

The association between accountant's competences, organisational culture and integrated reporting practices

Integrated
reporting
practices

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Abstract

Purpose – This study aims to investigate the association between accountant's competences, organisational culture and integrated reporting practices.

Design/methodology/approach – A questionnaire survey of 43 manufacturing firms in Mbarara district (South Western Uganda) was undertaken. The unit of inquiry was senior staff in the accounts office while the unit of analysis was the manufacturing firm. The study hypotheses were tested using regression analysis with the aid of Statistical Package for Social Sciences software version 21.

Findings – The findings revealed that while there is a positive and significant association between accountant's competences and integrated reporting practices, the association between organisational culture and integrated reporting practices is insignificant. In the additional analysis, this study finds that accountant's competences are significantly associated with all the content elements of an integrated report as enshrined in the International Integrated Reporting Framework of 2013. Surprisingly, organisational culture is not significantly associated with any of the content elements of an integrated report as enshrined in the International Integrated Reporting Framework of 2013.

Practical implications – To the academia, this study expands on the understanding of what matters for improvement in integrated reporting practices in an emerging economy such as Uganda whose history is characterised by civil wars and political unrest. Those in practice may use this study results to promote better reporting practices through the attraction of professional accountants with the necessary proficiencies in corporate reporting practices. The policymakers may also opt to mandate integrated reporting among manufacturing firms.

Originality/value – This study provides a first-time and in-depth understanding of the association between the accountant's competences, organisational culture and integrated reporting practices using evidence from a developing African Country – Uganda.

Keywords Accountant's competence, Integrated reporting, Manufacturing firms, Organisational culture

Paper type Research paper

1. Introduction

The inter-linkage between business, society and the environment has become a focus of academicians, practitioners and policymakers across the globe (Omran *et al.*, 2021; Soriya



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and Rastogi, 2021; Wachira *et al.*, 2019; Bananuka *et al.*, 2019). It is no longer a matter of maximizing wealth for shareholders at the expense of society and the natural environment but rather, ensuring welfare for all. The continuous urge for shareholders' wealth maximisation exacerbates environmental and social problems and as such corporation activities are under scrutiny. As a result, there is a need for businesses to provide environmental, social and governance disclosures within their reports (Wachira *et al.*, 2019) and one such way is through integrated reporting (IR). IR is a new methodology on the corporate reporting landscape that incorporates information on financial, governance, social and environmental aspects of a firm in a single report (IIRC, 2013; Omran *et al.*, 2021). This has been triggered by the significant increase in demand for transparency and value for money from regulators, legislators, shareholders and broader stakeholder groups (Dey and Burns, 2010; Eccles and Krzus, 2010; Hopwood *et al.*, 2010; Pollach *et al.*, 2009; IIRC, 2013). It is believed that instead of having stand-alone reports on financial, governance, social, environmental aspects of a firm, integrating these reports into a single report provides a holistic viewpoint (IIRC, 2013). In addition, IR practices promote the understanding of interdependencies of the various information and support integrated thinking, decision-making and actions (PKF, 2016; de Villiers *et al.*, 2014; Haji and Anifowose, 2016). Despite the significant role played by integrated reports, IR practices are still far from desirable especially in emerging economies (Bananuka *et al.*, 2019; Gunarathne and Senaratne, 2017; Haji and Hossain, 2016; Higgins *et al.*, 2014). The motivation of this study stems from the need to explain the reasons for low IR practices.

Early IR research studies have tended to focus on the outcomes and benefits of IR (Stubbs and Higgins, 2014; Atkins and Maroun, 2015; Rowbottom and Locke, 2016) and the central adoption challenges (Bananuka *et al.*, 2019; Flower, 2015; Perego *et al.*, 2016). A few studies have examined the determinants of IR such as board characteristics (Alfero *et al.*, 2018; Frias-Aceituno *et al.*, 2013; Vitolla *et al.*, 2019), corporate governance (Michelon and Parbonetti, 2012) firm characteristics (Frias-Aceituno *et al.*, 2014), national culture (Vitolla *et al.*, 2019; Raimo *et al.*, 2019), elements of the diffusion of innovation theory (Gunarathne and Senaratne, 2017; Robertson and Samy, 2015), cost of equity (Vitolla *et al.*, 2020; Zhou, 2017), ownership structure and stakeholder demand (Alfero *et al.*, 2018). Although these studies provide insights on the adoption and/or practice of IR, a knowledge gap still exists. For instance, most of these studies use data on companies listed on the stock exchange (Aureliana-Geta *et al.*, 2019; Buitendag *et al.*, 2017; Dhananjaya and Nadeesha, 2020; Oluwamayowa, 2019). Moreover, they provide evidence from countries other than Uganda, except for Bananuka *et al.* (2019), who used an interpretivist approach to establish the reasons for the slow adoption of IR using responses from senior executive managers of Capital Markets Authority, Professional accountancy bodies, Uganda Securities Exchange (USE) and firms listed on USE.

Secondly, sector-specific studies are scarce. Vitolla *et al.* (2020) looked at financial institutions. Little is known about the manufacturing sector. We believe that manufacturing firms offer a fertile ground for the study of IR practices, as their activities range from turning raw materials into finished goods; of which the process involves the interrelations between the human, social, environmental and economic resources that must be reported. Anecdotal evidence shows that whilst some manufacturing firms may capture such information separately, they do so when the need arises more over as separate reports. The shortcoming of this approach is that such firms will choose what to and not to report, and thus misrepresenting the true and fair view of the firm's performance and position. Much as IR is not yet mandatory in most developing countries like Uganda, its practice by organisations is a best practice given the underlying significance.

Thirdly, there have been limited studies that empirically examine the determinants of IR in emerging countries in Africa as this has been evidenced in the [Soriya and Rastogi \(2021\)](#) study whereby out of 110 articles reviewed, only 8 articles mentioned African countries. [Soriya and Rastogi \(2021\)](#) found that only 6 articles mentioned South Africa whilst 2 articles mention Uganda and Nigeria. This is because IR is fairly a new phenomenon that requires more attention of various scholars. [Omran et al. \(2021\)](#) further note that IR is a new reporting paradigm where the financial and non – financial information is disclosed. The interrelationship between the financial and non – financial information as contained in the integrated reports creates a holistic approach for telling a value creation story of the organisation ([Omran et al., 2021](#)) which improves decision-making.

In the study of a systematic literature review of IR from 2011 to 2020 by [Soriya and Rastogi \(2021\)](#), it can be observed that no study has so far examined the relationship between accountant’s competence and IR. It can also be observed that there is no study that has empirically established the relationship between organisational culture and IR practices. Except for a study by [Oktorina et al. \(2021\)](#), whose study documented that the country-level accounting competences are critical for IR practices, no other study seems to investigate such an association. This study contributes to the existing literature on IR by examining the association between accountant’s competences, organisational culture and IR practices. We argue as follows: *Firstly*, IR involves bringing together information on financial, governance, social, environmental aspects of a firm, with the objective of communicating organisational value creation through the lens of multiple capitals ([IIRC, 2013a](#)). This is not possible if the direct producer of the integrated report, in this case, the accountant, does not possess the necessary knowledge, skills and abilities to do so. IR implementation is possible if the accountant involved can identify the ever-changing stakeholder needs and general changes in the environment. This calls for the accountant to possess the general knowledge, skills and abilities related to interaction and adaptability (behaviour flexibility) besides the specific IR competences. Thus, the accountant’s competence in IR cannot be ignored. *Secondly*, organisations whose culture values the protection of stakeholders’ interests are likely to adopt IR ([Kummer et al., 2015](#); [Bouwman, 2013](#)). [Poškienė \(2006\)](#) defines organisational culture as “the complex set of ideologies, traditions, commitments and values that are shared throughout the organisation and that influence how the organisation conducts its whole performance becoming a potential source of innovation, advance and advantage” (pg. 3). This implies that organisations that espouse transparency, integrity and ethics in reporting are more likely to embrace IR. *Thirdly*, the association between accountant’s competences, organisation culture and IR practices is supported by the legitimacy theory ([Deegan, 2006](#)) and organisational culture model. According to these theories, a competent and competitive workforce is an essential factor if firms are to survive in the face of the rapidly changing needs of stakeholders. Equally, a culture that conforms to the dynamic needs of stakeholders is essential for IR.

This study, therefore, seeks to investigate the association between accountant’s competences, organisational culture and IR practices using evidence from Uganda’s manufacturing firms located in Uganda’s second-largest city – Mbarara. This aim was achieved through a questionnaire survey of 43 manufacturing firms. Results indicate that accountant’s competences are significantly associated with IR practices, unlike organisational culture. This study further found that accountant’s competences are significantly associated with all the content elements of an integrated report as indicated in the International IR Framework of 2013. Contrary, organisational culture is not significantly associated with any of the content elements of an integrated report as found in the International IR Framework of 2013. This has several implications for academia, practice

and general society. To the academia, this study expands on our understanding of what matters for improvement in IR practices in an emerging economy like Uganda whose history is characterised by civil wars and political unrest. Those in practice may use this study results to promote better reporting practices through the attraction of professional accountants with the necessary proficiencies in corporate reporting practices. Society especially civil society organisations, political leaders and consumer movement organisations may demand disclosure of company performance in terms of social, environmental, governance and economic performances in their reports. The policymakers may also opt to mandate IR amongst manufacturing firms and this could be done through the regulator of accountancy in Uganda [Institute of Certified Public Accountants of Uganda (ICPAU)].

The rest of the paper is organised as follows. Section 2 covers a review of theories and empirical literature. The research methods, results and discussion then follow, respectively, in Sections 3, 4 and 5. The study conclusions and implications are presented in Section 6.

2. Literature review and hypothesis development

2.1 Theoretical framework

In this study, we assert that the successful implementation of IR practices stems from the combination of human resources (e.g. the developers of the reports), informational resources (e.g. customer databases, customer engagement records and customer service interaction) and organisational resources (e.g. organisational culture, organisation processes and strategy). As such, we find the legitimacy theory and [Sashkin \(1997\)](#) organisation culture model relevant to underpin this study.

Legitimacy theory ([Deegan, 2006](#); [Dowling and Pfeffer, 1975](#)) presupposes that organisations continuously aim to ensure that they operate within the bounds and norms of their respective societies, that is they attempt to ensure, that their activities are perceived by outside parties as being “legitimate”. [Suchman \(1995\)](#) defines legitimacy as “a generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions”. In other words, an organisation’s legitimacy is shaped by what society collectively knows or perceives about the organisation conduct ([Deegan and Unerman, 2011](#)). IR involves incorporating information on financial, governance, social and environmental aspects of a firm in a single report ([IIRC, 2013](#)). In a way, it provides accountability and transparency of an organisation’s conduct in creating wealth. With the increasing stakeholder demands and changing environment, we state that in line with the legitimacy theory, the management of an organisation will respond to a threat to its legitimacy resulting from public concern over its socio-environmental effects by improving on their IR practices. To do so, firms strive to disclose information to their stakeholders to ensure that their behaviour is perceived legitimate and to aid stakeholders’ decision-making. Thus, IR forms part of the dialog of the ecosystem. One way to do this is to have accountants with competences that are necessary to interpret the International IR framework of 2013. The accountant’s competences such as the knowledge of adopting to changing situations especially in the corporate disclosure environment are helpful in an organisation’s capability to adopt or improve her disclosure practices.

Organisational culture model ([Sashkin, 1997](#)) – Organisational culture is the pattern of values, norms, beliefs, attitudes and assumptions that shape the ways in which people in organisations behave and things get done ([Schein, 1984](#); [Lewis, 1996](#); [Manetje and Martins, 2009](#)). Several models have used various dimensions and attributes of organisational culture such as the models presented by [Deal and Kennedy \(1982\)](#), [Hofstede et al. \(1990\)](#), [Gordon and](#)

Christensen (1993) Denison and Mishra (1995), Sashkin (1997), Cameron and Quinn (1999) and Handy (1999). This study uses the five-factor model of organisational culture developed by Sashkin (1997). His model is based on the work of Dr Talcott Parsons, a sociologist at Harvard. He argued that all organisations must carry out five crucial functions if they are to survive for any substantial length of time. He adds that each of the functions is shaped by the values and beliefs that are shared by the organisation's members. As such, these values and beliefs are powerful forces for organisational effectiveness or failure. The functions are labelled managing change, goal achievement, coordinated teamwork, customer orientation and culture strength.

Managing change concerns how well the organisation is flexible and able to adapt to and deal effectively with changes in its environment, which could be technological changes or social changes. The corporate reporting space is rapidly changing, moreover stakeholder demands keep changing and so organisations cannot afford to stick to the old ways of doing things. Organisations need to be open to the changes in the reporting space. Managers need to quickly embrace IR as a best practice even when IR practice has not yet been made a regulation. Goal achievement concerns how effective the organisation is in achieving goals, the extent to which there are coherent and shared (aligned) goals and the degree to which shared values support improvement and achievement rather than the status quo. IR is not limited to having all financial, social and environmental information captured in a single report as opposed to separate standalone reports. Integrated reports increase accountability and transparency, which, in turn, improves the firm value. However, as organisations pursue this, the goals must be aligned to their internal and external clients' needs. Coordinated teamwork concerns how well the efforts of individuals and groups within the organisation are tied together, coordinated and sequenced so that people's work efforts fit together effectively. The success of IR depends on how well coordinated other concerned units are. Managers must emphasise teamwork and put in place mechanisms to achieve this. Customer orientation concerns the extent to which organisational activities are directed towards identifying and meeting the needs and goals of clients and customers. The testing ground in this study is a manufacturing firm. It is expected that firms that produce what the customers want and are able to satisfy their needs are bound to grow and survive in the long run. Culture strength concerns the extent to which individuals agree to the values, beliefs and attitudes the organisation has set and whether specific values are valid and do exist and are followed. For instance, when a certain group of values and beliefs is strongly shared by most or all of the organisation's members, then the resultant cultural fabric is more like a tightly-knit broadcloth, with a clearly visible design. IR involves almost all the departments in an organisation. Firms that value transparency and high adaptability are more likely to adopt the practice.

2.2 Hypotheses development

2.2.1 Accountant's competences and integrated reporting practices. Competence has been generally defined as a set of knowledge, skills, behaviours and attitudes that contribute to personal effectiveness (Afrifa, 2013; Savory, 2006; Bonner and Sprinkle, 2002; Heath and Tversky, 1991). It is also referred to as a subjective feeling about one's ability to successfully perform a task that is determined by experience, training and prior performance relevant to the domain of the task (Boyatzis and Saatioglu, 2008; Bourne and Franco-Santos, 2010). The preparation of integrated reports involves bringing together information on financial, governance, social, environmental aspects of a firm, with the objective of communicating organisational value creation through the lens of multiple capitals (IIRC, 2013a). It involves defining the factors that create value and the interconnectivity between those factors, their

recognition, measurement and IR report content. This means that for an accountant to be able to prepare integrated reports moreover according to the set standards, he/she must possess the necessary knowledge, skills and abilities.

Studies that have investigated the relationship between accountant's competences and IR practices are scarce. This is evidenced in the [Soriya and Rastogi \(2021\)](#) study of a systematic review on IR from 2011 to 2020. However, [Oktorina et al. \(2021\)](#) found that the country-level accounting competences are important for the adoption of the international IR framework. The weakness of [Oktorina et al. \(2021\)](#) is that, it does not consider the competence of the individual accountants but rather looks at the number of accountants who are members of professional accountancy organisations. In another study, [van Bommel \(2014\)](#) conducted a qualitative study on NGOs in the Netherlands and the results revealed that accountant knowledge on the composition of an integrated report was key for the diffusion of IR. There are studies that investigate accountant's competences and financial reporting. For instance, [Albu et al. \(2011\)](#) in their study, reported that accountant's capacity has a critical influence on the application of accounting standards in the preparation of financial statements. Drawing from this, it is clear that with their technical expertise, key reporting competencies and ability to analyse and translate data into accessible measurements, accountants are in a prime position to further the IR practices. Thus, we hypothesise that:

H1. Accountant's competence is positively associated with IR practices.

2.2.2 Organisational culture and integrated reporting practices. [Asatiani et al. \(2021\)](#) argue that the concept of organisational culture is difficult to define. [Asatiani et al. \(2021\)](#) note that organisational culture means everything in an organisation. Relatedly, [Yang et al. \(2021\)](#) point out that the generally accepted definition of organisational culture is lacking in the literature. [Yang et al. \(2021\)](#) defined organisational culture to encompass the values and behaviours that contribute to the unique social and psychological environment of an organisation. This means that organisational culture encompasses the values and beliefs of an organisation. Organisational culture can also be summarised as "the way of doing things". As such, patterns in cultures can be observed through the policies and procedures in organisations.

Studies that link organisational culture to IR practices are uncommon. However, there are studies that link organisational culture to disclosures, strategic change and sustainability management. For example, [Elkelish and Hassan \(2014\)](#), investigated organisational culture and corporate risk disclosure amongst the United Arab Emirates listed companies. The study reported that corporate risk disclosure is associated with the organisation's culture. Likewise, [Akhtaruddin and Rouf \(2012\)](#) also find a strong relationship between culture and voluntary disclosure in Bangladesh. [Nyahas et al. \(2017\)](#) found that organisational culture is positively and significantly associated with voluntary disclosure.

[Alshumrani, Munir and Baird \(2018\)](#) found that organisational culture in terms of innovation and attention to detail strongly affect strategic change in the organisation's competitive behaviours, technology and the general institutional environment. Because, IR is seen as an innovation ([Bananuka et al., 2019](#)), the findings of [Alshumrani et al. \(2018\)](#) mean that organisational culture can lead to the improvement of IR practices. In a study by [Oriade et al. \(2021\)](#), it was found that the management practice of sustainability has a strong association with organisational culture. This means that the organisational culture determines the direction of an organisation towards its sustainability goals. Firms whose cultures are biased towards sustainability are more likely to improve their sustainability

practices. As such, such firms could improve their reporting practices such as embracing sustainability or IR practices.

Organisational culture has also been linked to performance. For example, [Kuo and Tsai \(2019\)](#) found that organisational culture is positively and significantly associated with organisational performance. [Kuo and Tsai \(2019\)](#) conceptualised organisational culture as bureaucratic culture, innovative culture and supportive culture. In another study, [Mashile et al. \(2021\)](#) found that organisational culture in terms of supportive and power culture strongly influences employee turnover intentions. Turnover is one of the indicators of poor employee performance in an organisation. In [Mashile et al.'s \(2021\)](#) study, it was revealed that if there is much power/influence exerted on the academic staff, it is likely to result in high staff turnover. In relation to IR, such staff turnovers are expected to be disclosed. Studies have also linked organisational culture to knowledge sharing. This can be seen in [Tennakoon et al. \(2021\)](#), who found that organisational culture is significantly associated with knowledge sharing. [Osupile and Makambe \(2021\)](#) also found that organisational culture is significantly associated with knowledge sharing. From the above discussion, organisational culture has an influence on IR practices. Thus, we hypothesise that:

H2. Organisational culture is positively associated with IR practices.

2.2.3 Control variables. This study controlled for firm age and firm size (number of employees and daily income). The objective was to avoid rejecting the hypotheses that should have been accepted ([Bartov et al., 2000](#)). Existing studies show that older firms tend to disclose more information other than financial aspects because the firm tends to become more sensitive to investors and other stakeholders need with age and experience ([Bhayani, 2012](#); [Galani et al., 2011](#); [Mahajan and Chander, 2011](#); [Nandi and Ghosh, 2012](#)). In regard to firm size, larger firms have high visibility and experience more pressure from various stakeholder groups to disclose their social activities, as such they tend to disclose more information to the general public than smaller firms ([Kansal et al., 2014](#)). In addition, larger firms seem able to generate stronger competitive capability than smaller firms as a result of their superior access to resources, greater market power and economies of scale and scope ([Glen et al., 2003](#)).

3. Methodology

3.1 Design, population and sample

To test the relationship between accountant's competences, organisation culture and IR practices, this study used a cross-sectional survey using primary data from the participating firms. The choice of the method is because developing economies like Uganda have not yet advanced to the level of having centralised detailed panel data on manufacturing firms.

The population comprised of 49 manufacturing firms located in Mbarara District in Uganda (Business and licence department as at August 2016); out of which 43 participated in this study. The choice was because Mbarara has the highest concentration of corporates and businesses in the southwestern region of the country. Three senior staff from the accounts office were selected per firm considering the fact that they were more informed on the subject under investigation. The descriptive statistics in [Table 1](#) show that majority of these staff from the accounts office were male (55.8%, 72), 21–30 years age bracket (51.2%, 66), married (48.8%, 63) and had bachelors' degree (53.5%, 69). The responses from the officers were aggregated at the firm level using the firm ID as a break function in SPSS. In terms of firm characteristics, the majority of the firms were between 2 and 5 years old (34.9%, 15), followed by those more than 10 years old (27.9%, 12); had between 16 and 30

Category	Frequency (<i>n</i> = 129)	(%)
<i>Gender</i>		
Male	72	55.8
Female	57	44.2
<i>Age bracket</i>		
10–20 years	3	2.3
21–30 years	66	51.2
31–40 years	27	20.9
41–50 years	12	9.3
Above 50	21	16.3
<i>Level of education</i>		
College certificate	9	7.0
Diploma	48	37.2
Bachelors	69	53.5
Others specify	3	2.3

Table 1.

Respondents' profile

Source: Primary data

full-time employees (39.5%, 17); belonged to the category of beverages and soft-drinks (34.9%, 15) and had daily sales between shs. 3,660,000/(\$989) – shs. 23,330,000/(\$6,305.4) (37.2%, 16).

3.2 Data collection tool

Data were collected using a closed-ended survey questionnaire. It comprised four sections. Section A covered the demographic factors. Section B covered items relating to organisation culture. Section C covered items relating to the accountant's competence. All the items used were derived from those developed and tested by previous scholars. Based on the theoretical underpinnings and empirical literature, the current study variables were operationalised and measured as follows:

Accountant's competences – a self-report approach was used to measure competence. Particularly, the issues examined included general knowledge, skills and abilities related to interaction and adaptability/behaviour flexibility. This was based on the notion that when an individual is able to interact smoothly with others, is flexible and can easily adapt to changes in the environment, this can easily be translated into his/her work performance, in this case implementing IR practices. We particularly used items from [Wiemann \(1977\)](#) and [Rubin and Martin \(1994\)](#) which were largely focussed on the communicative competences (interaction and adaptability/behaviour flexibility). The items were anchored on a four-point scale ranging from “not at all” (1) to “a great deal” (4). The questionnaire items are shown in [Appendix 1: Accountant's competence questionnaire items](#).

Organisation culture – Issues examined captured the “way the organisation does its things” in terms of managing change, goal achievement, coordinated teamwork, customer orientation and cultural strength. The Organisation Culture Assessment Questionnaire by [Sashkin \(1997\)](#) was used (see [Appendix 2](#) for Organisational culture questionnaire items):

The items were anchored on a four-point scale ranging from “strongly disagree” (1) to “strongly agree” (4).

Integrated reporting practices – Assessing the extent of IR requires a review of company annual reports / sustainability reports/integrated reports. Unlike financial institutions that are required to submit their annual reports to the regulatory body, manufacturing firms in

Uganda do not have such a requirement. Obtaining panel data of listed firms in the country would have been an alternative option, but only two manufacturing companies were listed on the stock market by end of 2018 when data collection for this study commenced. Moreover, a handful of manufacturing companies in Uganda participate in the Financial Reporting Awards organised by ICPAU. Given the complications in accessing the actual financial reports, we opted to solicit the perceptions of the respondents. Respondents were encouraged to complete the questionnaire on IR based on their annual reports. The responses were anchored on a four-point scale (“never” = 1, “rarely” = 2, “often” = 3 “always” = 4). The Likert scale was then divided into two. Where respondents indicated their frequency of disclosing an item was within 1–2 (never or rarely), a value of 0 was given to indicate that, on average, the item is not disclosed in the entity’s annual report. Where respondents indicated their frequency of disclosing an item was within 3–4 (often or always), a value of 1 was given to indicate that on average, the item is disclosed in the entity’s annual report. The reason for presenting the questionnaire to respondents on the dependent variable on a four-point Likert scale was not to confuse respondents, as they were already used to a four-point Likert scale on the independent variables. By remaining consistent on the Likert scale points, we aimed to minimise mistakes. Otherwise, we would have had questionnaire items anchored on a binary scale of YES or NO. The values were then used to construct the un-weighted IR index (see [Appendix 3](#) for the integrated report checklist developed from IIRC framework of 2013 for the items used to compute the index).

Specifically, a percentage level of disclosure was computed. This was done by dividing the number of items disclosed by the total number of required disclosures. The percentage score was put on a Likert scale of 1 to 4 to match the scale of the predictor variables. In this case 0–25% = 1; 26%–50% = 2; 51%–75% = 3; and 76%–100% = 4. This process is consistent with previous studies ([Haji and Anifowose, 2016](#); [Kılıç and Kuzey, 2018](#); [Marx and Mohammadali-Haji, 2014](#); [Stent and Dowler, 2015](#); [Lee and Yeo, 2016](#)), except that these studies used the actual financial reports whilst the current study relied on perceptions.

3.3 Validity and reliability

Validity refers to whether the research instrument truly measures what it was intended to measure or how truthful the research results are ([Field, 2009](#)). We tested convergent validity by running a principal component factor analysis with varimax. However, before performing the factor analysis, the suitability of the data for factor analysis was assessed based on sample size adequacy, the Kaiser–Meyer–Olkin (KMO) and Bartlett tests. The following criterion is used to assess and describe the sampling adequacy. The recommended cut-off for the KMO is 0.7 ([Field, 2009](#); [Kaiser, 1974](#)). Specifically, the KMO for the study variables was 0.766 for accountant’s competences and 0.604 for organisational culture. Bartlett’s test of sphericity in all scales reached statistical significance (significant value was 0.000 for each scale). This implies that the data was suitable for factor analysis.

Having established the sample adequacy for factor analysis, validity was assessed by running a principal component factor analysis with varimax. The factors extracted, factor loadings and eigen values were used as parameters to assess validity. The recommended cut-off for factor loadings 0.5 and the eigen values extracted should be one and above ([Field, 2009](#)). The results revealed as follows: *For accountant’s competences*, 3 factors with item loadings above 0.5 were extracted. These were labelled knowledge (variance explained = 28.85%), abilities (VE = 20.67%) and skills (VE = 19.52%). *For organisational culture*, 5 factors with item loadings above 0.5 were extracted. These were labelled customer orientation (VE = 20.12%), coordinated teams (VE = 16.65%), culture strength (VE = 14.54%), managing change (VE = 11.59%) and goal achievement (VE = 11.46%). Reliability

in this study was further assessed using the Cronbach's alpha test Nunnally (1978) recommends a cut-off point of 0.7. The results showed that the Cronbach's alpha coefficient as follows: accountant's competences ($\alpha = 0.81$) and organisational culture ($\alpha = 0.78$).

3.4 Data analysis

All analyses were performed using SPSS v21. Data were cleaned and aggregated at the firm level using the firm ID as the break function. This was followed by parametric assumptions diagnostic tests. The results revealed that the parametric assumptions were met. Descriptive statistics were used to describe the sample characteristics and summarise the data. The relationships between the study variables were established using the zero-order correlation analysis. Whilst a hierarchical regression analysis was performed to ascertain the contribution of the predictor variables (accountant's competences and organisation culture) in explaining the variations in IR practices. Specifically, three regression equations were generated to define the models used:

$$\text{Model 1: IR} = \beta_0 + \beta_1\text{Age} + \beta_2\text{Emp} + \beta_3\text{Inc} + \varepsilon$$

$$\text{Model 2: IR} = \beta_0 + \beta_1\text{Age} + \beta_2\text{Emp} + \beta_3\text{Inc} + \beta_4\text{AC} + \varepsilon$$

$$\text{Model 3: IR} = \beta_0 + \beta_1\text{Age} + \beta_2\text{Emp} + \beta_3\text{Inc} + \beta_4\text{AC} + \beta_5\text{OC} + \varepsilon$$

Where:

IR = Integrated reporting practices;

β_0 = is a constant;

$\beta_1\text{Age}$ = the standardised beta coefficient of business age;

$\beta_2\text{Emp}$ = the standardised beta coefficient of No. of employees;

$\beta_3\text{Inc}$ = the standardised beta coefficient of daily income;

$\beta_4\text{AC}$ = the standardised beta coefficient of accountant's competences;

$\beta_5\text{OC}$ = the standardised beta coefficient of organisation culture; and

* ε = error term.

4. Results

4.1 Descriptive statistics

The summary descriptive statistics for accountant's competences, organisational culture and IR practices by manufacturing firms in this study are presented in Table 2. Regarding accountant's competence, the results show that on average, the accountant's possessed quite a bit of interaction and adaptability knowledge, skills and abilities (Mean = 3.23, SD = 0.51).

Variable	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. dev. Statistic	Variance Statistic
Accountant's competences	2.00	4.00	3.231	0.51	0.26
Organisational culture	1.97	3.80	3.047	0.435	0.189
Integrated reporting practices	1.82	4.00	2.842	0.525	0.276
Business age	1.00	4.00	2.326	1.229	1.511
Number of employees	1.00	6.00	2.791	1.597	2.550
Daily business income	1.00	5.00	2.744	1.255	1.576

Table 2.

Descriptive statistics **Source:** Primary data

The results also show that generally, all the participating firms agreed that to statements capturing their organisational culture (Mean = 3.04; SD = 0.43). The results further show that the firms rarely report the elements of IR in one report (Mean = 2.84; SD = 0.53).

4.2 Correlation analysis

Correlation analysis was performed to establish the associations between organisational culture, accountant's competences, and integrated reporting practices. The results are presented in Table 3.

Results in Table 3 reveal that with regard to firm characteristics, the number of employees and daily income is positively and significantly correlated with IR practices ($r = 0.357, p < 0.05$ and $r = 0.483, p < 0.05$, respectively). Whilst firm age is insignificantly correlated with IR practices ($r = 0.043, p > 0.05$). This means that the age of the manufacturing firm does not really matter in the IR practices. The results further reveal a positive and significant relationship between accountant's competences and IR ($r = 0.652, p < 0.05$). However, the relationship between organisation culture and IR practices was found to be insignificant ($r = 0.071, p > 0.05$). These results mean that positive changes in accountant's competences are associated with positive changes in IR practices amongst manufacturing firms in Mbarara District. Whilst organisation culture seems not to matter in the IR practices amongst manufacturing firms in Mbarara district.

4.3 Hierarchical results

A hierarchical regression analysis was performed to ascertain the contribution of the confounding variables (business age, number of employees, daily income), accountant's competences and organisation culture in explaining the variations in IR practices. The results are summarised in Table 4.

The results in Table 4 shows that in Model 1, the confounding variables (business age, number of employees, daily income) have significant explanatory power of 26% ($R^2 = 0.263, sig = 0.007$). However, of the three factors, daily income was found to be a significant predictor of IR practices (Beta = 0.431, sig = 0.034). Model 2 shows that the addition of accountant's competences to the equation contributes an extra 19% variance explained by the model ($R^2\Delta = 0.191; sig. f\Delta = 0.001$). Thus, the results offer support to *H1 (H1)*. However, we note that the addition of an accountant's competences to the equation renders daily income an insignificant predictor of IR practices in manufacturing firms in the Mbarara district. The addition of organisation culture in Model 3 reveals an insignificant extra 0.2% of the variance explained in IR practices. The result does not offer support to *H2 (H2)*. Further, the relationship between accountant's competence and IR practices remained positive and significant. Finally, the

Variable	1	2	3	4	5	6
Business age (1)	1					
Number of employees (2)	0.594**	1				
Daily business income (3)	0.348*	0.709**	1			
Organisational culture (4)	0.095	0.369*	0.161	1		
Accountant's competences (5)	0.021	0.552**	0.576**	0.182	1	
Integrated Reporting practices (6)	0.043	0.357*	0.483**	0.071	0.652**	1

Notes: **Correlation is significant at the 0.01 level (two-tailed); *Correlation is significant at the 0.05 level (two-tailed)

Source: Primary data

Table 3.
Correlation analysis results

JFRA	Variable	Model 1	Model 2	Model 3
	<i>Independent variables</i>			
	Accountant's competences		0.616**	0.614**
	Organisational culture			0.053
	<i>Control variables</i>			
	Business age	-0.212	0.059	0.076
	Number of employees	0.177	-0.190	-0.222
	Daily income	0.431**	0.243	0.248
	<i>Model summary:</i>			
	R^2	0.263	0.454	0.456
	Adjusted R^2	0.206	0.396	0.383
	R^2 change	0.263	0.191	0.002
	F change	4.634	13.302	0.149
	F-statistics	4.634	7.897	6.206
Table 4. Hierarchical regression results	Note: **Significant at the 0.01 level Source: Primary data			

variables entered in the overall model altogether explain 38% (Adj. $R^2 = 0.38$) of the variance in IR practices, meaning that the remaining 62% is explained by other factors not considered in this study. It should be noted that the standardised coefficients are used in Table 4 and not the unstandardised coefficients. This is because this study uses data from different measurement units. According to Field (2009), the standardised beta values are all measured in standard deviation units and so are directly comparable which means that they provide a better insight into the "importance" of a predictor in the model.

We performed further regression analyses to establish the association between accountant's competences and organisational culture with the specific sub-scores of IR practices (organisational overview and external environment, governance, business model, risk and opportunities, strategy, performance, outlook and basis of preparation and presentation). The objective was to establish which of the elements of IR was more related to either accountant's competences or organisational culture. The results are presented in Tables 5 and 6. It was established that accountant's competences is more strongly related to organisation overview and external environment, governance and risks and opportunities, respectively. We found an insignificant relationship between organisational culture and all the individual content elements of IR.

5. Discussion

From the results, we now know the association between accountant's competences, organisational culture and IR practices in manufacturing firms. This study results further indicate that accountant's competences are more associated with organisational overview and external environment, governance and risks and opportunities. This means that accountants in Uganda focus more on disclosing more information the organisation's mission and vision, the macro and the micro environment as they possibly are seen as a basis for decision-making by the investors, as an integrated report is investor focussed. Also, accountants put emphasis on disclosing information related to the entity's governance mechanisms to enable the various stakeholders to assess the quality of governance in terms of ethics of the respective manufacturing firms. Accountants are also more concerned with

Integrated reporting practices

Variable	1	2	3	4	5	6	7	8
<i>Independent variable</i>								
Accountant's competences	0.559**	0.741**	0.329**	0.613**	0.411**	0.387**	0.421**	0.464**
<i>Control variables</i>								
Business age	-0.187	0.006	-0.067	0.109	-0.050	-0.152	-0.077	0.044
Number of employees	-0.013	0.084	0.075	0.040	0.172	0.085	-0.182	-0.179
Daily income	0.160	-0.179	0.468**	0.039	0.260	0.247	0.267	0.431**
<i>Model summary</i>								
R ²	0.444	0.483	0.563	0.458	0.512	0.373	0.264	0.469
Adjusted R ²	0.385	0.429	0.517	0.401	0.460	0.307	0.187	0.413
F-statistics	7.586	8.882	12.243	8.031	9.959	5.660	3.415	8.399
Durbin Watson	1.551	1.076	1.563	2.195	1.446	1.436	1.004	2.177

Table 5.

Regression results of accountant's competences and IR components

Notes: **Significant at the 0.01 level. Legend: 1-organisational overview and external environment, 2-governance, 3-business model, 4- risk and opportunities, 5-strategy and resource allocation, 6-performance, 7-outlook, 8-basis of preparation and presentation

Source: Primary data

Variable	1	2	3	4	5	6	7	8
<i>Independent variable</i>								
Organisational culture	0.188	0.216	-0.128	-0.012	0.161	-0.076	-0.088	-0.009
<i>Control variables</i>								
Business age	-0.367	-0.243	-0.257	-0.165	-0.174	-0.349	-0.293	-0.164
Number of employees	0.201	0.388	0.352	0.413	0.314	0.364	0.125	0.104
Daily income	0.347	0.066	0.559**	0.226	0.399**	0.360	0.390	0.572**
<i>Model summary</i>								
R ²	0.314	0.243	0.521	0.269	0.447	0.303	0.181	0.361
Adjusted R ²	0.242	0.163	0.471	0.192	0.389	0.229	0.095	0.293
F-statistics	4.352	3.051	10.353	3.496	7.687	4.124	1.206	5.362
Durbin Watson	1.274	0.756	1.410	1.761	1.290	1.458	0.913	1.951

Table 6.

Regression results of organisational culture and IR components

Notes: **Significant at the 0.01 level Legend: 1-organisational overview and external environment, 2-governance, 3-business model, 4- risk and opportunities, 5-strategy and resource allocation, 6-performance, 7-outlook, 8-basis of preparation and presentation

Source: Primary data

the disclosure of risks and opportunities as this assures the investors about the going concern of the entity. As a result, the entity is able to attract funding from the various stakeholders most importantly the investors, lenders and customers. It should be noted that accountant's competences are further associated with other elements of an integrated report as indicated in the International IR Framework which signifies the need to have that accountant with sufficient knowledge, skills and abilities to have an integrated report that complies with the International IR Framework of 2013.

Whilst the accountant's competences and IR practices are positively and significantly associated, the association of organisational culture is inconsequential. The results mean that if we are to see more firms implement IR, accountant's competences must improve. We

know that IR is “a concise communication about how an organisation’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term” (IIRC, 2013, p. 7). Two things emerge from this definition: firstly, IR involves interconnecting between the financial, social and environmental dimensions of business performance in an attempt to achieve a more holistic viewpoint. Secondly, it involves providing information on factors that influence organisational value over time. In this study, we assessed the general knowledge, skills and abilities related to interaction and adaptability/behaviour flexibility. We posit that when an individual is able to interact smoothly with others, is flexible and can easily adapt to changes in the environment, this can easily be translated into his/her work performance, in this case implementing IR practices. Besides, someone who can manage interaction and change will always have others’ interests at heart, which is what IR is all about. In line with the legitimacy theory, by adopting IR, firms strive to disclose information to their stakeholders to ensure that their behaviour is perceived legitimate and to aid stakeholders’ decision-making. The results are consistent with legitimacy theory and previous study findings on the relationship between accountant’s competences and IR. For example, Oktorina *et al.* (2021) found that the country-level accounting competences are important for the adoption of the international IR framework (2021).

The result on organisational culture is contrary to the organisational culture model and the findings of previous studies such as Nyahas *et al.* (2017). Nyahas *et al.* (2017) found that organisational culture is positively and significantly associated with voluntary disclosure. The probable reason for the non-significance of the relationship between organisational culture and IR is that majority of the firms in Uganda are not well conversant with the new reporting regimes and as such, IR has not yet been embraced in their culture. Whilst there are efforts by professional accountancy bodies, there are still undesirable IR practices in Uganda (Bananuka *et al.*, 2019). However, the regulator of accountancy in Uganda – ICPAU has organised training workshops for accountants across the country to improve the current reporting practices. The ICPAU has further organised the Financial Reporting Awards where firms compete for the best integrated and or sustainability report. Such efforts are aimed to promote sustainability and IR practices. Therefore, there is a serious drive to promote the new reporting practices and that is why a considerable number of firms currently prepare sustainability reports although this may not have been incorporated in the organisational culture of all organisations. Also, the non – significance of relationship between organisational culture and IR could be a result of the smaller sample involved in the study.

6. Conclusion and implications

The aim of this study was to investigate the association between accountant’s competences, organisation culture and IR practices in manufacturing firms. This was achieved through a questionnaire survey of 43 manufacturing firms located in the Mbarara District, second to the capital city of Kampala, Uganda. The study results suggest that IR practices in manufacturing firms are associated with accountant’s competences rather than organisational culture. In the additional analyses, this study found that accountant’s competences are associated with all the content elements of an integrated report as enshrined in the International IR Framework of 2013, unlike organisational culture.

The study has a number of implications for several groups. For academia, this study expands on our understanding of what matters for improvement in IR practices in an emerging economy like Uganda whose history is characterised by civil wars and political unrest. The findings of this study provide support for legitimacy theory. Accountants must

prepare integrated reports if they are to gain or maintain their licence to continue operating within the societies where their manufacturing firms are located. Those in practice may use this study results to promote better reporting practices through the attraction of professional accountants with the necessary expertise in corporate reporting practices or training of existing accountants in integrated and sustainability reporting. From this study results, it is clear that accountant's competences are associated with all the content elements of an integrated report, unlike organisational culture which implies that, the practice has to focus on how to improve the accountant's competences if their reporting practices must improve to manage legitimacy. Society especially civil society organisations, political leaders and consumer movement organisations may demand disclosure of company performance in terms of social, environmental, governance and economic performances in their reports. The policymakers may also opt to mandate IR amongst manufacturing firms and this could be done through the regulator of accountancy in Uganda (ICPAU).

Like any other study, this study is not without limitations. Firstly, this study was cross-sectional and so, monitoring changes in behaviour over time was not possible. Secondly, the variables in this study explained 38% of the variance in IR practices. There is a need for research in other determinants of IR that may explain the remaining 62% of the variance. This study suggests that future research investigates whether institutional pressures if any, are behind the improved practice of IR and or sustainability reporting in Uganda and in other developing countries. The control variables in this study are limited to firm age and firm size. Future studies may include other control variables such as profitability, leverage and capital structure. The non-significance of the relationship between organisational culture and IR practices provides more avenues for further research. For example, more studies establishing the same relationship could be conducted in Uganda involving large samples to see if the non-significance was due to the smaller sample. Also, the same relationship could be tested in other non-manufacturing firms.

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Appendix 1. Accountant's competences questionnaire items

- (1) Knowledge:
- I know how to adapt to changing situations
 - I know how to treat people as individuals
 - I generally know what type of behaviour is appropriate in any given situation
 - I am sensitive to others' needs at the moment
 - I make an effort to understand reasons for changes and their impact on operations
 - I make proposals to modify methods and procedures
- (2) Skills:
- I find it easy to get along with others
 - I am easy to talk to
 - I do not make unusable demands on my friends
 - I am an effective conversationalist
 - I am interested in what others have to say in a conversation
 - I generally say the right thing at the right time
 - I am flexible
 - I remain productive in difficult situations
- (3) Abilities:
- I rarely interrupt others
 - I can deal with others effectively
 - My conversation is characterised by smooth shifts from one topic to another
 - I pay attention to the conversation
 - I do follow the conversation very well
 - I take an interest in new ideas and new ways of doing things
 - I take prudent risk

Appendix 2. Organisational culture questionnaire items

- (1) Managing change:
- People are flexible and adaptable when changes are necessary
 - People feel that most change is the result of pressures imposed from higher up in the organisation
 - People have a clear idea of why and how to proceed throughout the process of change
 - People believe that change happens too quickly and causes too much disruption
 - People believe they can influence and affect their work through their ideas and involvement
 - People believe that their concerns and anxieties during periods of change are heard and taken into consideration
- (2) Achieving goals:
- Individuals and teams have clearly defined goals that relate to the goals and mission of the business
 - People and teams are often expected to reach goals, which they believe are unattainable

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- Individuals and teams are measured and rewarded according to how well goals are achieved
 - Individuals and teams participate in defining specific goals
 - We constantly stretch our goals, to continuously improve
 - Individuals, teams and functional areas often have incompatible goals
- (3) Coordinated team:
- Teams often lack the authority needed to get the job done effectively
 - People believe in teamwork, the “what’s in it for us” approach rather than “what’s in it for me”
 - People lack the interpersonal and technical skills they need to work effectively in teams
 - People know what’s expected of them and understand their impact on other people, teams and functions
 - People believe in working together collaboratively, preferring cooperation over competition
 - Managers at all levels work together as a team to achieve results for the organisation
- (4) Customer orientation:
- We give the highest priority and support to meeting the needs of clients and customers and to solving their problems
 - Our policies and procedures help us to provide the service our customers want and need
 - People often see customer and client problems as someone else’s responsibility
 - People are always looking for new ways to better serve clients and customers
 - Employees who do the best job of serving customers are more likely than other employees to be recognised or rewarded
 - When customers have problems with the products or services they receive, those problems are always resolved to their satisfaction
- (5) Culture strength:
- People value and make use of one another’s unique strengths and different abilities
 - Everyone knows and understands our business objectives and priorities
 - People sometimes compromise company policies or principles to reach operational goals
 - Business decisions are most often made on the basis of facts, not just perceptions or assumptions
 - People have access to timely and accurate information about what’s really happening in the organisation and why
 - Everyone strongly believes in a set of shared values about how people should work together to solve common problems and reach mutual objectives

Appendix 3. The integrated report checklist developed from the IIRC framework of 2013

- (1) Organisational overview and external environment:
- This firm includes in its report its mission
 - This firm includes in its report its vision
 - This firm includes in its report its culture
 - This firm includes in its report its ethics
 - This firm includes in its report its values
 - This firm includes in its report its ownership
 - This firm includes in its report its operating structure
 - This firm includes in its report its principal activities
 - This firm includes in its report its markets
 - In this firm's report, the threat of new competition is disclosed
 - In this firm's report, the presence of substitute products by other producers is disclosed
 - The bargaining power of customers/clients of this firm is disclosed in this firm's report
 - The intensity of competitive rivalry is disclosed in this firm's report
 - The bargaining power of suppliers of this firm is disclosed in this firm's report
 - This firm includes in its report interests of key stakeholders
 - This firm includes in its report the legitimate needs of key stakeholders
 - This firm includes in its report significant changes from prior periods
 - This firm includes in its report its macroeconomic conditions
 - This firm includes in its report its microeconomic conditions
 - This firm includes in its report its industry trends
 - This firm includes in its report its relative strengths and weaknesses of competitors and customer demand
 - This firm includes in its report, the speed of technological change
 - This firm includes in its report, the effect of technological change on its operations
 - This firm includes in its report, societal issues such as population and demographic changes and human rights
 - This firm includes in its report, environmental challenges such as climate change, the loss of ecosystems and resource shortages
 - This firm reports on the legislative environment in which it operates in its report
 - This firm reports on the regulatory environment in which it operates in its report
 - This firm reports on the political environment in which it operates
- (2) Governance:
- This firm includes in its report its leadership structure e.g. skills and diversity
 - This firm includes in its report processes used to make strategic decisions
 - This firm includes in its report the particular actions those charged with governance have taken to influence the strategic direction
 - This firm includes in its report the particular actions those charged with governance have taken to monitor the strategic direction

- This firm includes in its report the particular actions those charged with governance have taken to influence the firm's approach to risk management
 - This firm includes in its report the particular actions those charged with governance have taken to monitor the firm's approach to risk management
 - This firm includes in its report, how the firm's culture is reflected in its use of the capitals
 - This firm includes in its report, how the firm's ethics is reflected in its use of the capitals
 - This firm includes in its report, whether the firm is implementing governance practices that exceed legal requirements
 - This firm includes in its report, the responsibility those charged with governance take for promoting innovation
 - This firm includes in its report, the responsibility those charged with governance take for enabling innovation
 - This firm includes in its report how remuneration and incentives are linked to value creation in the short, medium and long term
- (3) Business model:
- This firm includes in its report its attitude to risk
 - This firm includes in its report key elements of the business model
 - This firm includes in its report its inputs
 - This firm includes in its report how the business model has been designed to adapt to change
 - This firm includes in its report its outputs
 - This firm includes in its report its outcomes
 - This firm includes in its report its business activities
 - This firm includes in its report its key products and services
- (4) Risks and opportunities:
- This firm includes in its report the specific source of risks
 - This firm includes in its report the specific source of opportunities
 - This firm includes in its report the key opportunities that are specific to the organisation
 - This firm includes in its report the key risks that are specific to the organisation
 - This firm includes in its report the specific steps being taken to mitigate key risks
 - This firm includes in its report the specific steps being taken to manage key risks
 - This firm includes in its report the specific steps being taken to create value from key opportunities
 - This firm includes in its report, the assessment of the likelihood that the risk or opportunity will come to fruition
- (5) Strategy and Resource allocation:
- This firm includes in its report, the organisations short-term strategic objectives
 - This firm includes in its report, the organisations medium-term strategic objectives
 - This firm includes in its report, the organisations long-term strategic objectives

- This firm includes in its report, the strategies it has in place to achieve those strategic objectives
 - This firm includes in its report, the strategies it intends to implement to achieve those strategic objectives
 - This firm includes in its report, the resource allocation plans it has to implement its strategy
 - This firm includes in its report, the strategies it intends to implement to achieve those strategic objectives
- (6) Performance:
- This firm includes in its report the quantitative indicators with respect to targets and risks and opportunities
 - This firm includes in its report the material effects on capitals up and down the value chain
 - This firm includes in its report key performance indicators that combine financial measures with other components
 - This firm includes in its report the organisation's effects (both positive and negative) on the capitals
- (7) Outlook:
- This firm includes in its report its expectations about the changes in the external environment in which the organisation operates in the short term
 - This firm includes in its report its expectations about the changes in the external environment in which the organisation operates in the medium term
 - This firm includes in its report its expectations about the changes in the external environment in which the organisation operates in the long term
 - This firm includes in its report its equipped to respond to the critical challenges
 - This firm includes in its report its comparisons of actual performance to previously identified targets
 - This firm includes in its report the legal or regulatory requirements
- (8) Basis of preparation and presentation:
- This firm includes in its report its summary of the significant frameworks
 - This firm includes in its report an explanation of the uncertainty
 - This firm includes in its report the volatility, certainty range or confidence interval associated with the information provided
 - This firm includes in its report its measurement methods and underlying assumptions
 - This firm includes in its report actions to manage the matter and how effective they have been
 - This firm includes in its report materiality determination process

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