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Gearing up for sustainability and climate change disclosures in Ghana: a qualitative study

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Abstract: Environmental degradation through greenhouse gas emission, irregular mining practices, sand winning, indiscriminate timber logging, bush-fire, etc. has reached alarming rate in Sub-Saharan Africa. Some studies blame the accounting profession for these threats. The International Federation of Accountants (IFAC), in their quest to resolve the situation, through the International Sustainability Standards Board (ISSB), have issued International Financial Reporting Standards (IFRS) on sustainability and climate change disclosures. In this study, we assess how accountants in Ghana are geared up for the implementation of these standards using a qualitative study approach. The results of the study show that accountants in Ghana are generally aware of sustainability accounting. Nevertheless, most of them lack the requisite knowledge of the thematic areas of the IFRS sustainability disclosure and reporting standards issued by IFAC's ISSB to facilitate their implementation. The implications of the results are discussed. This study, thus, makes a significant contribution to the extant literature on sustainability reporting by soliciting the opinion of accountants in Ghana.

Keywords: gearing up; implementation; IFRS sustainability disclosure standards; accountants; Ghana; qualitative study.

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1 Introduction

Natural resources rich sub-Saharan Africa (SSA) (Grabowski and Self, 2021), beset with environmental degradation through greenhouse gas emission, irregular mining practices, sand winning, indiscriminate timber logging, bush-fire, etc. has reached alarming rate (Adesete et al., 2023). The situation is perhaps worst in Ghana where sand winners, chain-saw operators, small-scale miners popularly known as ‘Galamsayers’ and many

others undertake their activities with reckless abandon. This phenomenon has become a resource curse or likened to the ‘Dutch Disease’ akin to developing countries (Corden, 1984). Prior studies attribute this canker to a myriad of factors. For instance, some studies have observed that increased government expenditure, industrialisation, and militarisation (Kwakwa, 2022) and urbanisation and natural resources extraction (Kwakwa et al., 2020) contribute to carbon dioxide emission in Ghana. Again, Kwakwa et al. (2023) argued that multiple variables including age, income, gender, environmental concern, among others are key drivers affecting water conservation practices in Ghana. Alhassan et al. (2022), however, concluded that poor solid waste management contribute to environmental degradation in the country. The outcome of these menaces culminates into myriad and formidable challenges to sustainable development agenda in the sub-region: unemployment (Ackah-Baidoo, 2016); inadequate access to basic healthcare and education (Li and Samimi, 2022); food insecurity and malnutrition; debt crisis (Battaile, 2015); inadequate investment in infrastructure (Kodongo and Ojah, 2016) and failed national governance system (Davis, 2017). In consequence, these challenges have become an albatross, threatening the quality of human life within the sub-region (Kateja and Jain, 2021; Teo et al., 2019). Hence, bodies such as the United Nations (UN), European Union (EU), African Union (AU), and others, have instituted measures to address the canker. The UN for instance, has released sustainable development goals (SDGs) (Bebbington and Unerman, 2018, 2020; Lodhia et al., 2023; Tetteh et al., 2023) to combat the menace. Despite these efforts made, the issue still remain unresolved (Laine et al., 2021). Some studies lay the failure at the doorstep of the accounting profession (Bebbington and Bebbington, 2018; Dyball and Thompson, 2013). In these studies, accountants are blamed for downplaying the activities of their organisations on the environment, society, and the larger economy. Accountants are also accused for disclosing sustainability activities in the financial statements mainly with the intention of improving the corporate image of their organisations rather than for justifiable purposes (Magoma, et al., 2022).

To address these concerns, some studies are championing the campaign for comprehensive sustainability reporting by organisations in SSA, Ghana (Amoako et al, 2022, 2023). The International Financial Reporting Standards Foundation (IFRS Foundation) of the International Federation of Accountants (IFAC), through its umbrella body, the International Sustainability Standards Board (ISSB), in responding to these calls, have released two international sustainability disclosure and reporting standards:

- IFRS S1: General requirements for disclosure of sustainability-related financial Information (IFRS S1)
- IFRS S2: Climate-related disclosure (IFRS S2), to address the issue, effective January, 2024.

These standards are to be complied with by organisations through the provision of disclosures on their sustainability activities in the financial statements. This will enable users of the financial statements assess the sustainable behaviour of organisations. These IFRSs place a responsibility on accountants who are primarily responsible for the preparation and presentation of the financial statement to facilitate informed economic decision making by users. In consequence, this has raised our curiosity to assess the preparedness and readiness of accountants in Ghana, as part of the accounting profession who have been accused of not comprehensively disclosing the sustainability activities of

their organisations in their financial statements, to embrace the responsibilities that come with these IFRSs. Thus, this research, as one of the pioneer studies, makes a significant contribution on how geared accountants in Ghana are toward the successful implementation of IFRS sustainability disclosure and reporting standards using a qualitative study approach.

2 Literature review and research question

2.1 Regulatory framework

The ISSB announced two International Sustainability Disclosure Standards (IFRS SDS or the Standards) on 26 June 2023 that commence on 1 January, 2024 (Grant Thornton International, 2023). The Standards are IFRS S1: General Requirements for Disclosure of Sustainability related Financial Information and IFRS S2: Climate-related Disclosure. These two standards mark the beginning of a new era in which organisations are demanded to provide sustainability related disclosures of their activities. Specifically, the two standards aim at improving the consistency and the quality of reporting on sustainability activities by organisations globally. The IFRS Foundation argue that this objective will be achieved through the matching of the significance of sustainability reporting with present regulations pertaining financial reporting.

2.1.1 IFRS S1: general requirements for disclosure of sustainability-related financial information and IFRS S2: climate-related disclosure

The fundamental aim of IFRS S1 is the provision of disclosures regarding sustainability-related risks and opportunities that could logically be assumed to influence the prospects of the organisation (i.e., the enterprise value of the firm) (Avi, 2022). This standard provides the primary requirements regarding disclosures on sustainability-related activities that will enable users of the financial statement assess the enterprise value of the firm (Fischer et al., 2023). According to the ISSB, IFRS S1 should be used in conjunction with IFRS S2: Climate-related disclosure and other standards that may be released in the future. In consequence, IFRS S1:

- a requires organisations to provide disclosures in their financial statements on material information regarding sustainability-related risks and opportunities to meet the information needs of investors
- b requires disclosures of industry-specific sustainability-related risks or opportunities in reference to the Sustainability Accounting Standards Boards (SASB) standards that relate to the specific industry by organisations
- c requires that for disclosures on sustainability-related risks and opportunities outside the scope of IFRS S2, organisations are to consult other relevant sources
- d requires the disclosure of material information enabling investors to appreciate the nexus between sustainability-related risks and opportunities as well as the sustainability-related financial disclosures and financial statements
- e postulates Generally Accepted Accounting Principles (GAAP) is agnostic.

Avi (2022), Fischer et al. (2023) and Grant Thornton International (2023) and post that the core contents of IFRS S1 are four-folds including:

2.1.1.1 Governance

Organisations will be required to provide report on the processes, controls, and procedures that are employed in managing sustainability-related risks and opportunities. These reports have to provide the identification of scheduled officers and the description of the role of management to identify, assess, and manage sustainability-related risks and opportunities.

2.1.1.2 Strategy

This component of IFRS S1 requires management to provide disclosures on what management assesses to be the organisation's sustainability risks and opportunities and the proposed remedies by:

- 1 identifying the organisations sustainability-related risks and opportunities
- 2 disclosing the effect on the organisation in areas such as business model, decision making, and financial planning
- 3 explaining the organisation's resilience to these risks.

Again, IFRS S1 requires detailed disclosures on the organisation's sustainability-related risks and opportunities. Specifically, the standard requires the organisation to:

- 1 identify the risks and opportunities by describing these risks and opportunities and the time horizon during which each could be reasonably expected to have a financial effect
- 2 define the time horizon, that is whether the organisation perceives short, medium, and long-term.

Thus, organisations are expected to provide disclosures regarding the current and anticipated effects of such matters on their value chain and how these matters will affect the financial statements over time.

2.1.1.3 Risk management

Organisations are required to provide detailed description of how the identification of sustainability-related risks and opportunities is carried out. The explanation is required to include the extent of integration of risk management activities into the overall risk management process. Specifically, the organisation is required to provide the following disclosures on risks:

- 1 the assessment of the likelihood and effect of such risks
- 2 the priorities of such risks
- 3 the input parameters such as data sources that were considered during the risk assessment process
- 4 whether the risk assessment process is consistent with prior years.

Regarding opportunities, the organisation is required to disclose how it:

- 1 assesses and priorities
- 2 monitors, manages, and mitigates potential dangers to anticipated opportunities.

2.1.1.4 Metrics and targets

The organisation is required to provide disclosures on how it measures, monitors, and manages its sustainability-related risks and opportunities. Organisations are required to disclose their set targets on sustainability risks and opportunities identified and the adopted metrics in assessing progress being made. IFRS S1 does not require mandatory assurance. Such an assurance is dictated by local jurisdiction. Nevertheless, organisations are expected to disclose whether the measurement has been assured by an appropriate external party.

Grant Thornton International (2023) postulate that both IFRS S1 and IFRS S2 are required to be applied concurrently (Grant Thornton International, 2023). However, IFRS S2 has been specifically developed for the disclosure of climate-specific requirements by organisations (Ortega, 2023; Vo, 2023) including:

- 1 disclosing strategies that distinguish between risks that are physical and transitional
- 2 disclosing plans designed to respond to climate-related risks and opportunities, including targets sets for climate-related events and any the benchmarks required to be met by regulations
- 3 organisations disclosing how performance analysis are done in explaining the effect of diverse climate-related events on the business in the future
- 4 organisation's disclosures on climate-related metrics and targets are required to include:
 - a relevant cross-industry metrics such as greenhouse gas emissions
 - b relevant industry-wide metrics
 - c the organisation's specific metrics adopted by the board when assessing progress made against set targets.

2.2 Theoretical review

Sustainability-related risk is considered as 'a condition or a potentially occurring event that may provoke harmful stakeholder reactions' [Hofmann et al., (2014), p.168]. Giannakis and Papadopoulos (2016) argued that these risks are environmentally, socially, and economically hazardous. The ultimate aim of stakeholder adverse reactions is to minimise environmental and social consequences of a potential negative occurrence (Eccles et al., 2012). This definition has been operationalised in this study. Sustainability-related risks manifest when organisations are related to something that can potentially precipitate adverse stakeholder reactions. Managing sustainability-related risks mainly dwells on the values and willingness of organisations. Giannakis and Papadopoulos in 2016 opined that the stages in managing sustainability-related risks include: identification of risk, assessment, analysis, treatment, and monitoring. Through the adoption of tools including checklists and risk mapping, risk identification can be made and examined

according to their possibility of occurrence and effect on organisation performance (Sanni-Anibire et al., 2020). The analysis of risk is the most significant step in the process of managing risk (Giannakis and Papadopoulos, 2016; Hallikas et al. 2004). Organisations are required to appreciate the origins of risks and their potential consequences, so that the most suitable remedies can be adopted. Hallikas et al. (2004) advocated that, measures such as risk transfer, risk taking, risk elimination as well as risk reduction, are suitable actions and practices for risk treatment. Avoidance, monitoring-based mitigation, collaboration-based mitigation, and acceptance are appropriate strategies for the management of sustainability-related risks (Hajmohammad and Vachon, 2016). Lastly, Giannakis and Papadopoulos (2016), suggested that measures such as continuous evaluation of sustainability-related risks and reforms in the supply environment of businesses are conducive for risk monitoring.

Identification of mitigation measures regarding sustainability-related risks have been provided in the extant literature. Nevertheless, it is crucial for organisations to organise sustainability-oriented practices as traditional risk management measures are ineffective in resolving sustainability-related risks issues. Thus, specific strategies and practices that are sustainability-focused are required in managing and mitigating sustainability-related risks. So, measures such as monitoring and auditing suppliers, adopting sustainability benchmarks in supplier selection, adopting standards and certificates, codes of conduct, supplier evaluation, social and environmental assessments, penalties, and awards can be specifically adopted to mitigate sustainability-related risks and facilitate supply chain performance (Beske and Seuring, 2014; Giannakis and Papadopoulos, 2016)

Gatzert et al. (2020) and Gatzert and Reichel (2024) identified climate risk, credit risk, market risk, and liquidity risk as sustainability-related risks within the insurance industry. Climate risk concerns water scarcity and its impact on financial assets. Credit risk however, refers to default emanating from political factors regarding environmental, social and governance issues that adversely affect the business model of organisations including taxes. Non-sustainable investment as a result of depreciation due to economic, social, and governance (ESG) regulatory measures can lead to market risk. Liquidity risk could emanate from natural disaster influencing significant proportion of clients to make huge sums of withdrawal from their accounts to cater for such losses. The authors however, opined that, organisations can institute measures to benefit from these risks. For instance, organisations can invest in industries that are resilient to climatic risks including real estate, municipal bonds, infrastructure funds, and liaising with government through public-private partnerships. These opportunities have been validated by other studies (Golnaraghi, 2018; Kähkönen et al., 2023; Njoroge, 2019; Swiss, 2020). Kähkönen et al. (2023) in their study admonished organisations involved in supply chain to minimise sustainability-related risks through both direct and indirect collaboration and direct and indirect monitoring practices. Njoroge et al. (2019) outlined the following innovation strategies as means by which organisations can exploit sustainability-related opportunities to their advantage: provision of standardised services; ensuring service quality; the readiness for product introduction; and ultimately, the adoption of technology. The authors are of the opinion that, there is a positive nexus between these innovative strategies and the economic aspect of sustainability performance of businesses. They concluded that, these strategies facilitate sustainable growth of businesses, long-run profitability regarding resource management, enhanced customer satisfaction, and effective management of value chain.

Short, medium, and long-term time ranges could be set as targets for sustainability metrics. Quantitative targets for sustainability metrics are usually long-term in nature and provide no information on how they could be achieved. In meeting such targets, the procedures outlined could be both quantitatively and qualitatively arbitrary. Sustainability metric benchmarks can be achieved through unambiguously detailed and meticulously quantified targets. The uniqueness of each organisation influences instituting targets for sustainability metrics. At the same time, the process framework for developing sustainability metric targets is adaptable to the unique situation of a particular institution. Such adjustable metric targets reveal the beau idéal of sustainability both locally and globally. Whereas metric target strategy is universally applicable, the resultant sustainability metric targets will be eccentric to each organisation (Rauch and Newman, 2009).

Targets for sustainability metrics can be adopted to assess sustainability progress achieved. Nevertheless, current metrics used in examining sustainability progress in the manufacturing sector are prone to subjective assessments, information sharing weaknesses, and incomplete consideration of sustainability. A holistic set of sustainability indices involving diverse forms of manufacturing systems are fashioned, using distance to target approach and modified to approximate and calculate the values of all sustainability indices. Such metric targets are impartial and replicable with lucid estimation procedures and coherent exposition of the outcomes (Song and Moon, 2019).

2.3 Empirical review and research questions

Klymenko et al. (2021) using the tiple layered model canvas (i.e., accounting for economic, social, and environmental facets) of sustainable practices of Norwegian manufacturing firms, observed that whereas accounting for economic values is satisfactorily catered for by organisations, same cannot be said about the holistic assessment of environmental and social accounting. The authors argued that there is a shift from sustainability-related internal manufacturing processes to product life cycle's sustainability-related issues. Ascani et al. (2021) in their study on the role management accountants play regarding sustainability accounting and reporting, asserted that the active participation of management accountants depends on issues including increasing their competencies to address other facets of expertise and the significance of accounting education in facilitating knowledge on sustainability-related issues. Fülöp and Hernádi earlier in 2013 observed that, sustainability accounting is key for the effective implementation of sustainable strategy by organisations. Peršić et al. (2017) while acknowledging the significance of sustainability accounting in the tiple bottom line framework, argued that there is difficulty in putting together policies that promote economic, environmental, and social goals simultaneously.

Gholami et al. (2013) adopting a belief-action outcome framework and a survey approach involving 405 organisations regarding the perception of senior managers of both the progenitor to and the repercussions of Green IS adoption by a firm, documented that whereas coercive isomorphism impacts the attitude for the adoption of Green IS, mimetic isomorphism has no influence on such adoption. To the authors, there is significant correlation between Green IS adoption, attitude, and consideration for future effects. The authors again found that in the long run, there is a positive nexus between Green IS adoption and environmental performance of organisations. In contrast, Dao et al. (2011), using the resource-based view as a theoretical lens in their study, postulated

for an integrated sustainability framework of human, supply chain, and information technology resources in enabling organisations to improve on sustainability capabilities. The authors argued that these capabilities will facilitate the provision of sustainable values to key stakeholders and achieve lasting competitive advantage in the industry. Shet and Pereira (2021) in their study on proposed managerial competencies for Industry 4.0 Revolution and their implications for social sustainability, identified 14 set of managerial competencies for the benefit of stakeholders. These include agility, business acumen, sustainability, collaborative mind-set, problem-solving and decision making, etc. The authors posited that these set of competencies are crucial in meeting sustainable behaviour amid the 4.0 Industrial Revolution.

Olya et al. (2021) in their study adopting both structural equation modelling and fuzzy-set qualitative comparative analysis approaches, found that social and environmental aspects of sustainability are crucial in meeting the satisfaction and loyalty of clients in the hotel industry. The study however, concluded that economic dimensions and familiarity of sustainability related issues remotely influence clients' satisfaction about hotel services, yet they have the potential of improving guest satisfaction. Besides, they observed that, all the three dimensions of sustainability are crucial for sustainability efforts to influence clients' satisfaction and loyalty in the hotel industry. According to the authors, familiarity with sustainability dimensions alone is inadequate, but when it is combined with the social aspect, clients' satisfaction and loyalty increases.

Despite the fact that these studies have addressed the salient issues bordering on general sustainability accounting and both IFRS S1 and IFRS S2, they fell short in addressing the preparedness and readiness of accountants in meeting the requirements of both IFRS S1 and IFRS S2. This is the issue gap that the present study attempts to resolve with Ghana as its focus by asking the underlisted research questions (RQs):

RQ1 Are accountants in Ghana abreast with general sustainability accounting?

RQ2 How geared up are accountants in Ghana in meeting the disclosure requirements of IFRS S1 and IFRS S2?

3 Technique and data

This segment of the study addresses the methodology adopted. Thus, the research design and approach, data collection and analysis methods, and tests of rigor are the specific focus of this section of the study.

The qualitative research design was adopted for the study due to its significance in eliciting useful comments from practitioners (Amaning, 2024; Gyau et al., 2023). Also, exploratory research approach was used as it is relevant in unraveling issues that have been understudied (Amaning et al., 2021; Kuranchie, 2021). This approach is actually helpful in ascertaining how geared professional accountants in Ghana are toward the implementation of the requirements of IFRS S1 and IFRS S2. From participants perspective, usually qualitative research methods are used in addressing issues concerning experience, meaning, and opinion (Gyau et al., 2023). These methods were adopted because when scholars elicit information from participants concerning their experiences, they mostly learn more than they had intended to Hammarberg et al. (2016). This phenomenon is put into a better context by Partington (2002). He opined that the

richness of the whole data collected actually addresses the research problem when qualitative research methods including semi-structured interviews are used.

The participants of the study comprise of accountants working with both the public and private sectors in the Ashanti, Eastern, and Western regions of Ghana. These three regions were selected for the study because, geographically, they are the most affected in terms of environmental degradation among the original ten regions in the country. Because of the increased demand for sustainability information that possess higher levels of trust by markets, investors, and other stakeholders, accountants have significant roles to play. In consequence, the onus in meeting the requirements of both IFRS S1 and IFRS S2 in the financial statements lies on accountants. This assertion is in agreement with prior studies who have concluded that accountants play key roles in sustainability reporting in organisations (Saraswati et al., 2021; Schaltegger and Zvezdo, 2015). The participants of this study numbering 19 and provided pseudo that commence from A1 to A19 were carefully selected from the main sectors of the economy including manufacturing, mining, hospitality, retailing, and academia purposively and conveniently because of their significance in providing disclosure requirements in the financial statements to facilitate informed economic decision making of users and their availability as at the time of collecting data (Amaning, 2024; Amaning et al., 2021).

In addressing the research problem, semi-structured interview was used. The participants gave their permission for the interview by signing consent papers. To facilitate an effective data collection exercise, the interview guide containing the research questions was mailed to the participants ahead of time. Before each interview section started, the aim of the study and the voluntary participation of participants were discussed. The participants were again assured of their anonymity and confidentiality in the data collection exercise. The theoretical saturation was arrived at after 12 participants were interviewed. After this level, no additional results were produced by the interview. This approach in collecting data provided primary data which were required by the nature of the study to address the research problem. The responses received were analysed into themes. This analytical approach was considered appropriate for the study because qualitative researches depend on the specific words of the participants to provide insights on how they perceive the issues under consideration (Amaning, 2024; Amaning et al., 2021; Castleberry and Nolen, 2018). Thus, this analytical method was adopted to analyse the data collected yielding qualitative content, narratives, and discourse analyses. These methods minimise the weaknesses involved in quantitative analyses methods (Kuranchie, 2021). In deriving inferences from the data to draw conclusion, we found themes, patterns, and linkages (Ameyaw-Brobby and Gupta, 2021).

In qualitative studies, validity and reliability tests, are as relevant as in quantitative studies (Amaning et al., 2021). Besides, sufficient descriptions provided for the conclusions of qualitative research, enable readers identify with the findings. It is required for researchers to ensure the credibility, relevance, reliability, and consistency in research before the outcomes are considered valid. And in the opinion of Amaning (2024) and Amaning et al. (2021) participant triangulation is a suitable tool in realising the validity and trustworthiness of the qualitative research results. Gyau et al. (2023) affirmed this position by arguing that validity is the rule of thumb in assessing the actual worth of a qualitative study. In assessing the validity of this research outcomes, participant triangulation techniques were adopted. These techniques were used to ascertain convergence between participants before themes were formed (Kuranchie, 2021). We adopted this approach in the research through asking the participants the same

set of questions during the interview session. Similarities and differences in the responses received were ascertained prior to forming themes. Thus, the opinion of participants in the study were compared and contrasted before forming themes. Again, to achieve participant triangulation that will enhance the validity of the research outcomes, the interview was held in two phases. The responses received in the second phase was confirmation of those received during the first phase. Similarly, the understandability of the research findings by readers ensures their credibility (Hammarberg et al., 2016). Consistency of qualitative research findings is a benchmark adopted to assess their reliability (Ibiamke and Ajekwe, 2017). This benchmark does not necessarily guarantee that same outcome would be realised in other instances. It rather postulates that, other researchers adopting same data in their study would find patterns that are comparable (Amaning, 2024; Amaning et al., 2021).

4 Presentation and discussion of results

Presented below in Table 1 is the socio-demographic data of the participants selected for the study.

Table 1 Socio-demographic data of participants

<i>Pseudo sex age academic professional position length range qualification affiliation of service</i>						
A1	Male	51–55	MBA – finance	ICAG	Finance officer	31 years
A2	Male	46–50	MBA – accounting	ICAG	Principal accountant	25 years
A3	Female	41–45	MSC – accounting and finance	ACCA	Chief accountant	21 years
A4	Male	36–40	MBA – finance	CIMA	Accountant	13 years
A5	Male	46–50	MBA – finance	ICAG	General manager	22 years
A6	Female	31–35	MBA – finance	ICAG	Accountant	10 years
A7	Female	36–40	MSc – finance	ICAG	Senior accountant	15 years
A8	Male	31–35	MSc – finance	ICAG	Accountant	8 years
A9	Male	36–40	MPhil – accounting	ACCA	Senior accountant	17 years
A1	Male	55–60	MBA – accounting and taxation	ICAG	Chief accountant	33 years
A11	Male	41–45	MSc – finance	CIMA	Accountant	9 years
A12	Male	51–55	MBA accounting	ACCA	Finance officer	29 years
A13	Female	31–35	MBA – finance	ICAG	Assistant accountant	5 years
A14	Female	36–40	MSc – finance	ICAG	Senior accountant	14 years
A15	Male	26–30	MSc – finance	ICAG	Assistant accountant	6 years
A16	Female	41–45	MPhil – finance	ICAG	Senior accountant	16 years

Notes: ACCA = association of certified chartered accountants; CIMA = chartered institute of management accountant; ICAG = institute of chartered accountants, Ghana.

Table 1 Socio-demographic data of participants (continued)

	<i>Pseudo</i>	<i>sex</i>	<i>age</i>	<i>academic</i>	<i>professional</i>	<i>position</i>	<i>length</i>	<i>range</i>	<i>qualification</i>	<i>affiliation</i>	<i>of service</i>
A17	Female	36–40	MBA – accounting	ACCA	Accountant	12 years					
A18	Male	31–35	MPhil – accounting	ICAG	Accountant	7 years					
A19	Male	41–45	MBA – accounting	ICAG	Principal accountant	14 years					

Notes: ACCA = association of certified chartered accountants; CIMA = chartered institute of management accountant; ICAG = institute of chartered accountants, Ghana.

4.1 Research question one (RQ1) – are accountants in Ghana abreast with general sustainability accounting?

In this segment of the study, we sought to ascertain the awareness of sustainability accounting among accountants in Ghana.

4.1.1 Awareness of sustainability accounting

During the interview session with the participants, it emerged that all of them have a fair idea regarding the awareness of sustainability accounting. This phenomenon is line with the conclusion of Amoako et al. (2022) and Amoako et al. (2023) who argued that accountants have a fair idea on sustainability accounting. In this study, the participants argued that they got to know about sustainability accounting either through training programs and workshops or newsletters and bulletins issued by their affiliated professional bodies. For instance, a participant stated that:

“Through CPD training programs organised by the Institute of Chartered Accountants, Ghana, I have become aware of sustainability accounting” (A1).

Another Participant claimed that:

“Honestly, but for circulations on news and events about the subject [sustainability accounting] by ICAG, I would not have known about it. It is an emerging issue. It is new to some of us, honestly” (A10).

Regarding the proficient use of sustainability information to determine the organisation’s economic, environmental and or social impacts, the participants provided divergent responses. This observation confirms the conclusions of Klymenko et al. (2021) who asserted that accountants are more proficient with the economic dimension of sustainability than the environmental and social strands. This outcome is also consistent with the position of Olya et al. (2021) that all the three sustainability dimensions are crucial in meeting stakeholders’ expectations. In the current study, whereas some of them provided an emphatic ‘Yes’ response, others answered ‘No’, and another category of participants did not provide a straightforward ‘Yes’ or ‘No’ response. For instance, an interviewee who belongs to the ‘Yes’ category of participants retorted that:

“My organisation is mandated by regulatory bodies such as the environmental protection agency (EPA) and the minerals and mining commission to report the impact of its activities on the environment and the inhabitants in our catchment area. The inputs required for these reports are generated by my office. I am

therefore very proficient in using sustainability information to determine the organisation's environmental and or social impacts" (A5).

However, a participant belonging to the 'No' category of participants argued that:

"Even though my department is responsible for generating data required for the annual financial reports of the organisation, honestly I am not proficient in using sustainability information to determine the organisation's environmental and or social impacts" (A15).

Then, a participant associated with the participants who could not provide a straightforward 'Yes' or 'No' response stated that:

"I am somehow proficient in using sustainability information to determine the organisation's environmental and or social impacts. This is because, sustainability accounting entails how businesses report on the economic, social, and environmental impacts of their activities. Thus, I can say that, I am a bit proficient with respect to the use of sustainability information to determine my organisation's environmental and or social impacts" (A16).

On the issue of advanced knowledge of sustainability accounting, majority of the participants mentioned during the interview session that, they have a basic knowledge. This outcome is at variant with the position of Ascani et al. (2021) who observed that accountants should be more competent about sustainability accounting to facilitate effective implementation. Only a few of the interviewees in the current study mentioned that they have advanced knowledge of sustainability accounting. For instance, some of the participants mentioned that:

"I have average knowledge about sustainability accounting. I do not know much about it since it is an emerging issue. It transcends environmental accounting. I am still learning most of the strands and thematic areas required by both IFRS S1 and IFRS S2. So, on a scale of 1 to 10, I am between 5 and 6" (A4).

"Sustainability accounting is a new area. Until recently when the International Sustainability Standards Board issued both IFRS S1 and IFRS S2, there was no IFRS detailing how sustainability issues and practices should be disclosed in the financial statement. I do not know much about it since we still receiving training on those two IFRSs" (A11).

However, one of the participants who argued that they have advanced knowledge, for instance stated that:

"Yes, I have advanced knowledge about sustainability accounting. I am aware of the implications of the activities of my organisation economically, socially, and environmentally, most especially on the local community. These implications can affect the fortunes of my organisation either positively or negatively" (A3).

Concerning the application of sustainability principles in their daily work schedule, the participants gave varied response during the interview session. Majority of the participants said they do not apply sustainability principles in their routine job decision-making as they are oblivious of those principles. Only a few mentioned that they do. This observation is contrary to the findings of Fülöp and Hernádi (2013). The scholars posited that possessing advanced knowledge of the principles of sustainability accounting is key for the effective implementation of sustainable strategy. For instance, some of those participants stated that:

“Yes. I am expected to provide disclosures on environmental issues that affect my work. It is organisational requirement enforced by regulations” (A1).

“Yes, based on the sustainability governance policy of my organisation demanding sustainable behaviour from everyone, I am supposed to apply sustainability principles in my daily work schedule” (A6).

Again, the participants were asked if they have a good knowledge of multiple sustainability reporting frameworks or standards. Majority of the interviewees mentioned that they do not know about sustainability reporting frameworks or standards. This outcome, perhaps validates the argument of Peršić et al. (2017) that there is a challenge in putting together policies that promote economic, environmental, and social sustainability accounting dimensions simultaneously. This is so because most of the participants in the present study lack knowledge of multiple sustainability reporting frameworks or standards. Only a few mentioned that they have a good knowledge. For instance, one of them stated that:

“Yes, I do. I know of the Global Reporting Initiatives (i.e., GRI), and Dow Jones Sustainability Reporting Indices (DJSI). The GRI for instance, detailed how organisations should report sustainability issues based on the triple-bottom line (economy, social, and the environment). The DJSI on the other hand are benchmarks recognised by investors as best sustainable business practices required for the survival of businesses in the long-run”. I am also somehow proficient about both IFRS S1 and IFRS S2 that have just been issued by the ISSB” (A16).

4.1.2 Application of sustainability reporting frameworks or standards

The participants were asked if they have a good knowledge of the sustainability reporting frameworks and standards issued by the ISSB. The responses received were not any different from the preceding session. Majority of the participants said that they do not have good knowledge about the implementation of the standards issued by the ISSB. Only a handful of them mentioned that they do have a fair knowledge about how to implement those two IFRSs. This outcome is not surprising as the ISSB issued IFRS S1 and IFRS S2 not long ago. Hence, most accountants are yet to be exposed to them for effective implementation. For instance, one of them argued that:

“I am aware of the contents of those two IFRSs that were issued in June this year, 2023 and awaiting implementation effective January, 2024. I have attended a training program organised by ICAG for members (i.e., professional accountants) on the implementation of IFRS S1 and IFRS S2” (A3).

The participants’ familiarity with both the requirements of IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2: Climate-related

Disclosure was asked during the interview session. Their responses received once again followed similar pattern; that is, only a few of the participants are familiar with the contents of

IFRS S1 and IFRS S2. This is an indication that stakeholders of the accounting profession in Ghana have a lot of work to do. This will help accountants in the country to be familiar and conversant with both IFRS S1 and IFRS S2 to facilitate their effective implementation. Our finding validates the call for coercive isomorphism by Gholami et al. (2013) on sustainability reporting. For instance, one participant retorted that:

“I am familiar with the contents of both IFRS S1 and IFRS S2. I have copies of those two sustainability-related standards. I have also attended a continuous professional development (CPD) training program organised by ICAG” (A16).

The rest of the participants either have a general knowledge or are not familiar with the requirements of IFRS S1 and IFRS S2. For example, one participant contended that:

“I am not entirely familiar with the contents of both IFRS S1 and IFRS S2. I have a general about them through news bulletins received from the International Federation of Accountants (IFAC). My organisation is yet to train us on the implementation of those sustainability reporting standards. This has always been the norm; training is provided to employees by my organisation on new issues before their implementation.” (A13)

In a follow-up question on the implementation of IFRS S1 and IFRS S2, the participants who mentioned that they are familiar with them seemed to be somehow prepared and ready for that. This outcome is an indication that accountants in Ghana, due to their lack of knowledge in IFRS S1 and IFRS S2, are not currently prepared and ready for their implementation. This position, again supports the call by Gholami et al. (2013) for coercive isomorphism from the regulators of the accounting profession in Ghana to enhance the successful implementation of IFRS S1 and IFRS S2. For example, one participant stated that:

“The CPD I attended has partially equipped for the implementation of both IFRS 1 and IFRS S2. This was organised by ICAG. I said partially because one training program is not sufficient to ensure the effective implementation of those two standards. There should be more CPDs and workshops to ensure effective implementation” (A3).

The participants were also asked if they have prior experience in using sustainability reporting frameworks and standards for decision-making. The responses received were not any different from the earlier ones; that is, on a few of the participants have prior experience in using sustainability reporting frameworks and standards to make decisions. This outcome is a revelation that accountants in Ghana lack experience using sustainability reporting frameworks and standards for decision-making. This position supports the observation of Ascani et al. (2021) that the increased competencies of accountants in sustainability accounting will facilitate their knowledge on sustainability-related issues. For instance, a participant stated that:

“To a large extent, I have enough experience in using sustainability reporting frameworks and standards to make decisions. My organisation expects us (i.e., employees) to abide by the Dow Jones Sustainability Reporting Indices (DJSI) framework in our activities. This has therefore shaped me to be well positioned to make decisions using sustainability reporting frameworks and standards” (A16).

Regarding the participants’ confidence in their ability to use sustainability information for decision-making, only a few of them said they have such confidence. This result is in agreement with the conclusion of Peršić et al. (2017) that accountants lack a holistic knowledge of the three dimensions of sustainability accounting. This phenomenon, perhaps, explains their lack of confidence in their ability to use sustainability information for decision-making. For instance, a participant stated that:

“I have over the years complied with the requirements of both GRI and DJSI in issuing sustainability reports. Besides, I have attended a training program

organised by ICAG pertaining the implementation of IFRS S1 and IFRS S2 issued by the ISSB. So, to some extent, I think I have enough confidence in my ability to use sustainability information for decision-making" (A16).

From the foregoing, it can be concluded that accountants in Ghana are generally aware of the essence of sustainability accounting, as most of the participants seem to be familiar with some sustainability reporting framework and indices.

4.2 Research question two (RQ2) – How geared up are accountants in Ghana in meeting the disclosure requirements of IFRS S1 and IFRS S2?

In this part of the study, we verified the preparedness and readiness of accountants in Ghana in implementing the disclosure requirements of IFRS S1 and IFRS S2.

4.2.1 Exposure to sustainability reporting practices

The participants were asked if they have heard of sustainability report during the interview session. Almost of them said they have heard about it except a few participants who said 'No'. This response rate is encouraging as it is an indication that accountants are aware of the existence of sustainability report. This result is consistent with the opinion of Amoako et al. (2022, 2023) that accountants in Ghana are generally aware of the contents of sustainability report.

The participants, in a follow up question on the above, were asked of the extent of their interaction with these reports. Their responses were several and varied. Some said they that they are yet to have any interaction with such reports. Others mentioned that their level of interaction with such reports is low. Others said it is basic. Some said they have occasional interaction with such reports. A few others mentioned that they are proficient with sustainability report. For instance, one of such participants mentioned that:

"I have been issuing sustainability reports to provide information for management use. I am therefore proficient with sustainability reports" (A1).

The participants, during the interview session were asked if their work schedule include either the preparation or review of sustainability reports. Majority of the participants mentioned that their work schedules do not involve any of these tasks. Only a few participants answered that their responsibilities at the work place require either the preparation or review such reports. The call for coercive isomorphism by Gholami et al. (2013) is relevant in this regard. Such a call will pressurise organisations to assign the responsibility for the preparation and review of sustainability reports to appropriate accountants. For instance, some of them mentioned that:

"I am responsible for the generation of the inputs required for the preparation of annual reports which include the contents for sustainability-related disclosures" (A3).

"I am responsible for the review of the draft annual reports which include sustainability-related disclosures before they are issued by the board directors. The review of sustainability reports is part of my work schedules" (A5).

4.2.2 Training on sustainability reporting practices

The participants were asked if they participated in any general sustainability-related training program or workshop during the last 12 months. Only a few of them said 'No'. Majority of the participants mentioned that they have received training programs on sustainability organised by their industrial regulators in the past 12 months. This outcome is a positive signal as accountants in the country will be exposed to basic sustainability reporting practices.

The participants were again asked during the interview session if they have specifically attended an IFRS sustainability disclosure and reporting training program or workshop to build their capacity for sustainability reporting. Majority of them stated that they are yet to attend any such training program. Only a few of the participants mentioned that they have received training provided by ICAG in collaboration with ACCA on both IFRS S1 and IFRS S2. A participant for instance mentioned that:

"ICAG teamed up with ACCA to organise a virtual forum for their members on how they should be prepared for the implementation of IFRS S1 and IFRS S2. During the forum seasoned accounting practitioners and experts of sustainability took turns to address how the disclosure requirements of those sustainability-related IFRSs should be carried out. Later, ICAG again organised public lectures on two occasions within the past three months on the same issue. Industrial experts were invited to enlighten participants on how to provide disclosure requirements for their sustainability-related activities in their annual reports. I participated in all these fora. ICAG, as the sole regulator of the accounting profession in Ghana has been very helpful in ensuring that its members are well poised for the successful implementation of IFRS S1 and IFRS S2. Hence, it has been spearheading the organisation of CPDs on sustainability reporting. For now, I will mention that, as a regulator, it has performed creditably well on that score" (A3).

Despite the fact that accountants in the country have attended general sustainability-related training programs or workshops thereby being exposed to basic sustainability reporting practices, this particular result is a 'wake-up call' to IFAC and ICAG to step-up their capacity building training programs for accountants in Ghana on IFRS sustainability disclosure standards and reporting. This will ensure that they receive the required competencies as proffered by Shet and Pereira (2021) to ensure the successful implementation of IFRS sustainability disclosure and reporting standards.

The participants were asked during the interview session if their organisations provide opportunities for capacity building in sustainability reporting. Only a few of the participants mentioned that their employers provide them with such opportunities. This finding is an indication that accountants in the country may lack the requisite competencies in implementing the requirements of IFRS S1 and IFRS S2 in their financial statements. For instance, a participant mentioned that:

"Our industrial regulators mandate my organisation to provide capacity development on sustainability reporting. In consequence, my organisation provides us [employees] with such supports by making sufficient resources available through annual budgetary allocations" (A1).

It must be emphasised that the opportunities to participate in training programs by accountants are key for the effective implementation of the requirements of IFRS S1 and IFRS S2.

4.2.3 *Support for effective implementation of sustainability reporting practices*

During the interview session with the participants, they were asked if their organisations have provided them with sufficient resources and support for the effective implementation of IFRS sustainability disclosure standards. Only a few of them said that their organisations have made such commitments to ensure the effective implementation of IFRS sustainability disclosure standards. A participant for instance stated that:

“My organisation has made a budgetary allocation to cater for the provision of the necessary resources require for the effective training of finance and inter audit personnel on IFRS sustainability disclosure standards in the coming. Management has given the assurance that, they will encourage employees to participate in such training programs” (A1).

Majority of them said they are yet to receive such supports. Even though, the IFRS sustainability disclosure standards were issued by the ISSB in June, 2023, this situation of inadequate management commitments to ensure their successful implementation is not encouraging.

The participants were asked of the various sources they receive relevant information pertaining to sustainability reporting practices. Some of them mentioned that they receive such information from either their employers, regulators, ICAG, the sole regulator of accounting profession in Ghana, or IFAC. Some of the participants went further to mention that they receive such information through either monthly or quarterly management reports, annual reports on their organisations, news bulletins and journals from ICAG or IFAC on best sustainability practices among others. Other participants, however, said that they do not receive such information.

The opinion of the participants was asked on the appropriate measures required to ensure the preparedness and readiness of accountants for successful implementation of IFRS sustainability disclosure standards and reporting. All the participants unanimously mentioned that training and education programs are essential for the successful implementation of IFRS S1 and IFRS S2. This outcome is in line with the call by Ascani et al. (2021) that education in facilitating knowledge on sustainability-related issues is crucial in gaining the competencies required for sustainability reporting (Shet and Pereira, 2021). A participant for instance, argued that:

“ICAG should make CPDs on IFRS sustainability disclosures and reporting mandatory. This can be achieved by attaching substantial scores on them. And insist that renewal of annual membership of accountants will depend significantly on their participation of such training programs in prior years. Thus, that subsequent annual membership renewals will substantially depend on how many points one scored in preceding years’ CPDs. This will compel accountants in particular and their employers in general, to attach importance to such training programs. Else this initiative introduced by the IFAC will be a mirage” (A12).

Another participant mentioned that:

“ICAG, ACCA and other professional accounting bodies should incorporate IFRS sustainability disclosures and reporting into their syllabi. They should also insist that tertiary institutions offering accounting programs at both the undergraduate and post graduate levels incorporate same into their syllabi else they [professional bodies] will not provide them with attestations to receive accreditations to enable them run such programs. This will measure will ensure that potential accountants will become abreast with IFRS sustainability

disclosures and reporting issues before their eventual qualification as professional accountants” (A16).

The participants were again asked if their organisations have integrated any sustainability framework or standard into their reporting practices. Majority of the participants mentioned that their organisations have not integrated any sustainability framework or standard into their reporting practices. This situation is unacceptable as the integration of the appropriate sustainability framework into their reporting practices of organisations will ensure the provision of the required information for effective decision-making. This position is in line with that of Dao et al. (2011) who are calling for integrated sustainability framework of human, supply chain, and information technology resources in enabling organisations to improve on sustainability capabilities. Only a few of them mentioned that they have such frameworks as part of their reporting practices. For instance, one of them stated that:

“My organisation has integrated the DJSI into our reporting practices. The DJSI ensure that organisations observe sound sustainable practices including proper water discharge, social impact assessment, cyanide events, among others” (A16).

Regarding the drivers of sustainability reporting practices in their organisations, majority of the participants said that they are oblivious of such drivers. This outcome is at variant with the observations of prior studies (Bebbington and Unerman, 2018; Lodhia et al., 2023; Tetteh et al., 2023) that the appropriate competencies in sustainability accounting including the drivers of sustainability reporting practices are crucial for effective implementation of IFRS sustainability disclosure standards. Hence, conscious efforts are to be made for their acquisition. Only a few of the participants mentioned that they know of some of the reasons for sustainability reporting practices. They mentioned that environmental concerns and the needs of future generations compare organisations to issue sustainability reporting practices. For instance, a participant stated that:

“Our regulators always want to know how environmentally conscious we are. They are concerned about wasting resources at the expense of the future generation. And so, they insist that we issue periodic reports on our sustainability practices. So, to us, it is a regulatory requirement to issue sustainability practices’ reports” (A5).

The participants were asked during the interview session if their organisations have sustainability officers responsible for coordinating sustainability issues. Only a few of the participants mentioned that their organisations have such officers. A participant, for instance mentioned that:

“Our regulator requires that we engage the services of a sustainability officer whose main responsibility is to ensure sustainable business practices. Also, such an officer will foresee the regular sustainability reporting to relevant stakeholders” (A2).

Then, on the issue of the participants’ confidence in the ability of their organisations to meet the upcoming IFRS sustainability reporting requirements, majority of them said they do not have such confidence. Their explanation was that, with the kind of preparations required to meet such expectations vis-à-vis their organisations’ current practices, they are doubtful of their achievement. This outcome is in consonance with the position of Peršić et al. (2017) argued that there is lack of confidence in putting together

policies that promote economic, environmental, and social goals simultaneously. A participant for instance argued that:

“We do not know much about the IFRS sustainability disclosure standards. No training programs are organised for us to be abreast with them. Honestly, it appears we will not be able to meet those requirements now; maybe later” (A14).

A few of the participants mentioned that per the preparations made by their organisations, they have confidence that those requirements will be met. Again, they asserted that their organisations’ current sustainability practices are extensive due to regulatory requirements. For example, a participant argued that:

“I have confidence in my organisation’s ability in meeting the upcoming IFRS sustainability reporting requirements. We already have the relevant structures in place. We currently prepare regular sustainability reports in line with relevant frameworks, DJSI, for our stakeholders. The DJSI are also used to track our sustainability performance. Besides, our organisation provides the needed resources and support staff capacity building on sustainability reporting through regular training programs. I am confident that we will be able to meet those requirements” (A16).

4.2.4 Governance factors and sustainability reporting practices

Regarding the necessary structures instituted by the governing board or its equivalent to ensure sound sustainability reporting practices, the participants gave varied responses. Most of them said that there no such structures in their organisations. The assertion by Kähkönen et al. (2023) that the existence of the appropriate governance structures is necessary to minimise sustainability-related risks and maximise the gains associated with sustainability-related opportunities is not in line with this finding. The absence of these structures is an unfortunate situation as far as the implementation of the requirements of IFRS S1 and IFRS S2 are concerned. Accordingly, a call is being made to stakeholders of the accounting profession in Ghana, particularly regulators, to institute the appropriate measures to address the situation as recommended by Njoroge et al. (2019). For example, a participant contended that:

“No, we do not have anything like that. We do not prepare and present sustainability report as part of our annual reports. If we were to do that, then it would have been appropriate to have a sustainability governance policy in place which will detailed what to add and what to exclude in such a report and even who should be responsible for that” (A8).

Others said that plans have been made by their organisations to establish such structures. A few others, however, mentioned that they their organisations have such governance factors and sustainability reporting practices in place. For instance, a participant retorted that:

“Our organisation has a sustainability governance policy that has been used for more than 3 years now. It spells out our sustainability practices; including whom to purchase from, who to sell or render services to, how to discharge wastes in order to preserve ecological resources, etc. In addition, the policy has created a sustainability office to be headed by an expert whose responsibility is to ensure that our sustainability reports contain information about the governance processes, controls, and procedures adopted to monitor and manage sustainability-related opportunities and risks” (A1).

4.2.5 Strategic factors and sustainability reporting practices

Regarding sustainability-related risks and opportunities, the participants were asked if their organisation's sustainability disclosures provide information about the approaches used to manage them. Most of the participants mentioned that no such strategies exist in the first place. This outcome is timely as it informs the stakeholders of organisations of the need to embrace the call by previous studies (Eccles et al., 2012, Giannakis and Papadopoulos, 2016; Sanni Anibire et al., 2020) for the adoption of appropriate strategies in minimising sustainability related risks. For instance, a participant argued that:

“Sustainability reporting is an emerging area. We currently do not provide disclosures on any sustainability-related risks and opportunities. We have no strategies in place in managing any sustainability-related risks and opportunities” (A7).

Some few others, however, mentioned their organisations have the appropriate strategies in managing sustainability-related risks and opportunities. For instance, a participant stated that:

“We have the appropriate strategies in place to manage sustainability-related risks and opportunities. For instance, our sustainability policy directs us on how to assess our vendors and clients in order to minimise risks and maximise our gains at the same time. Besides, where and how to invest have all been provided for in such a policy” (A1).

The participants were asked if their organisation's strategic decision-making is linked with its sustainability-related risks and opportunities. Most of them mentioned that no such relationship exists. They argued that their organisations do not have any policy on sustainability practices. Hence, any strategic decision-making being made does not consider any sustainability-related risks and opportunities. This is unacceptable practice as organisations are required to appreciate the origins of risks and their potential consequences, so that the most suitable strategic decisions that are sustainability-focused can be adopted to minimise them. This position agrees with the call by prior studies (Beske and Seuring, 2014; Giannakis and Papadopoulos, 2016). For instance, a participant contended that:

“We have a five-year strategic plan that was developed two years ago. This plan guides our activities and practices. Sustainability reporting is a new thing; it has just evolved. It was not factored into the five-year strategic plan that regulates our activities. Hopefully, when the management and the governing board embrace sustainability reporting, the strategic plan will be revised to include sustainability-related risks and opportunities” (A18).

Nevertheless, some few participants posited that sustainability-related risks and opportunities are considered strategic decision-making by the organisations. Some of the argued that their organisations value sustainable behaviour. Therefore, strategic decision-making is interlinked with sustainability-related risks and opportunities in their organisations. For instance, of them asserted that:

“We have a sustainability governance policy that has been used for over 3 years. Our strategic plan that was recently revised considers how we should embrace sustainable behaviour as an organisation. For example, the strategic plan directs our sustainability practices regarding sound environmental practices and investments in order to minimise sustainability related risks and maximise the gains that sustainability-related opportunities present to us” (A1).

The participants were once again asked if their organisations consider both the short-term and the long-term impact of their sustainability activities on their business models and value-chain. Only a few of the participants answered ‘Yes’. They argued that the consideration of both the short-term and the long-term effects of sustainability practices is necessary as they are part of the requirements of sustainability accounting. This outcome is in line with the call by Sanni-Anibire et al. (2020) that, organisations should institute the appropriate governance policies on sustainability practices including considerations for short-term and the long-term impacts of sustainability activities as they are part of the requirements of both IFRS SI and IFRS S2.

A participant for instance, stated that:

“Both short-term and the long-term impacts of our sustainability activities have been integrated into our supply chain processes and operation. This is done mainly to minimise sustainability related risks and maximise sustainability-related opportunities from such operations” (A19).

Majority of the participants argued that their respective organisations do not have such considerations on sustainability practices. Their reason was that, their organisations do not have any sustainability governance policy that will detail what constitute sustainability practices.

4.2.6 Risk management factors and sustainability reporting practices

Again, the participants were asked whether their organisations’ sustainability disclosures provide information about the processes and procedures used to identify, assess, prioritise, and monitor sustainability-related risks and opportunities. Investors require such relevant information to enable them appreciate the strategies the organisation has adopted in managing sustainability-related risks and opportunities to enhance the maximisation of their wealth. This outcome is in consonance with earlier studies (Gatzert et al., 2020; Gatzert and Reichel, 2024; Golnaraghi, 2018; Kähkönen et al., 2023; Njoroge, 2019; Swiss Re, 2020) whose findings support this call. However, only a few of the participants in this study answered that their organisations’ sustainability disclosures provide such significant information. A participant, for instance stated that:

“In accordance with our sustainability governance policy, annual targets are set as objectives using the DJSI. Appropriate measures are used to identify, appraise, and track sustainability-related risks and opportunities. Again, due to limited resources, we prioritise identified sustainability-related risks and opportunities in their management. By this approach, significant sustainability related risks and opportunities receive management attention” (A16).

The rest answered that no such processes and procedures in their organisations. Their argument was that, sustainability reporting is new to them. Therefore, no measures have been instituted to report on sustainability-related risks and opportunities. For example, a participant mentioned that:

“Sustainability reporting is a new invention by the regulators of the accounting profession. Our organisation is yet to take a critical look at it. In the coming year, I am sure our board of directors will come out with the appropriate policy to address sustainability practices in our organisation. Maybe when that is done, then we will begin issuing sustainability reports that will highlight disclosures about the processes and procedures adopted in identifying,

examining, prioritising, and monitoring of sustainability-related risks and opportunities” (A9).

The participants were asked whether their organisations adopt the appropriate criteria (i.e., qualitative or quantitative) to evaluate the nature, likelihood, and magnitude of sustainability related risks and opportunities. A few of them mentioned that their organisations have instituted such measures in appraising the nature, likelihood, and magnitude of sustainability related risks and opportunities. They argued that the adoption of the appropriate criteria is relevant in minimising sustainability-related risks and exploiting exploit sustainability-related opportunities in the organisation. These outcomes are in line with the positions of Kähkönen et al. (2023) and Njoroge (2019).

Again, other participants also mentioned that their organisations use such criteria to assess the type, possibility, and degree of sustainability-related risks and opportunities. Their argument was that, sustainability-related risks and opportunities can influence the enterprise value of their organisations. This result agrees with the assertion of prior studies (Golnaraghi, 2018; Swiss Re, 2020), that sustainability related risks and opportunities have the potential in influencing the enterprise value of organisations. According to the participants, the management of their organisations have recognised the essence of instituting the appropriate criteria to minimise risks and exploit the opportunities that are sustainability related. For instance, a participant retorted:

“We have integrated these benchmarks into the risk convergence table used in our organisation. This table enables us to examine the nature, likelihood, and the degree of sustainability-related risks and opportunities embedded in our operations. The DJSI we integrated into our sustainability reporting framework require that we should have such criteria to enable us minimise identified sustainability-related risks, while maximising the gains associated with the identified sustainability-related opportunities” (A16).

Nevertheless, majority of the participants answered that no such criteria exist in their organisation. They argued that sustainability reporting is a new thing and also not mandatory in their industries. Some of these participants argued further that their organisations do not appreciate the essence of adopting any criterium to evaluate the nature, likelihood, and magnitude of sustainability-related risks and opportunities. For example, one of them contended that:

“We do not have any criteria for the evaluation of the nature, likelihood, and magnitude of sustainability-related risks and opportunities in my organisation. For now, sustainability reporting is not mandatory as far as our industry is concerned. Our management therefore does not regard the significance of having such criteria” (A17).

4.2.7 Metrics and target, and sustainability reporting

Again, the participants were asked if their organisations apply guidelines, e.g., IFRS sustainability disclosure standards or others, in setting their respective organisation’s metrics and targets for sustainable climatic practices. Only a few of the participants responded that their organisations apply some form of guidelines in setting cross industry metrics and targets. According to them such frameworks are necessary in setting metrics and targets on sustainable climatic practices, thus, facilitating sustainability reporting. This outcome is in support of the position of prior studies (Rauch and Newman, 2009; Song and Moon, 2019) who argued that such frameworks are relevant to meet

stakeholders' expectations, particularly those of regulators. For instance, one of them mentioned that:

".....as stated earlier, my organisation has integrated the DJSI, which is a global cross-industry sustainability metric into our reporting practices. DJSI enable us meet the demands of our stakeholders, including investors, regulators, etc., that we observe sound sustainable practices such appropriate means of discharging waste, social impact assessment, cyanide spillage, among others" (A16).

Most of the participants argued that they do not apply any sustainability-related guidelines when setting metrics and targets in their organisations. Those participants maintained their position that sustainability reporting has just come. Hence, there are no sustainability-related guidelines to be considered when setting targets and metrics.

The participants were again asked if their roles include sustainability-related targets that they need to achieve. Most of them answered that their responsibilities are exclusive of sustainability-related targets. Their argument was that, sustainability practices are hardly regulated in their organisations. Hence, sustainability-related targets are not set. Some others, however, mentioned that their work schedules include sustainability-related targets put in place to regulate sustainability practices in their organisations. They argued that their schedules include sustainability-related targets that need to be achieved due to relevance in enhancing the enterprise value of their organisations. This outcome supports the call by Song and Moon (2019) who argued that such frameworks are relevant to meet stakeholders' expectations, particularly those of regulators. For instance, a participant stated that:

"The appraisal of the application for credit facilities by clients from my organisation is the responsibility of my department. Part of the benchmarks we look for include sound sustainability practices. In consequence, clients who score high on such rubrics are granted the credit facility. However, those who score low marks are denied the loan" (A1).

Another participant mentioned that:

"Regulatory benchmarks set by our regulators demand periodic reports. Such reports should contain sustainability practices during the period under review. I am part of the team who generate the inputs for those reports" (A3).

Regarding the timeliness sets for achieving sustainability-related targets in their organisations, the participants gave varied responses. Those who said that their responsibilities are exclusive of sustainability-related targets, once again answered that, there are no timeliness sets for achieving sustainability-related targets in their organisations. For instance, one participant argued that:

"Not really. We set timelines for our operations but not sustainability-related targets. The reason is that there are no regulations for sustainability practices. So, we do not set timeliness for their achievement. With the advent of IFRS sustainability disclosure standards, our organisation will come out with a sustainability governance policy that may consider timeliness for achieving sustainability-related targets" (A9).

However, some participants answered that timeliness are set to meet sustainability-related targets in their organisations due to their significance in enhancing the enterprise value for their organisations and meeting regulatory requirements. These outcomes are in consonance with the position of Rauch and Newman (2009) and Song and Moon (2019). Despite the fact that these set of participants acknowledged the significance of setting

timeliness to achieve sustainability-related targets in their organisations, they, however, shared divergent positions regarding the duration for such timeliness. Whereas some of them mentioned that, sustainability related targets are mostly established annually and reviewed to reflect current issues (Rauch and Newman, 2009), others argued that their organisations set sustainability-related targets for longer periods, and appropriate measures put in place for their achievements (Song and Moon, 2019). They mentioned further that these sustainability-related targets and metrics received third party validations. For instance, a participant asserted that:

“We set sustainability-related targets annually. These are reviewed to reflect emerging trends. Management ensures that appropriate structures are put in place for their achievement of these targets” (A3).

Another participant mentioned that:

“We currently have a 5-year sustainability-related targets. Nevertheless, these “targets have been broken down into yearly targets for their effective achievement. Besides, management always insists that all sustainability related targets are reviewed through the DJSI” (A16).

5 Conclusions and implications of the study

The wanton depletion of natural resources has reached alarming crescendo in most countries in SSA, most especially Ghana. Most forest reserves have been depleted through illegal mining, indiscriminate timber logging, among others. River bodies, which serve as sources of drinking water for many communities within the sub-region have also not been spared by this canker. Besides, vast hectares of arable lands have equally been destroyed. These practices have dire consequences for human existence as most of these resources and water bodies that are depleted are not renewal. There are also serious health concerns from cyanide spillage and other hazardous substances that are dumped indiscriminately. These practices raise serious issues about sustainability. Hence, they have received global attention with many organisations including the UN, IFAC, etc., are trying to find a last solution to them. Prior studies blame the accounting profession for some of these lapses. Accountants are blamed for downplaying the activities of their organisations on the environment, the society, and the larger economy. Accountants are also accused for disclosing sustainability activities in the financial statements mainly with the intention of improving the corporate image of their firms rather than for justifiable purposes. In consequence, some studies are championing the campaign for comprehensive sustainability reporting by organisations in SSA, Ghana. IFAC, through its umbrella body, ISSB, in response to these calls, has released two IFRS sustainability disclosure and reporting standards - IFRS S1: General Requirements for Disclosure of Sustainability related Financial Information (IFRS S1) and IFRS S2: Climate-related Disclosure (IFRS S2), to commence effective January 1, 2024, to address the issue. These standards are to be complied with by organisations by providing comprehensive disclosures on their sustainability activities to enable users assess their sustainable behaviour.

In this study, we have assessed the preparedness and readiness of the accountants in Ghana for the implementation of these two IFRS sustainability disclosure and reporting standards using a qualitative study approach. The outcome of the study reveal that

Ghanaian accountants have a fair awareness of sustainability accounting. However, they generally are not well geared up for the successful implementation of IFRS S1 and IFRS S2, effective January 1, 2024, as most of them have challenges regarding the proficient use of sustainability information to determine the organisation's environmental and or social impacts. Besides, they lack knowledge about the thematic areas (i.e., governance, strategy, risk management, cross-industry targets and metrics, and climate-related risk and opportunities) of the two IFRS sustainability standards that have been issued by the ISSB. Again, they lack exposure to sustainability reporting practices due to inadequate IFRS sustainability disclosure and reporting training programs or workshops to enhance their capacity building in sustainability reporting. In addition, most organisations are yet to integrate any sustainability framework or standard into their reporting practices.

The results have both policy and practical implications as researches that align the further developments of Ghana with the SDGs of the UN are held in high esteem as the country's globalisation agenda continues. Sustainability accounting education that will groom successive working professionals is highly required in Ghana to enhance the development of economy that is more sustainable. Policy makers and regulators of the accounting profession in Ghana, especially IFAC and ICAG are to build the capacity of accountants on sustainability accounting through mandatory CPDs and provision of regular information. This approach can be achieved by issuing a policy that annual membership renewals will depend significantly on the participation of such training programs in prior years. This will boost the knowledge and confidence of accountants on IFRS sustainability disclosure standards. Besides, ICAG in particular and its other counterparts such as the ACCA and CIMA should incorporate IFRS sustainability disclosures standards and reporting into their syllabi. They should also insist that tertiary institutions offering accounting programs at both the undergraduate and post graduate levels incorporate same into their syllabi before providing them with attestations to receive accreditations to enable them run such programs. This measure, as coercive isomorphism, will ensure that potential accountants will become abreast with IFRS sustainability disclosures and reporting issues before their eventual qualification as professional accountants. Regarding practical implication, organisations are to provide regular training to accountants on sustainability accounting. This will assist to build the capacity and confidence of accountants. Organisations should also integrate the appropriate sustainability framework or standard that are validated by a third party into their reporting practices. This will enable accountants provide appropriate advice to management on sustainability issues and also provide the required sustainability-related disclosures in their reports to assist stakeholders make informed economic decisions.

6 Limitations and suggestions for future studies

Despite the fact that this study makes some significant contributions about the preparedness and readiness of accountants in Ghana regarding the implementation of IFRS S1 and IFRS S2, the results were mainly based on qualitative analysis of data from a primary source thereby limiting their generalisability. We encourage future researches to adopt quantitative analysis to offer a broader perspective on the phenomenon. Again, the study was conducted in three out of the original ten regions in Ghana. Thus, the results may not apply directly to the socio-cultural contexts of the other regions. We encourage future researches to replicate the study in the other regions to enhance the

generalisability of the results. Future studies may also espouse the professional skills, and decision (cognitive) flexibilities, organisational culture, and information system quality that are essential for the successful implementation of IFRS sustainability disclosure standards.

References

- Ackah-Baidoo, P. (2016) 'Youth unemployment in resource-rich Sub-Saharan Africa: a critical review', *The Extractive Industries and Society*, Vol. 3, No. 1, pp.249–261.
- Adesete, A.A., Olanubi, O.E. and Dauda, R.O. (2023) 'Climate change and food security in selected Sub-Saharan African Countries', *Environment, Development and Sustainability*, Vol. 25, No. 12, pp.14623–14641.
- Alhassan, H., Kwakwa, P.A. and Owusu-Sekyere, E. (2020) 'Households' source separation behaviour and solid waste disposal options in Ghana's Millennium City', *Journal of Environmental Management*, Vol. 259, p.110055, <https://doi.org/10.1016/j.jenvman.2019.110055>.
- Amaning, N. (2024) 'Qualitative analysis on technology acceptance model of accounting faculty perceptions of virtual accounting coursework', *Cogent Education*, Vol. 11, No. 1, p.2331345, <https://doi.org/10.1080/2331186X.2024.2331345>.
- Amaning, N., Kuranchie, A., Salifu, I. and Ntoah-Boadi, S. (2021) 'Qualitative analysis on accounting ethics education for bachelor students', *International Journal of Critical Accounting*, Vol. 12, No. 2, pp.156–177.
- Ameyaw-Brobby, T. and Gupta, U. (2021) 'Chinese businesses and transnational knowledge transfer under constrained environment: results from the field in Ghana', *African Journal of Economic and Sustainable Development*, Vol. 8, No. 1, 51–73.
- Amoako, K.O., Amoako, I.O., Tuffour, J. and Marfo, E.O. (2022) 'Formal and informal sustainability reporting: an insight from a mining company's subsidiary in Ghana', *Journal of Financial Reporting and Accounting*, Vol. 20, No. 5, pp.897–925.
- Amoako, K.O., Marfo, E.O., Akwaa-Sekyi, E.K., Amaning, N. and Yankey, N. (2023) 'Stakeholder perceptions of sustainability reporting on the websites of technical universities in Ghana', *Benchmarking: An International Journal*, Vol. 30, No. 10, pp.4248–4284.
- Ascani, I., Ciccola, R. and Chiucchi, M.S. (2021) 'A structured literature review about the role of management accountants in sustainability accounting and reporting', *Sustainability*, Vol. 13, No. 4, p.2357, <https://doi.org/10.3390/su13042357>.
- Avi, M.S. (2022) 'The relationship between financial reporting and sustainability report', *Journal of Economics, Finance, and Management Studies*, Vol. 5, No. 4, pp.1013–1036, DOI: 10.47191/jefms/v5-i4-11.
- Battaile, B., Hernandez, F.L. and Norambuena, V. (2015) *Debt Sustainability in Sub-Saharan Africa: Unraveling Country-Specific Risks*, World Bank Policy Research Working Paper, No. 7523.
- Bebbington, A. and Bebbington, H.D. (2018) 'Mining, movements and sustainable development: concepts for a framework', *Sustainable Development*, Vol. 26, No. 5, pp.441–449.
- Bebbington, J. and Unerman, J. (2018) 'Achieving the United Nations sustainable development goals: an enabling role for accounting research', *Accounting, Auditing and Accountability Journal*, Vol. 31, No. 1, pp.2–24.
- Bebbington, J. and Unerman, J. (2020) 'Advancing research into accounting and the UN sustainable development goals', *Accounting, Auditing and Accountability Journal*, Vol. 33, No. 7, pp.1657–1670.
- Beske, P. and Seuring, S. (2014) 'Putting sustainability into supply chain management', *Supply Chain Manag. Int. J.*, Vol. 19, No. 3, pp.322–331.

- Castleberry, A. and Nolen, A. (2018) 'Thematic analysis of qualitative research data: is it as easy as it sounds?', *Currents in Pharmacy Teaching and Learning*, Vol. 10, No. 6, pp.807–815.
- Corden, W.M. (1984) 'Booming sector and Dutch disease economics: survey and consolidation', *Oxford Economic Papers*, Vol. 36, No. 3, pp.359–380.
- Dao, V., Langella, I. and Carbo, J. (2011) 'From green to sustainability: Information Technology and an integrated sustainability framework', *The Journal of Strategic Information Systems*, Vol. 20, No. 1, pp.63–79.
- Davis, T.J. (2017) 'Good governance as a foundation for sustainable human development in sub-Saharan Africa', *Third World Quarterly*, Vol. 38, No. 3, pp.636–654.
- Dyball, M.C. and Thomson, I. (2013) 'Sustainability and accounting education', *Accounting Education*, Vol. 22, No. 4, pp.303–307.
- Eccles, R.G., Ioannou, I. and Serafeim, G. (2012) *The Impact of a Corporate Culture of Sustainability on Corporate Behavior And Performance*, Vol. 17950, No. 1, National Bureau of Economic Research, Cambridge, MA, USA.
- Fischer, T., Adolph, J., Schober, M., Townend, J. and Zipse, O. (2023) 'the future of corporate disclosure: non-financial KPIs, sustainability and integrated reporting', in *Road to Net Zero: Strategic Pathways for Sustainability-Driven Business Transformation*, pp.93–121, Springer International Publishing, Cham.
- Fülöp, G. and Hernádi, B.H. (2013) 'Sustainability accounting: a success factor in corporate sustainability strategy', *New Challenges of Economic and Business Development*, Vol. 4, No. 1, pp.229–241.
- Gatzert, N. and Reichel, P. (2024) 'Sustainable investing in the US and European insurance industry: a text mining analysis', *The Geneva Papers on Risk and Insurance-Issues and Practice*, Vol. 49, No. 1, pp.26–62.
- Gatzert, N., Reichel, P. and Zitzmann, A. (2020) 'Sustainability risks and opportunities in the insurance industry', *Zeitschrift für die gesamte Versicherungswissenschaft*, Vol. 109, No. 1, pp.311–331.
- Gholami, R., Sulaiman, A.B., Ramayah, T. and Molla, A. (2013) 'Senior managers' perception on green information systems (IS) adoption and environmental performance: results from a field survey', *Information and Management*, Vol. 50, No. 7, pp.431–438.
- Giannakis, M. and Papadopoulos, T. (2016) 'Supply chain sustainability: a risk management approach', *International Journal of Production Economics*, Vol. 171, No. 1, pp.455–470.
- Golnaraghi, M. (2018) 'Climate change and the insurance industry: taking action as risk managers and investors', *Perspectives From C-Level Executives In The Insurance Industry* [online] https://www.genevaassociation.org/sites/default/files/research-topics-documenttype/pdf_public/climate_change_and_the_insurance_industry_taking_action_as_risk_managers_and_investors.pdf (accessed 25 September 2023).
- Grabowski, R. and Self, S. (2021) 'Manufacturing in Africa: an example from Zambia', *African Journal of Economic and Sustainable Development*, Vol. 8, No. 1, pp.18–34.
- Grant Thornton International (2023) *Overview of IFRS S1 and IFRS S2*, September 14, 2023 [online] <https://www.grantthornton.global/contentassets/12954b98feff401db669463df303260f/overview-of-ifrs-s1-and-ifrs-s2.pdf>.
- Gyau, E.K., Owiredu-Ghorman, K., Amaning, N. and Kpimekuu, P.B. (2023) 'Qualitative analysis on costs and benefits of adopting a cloud-based accounting information system: a case study of Rural Banks in Ghana', *European Journal of Accounting, Auditing and Finance Research*, Vol. 11, No. 6, pp.70–91.
- Hajmohammad, S. and Vachon, S. (2016) 'Mitigation, avoidance, or acceptance? Managing supplier sustainability risk', *Journal of Supply Chain Management*, Vol. 52, No. 2, pp.48–65.
- Hallikas, J., Karvonen, I., Pulkkinen, U., Virolainen, V.M. and Tuominen, M. (2004) 'Risk management processes in supplier networks', *International Journal Of Production Economics*, Vol. 90, No. 1, pp.47–58.

- Hammarberg, K., Kirkman, M. and de Lacey, S. (2016) 'Qualitative research methods: when to use them and how to judge them', *Human Reproduction*, Vol. 31, No. 3, pp.498–501.
- Hofmann, H., Busse, C., Bode, C. and Henke, M. (2014) 'Sustainability-related supply chain risks: conceptualization and management', *Business Strategy and the Environment*, Vol. 23, No. 3, pp.160–172.
- Ibiamke, A. and Ajekwe, C.C. (2017) 'On ensuring rigour in accounting research', *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Vol. 7, No. 3, pp.157–170.
- Kähkönen, A.K., Marttinen, K., Kontio, A. and Lintukangas, K. (2023) 'Practices and strategies for sustainability-related risk management in multi-tier supply chains', *Journal of Purchasing and Supply Management*, Vol. 100848, DOI.org/10.1016/j.pursup.2023.100848.
- Kateja, A. and Jain, R. (Eds.). (2021) *Urban Growth and Environmental Issues in India*, Springer, Singapore.
- Klymenko, O., Lillebryggfeld Halse, L. and Jæger, B. (2021) 'The enabling role of digital technologies in sustainability accounting: findings from Norwegian manufacturing companies', *Systems*, Vol. 9, No. 2, p.33, doi.org/10.3390/systems9020033.
- Kodongo, O. and Ojah, K. (2016) 'Does infrastructure really explain economic growth in Sub Saharan Africa?', *Review of Development Finance*, Vol. 6, No. 2, pp.105–125.
- Kuranchie, A. (2021) *Research Made Easy*, 3rd ed., Bookworm Publications, Kumasi.
- Kwakwa, P.A. (2022) 'The effect of industrialization, militarization, and government expenditure on carbon dioxide emissions in Ghana', *Environmental Science and Pollution Research*, Vol. 29, No. 56, pp.85229–85242.
- Kwakwa, P.A., Alhassan, H. and Adu, G. (2020) 'Effect of natural resources extraction on energy consumption and carbon dioxide emission in Ghana', *International Journal of Energy Sector Management*, Vol. 14, No. 1, pp.20–39.
- Kwakwa, P.A., Arku, F.S. and Nanor, M.A. (2023) 'Determinants of water conservation practices among opinion leaders: evidence from Kwahu East District, Ghana', *Development in Practice*, Vol. 33, No. 1, pp.42–58.
- Laine, M., Tregidga, H. and Unerman, J. (2021) *Sustainability Accounting and Accountability*, 3rd ed., Routledge, Milton Park, Abingdon, Oxfordshire.
- Li, Q. and Samimi, C. (2022) 'Sub-Saharan Africa's international migration constrains its sustainable development under climate change', *Sustainability Science*, Vol. 17, No. 5, p.18731897.
- Lodhia, S., Kaur, A. and Kuruppu, S.C. (2023) 'The disclosure of sustainable development goals (SDGs) by the top 50 Australian companies: substantive or symbolic legitimation?', *Meditari Accountancy Research*, Vol. 31, No. 6, pp.1578–1605.
- Magoma, A., Mbwambo, H. and Kasheshi, E. (2022) 'Determinants of corporate environmental disclosures: a case of selected listed manufacturing firms in Tanzania', *African Journal of Accounting and Social Science Studies*, Vol. 4, No. 1, DOI:10.4314/ajasss.v4i1.7.
- Njoroge, M., Anderson, W. and Mbura, O. (2019) 'Innovation strategy and economic sustainability in the hospitality industry', *The Bottom Line*, Vol. 32, No. 4, pp.253–268.
- Olya, H., Altinay, L., Farmaki, A., Keneyeva, A. and Gursoy, D. (2021) 'Hotels' sustainability practices and guests' familiarity, attitudes and behaviours', *Journal of Sustainable Tourism*, Vol. 29, No. 7, pp.1063–1081.
- Ortega, M. (2023) 'Environmental, social, and governance (ESG) reporting from an environmentalist's (not investor's) lens', *Environs Environmental Law and Policy Journal*, Vol. 47, No. 1, pp.52–104.
- Partington, D. (2002) 'Grounded theory', *Essential Skills For Management Research*, pp.136–157, DOI: <https://doi.org/10.4135/9781848605305>.

- Peršić, M., Janković, S. and Krivačić, D. (2017) 'Sustainability accounting: upgrading corporate social responsibility', in Aluchna, M. and Idowu, S. (Eds.): *The Dynamics of Corporate Social Responsibility. CSR, Sustainability, Ethics and Governance*, Cham, Springer, https://doi.org/10.1007/978-3-319-39089-5_15.
- Rauch, J. N., and Newman, J. (2009). Defining sustainability metric targets in an institutional setting. *International Journal of Sustainability in Higher Education*, 10(2), 107-117.
- Sanni-Anibire, M.O., Mahmoud, A.S., Hassanain, M.A. and Salami, B.A. (2020) 'A risk assessment approach for enhancing construction safety performance', *Safety Science*, Vol. 121, No. 1, pp.15–29.
- Saraswati, E., Erel, R.A. and Anjani, A. (2021) 'Roles of accountants and sustainable development goals in Indonesian crude palm oil industry', *Global Business and Management Research*, Vol. 13, No. 4, pp.575–586.
- Schaltegger, S. and Zvezdov, D. (2015) 'Gatekeepers of sustainability information: exploring the roles of accountants', *Journal of Accounting and Organizational Change*, Vol. 11, No. 3, pp.333–361.
- Shet, S.V. and Pereira, V. (2021) 'Proposed managerial competencies for Industry 4.0–Implications for social sustainability', *Technological Forecasting and Social Change*, Vol. 173, No. 1, p.121080, <https://doi.org/10.1016/j.techfore.2021.121080>.
- Song, Z. and Moon, Y. (2019) 'Sustainability metrics for assessing manufacturing systems: a distance-to-target methodology', *Environment, Development and Sustainability*, Vol. 21, No. 1, pp.2811–2834.
- Swiss, R.E. (2020) *Power Up: Investing in Infrastructure to Drive Sustainable Growth in Emerging Markets* [online] <https://www.swissre.com/institute/research/sigma-research/sigma-2020-03.html> (accessed 28 September 2023).
- Teo, H.C., Lechner, A.M., Walton, G.W., Chan, F.K.S., Cheshmehzangi, A., Tan-Mullins, M., ... and Campos-Arceiz, A. (2019) 'Environmental impacts of infrastructure development under the belt and road initiative', *Environments*, Vol. 6, No. 6, p.72.
- Tetteh, L.A., Agyenim-Boateng, C. and Simpson, S.N.Y. (2023) 'Institutional pressures and accountability processes in pursuit of sustainable development goals: insights from Ghanaian indigenous oil companies', *Corporate Social Responsibility and Environmental Management*, DOI.org/10.1002/csr.2554.
- Vo, T.A. (2023) *The Economic Consequences of Climate-Related Risk Disclosure*, Doctoral Dissertation, Swinburne University of Technology, Australia.