write answers to questions. • High level of analysis and synthesis. • Use of many languages. • Improve meta research. • Assistance on literature reviews, grammar/spell checks and proofreading. • Potential integration into other systems such as, work, PowerPoint and outlook.</td>
<td><strong>HONESTY/RIGOUR</strong> • Incorrect/misleading information created by the model. • Incomplete information. • ChatGPT lacks understanding of legal and ethical issues. • Absence of critical thinking. <strong>TRANSPARENCY/ACCOUNTABILITY</strong> • Lack of proper referencing/citations/plagiarism. • Authorship boundaries. • Use of ChatGPT is difficult to detect.</td>
<td>• Policies and training for authors, editors, universities, and course coordinators. • Implementation of protocols for authorship, for example: • Require report the origins of the text. • Disclosure statement and self-reflection on the use of ChatGPT. • Copy and verification of data. • Search for references and patterns in the text. • Plagiarism/similarity checks with detector systems. • Requirement of more critical thinking on written texts. • Use of oral tasks combined with written work to check human knowledge/contribution. • Detailed evaluation of risks and opportunities. • Broaden the debate on ChatGPT • Ban/restrict the use of ChatGPT. • Global/local/sectorial accepted regulation on ChatGPT.</td>
<td></td>
</tr>
</tbody>
</table>
(Table 3 cont.).

<table>
<thead>
<tr>
<th>ChatGPT</th>
<th>OPPORTUNITIES EXAMPLES (i)</th>
<th>RISKS/LIMITATIONS EXAMPLES (i)</th>
<th>PRACTICAL IMPLICATIONS</th>
<th>MITIGATION SUGGESTION</th>
</tr>
</thead>
</table>
| BROADER IMPLICATIONS (Outside scholarship but also relevant to the UK Concordat to support research integrity in relation to the area of ‘care and respect’ for all participants, subjects, users and beneficiaries of the research. This includes humans, animals, environment and culture) (ii) | • Automation.  
• 24/7 and personalised services for users.  
• Handling several users at simultaneously.  
• Disseminate knowledge to the general public. | **CARE AND RESPECT**  
**Security**  
• Loss of privacy.  
• Criminal activities/ cybersecurity.  
• Impersonation of people.  
• Dissemination of incorrect/misleading information.  
• Increase surveillance.  
**Inclusion**  
• ChatGPT is not a possibility for everyone.  
• Use of ChatGPT to be charged.  
• Bias in ChatGPT training.  
• Job redundancies/loss of skills.  
• Potential negative impact on equality and cultural identity.  
**Legal/Financial**  
• Copyrights infringements.  
• Misuse of others’ work.  
• Use of personal data.  
• Use of low paid workers by OpenAI, who had traumatic experience classifying offensive content from the Internet. | • Detailed evaluation of risks and opportunities.  
• Broaden the debate on ChatGPT  
• Ban/restrict the use of ChatGPT.  
• Globally accepted regulation on ChatGPT. |
| SOCIAL        | • Automation.  
• 24/7 and personalised services for users.  
• Handling several users at simultaneously.  
• Disseminate knowledge to the general public. | **CARE AND RESPECT**  
**Security**  
• Loss of privacy.  
• Criminal activities/ cybersecurity.  
• Impersonation of people.  
• Dissemination of incorrect/misleading information.  
• Increase surveillance.  
**Inclusion**  
• ChatGPT is not a possibility for everyone.  
• Use of ChatGPT to be charged.  
• Bias in ChatGPT training.  
• Job redundancies/loss of skills.  
• Potential negative impact on equality and cultural identity.  
**Legal/Financial**  
• Copyrights infringements.  
• Misuse of others’ work.  
• Use of personal data.  
• Use of low paid workers by OpenAI, who had traumatic experience classifying offensive content from the Internet. | • Detailed evaluation of risks and opportunities.  
• Broaden the debate on ChatGPT  
• Ban/restrict the use of ChatGPT.  
• Globally accepted regulation on ChatGPT. |
| ENVIRONMENTAL | **CARE AND RESPECT**  
ChatGPT is energy intensive. | • Use of efficient systems. | | |

Sources: (i) Ameen et al. (2023); Loh (2023); Nautiyal et al. (2023); Polonsky and Rotman (2023); Skavronskaia et al.(2023); Burger et al.(2023); Peres et al.(2023); Dwivedi et al. (2023); Sallam (2023). (ii) https://ukrio.org/research-integrity/what-is-research-integrity/ and https://ukrio.org/ukrio-resources/ai-in-research/
<table>
<thead>
<tr>
<th>OPPORTUNITIES EXAMPLES</th>
<th>RISKS/LIMITATIONS EXAMPLES</th>
<th>PRACTICAL IMPLICATIONS</th>
<th>MITIGATION SUGGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCA (2023a, 2023b)</strong></td>
<td>• Reduced workflows and increase efficiencies in labour-intensive areas.</td>
<td>Auditing firms are migrating tasks to AI hoping to increase the quality of work produced, avoiding fines on auditing failures.</td>
<td>Implementing procedures to review and monitor the work produced by machines is necessary to avoid failures.</td>
</tr>
<tr>
<td><strong>ICAEW (2023b, 2023a, 2023c)</strong></td>
<td>• Job losses.</td>
<td>Corrupted data can be migrated into ChatGPT which is a learning machine, generating wrong rules. Deloitte has an internal AI tool and cautioned staff of inaccuracies about people, places and facts.</td>
<td>Monitoring procedures to control the data into machines could prevent this risk.</td>
</tr>
<tr>
<td><strong>CAI (2023b, 2023a)</strong></td>
<td>• Expand marketing strategies.</td>
<td>PwC has allocated $1 billion investment to AI training which is a sign of job transformation and disruption. PwC training involves ethics in AI and the responsible use of AI.</td>
<td>Develop competencies to build capacity on the using ChatGPT is essential to maintain a human-centred approach while using AI in the accountancy profession.</td>
</tr>
<tr>
<td>OPPORTUNITIES EXAMPLES</td>
<td>RISKS/LIMITATIONS EXAMPLES</td>
<td>PRACTICAL IMPLICATIONS</td>
<td>MITIGATION SUGGESTION</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------</td>
<td>------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>CIMA (2023)</strong></td>
<td><strong>CIMA (2023)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Summarise text.</td>
<td>• Academic misconduct.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Translate items.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Write letters of recommendations and CVs.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hundreds of students are being caught in cheating while using ChatGPT. BIG4s have banned graduate students to using AI to write job applications. Academics apologised to BIG4s after admitting the use of AI which lead to false allegations in a parliamentary enquiry.

UNESCO recognised AI implications in the UN Sustainable Development Goal 4 (Quality of Education). Thus, UNESCO has developed a guidance on AI in education and research for policy-makers in accordance with the Beijing Consensus. There is also a guidance for policy-makers on AI in the UK. These discussions can be transferable to the case of ChatGPT in the accountancy profession. Achieving a consistent guidance on the use of ChatGPT to accountancy students, researchers and practitioners would protect a consistency approach on human agency and professional values.
<table>
<thead>
<tr>
<th>OPPORTUNITIES EXAMPLES</th>
<th>RISKS/LIMITATIONS EXAMPLES</th>
<th>PRACTICAL IMPLICATIONS</th>
<th>MITIGATION SUGGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EY (2023a, 2023c, 2023b)</strong></td>
<td><strong>EY (2023a, 2023c, 2023b)</strong></td>
<td>Intellectual property and/or personal information may be uploaded in an AI machine. The use of unauthorised information may lead to fines. EY has admitted AI uncertainties over privacy and data security, yet EY is publicising that its own AI platform is safe, even though it is trained on internet data. KPMG is preventing UK staff members from using ChatGPT due to concerns about information protection.</td>
<td>The implementation of ChatGPT should involve a rigorous period of training and tests. Internally developed AI tools can prevent risks of data security. A risk management plan can also help identify risks that may differ among areas of a particular organisation.</td>
</tr>
<tr>
<td>• ChatGPT as a tool to alleviate the burden on employees (e.g. payroll).</td>
<td>• Use of personal information for commercial purposes. • Writing up software programmes that warm others. • The personalization of services by ChatGPT can drive to an inconsistent approach to products and services description.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PwC (2023a, 2023b)</strong></td>
<td><strong>PwC (2023a, 2023b)</strong></td>
<td>More investment in AI with the aspiration of making auditing firms more competitive. Recently, PwC pitched ChatGPT to clients after announcing job cuts. Loss of valuable human skills may be at risk.</td>
<td>A business strategy would help to analyse the optimum ratio of human intelligence to machine intelligence. An action plan to keep the memory of valuable skills is recommended.</td>
</tr>
<tr>
<td>• Jobs creation. • Provide support on tax and legal services. • Improve productivity. • Summarise texts.</td>
<td>• Job losses making workers concentrate on value-adding tasks.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(Table 4 cont.)*
<table>
<thead>
<tr>
<th>PERSPECTIVES FROM ACCOUNTANCY PROFESSION</th>
<th>RISKS/LIMITATIONS EXAMPLES</th>
<th>PRACTICAL IMPLICATIONS</th>
<th>MITIGATION SUGGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPPORTUNITIES EXAMPLES</td>
<td>RISKS/LIMITATIONS EXAMPLES</td>
<td>PRACITICAL IMPLICATIONS</td>
<td>MITIGATION SUGGESTION</td>
</tr>
<tr>
<td><strong>Deloitte (2023a, 2023b, 2023c)</strong></td>
<td>Deloitte (2023a, 2023b, 2023c)</td>
<td>Automation of repetitive and difficult parts of the work by AI has been implemented by organisations. However, automation of repetitive tasks hides extra workload. For example, staff from Deloitte are required to perform due diligence while using its chatbot to assure quality, accuracy, and completeness of information produced.</td>
<td></td>
</tr>
<tr>
<td>• Creation of jobs.</td>
<td>• Fake information.</td>
<td>Costs and benefits should be considered as well as a detailed study on risks involved with the use of ChatGPT. For example, transition to AI should consider staff well-being, ethical and environmental issues and regulations in place.</td>
<td></td>
</tr>
<tr>
<td>• Improvement of products and services.</td>
<td>• Unreliable sources of information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Innovation of customers experiences.</td>
<td>• Filters for offensive language are easy to bypass.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Automation of repetitive tasks.</td>
<td>• High carbon footprint required to run AI systems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Creating and modifying pictures.</td>
<td>• Job losses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Analysing and summarising texts.</td>
<td>• Increased regulations on AI.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Writing programming code.</td>
<td>• Concentration on higher-order tasks where returns on AI investments are higher.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Translation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Report writing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KPMG (2023a, 2023b, 2023c)</strong></td>
<td>KPMG (2023a, 2023b, 2023c)</td>
<td>Changes in demand for human intelligence are occurring. Due to the use of AI, graduates in KPMG are now taking tax responsibilities designated to experienced staff. In PwC, junior staff are spending more time pitching clients than preparing routine meeting documents.</td>
<td>Making accountants aware of these changes and educating them to fulfil future demands in the job market is important.</td>
</tr>
<tr>
<td>• Support a range of tasks making it more efficient (e.g., Audit and HR).</td>
<td>• Breaking confidentiality and intellectual property.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Summarise legal documents.</td>
<td>• Increased regulations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Customer services.</td>
<td>• Copyrights issues.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Write business reports and pitches.</td>
<td>• Misinformation and discrimination.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Write code software.</td>
<td>• Cybersecurity.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sources: Due to the recent application of ChatGPT in accountancy profession, the examples of practical implications and mitigation in table 4 were gathered from a variety of sources below:

(iv) [https://unesdoc.unesco.org/ark:/48223/pf0000386693](https://unesdoc.unesco.org/ark:/48223/pf0000386693)
(v) [https://unesdoc.unesco.org/ark:/48223/pf0000387029_eng](https://unesdoc.unesco.org/ark:/48223/pf0000387029_eng)
(vi) [https://unesdoc.unesco.org/ark:/48223/pf0000368303](https://unesdoc.unesco.org/ark:/48223/pf0000368303)
(ix) [https://www.telegraph.co.uk/business/2024/03/02/big-four-accountant-ban-grad-using-ai-write-job-application/](https://www.telegraph.co.uk/business/2024/03/02/big-four-accountant-ban-grad-using-ai-write-job-application/)
(x) [https://www.theguardian.com/business/2023/nov/02/australian-academics-apologise-for-false-ai-generated-allegations-against-big-four-consultancy-firms](https://www.theguardian.com/business/2023/nov/02/australian-academics-apologise-for-false-ai-generated-allegations-against-big-four-consultancy-firms)
(xi) [https://www.bbc.co.uk/news/business-68553123](https://www.bbc.co.uk/news/business-68553123)
(xii) [https://www.ft.com/content/38ab8068-9f09-4104-859d-111a1dc47ad](https://www.ft.com/content/38ab8068-9f09-4104-859d-111a1dc47ad)
(xiii) [https://www.thetimes.co.uk/article/companies-block-chatgpt-amid-privacy-fears-5ggb5dv9](https://www.thetimes.co.uk/article/companies-block-chatgpt-amid-privacy-fears-5ggb5dv9)
(xv) [https://www.wsj.com/articles/ey-unveils-fruits-of-1-4-billion-artificial-intelligence-investment-ab8d5b5a](https://www.wsj.com/articles/ey-unveils-fruits-of-1-4-billion-artificial-intelligence-investment-ab8d5b5a)
REFERENCE LIST


Advance HE (2023a), “Authentic Assessment in the era of AI. Available at: https://www.advance-he.ac.uk/membership/all-member-benefit-projects/Authentic-Assessment-in-the-era-of-AI? _cldee=c9fOFLmznMiMb%E2%80%A6 Accessed on 05.06.2023”.

Advance HE (2023b), “Excited, concerned and curious’: student perspectives on learning and working in the era of AI. Available at: https://advance-he.ac.uk/news-and-views/excited-concerned-and-curious-student-perspectives-learning-and-working-era-ai? _cldee=c9fOFLmznMiMbM7kAZB%E2%80%A6 Accessed on 05.05.2023”.

Advance HE (2023c), “Higher education in the era of AI. Available at: https://advance-he.ac.uk/news-and-views/higher-education-era-ai? _cldee=c9fOFLmznMiMbM7kAZBOlkHCKzYkkpfDoarCXjtEqnWeM6YCOVt_I3lK3exv85y%E2%80%A6 Accessed on 05.05.2023”.


Berg, B. (2004), *Qualitative research methods*. Ally and Bacon, Boston.


CAI (2023a), “Supporting accountancy marketing with generative AI. Available at: https://www.charteredaccountants.ie/Accountancy-Ireland/Home/Al-Articles/revolutionising-accountancy-marketing-with-generative-ai Accessed on 05.05.2023”.
CAI (2023b), “What can ChatGPT do for accountants? Available at: https://www.charteredaccountants.ie/Accountancy-Ireland/Articles2/News/Latest-News/what-can-chatgpt-do-for-accountants Accessed on 05.06.2023”.


Deloitte (2023c), “Some thoughts on artificial intelligence. Available at: https://www.deloitteacademy.co.uk/node/4470 Accessed on 05.06.2023”.


EY (2023c), “How ChatGPT can be harnessed to benefit Irish businesses. Available at: https://www.ey.com/en_ie/consulting/how-chatgpt-can-be-harnessed-to-benefit-irish-businesses Accessed on 05.05.2023”.

27

Hacker, B. (2023), “Will ChatGPT revolutionize accounting? The Benefits of Artificial Intelligence (AI) in Accounting. Available at: https://opus4.kobv.de/opus4-rosenheim/frontdoor/index/index/docId/2134 Accessed on 05.06.2023”.


PwC (2023b), “PwC announces strategic alliance with Harvey, positioning it at the forefront of generative AI. Available at: https://www.pwc.co.uk/press-room/press-releases/pwc-announces-strategic-alliance-with-harvey.html Accessed on 27.06.2023”.

QAA (2023), “The rise of artificial intelligence software and potential risks for academic integrity: A QAA briefing paper for higher education providers. Available at: https://www.qaa.ac.uk/docs/qaa/members/the-rise-of-artificial-intelligence-software-and-potential-risks-for-academic-integrity.pdf Accessed on 05.05.2023”.


The Guardian (2023), “ChatGPT reaches 100 million users two months after launch. Available at: https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app Accessed 05.05.2023”.


Universities of Oxford (S/N), “Use of generative AI tools to support learning. Available at: https://www.ox.ac.uk/students/academic/guidance/skills/ai-study Accessed on 14.04.2024”.

Universities UK (2019), “The concordat to support research integrity. Available at: https://www.universitiesuk.ac.uk/sites/default/files/field/downloads/2021-08/Updated%20FINAL-the-concordat-to-support-research-integrity.pdf Accessed on 05.05.2023”.


University of Glasgow (2024), “Generative AI guidance for researchers. Available at: https://www.gla.ac.uk/research/strategy/outpolicies/ai-for-researchers/ Accessed on 14.04.2024”.


END NOTES

1 https://openai.com/blog/chatgpt
2 Early versions were limited to internet but recently this restriction has changed. Please, see https://www.bbc.co.uk/news/technology-66940771
3 For example, some locations in China (https://www.advance-he.ac.uk/membership/all-member-benefit-projects/Authentic-Assessment-in-the-era-of-AI?_cldee=c9fOFImznMiMb...)
5 https://ukrio.org/about-us/what-is-research-integrity
6 https://www.advance-he.ac.uk/about-us
7 https://academic.admin.ox.ac.uk/article/unauthorised-use-of-ai-in-exams-and-assessment
8 https://www.plagiarism.admin.cam.ac.uk/what-academic-misconduct/artificial-intelligence
9 https://www.plagiarism.admin.cam.ac.uk/what-plagiarism/collusion
10 https://russellgroup.ac.uk/media/6137/rg_ai_principles-final.pdf
11 https://ukrio.org/about-us/the-concordat-to-support-research-integrity/
12 https://ukrio.org/research-integrity/what-is-research-integrity/
13 https://ukrio.org/research-integrity/what-is-research-integrity/
14 https://ukrio.org/ukrio-resources/ai-in-research/
17 https://www.wsj.com/articles/ey-unveils-fruits-of-1-4-billion-artificial-intelligence-investment-ab8d5b5a
18 https://www.wsj.com/articles/pricewaterhousecoopers-to-pour-1-billion-into-generative-ai-cac2cedd