Evaluation of the extent of disclosure of the UN Sustainable Development Goals (SDGs) in integrated reports by 40 South African companies listed on the Johannesburg Stock Exchange (JSE)

A research report submitted by

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ABSTRACT

In a world where resources are finite, sustainable development is of utmost importance to ensure the survival of the world as we know it. Many of the crises faced by the world such as poverty, a lack of clean water, deforestation and pollution can be reduced and, potentially, resolved through contributions from public and private organisations. In actual fact, many of these organisations contribute to the problems at hand as a result of a lack of regulatory guidance on sustainable development.

This report provides insight into the integrated reports of 40 JSE-listed companies using the process of content analysis to ascertain each company's contribution to sustainable development, through aligning its corporate practices with achieving the UN Sustainable Development Goals (SDG). No guideline currently exists for preparing SDG-related disclosures to be presented in integrated reports. As a result, a disclosure checklist was created for this purpose.

It was found that SDG-related disclosures are predominantly vague and minimal, if they were given at all. Additionally, companies tend to provide more SDG-related disclosures over time.

This research contributes to a small body of existing research in the field of SDG disclosures in integrated reports. This study is the first study to analyse the extent of SDG-related disclosures in South Africa.

DECLARATION

I hereby declare that this research report is my unaided work. It is submitted in partial fulfilment of the degree of Master of Commerce in Accountancy by Coursework and Research Report, at the University of the Witwatersrand, Johannesburg. It has not been submitted elsewhere to be awarded for another degree or for examination purposes at any other university.

Signature:

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II. LIST OF ABBREVIATIONS AND ACRONYMS

ABBREVIATION/ACRONYM	DESCRIPTION
CEO	Chief Executive Officer
CSR	Corporate Social Responsibility
ESG	Environmental, Social and corporate Governance
EY	Ernst & Young
GRI	Global Reporting Initiative
IA	Internal Audit
ICB	Industry Classification Benchmark
IFRS	International Financial Reporting Standards
IIRC	International Integrated Reporting Council
IR	Integrated Reporting
ITG	Integrated Thinking and Governance
JSE	Johannesburg Stock Exchange
JT	Jonckheere-Terpstra
KW	Kruskal-Wallis
MAT	Material Sustainable Development Issues
MPG	Measurement of Progress
RQ	Research Question
SASB	Sustainability Accounting Standards Board
SBM	Strategy and Business Model
SDC	Sustainable Development Context
SDG	Sustainable Development Goals
SDGD	Sustainable Development Goals Disclosure
SME	Small-Medium Sized Entity
UN	United Nations
VRF	Value Reporting Foundation

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1. INTRODUCTION

1.1. Context and purpose of the study

It is widely known that providing financial information relevant only to investors does not adequately deliver information about value creation (Adams et al., 2020; Atkins et al., 2015; du Toit, 2017; Kılıç & Kuzey, 2018; Macias & Farfan-Lievano, 2017). To deliver sufficient information on value creation, uphold the trust of the public and maintain a good reputation, the needs of all stakeholders should be addressed by communicating the organisation's activities toward a sustainable future (Adams et al., 2020). While integrated reporting (IR) in isolation may not achieve this, the inclusion of reporting on the SDGs and the organisation's achievements towards reaching them in the integrated report assist in achieving this objective.

As a result of the financial impact which organisations have on a country's gross domestic product, reporting the organisation's external impact in line with the SDGs gives stakeholders a holistic view of the organisation's external impacts (Adams, 2017). When providing SDG-related disclosures in an integrated report, an organisation is able to communicate its contribution towards achieving a sustainable future for the world. By reporting this information in an integrated report and aligning it with integrated reporting principles, the external impacts of the organisation can be aligned with the long-term value created by the organisation for all stakeholders (Adams et al., 2020).

Some preparers do not view the SDGs as an all-encompassing tool that helps to report non-financial information (Department for Business Energy and Industrial Strategy, 2020, as cited in Abhayawansa & Adams, 2021). Numerous organisations are reporting their activities against the SDGs to assure stakeholders that the organisation does not take the SDGs and sustainable development lightly (Abhayawansa & Adams, 2021; Farneti et al., 2019).

The SDGs have become increasingly relevant in recent years (Erin & Bamigboye, 2021). The effect of the SDGs on the corporate sphere prompts organisations to align their business practices with the SDGs to achieve the goals and help to achieve a sustainable future. Including the SDGs and their related targets in an organisation's business culture, strategy and operations can improve the quality of the corporate

reporting of that entity (Schaltegger et al., 2017). In addition, including SDG-related disclosures enables organisations to accept innovative corporate reporting practices and to challenge the limitations of traditional corporate reporting (Erin & Bamigboye, 2021).

This study analyses the integrated reports of 40 JSE-listed companies to establish the sustainable development practices of the organisations. Additionally, the extent of the alignment of these practices with achieving the UN SDGs is evaluated using a normative reporting framework grounded in the prior academic research and relevant codes of best practice (see Erin & Bamigboye, 2021). Possible determinants of SDG reporting are also explored. There is currently no existing guideline for SDG-related disclosures to be presented in integrated reports (Adams et al., 2020). As a result, a disclosure checklist was created for this purpose. South Africa's establishment of IR provides an ideal context in which to evaluate the extent of SDG and related disclosures (Malola & Maroun, 2019; McNally et al., 2017).

1.2. The research questions

Prompted by underlying isomorphic pressures and organisational legitimacy, SDG and integrated reporting are increasing (Erin & Bamigboye, 2021; Malola & Maroun, 2019). The size of companies, governance structures and environmental and social impacts can further drive SDG reporting within integrated reports of organisations. This is based on earlier findings that these factors are determinants of more extensive sustainability or integrated reporting in general (Alrazi et al., 2015; de Villiers et al., 2017; De Villiers & Maroun, 2018) .

Consequently, this research report addresses the following research questions (RQ):

RQ1: To what extent are SDG disclosures made by South African listed companies?

RQ2: What are the possible determinants of reporting on the SDGs by South African listed companies?

RQ2a: Do larger South African listed companies include more SDG disclosures in their integrated reports than do smaller companies?

RQ2b: Do companies with board members experienced in sustainable development provide more SDG disclosures than other companies provide?

RQ2c: Do companies with larger environmental and social impacts provide more SDGs disclosures in their integrated reports than do those with smaller impacts?

1.3. Significance of the study

A study by Bebbington and Unerman (2018) promoted SDG and related disclosures by organisations after evaluating the achievement of the SDGs from an accounting research perspective. Their study created a new avenue of accounting research (Erin & Bamigboye, 2021; Erin et al., 2022; Hopper, 2018). As a result, this study increases the small body of research in the SDG reporting field and illustrates the reporting practices of South African companies with regards to SDG reporting. This report also promotes the importance of SDG reporting with specific emphasis on disclosure in integrated reports.

Additionally, preparers of integrated reports can benefit from the research by applying the developed disclosure checklist to ensure that the most relevant and useful SDG related disclosures are made. The research points out the extent of SDG disclosures currently being made in South Africa and analyses the relationship between the disclosures and the company size, governance knowledge base and social and environmental impacts. The research will illustrate the importance of reporting on the SDGs within integrated reports and suggest that preparers include these types of disclosures in integrated reports. Finally, the research extends the awareness of the SDGs at a corporate level, and through the disclosures in integrated reports, to the level of the users. This can increase and improve attempts of trying to achieve the SDGs.

1.4. Limitations, and delimitations

Firstly, this study is limited to companies listed on the JSE as all JSE companies are required to prepare integrated reports to comply with the King IV Code of Governance. Non-listed companies are not required to prepare integrated reports making it difficult

to assess whether the company discloses SDG information. The limitation is necessary to avoid inconsistency in the sources of the data.

Secondly, this report does not attempt to assess the quality of SDG-related disclosures. There is no existing scale for measuring the quality of these disclosures. As the first South African study to assess SDG-related disclosures, only the extent of the disclosures has been assessed.

Lastly, this study is limited to integrated reports, creating a source-based limitation because of information included in other reports or from other sources such as organisational websites and press releases not being considered. The risk is reduced because of the integration of information in an integrated report resulting in material information concerning the organisation being included in the report (IIRC, 2013, 2021).

The following chapters will provide further information on this topic. Chapter 2 will first provide background information about the topic. Chapter 3 discusses the methodology applied by the researcher in completing this study. Chapter 4 will showcase the results of the study and chapter 5 will summarise and conclude the findings of the study. References and Appendices can be found at the end of the report.

2. LITERATURE REVIEW

2.1.1. What is Integrated Reporting (IR)?

IR is a form of corporate reporting which incorporates both financial and non-financial information in a single, concise report (du Toit, 2017; Engelbrecht et al., 2018; Hsiao et al., 2021; Lakshan et al., 2021; Malafronte & Pereira, 2020). Grounded in the philosophy of integrated thinking, integrated reports provide a holistic view of an entity by telling the firm's unique "story" (de Villiers et al., 2017; Ecim & Maroun, 2022; Nguyen et al., 2021; Steenkamp & Roberts, 2021). Each account provides insight into the firm's strategy, operations, risks and ability to create value in the short-, medium- and long-term (Guthrie et al., 2017; Nguyen et al., 2021; Silvestri et al., 2017).

IR is considered to be a relatively new reporting mechanism. It was introduced as a result of the challenges which arose from the Global Financial Crisis and major corporate failures (Arul et al., 2020; Dumay & Dai, 2017). IR is not a completely new

reporting phenomenon; it is a continuation of the development of corporate reporting (de Villiers et al., 2017; Dumay & Dai, 2017). IR can be seen as an extension of sustainability reporting (de Villiers et al., 2017; Guthrie et al., 2017; Nguyen et al., 2021; Stent & Dowler, 2015). Both IR and sustainability reporting aim to improve disclosure to show the sustainability of the firm (Bridges et al., 2021; Girella et al., 2021). The need for the change to IR stemmed from the need for more efficient and useful information as well as the lack of corporate transparency that transpired through the use of traditional financial reporting and sustainability reporting (Dumay & Dai, 2017; Silvestri et al., 2017).

The significance of environmental and social issues in the world has resulted in a growing demand from investors for companies to present non-financial information (Atkins et al., 2015; Kılıç & Kuzey, 2018). Sustainability reporting communicates non-financial information focusing on environmental, social and governance factors (de Villiers et al., 2017). Traditional financial reporting does not clearly indicate how a firm creates value (Steenkamp & Roberts, 2021). It focuses only on reporting past and present data which are most useful for short-term decision-making (Nguyen et al., 2021). When coupled with sustainability reporting, non-financial and financial information is reported in separate reports which do not show the interrelatedness of the information (de Villiers et al., 2017). Combining financial and non-financial information into a single report does not show a link nor does it reveal the firms' strategies or value creation potential (Kılıç & Kuzey, 2018; Oktorina et al., 2021). IR is the mechanism created as the solution to this problem (de Villiers et al., 2017; Oktorina et al., 2021; Silvestri et al., 2017).

The holistic firm view created by IR results from the integration of financial and non-financial information into a clear and succinct integrated report (Biondi et al., 2020; Herath et al., 2021; McNally et al., 2017; Oktorina et al., 2021; Silvestri et al., 2017; Steenkamp & Roberts, 2021). The report includes forward-looking information regarding the firm's strategy, six capitals (human, intellectual, financial, social and relationship, natural, manufactured), business activities, value creation, risk assessments and mitigations, and the interconnectivity between these factors (Macias & Farfan-Lievano, 2017; Naynar et al., 2018; Steenkamp & Roberts, 2021).

Integrated reports are primarily prepared with the information needs of financial capital providers in mind, while other stakeholders are a secondary consideration (du Toit, 2017; Garcia-Sanchez et al., 2020; Girella et al., 2021; Hsiao et al., 2021; Lai et al., 2017; Macias & Farfan-Lievano, 2017). This is because of investors' growing preference for companies pursuing CSR initiatives and establishing a culture of social and environmental responsibility (Atkins & Maroun, 2015; Atkins et al., 2015; de Villiers et al., 2017; du Toit et al., 2017; Nguyen et al., 2021). The preference has grown from the need for more information regarding the long-term sustainability of organisations and their respective value creation strategies after the Global Financial Crisis (Dumay & Dai, 2017). Having access to information of this type can enable the investors to make more informed decisions in respect of the future of the organisation (Nguyen et al., 2021). Financial reporting alone, or coupled with sustainability reporting did not deliver this type of information (Dumay & Dai, 2017; Macias & Farfan-Lievano, 2017), whereas IR is seen to bridge the gap (du Toit et al., 2017).

2.1.2. Content, scope, and quality of integrated reports

During 2021, the IIRC and the Sustainability Accounting Standards Board (SASB) merged to form the Value Reporting Foundation (VRF) which is consolidated in the IFRS Foundation. The previous standalone IIRC Framework is now housed within the VRF. Although no formal changes have yet occurred as a result of the merger, the framework is expected to develop. As a result, the fundamental concepts, guiding principles and content elements in the consolidated VRF IR Framework align with those of the previous IIRC Framework. Table 1 summarises the IR framework by indicating the fundamental concepts, content elements and guiding principles

Table 2.1. Fundamental concepts, content elements and guiding principles of the Integrated Reporting Framework

The 3 fundamental concepts		
Value creation for the organisation and for others	The six capitals	The value creation process
The 7 guiding principles		
Strategic focus and future orientation	Conciseness	Materiality	Consistency and comparability
Connectivity of information	Stakeholder relationships	Reliability and completeness
The 8 content elements		

Organizational overview and external environment	Governance	Business model	Risks and opportunities
Strategy and resource allocation	Performance	Outlook	Basis of preparation and presentation

Source: IIRC, 2021 Framework (IIRC, 2021).

The scope of an integrated report is guided by the fundamental concepts of IR, the guiding principles and the content elements of IR. It comprises information regarding strategies and the value creation process, performance as it relates to the six capitals, governance of the organisation and value creation by the entity for itself and others (Girella et al., 2021). Integrated reports should include only material information which affects value creation (Lakshan et al., 2021). Materiality is the ability of information to change the decisions and value creation perceptions of stakeholders if it is included or excluded from the integrated report (Macias & Farfan-Lievano, 2017). Materiality is of paramount importance in preparing integrated reports as it is the beginning of the IR process (Lai et al., 2017).

The IIRC has shown this significance by making it one of the guiding principles of its Integrated Reporting Framework (IIRC, 2013). The conciseness of integrated reports is affected by materiality as it is used as a determinant to establish the inclusion of content (Lakshan et al., 2021; Tirado-Valencia et al., 2019). Materiality is a difficult concept to apply because of the lack of guidance in determining whether an item is material or not. It is an entity-based judgement of the preparers of the integrated reports (Cerbone & Maroun, 2020; Lai et al., 2017; Steenkamp & Roberts, 2021). The remaining guiding principles of strategic focus and future orientation, consistency and comparability, the connectivity of information, stakeholder relationships, and reliability and completeness illustrate the importance of the interrelatedness of information presented in integrated reports.

The content of integrated reports, once determined to be material, should encompass the eight content elements in the IIRC Framework. These comprise organizational overview and the external environment, governance, organisational business model, risks and opportunities, strategy and resource allocation, performance, outlook, and the basis of preparation and presentation (IIRC, 2013). For the report to deliver quality

information, the seven guiding principles set out in the IIRC framework should be reached (Naynar et al., 2018). These principles ensure that the content of the report aligns with the content elements, the ability of the organisation to create value over time will be communicated to the users of the reports.

Preparing a high-quality integrated report is difficult and the lack of guidance on ensuring a high-quality integrated report makes it even more so (de Villiers et al., 2017; Malafronte & Pereira, 2020). Hsiao et al. (2021) found that firms which align their reports with the IIRC Framework are regarded as having produced higher-quality integrated reports. McNally et al. (2017) propose that time constraints could be a factor in integrated reports being lower in quality than they should be.

2.1.3. Integrated thinking

Integrated reporting is based on the philosophy of integrated thinking (de Villiers et al., 2017; Kunc et al., 2020). du Toit et al. (2017) argue that without integrated thinking in the IR process, the integrated report does not add value to the end-user and is seen only as a surface-level report. Integrated thinking is defined by the VRF as “the active consideration by an organisation of the relationships between its various operating and functional units and the capitals that the organisation uses and affects” (VRF, 2021, p. 6). Without integrated thinking, a report reflecting financial and non-financial information may be presented, but the dependency among the various business functions and capitals will not be covered (du Toit et al., 2017; Ecim & Maroun, 2022; Lakshan et al., 2021; Maroun et al., 2023).

The centrality of integrated thinking within the IR process highlights its importance to firms which adopt IR and present integrated reports (Guthrie et al., 2017). Past literature has discussed countless benefits of integrated thinking within firms’ operations. Arora et al. (2021) discuss the valuable insights provided by non-accountants in the integrated reporting process because of the collaboration among organisations’ different business functions. As a result of accountants’ involvement in the reporting process, their influence over the process is substantial (Nguyen et al., 2021). The consideration of non-accountant perspectives resulting from integrated thinking can provide different frames of reference over the business for both external and internal users of the integrated reports. Arul et al. (2020) found that integrated

thinking can exist independently of IR showing that organisations can benefit from integrated thinking even if IR is not adopted.

du Toit et al. (2017) discuss how integrated thinking enhances stewardship and accountability by requiring different information to be reported in an integrated report. They also discuss the improved quality of IR within companies where integrated thinking has improved. Interdepartmental collaboration is improved and a breakaway from a silo mentality is experienced, resulting in improved decision making for organisations (Arul et al., 2020). On the contrary, weaknesses have also been identified in past literature. Arora et al. (2021) discuss the ambiguity of the concept of integrated thinking. They argue that without clear guidance on what integrated thinking really is, organisations do not really undertake IR.

The IIRC advocated that improved departmental cooperation and communication can be achieved by integrated thinking, fostering a positive change in organisational behaviour. This was supported by the findings of Busco et al. (2021) and Herath et al. (2021). Dumay and Dai (2017) found that integrated thinking, rather than promoting a new and improved organisational culture, clashed with existing firm cultures. They noted that integrated thinking has the potential to increase appreciation and awareness by the staff of the decisions they make and how these align with the strategic goals and value creation initiatives of the company. However, supported by de Villiers et al. (2017), it was found that IR was viewed, in practice, as a compliance exercise used to legitimise organisations. Further, the breakout from the silo mentality is not always seen to be beneficial, especially in the case of risk and fraud management departments. These departments should operate independently to achieve their objectives (Dumay & Dai, 2017).

In a study in Italy, Del Baldo (2017) found that SMEs are likely to have better ability to embody integrated thinking practices because of the smaller business operations and activities. The inherent operationalisation of SMEs to link different business functions and processes allows for the adoption of integrated thinking as a formal ideology to be easily embedded within business practices. Herath et al. (2021) found that CEOs' level of integrated thinking can also influence the value created by an organisation. As a result, it is necessary for the CEO of an organisation to have a high level of integrated

thinking for maximum value creation to be achieved, and subsequently, IR to be adequately applied.

2.1.4. Adoption of IR

IR is not a mandatory reporting mechanism; other than for JSE-listed companies in South Africa (Arul et al., 2020; Barth et al., 2017; de Villiers et al., 2017; McNally et al., 2017; Naynar et al., 2018). As a result, the adoption of IR in other nations is dependent on numerous factors. Some of these factors can be categorised into theories which drive the adoption of IR, CEO and board characteristics, and the benefits of adoption outweighing the challenges.

As opposed to backwards-looking financial information, IR focuses on delivering material information about the utilisation of the firm's six capitals to enable more informed decision making about the future (Arora et al., 2021; Kunc et al., 2020). The delivery of information regarding a firm's ESG activities provides more information to the user about the firm's intangible assets which would not have been provided under previous reporting mechanisms (du Toit et al., 2017). Consequently, IR can be seen to improve the quality of ESG reporting because it includes ESG themes. In this way, the level of integrated thinking is also improved by adopting IR (Arul et al., 2020; Di Vaio et al., 2020; du Toit et al., 2017; Macias & Farfan-Lievano, 2017; Steenkamp & Roberts, 2021).

IR attracts a larger investor base than alternative reporting mechanisms do. More investors are applying ESG and value creation screening criteria. The adoption of IR does not prompt a loss of investment or loss of potential investments in this regard as IR incorporates the reporting of these criteria which prompts more investment, including foreign investment (Atkins et al., 2015; du Toit et al., 2017; Macias & Farfan-Lievano, 2017; Nguyen et al., 2021).

IR has internal benefits for the firm as it can be used as an internal management tool (Del Baldo, 2017; Macias & Farfan-Lievano, 2017; Steenkamp & Roberts, 2021). The IIRC claim that the enhancement of integrated thinking for IR enables firms to understand the business holistically. This understanding leads to an improvement in internal business controls, processes, and systems (de Villiers et al., 2017; Di Vaio et al., 2020; Dumay & Dai, 2017; Naynar et al., 2018). IR provides more insight into the

value creation approach for each function within an organisation (de Villiers et al., 2017).

Engelbrecht et al. (2018) investigated the impact on IR through the function of internal audit (IA). They found that IA has tremendous potential to improve IR and the IR process because of the holistic knowledge which the IA function has of the organisation. Consequently, firms with an existing IA function can find it easier to adopt IR and can reap the benefits of IR by including the IA function in the IR process. IR promotes a conceptual shift by organisations from the short-term perspective to a long-term perspective (Del Baldo, 2017; Stent & Dowler, 2015).

On the contrary, IR proposes challenges for businesses and includes weaknesses which need to be resolved before it can become the corporate reporting norm (Dumay & Dai, 2017; Malafronte & Pereira, 2020). One such challenge is the view that IR is a superficial, compliance exercise (Arora et al., 2021; Atkins & Maroun, 2015; de Villiers et al., 2017; Dumay & Dai, 2017; McNally et al., 2017). The numerous benefits of IR will not be reflected if this is the case. Dumay et al. (2017) found that many firms are confused about what IR means and, as a result, do not engage in the IR process. Additionally, the recommended IIRC Framework to engage in IR is not well-accepted if firms were previously exposed to other non-financial reporting frameworks such as the GRI, as these other frameworks are easier to understand and apply (Dumay et al., 2017; Hsiao et al., 2021; McNally et al., 2017).

du Toit et al. (2017) and de Villiers et al. (2017) found that companies which produced integrated reports often include repetitive information, diminishing the conciseness and clarity intended. Over time, decreased repetitions were found, but, this has not been attributed to an increase in quality of IR or to a presentation of the bare minimum by organisations engaging in the IR process for legitimacy purposes. The vast range of information and the lack of consistency in reporting disclosures because of the principle-based application of IR principles makes comparability among organisations extremely difficult (de Villiers et al., 2017; Engelbrecht et al., 2018; Malafronte & Pereira, 2020; Nguyen et al., 2021). Naynar et al. (2018) identified a perception gap in IR. Organisations were preparing integrated reports based on what was thought to be stakeholder relevant information while stakeholders viewed it as otherwise

(McNally et al., 2017). It was found that the gap was influenced by user knowledge and experience as this was not considered by preparers.

The inherent nature of reporting non-financial information introduces the issue of quantifying or measuring supposedly unquantifiable and immeasurable items (de Villiers et al., 2017; McNally et al., 2017). Since IR is based on an integrated thinking philosophy, the lack of a framework for implementing integrated thinking, the benefits of IR will not be actualised (Arul et al., 2020; McNally et al., 2017). du Toit (2017) found that integrated reports use complex language making them difficult to read and understand. As a result, the reports are only useful to a small proportion of the users who can read and understand the reports. Assurance over integrated reports is also a challenge in the array of information types included in integrated reports (Borgato & Marchini, 2021; Engelbrecht et al., 2018; Tirado-Valencia et al., 2019). Finally, the IIRC framework is tailored for implementation by large companies, excluding considerations of SME implementation making it difficult for SMEs to prepare integrated reports (Del Baldo, 2017).

2.2. IR in South Africa

Since 2010, all JSE-listed companies have been required to prepare integrated reports on a comply-or-explain basis (de Villiers et al., 2017; Kılıç & Kuzey, 2018; Malola & Maroun, 2019; Steenkamp & Roberts, 2021). This was the first instance of mandatory IR in the world (de Villiers et al., 2017). Since then, the reputation of South Africa in the IR field has grown and South Africa is now renowned as the world leader in IR (Atkins & Maroun, 2014; Steenkamp & Roberts, 2021). South Africa started reporting on ESG issues before the IIRC framework was implemented (Malola & Maroun, 2019). Governance codes like the King codes required financial and non-financial information to be reported to promote stakeholder centeredness and corporate accountability (Atkins et al., 2020; Malola & Maroun, 2019; McNally et al., 2017). This was to present South Africa as a possibility for progressive business reporting practices and to stimulate foreign investment in South Africa (Atkins & Maroun, 2014; McNally et al., 2017). While South Africa is at the forefront of the IR movement, IR was not an overnight success (Atkins & Maroun, 2015). It has taken time and improvement of IR practices for South Africa to earn the reputation that it now has in the IR field (Atkins et al., 2015).

Many high profile South African companies now spend a great deal to produce a high-quality integrated report (Atkins et al., 2020; PwC, 2015). Studies on integrated reports of JSE-listed companies have shown communication of organisational strategy, and improved reporting on governance and business model, yet the reports have lacked quality (EY, 2017; PwC, 2014, 2015). Improvement in the reporting of risk management, materiality determinants, stakeholder identification and engagement, as well as a greater focus on the future are needed (PwC, 2015). High quality integrated reports pay attention to factors such as detailed value creation understanding by higher management, proactive sustainable development commitment through accounting for social and environmental issues, reduced impression management, high confidence by stakeholders, and legitimacy (Atkins et al., 2020). du Toit (2017) found that organisations which produce integrated reports in complex language, is associated with better quality in the EY Excellence in Integrated Reporting Awards. Poor language use can decrease the relevance of integrated reports for some stakeholders (du Toit, 2017). EY evaluates the quality of integrated reports based on organisations' application of the IIRC guiding principles; those organisations with better compliance will be seen to produce better quality integrated reports and can potentially win awards from EY for IR excellence (EY, 2017).

Regardless of the establishment of IR in South Africa, there is still an opportunity for improvement for South African firms in their IR processes (Atkins & Maroun, 2014; Malola & Maroun, 2019). Atkins and Maroun (2014) found that institutional investors in South Africa believed that integrated reports are too long and complex, repetitive and are sometimes used merely as a compliance tool (see also Atkins & Maroun, 2015; de Villiers et al., 2017; Dumay & Dai, 2017; McNally et al., 2017). They also found that institutional investors were not involved in the process of identifying information to include in integrated reports, despite the investors being the primary report users. The value in IR is lost if the primary users' information needs are not reflected in integrated reports.

In a study of the drivers of the quality of integrated reports during 2015 and 2016, Malola and Maroun (2019) found that most disclosures in integrated reports are not quantified or measured; they are qualitative in nature which makes it difficult to determine improvements. They also found that a historic focus is still used in integrated reports, rather than a forward-looking approach representative of long-term

value which considers risks and opportunities (see also PwC, 2015). On the contrary, Malola and Maroun (2019) found that integrated reports of South African organisations have developed to become less repetitive, and more detailed without increasing in length. These improvements, despite the weaknesses, show promise for IR in South Africa. In a case study in South Africa, McNally and Maroun (2018) highlighted that, despite potential apprehension towards applying IR practices, organisations can take advantage of the better understanding of value creation and the wider scope associated with management control through reporting of financial and non-financial information in IR (see also PwC, 2015).

IR in South African firms, coupled with the development of practices over time, have resulted in numerous benefits and changes achieved by the firms in their operations (Guthrie et al., 2017; McNally & Maroun, 2018; Raemaekers et al., 2016; Steenkamp & Roberts, 2021). Some findings indicated that organisations which have firmly established IR can better understand the value creation and decision-making processes (Steenkamp & Roberts, 2021). Other studies have shown that IR can increase awareness of the organisational impact, in social and environmental contexts, as well as the impacts on strategy and business operations (Guthrie et al., 2017; McNally & Maroun, 2018). Atkins and Maroun (2014) found that institutional investors in South Africa welcomed IR as an improvement in disclosures for making better investment decisions.

The rooted establishment of IR in South Africa makes it a fitting environment in which to study the disclosures in integrated reports (Malola & Maroun, 2019). Organisations in South Africa have been able to develop their IR processes over a longer time than counterparts in other countries where IR is relatively new (Arul et al., 2020; Malola & Maroun, 2019; McNally et al., 2017), making South African organisations' integrated reports an ideal subject for the purposes of this study.

2.3. The Sustainable Development Goals

Numerous challenges affect the world. In response to these global challenges, in 2015 the UN established the 17 UN Sustainable Development Goals (SDGs), which all UN member nations adopted. The SDGs created the foundation for a sustainable world by introducing a formalised goal-set which, if achieved, will solve the major crises

faced by the world (Erin & Bamigboye, 2021; Stefanescu, 2021). The UN hopes to achieve these goals by 2030.

The SDGs are regarded as a guideline for sustainable development to be applied at a national or state level by governments. The role of organisations, including the private sector, should not be disregarded in applying SDGs. Worldwide, the private sector has a powerful impact on respective countries' gross domestic product and jobs because of the capital generated from these organisations, (Adams et al., 2020).

This contribution by the private sector warrants a recorded contribution to the achievement of the SDGs by individual companies, which in turn, increases the respective country's achievements of the SDGs. Some industries require, at a minimum, one of the SDGs to be achieved to ensure the sustainability of the industry (Adams, 2017). The UN encourages organisations to incorporate SDG considerations into their corporate reporting strategy and management and organisational processes (Busco et al., 2021; Di Vaio et al., 2020). The achievement of the SDGs aims to dissolve major global issues such as poverty, hunger, a lack of education, and climate change, amongst others. Consequently, it is unlikely that the SDGs will be achieved without the concerted effort of governments, and organisations (Adams, 2017).

Reporting on the achievement of the SDGs is voluntary, providing one reason for relatively low levels of disclosures on the SDGs in corporate reports (Erin & Bamigboye, 2021). The UN has no authority to enact mandatory reporting on the SDGs (Biondi et al., 2020). Regardless of whether SDG reporting is mandated or not, it is within the organisation's best interest to establish reporting of the SDGs. Should organisations establish a culture of incorporating SDG reporting, it could be seen as embedding responsible corporate behaviour (Di Vaio et al., 2020). Some preparers do not view the SDGs as an all-encompassing way to help report non-financial information (Department for Business Energy and Industrial Strategy, 2020, as cited in Abhayawansa & Adams, 2021). Numerous organisations are reporting their activities against the SDGs to assure stakeholders that the organisation does not take

the SDGs lightly, attempting to remain to be seen as legitimate (Abhayawansa & Adams, 2021; Farneti et al., 2019)

2.4. IR and the SDGs

It is widely known that providing information relevant only to investors does not deliver excellent information about value creation (Adams et al., 2020; Atkins et al., 2015; du Toit, 2017; Kılıç & Kuzey, 2018; Macias & Farfan-Lievano, 2017). To deliver value creation information, uphold the trust of the public and maintain a good reputation, the needs of all stakeholders should be addressed by communicating the organisation's strategies to progress to a sustainable future (Adams et al., 2020). While IR in isolation does not achieve this, the inclusion of reporting on the SDGs and the organisation's achievement do. The integration of reporting on the SDGs in an integrated report increases the transparency of social and environmental impacts which will improve accountability and reputation and enable more relevant value creation information to be delivered to all stakeholders (Adams, 2017; Adams et al., 2020; Biondi et al., 2020; Stefanescu, 2021).

Figure 1.3.1. – The 17 SDGs

The practice of integrated thinking in preparing an integrated report makes it easier for organisations to link the SDGs to their business and capitals. Achieving the purpose of the SDGs which is to achieve sustainable development aligns with the purpose of IR to achieve long-term value creation (Adams et al., 2020). Reporting on the SDGs within an integrated report can assist in achieving long-term value creation and sustainable development. The key stakeholders when communicating information about sustainable development through the SDGs and value creation through IR, are firstly, the providers of capital, followed by other stakeholders (Adams et al., 2020). Integrated reports are a suitable mechanism in which to communicate information about the SDGs as the information necessary for decision-making will be available in a single concise report.

The ease of incorporating the SDGs involves heightened organisational understanding of the social and political processes, challenges and opportunities (Adams, 2017). The IIRC Framework, which is communicated in respect of value creation information and processes over time, considers information such as social and environmental factors, the availability of resources through the capitals and their relative trade-offs and changing societal expectations. This type of information is most consistent with reporting for sustainable development (Adams, 2017). As such the incorporation of the SDGs with IR allows for a broader scope of sustainable development information to be reported on.

2.5.1. Theoretical models

Some of the theories driving IR adoption are the legitimacy, agency, institutional, signalling, diffusion of innovation, proprietary cost and voluntary cost theories (Arul et al., 2020; Del Baldo, 2017; du Toit, 2017; Garcia-Sanchez et al., 2020; Girella et al., 2021; Macias & Farfan-Lievano, 2017; Nguyen et al., 2021; Oktorina et al., 2021). The adoption of IR framed according to agency theory lies in organisations attempting to diminish information asymmetry with stakeholders as well as agency costs (Engelbrecht et al., 2018). The agency theory is the most popularly studied in the realm of IR adoption (Girella et al., 2021; Nguyen et al., 2021).

Legitimacy theory refers to the use of corporate reporting mechanisms to disclose information which enhances the corporate social responsibility of organisations to suggest organisational public legitimacy (du Toit, 2017; Macias & Farfan-Lievano,

2017). When adopting IR on the premise of obtaining organisational legitimacy, it is unlikely that integrated thinking will be embodied in the preparation of the integrated report (Arul et al., 2020). Reputational risk is also reduced by adopting IR for legitimacy (de Villiers et al., 2017; Del Baldo, 2017; Macias & Farfan-Lievano, 2017). Legitimacy and agency theories provide insight into the reasons for preparing an integrated report. How companies reflect the content for their reports may also be informed by the need to reduce information asymmetry (Kılıç & Kuzey, 2018; Naynar et al., 2018) or to strengthen their credibility in the eyes of stakeholders (Engelbrecht et al., 2018).

From a slightly different perspective, isomorphic pressures may explain how companies prepare integrated reports. Isomorphism is a sociological construct which is best explained as a process of homogenisation. Institutional isomorphism refers to the forces which drive organisations to homogenise business processes and activities with like organisations' business processes and activities. Institutional isomorphism includes succumbing to pressures to act in accordance with rules and expectations, as well as to act in accordance with socially accepted norms (DiMaggio & Powell, 1983). DiMaggio and Powell (1983) identified three types of institutional isomorphic changes: mimetic, coercive and normative isomorphism.

Mimetic isomorphism is based on the homogenisation of practices with other organisations' practices. The intention is to benefit from the practices once modelled by the organisation in environments in which such practices are not mandatory (Arul et al., 2020; DiMaggio & Powell, 1983; Lakshan et al., 2021). Coercive isomorphism is based on the adoption of homogenous practices as a result of societal expectations and external pressures from other organisations to act in a designated manner (DiMaggio & Powell, 1983; Maroun & van Zijl, 2016). These pressures can consist of regulatory pressures to comply with specific laws, or societal pressures to act in accordance with public expectations. Finally, normative isomorphism stems from the desire of organisations to be seen as legitimate, professional, and competent which is in line with the legitimacy theory (DiMaggio & Powell, 1983; du Toit, 2017; Macias & Farfan-Lievano, 2017). This includes the adoption of hiring policies which favour the procurement of highly qualified and skilled staff, as well as aligning business practices with professional conventions. This can strengthen the legitimacy of the organisation improving the organisation's reputation (DiMaggio & Powell, 1983).

As IR develops into a reporting norm, other organisations may be persuaded to produce integrated reports (du Toit, 2017). This provides evidence of normative isomorphic pressures at work. It also demonstrates mimetic isomorphic pressures as organisations emulate the practices of other leading organisations (Arul et al., 2020; Lakshan et al., 2021).

When IR is adopted based on regulatory requirements and public expectations, organisations are pressed to act in accordance with those rules and engage in IR (Arul et al., 2020; Maroun & van Zijl, 2016). Oktorina et al. (2021) provide empirical evidence about the determinants of voluntary IR in Indonesia. It was found that the signalling, diffusion of innovation, proprietary cost and voluntary cost theory can also be used to explain the ideology behind adopting IR in this regard.

Legitimacy theory is a premise upon which reporting of the SDGs can be based (Erin & Bamigboye, 2021; Farneti et al., 2019; Malola & Maroun, 2019). Because of the lack of mandatory reporting requirements of the SDGs, voluntary reporting of ESG factors enables organisations to fulfil their social contract. Abiding by social expectations through reporting of ESG factors enables organisational image to be legitimised (Farneti et al., 2019). In disclosing information about the SDGs which deal majorly with social and environmental factors, organisations are seeking to improve their legitimacy among competitors and stakeholders (Malola & Maroun, 2019).

A lack of mandatory reporting requirements of the SDGs creates and increase in mimetic isomorphism where organisations mimic the reporting actions of other organisations. Where competitors provide disclosures about the SDGs and their progress, other organisations will follow suit to benefit from providing those disclosures (see Arul et al, 2021). Coercive isomorphism is also seen in societal expectations and regulatory pressures to report on the SDGs and the organisation's progress in achieving them can coerce companies to report on the SDGs.

An example of coercive isomorphism in action with relation to IR is cited by Garcia-Sanchez et al. (2020) on CEO power. The qualifications and skillsets of CEOs should be considered competent and professional. The hiring of CEOs and the exercise of their relative power can influence the adoption of IR. CEOs with high power discouraged the reporting of integrated information despite organisational incentive schemes. Furthermore, CEOs of organisations exposed to many growth opportunities

were also found to discourage the disclosure of integrated information, perhaps to maintain competitive advantage. Girella et al. (2021) found that CEO power was an important way to influence the reporting of CSR factors As a result, the power of CEOs over corporate disclosures can influence the adoption of IR by an organisation.

Girella et al. (2021) also found that the size of the board of an organisation, the independence of the board, and the gender diversity can affect the decision to adopt reporting of integrated information. The coercive isomorphic forces at play in this regard may influence the adoption of IR. More women and independence of board members were shown to increase the reporting of integrated and sustainability information. As a result, the adoption of IR by an organisation could be influenced by board characteristics, namely board size, independence, and board gender diversity.

Normative isomorphism, in alignment with the legitimacy theory, aims to achieve institutional legitimacy, professionalism and competency, organisations could report on the SDGs and their achievement thereof. The hiring policies of organisations play a role in achieving legitimacy and being seen as professional and competent. It follows that the SDGs and the progress towards achieving them is disclosed because of underlying expectations from the public, regulatory bodies and the need to be seen as legitimate.

Given the relevance of organisational legitimacy and underlying isomorphic pressures, the first research question is:

> ***RQ1:*** **To what extent are SDG disclosures made by South African listed companies?**

2.5.2. Possible drivers of SDG reporting

The increased disclosure of SDGs in integrated reports is as a result of the underlying isomorphic pressures to disclose information about the SDGs and their progress towards achieving sustainable development. These pressures can be higher for larger organisations which have more influence and impact that these companies have on society. Larger organisations can adopt reporting on the SDGs within their integrated reports, grounded in a legitimacy theory approach.

> ***RQ2a:*** **Do larger South African listed companies include more SDG disclosures in their integrated reports than do smaller companies?**

As a result of succumbing to isomorphic pressures, industry leaders may have board members experienced in sustainable development or the SDGs to ensure disclosure of relevant information in these fields. By succumbing to mimetic isomorphic pressures organisations can enhance their reputation by conforming to the practices of industry leaders. These practices can extend to the governance structures of organisations (Malola & Maroun, 2019). Consequently, organisations may increase sustainable development and SDG experience on the board by employing more qualified personnel and establishing a sustainability committee (Malola & Maroun, 2019); heeding the practices of industry leaders and simultaneously succumbing to normative isomorphic pressure in their own regard.

RQ2b: Do companies with board members experienced in sustainable development provide more SDG disclosures than other companies provide?

Companies with greater external impact will be more concerned with upholding their reputation and will provide SDG disclosures to do this. The coercive and normative pressures on high-impact organisations and industries can prompt disclosure of SDG and sustainable development information. In accordance with the legitimacy theory, these organisations can provide SDG disclosures to uphold their social contract and enhance its reputation to be seen as legitimate.

RQ2c: Do companies with larger environmental and social impacts provide more SDGs disclosures in their integrated reports than do those with smaller impacts?

3. METHODOLOGY

3.1. Research paradigm

Positivist research enables studies to be conducted objectively through the avoidance of speculations and judgement (Leedy & Ormrod, 2019). The research is based on empirical procedures performed on the subject matter resulting in empirical data, allowing for the results to be extrapolated (Leedy & Ormrod, 2019). Positivist methods have been successful in the past, yet they have not revealed non-financial associations (such as social, environmental, and governance) with the subject matter (Baker & Bettner, 1997).

Interpretive methodologies are subjective in nature (Maroun, 2012). This results from the methods used, which include analysing texts and interviews. (Cohen & Crabtree, 2006). These methods provide information which can show many phenomena not just a single objective circumstance presented by positivist research (Guest et al., 2013). For research grounded in the association of corporate reporting with non-financial information, an interpretive methodology is more appropriate (de Villiers et al., 2019; Michelon et al., 2015). As a result, this study adopts an interpretive epistemology.

3.2. Research method

To answer the research questions, a mixed-method approach was used to employ both qualitative and quantitative methods. A thematic content analysis was used to collect and analyse disclosures dealing directly or indirectly with the SDGs in the integrated reports of 40 JSE-listed companies (Erin & Bamigboye, 2021; Erin et al., 2022; Maroun et al., 2018). The method of content analysis allows for qualitative information to be quantitatively represented by categorising the information and codifying it for trend analysis (Erin & Bamigboye, 2021; Maroun et al., 2018). This strengthens the validity of the results and enables the data to be analysed methodically and consistently.

Thematic content analysis allows for intricacies and associations in the textual data to be identified as themes (Guest et al., 2012). Using the method of thematic content analysis, the researcher is required to be involved during the data collection and analysis phases of the study. Accordingly, the researcher's judgements direct the research paradigm (Steenkamp & Northcott, 2007). The study can then advance corporate reporting research and practices and improve the understanding of the associations between non-financial information and corporate reporting.

3.3. Population and sampling

The population is JSE-listed companies. Studies on integrated reports of JSE-listed companies have shown good communication of organisational strategy and improved reporting on governance and business model. This makes JSE listed companies the ideal population from which to draw data for this study (EY, 2017; PwC, 2014, 2015). A sample of 40 randomly selected companies listed on the JSE were selected from the top 100 JSE-listed companies by market capitalisation as of 31 March 2022 (Appendix A).

The respective companies' integrated reports for the 2018, 2019 and 2020 years were inspected for the SDG and related disclosures. The nature of textual content analysis attracts smaller sample sizes (Solomon & Maroun, 2012). The labour intensiveness of the method of data collection and analysis requires smaller sample sizes to ensure that analyses are performed adequately, productively, and efficiently (Merkl-Davies et al., 2011).

Random selection ensures that the sample includes companies from different industries and this enables the results to be categorised per industry and eliminates the risk of specifically selecting companies within a designated industry. Additionally, random selection reduces the premise of selecting the Top 40 JSE-listed companies; the largest and most established listed companies will likely produce more related disclosures than will smaller and mid-tier listed companies.

Annual reports were inspected only where no integrated reports were prepared for a specific company or year. One hundred and twenty (120) reports were analysed. Ninety-three (93) reports were integrated reports and twenty-seven (27) reports were annual reports.

3.4. Instrument

To test RQ1 and RQ2, the researcher developed an instrument to guide readers to record specific disclosures dealing with the SDGs and the broader sustainability practices of the organisation. This is necessary because there is no single reporting model which explains what information related to the SDGs should be incorporated in integrated reports.

Adams et al. (2020) provide the starting point by creating the *Sustainable Development Goals Disclosure (SDGD) Recommendations*. These provided generalised disclosure recommendations categorised by four disclosure themes: (1) governance, (2) strategy, (3) management approach, and (4) performance and targets. The themes were used to structure the disclosure instrument and the individual disclosures are adapted from the SDGD Recommendations. The adaptation of the instrument from the SDGD Recommendations involved the researcher using the themes in the SDGD Recommendations and adapting them to create themes that were more understandable and comprehensive. The researcher then adapted the

relevant disclosure items in each them to align more with the adapted themes and to improve understanding and comprehensiveness.

The instrument was tested during the initial test study consisting of 10 companies. Thereafter, the individual disclosures were refined to include or exclude any points that the researcher found to be lacking or excessive. Wording in the disclosure checklist was adjusted to make the disclosure items clearer and easier to understand.

For example, in the disclosure theme Integrated Thinking and Governance, te disclosure items dealing with stakeholders and their engagement to achieve the SDGs, previously read:

> *"Describe how stakeholders engage with the organisation and describe the impact that this has on achieving the SDGs".*

Once the instrument had been refined, the above disclosure was separated into two separate disclosure items and currently reads as:

> *"Describe how stakeholders engage with the organisation"* and *"Describe the impact which stakeholder engagement has on achieving the SDGs".*

Separating the disclosure item removed ambiguity that arose regarding whether stakeholders, stakeholder engagement or the organisation is the subject of the second part of the initial disclosure item.

Once the instrument had been refined and completed after the test study, the researcher applied the completed instrument to the remaining sample. All changes were revised for the test study companies to ensure that all companies were assessed in accordance with the same instrument.

The researcher's instrument has been divided into 5 distinct sections for ease of understanding and thematic categorisation. The sections are based on the 5-step framework of including the SDGs in integrated reports (Adams, 2017). Individual items should be disclosed in an organisation's integrated report. The themes are representative of a holistic consideration of an organisation's sustainable development context and areas of the business that will be affected by SDG disclosures.

The researchers instrument includes 34 disclosure items. The disclosure items have been adapted from Adams et al. (2020). The disclosure items represent the minimum

complete set of SDG related disclosures as SDG disclosures are required to be presented throughout the integrated report and be related to each aspect of the business. This highlights the integration of the SDGs throughout the business and its operations.

Table 3.4.1. – Disclosure checklist

DISCLOSURE THEME SECTION	INDIVIDUAL DISCLOSURES
Understanding the sustainable development context	Define 'sustainable development' in the integrated report
	Describe how sustainable development issues/matters are identified
	Describe the sustainable development issues faced by the organisation to understand the sustainable development context
	Identify material risks and opportunities associated with sustainable development issues
	Describe how the sustainable developments risks and opportunities will be mitigated or used respectively
	Describe the impact of sustainable development risks and opportunities on the organisation's business model
	Describe how sustainable development is associated with the organisation's vision and mission
	Describe the impact that the inclusion of sustainable development issues and the pursuit of achieving the SDGs has on the ability of the organisation to create long-term value
Material sustainable development issues/matters	Include in the determination of materiality, consideration for sustainable development issues.
	Identify the material sustainable development issues/matters to enhance the organisation's understanding of the sustainable development context
	Describe why the identified issues/matters are material

Table 3.4.1. – Disclosure checklist

DISCLOSURE THEME SECTION	INDIVIDUAL DISCLOSURES
	Identify the material SDGs most relevant to the organisation's sustainable development context
	Explain why the SDGs identified as not relevant, are not relevant
	Describe how business operations have changed to achieve the relevant SDGs
Integrated thinking and governance	Describe how the board has integrated sustainable development issues/matters and the SDGs into their oversight functions of the organisation
	Describe the stakeholder identification process
	Describe how stakeholders engage with the organisation
	Describe the impact which stakeholder engagement has on achieving the SDGs
	Describe the financial impacts of trying to achieve the relevant SDGs
	Describe how the organisation establishes a culture that promotes sustainable development and the achievement of the SDGs
	Include a statement of responsibility from the board's chair that it is responsible for the SDG disclosures and achievement of the relevant SDGs
	Describe how the board oversees the progress towards achieving the SDGs
	Describe the board's proficiency in understanding sustainable development issues/matters and the processes needed to achieve the SDGs
	Describe how strategy considers the sustainable development issues/matters and the achievement of the relevant SDGs

Table 3.4.1. – Disclosure checklist

DISCLOSURE THEME SECTION	INDIVIDUAL DISCLOSURES
Strategy and business model	Describe if the organisation's strategy and business model have changed because of the inclusion of sustainable development issues/matters and the SDGs within the strategy
	Describe the impact which the achievement of the SDGs has on the organisation's strategy and business model
	Describe how value creation has been enhanced through the integration of the SDGs in the strategy/business model
Measurement of progress	Describe how key performance indicators are set to achieve the relevant SDGs
	Describe how progress toward the SDGs is monitored and evaluated
	Disclose information on qualitative targets related to the SDGs
	Disclose information on quantitative targets related to the SDGs
	Describe why the chosen metrics to record progress towards achievement of the SDGs is appropriate
	Describe challenges in achieving the SDGs
	Disclose the estimated period for the achievement of the relevant SDGs

Source: Adapted from (Adams et al., 2020)

The 34 disclosure items have been categorised into the 5 themes:

1. Understanding the sustainable development context
2. Material sustainable development issues /matters
3. Integrated thinking and governance
4. Strategy and business model
5. Measurement of progress

The data will be analysed interpretively and coded using a scale consistent with Hassan et al. (2020). This will involve the researcher aligning each disclosure with a rating code based on the extent of SDG and related activity mentioned in the disclosure (Section 3.5.). Descriptive statistics will be applied to the data to compute statistics such as the mean, max, and standard deviation. Additionally, Kruskal-Wallis H, Jonckheere-Terpstra (JT) and Mann-Whittney U tests will be used to ascertain if SDG disclosure scores vary with the level of the respective independent/grouping variable and the signs of any associations (Section 3.5.).

3.5. Data collection

The integrated reports were downloaded from the respective company websites and were inspected for the relevant disclosures. The integrated reports reviewed were for the years 2018, 2019 and 2020.

Each reports *table of contents* was analysed to identify the most relevant sections for potential disclosures. Each section was further divided into paragraphs to understand the content within the context of the section, and to ascertain its relevance to the study. The disclosures were thematically categorized and coded in line with the disclosure checklist/instrument. Thematic categorisation involved the analysis of the text unit to identify specific subject matter. The identified subject matter enabled the researcher to identify the theme which best included the subject matter and its characteristics.

To ensure that all the relevant disclosures were captured, a keyword search of each report took place. Where the keywords were section headings or subheadings, the entire section was inspected for further relevant disclosures. The keywords used were chosen because they were the most pertinent topics and ideas identified from prior research (Adams, 2017; Adams et al., 2020; Erin & Bamigboye, 2021; Erin et al., 2022). The list of keywords included terms such as "*Sustainable Development*", "*Sustainable Development Goals*", "*SDG*", "*Materiality*", "*Business Model*", "*Sustainable*", "*Vision*", "*Mission*", "*Purpose*" and "*Stakeholder Engagement*". The disclosures were analysed interpretively to allow for detailed analysis. The information was captured in Microsoft Excel and presented using the disclosure checklist instrument created.

For each organisation, the researcher captured general information such as the company name, the year under review and the type of report. The disclosures with

their related page numbers, as well as the type of disclosure, were also captured for each organisation. To ensure consistency, the type of disclosure and type of report were chosen based on a pre-set list of options which were *"Paragraph", "Heading", "Sub-Heading*" and "*Bullet Points*" for the type of disclosure, and "*Integrated Report*" and "*Annual Report*" for the type of report.

Disclosures were evaluated in two parts. Firstly, the frequency of SDG-related disclosures was found by identifying the disclosures directly related to the SDGs. This process does not consider the context and nature of the disclosures. To mitigate the limitation of the first evaluation, the second evaluation was subjective in nature and took into account the nature and context of the disclosures to provide a more refined measure (Hassan et al., 2020). In this way, the disclosures are considered holistically and contextually, not one disclosure using a scale consistent with Hassan et al. (2020):

> "A score of "0" was awarded for no disclosure at all. A score of "1" was awarded when the disclosure relating to a particular item was minimal, vague, and/or completely general. A score of "2" was awarded when disclosures contained objective, verifiable, and current data. A score of "3" was awarded when disclosure included all the ingredients of code "2," as well as providing specific information" (Hassan et al., 2020, p. 6).

Each disclosure was coded on a scale from 0 to 3. As there are 34 checklist items, the maximum score a company was able to obtain in a single year is 102 (34 x 3). Each checklist item was maxed at a score of 3 to avoid repetitions and double counting of scores. If a company scored lower than 3 for a specific checklist item, the maxed score of 3 did not apply and the highest score achieved by the company for that item was recorded.

3.6. Data analysis

RQ 1

The researcher used descriptive statistics to analyse the data. Descriptive statistics were used to compute statistics such as the min, max and mean to identify specific patterns, correlations and trends for all three years under review for all companies (Leedy & Ormrod, 2019).

The codified data are presented in frequency tables and graphical plots to illustrate the measure of SDG disclosures by each company in each of the relevant years (see Buchling and Maroun, 2021; Leedy & Ormrod, 2019). Both the number and percentage

of SDG disclosures are categorised according to each theme listed in Section 3.4. These were subsequently analysed for trends, correlations and patterns using descriptive statistics and graphical plots.

RQ 2

The coded and analysed data from RQ1 were analysed and processed further to address RQ2a, RQ2b and RQ2c. The data are ordinal *data* which is not normally distributed (Leedy & Ormrod, 2019). As a result, to analyse the data further to answer the remaining research questions, non-parametric tests were used.

A Spearman correlation test was performed to identify and analyse the possible relationships among the disclosure themes. The Spearman correlation test was conducted using the variables listed in Table 3.6.1. Additionally, Kruskal-Wallis H, Jonckheere-Terpstra (JT) and Mann-Whittney U tests were used to ascertain if SDG disclosure scores vary with the level of the independent/grouping variable and the signs of any associations. The dependent variables constituted the total disclosure score and the number of disclosures. Each variable was considered separately. The following general equation was applied:

SDG disclosures = f {grouping variable} + error

Where SDG is either the frequency or quality of companies' SDG disclosures in total and per theme (see Section 3.4) and the grouping variables are detailed in Table 3.6.1.

Table 3.6.1. - Variables used in the statistical analysis

Grouping/independent variables			
Relevant RQ	**Independent Variables**	**Assessment**	**Test statistic**
RQ1	Year	Disclosure scores were aggregated according to each separate year (2018, 2019 and 2020).	H-Test
RQ2a	Company size	Company size was measured by market capitalization with companies grouped by quartile	H-Test
RQ2b	Board experience in	Entities were allocated scores based on the	H-Test or U-Test if only two groups

	SDG reporting and sustainable development	existence of a Sustainability/Sustainable Development Committee - A sustainability committee would include the required board experience and qualifications that would be expected in order for a company to achieve the relevant sustainability outcomes of a business (Malola & Maroun, 2019) – no sustainability committee [0]; integrated sustainability committee with another functional board committee [1]; separate sustainability committee [2]	
RQ2c	Industry	Entities were allocated scores based on their respective industries' environmental and social impact - mining/industrial [3]; financial [2]; other industries [1] (Michelon et al., 2015)	H-Test or U-Test if only two groups
Measures of the level of SDG disclosures			
Total SDG extent score	The total disclosure score per theme (Section 3.4) was aggregated to get a total disclosure score per company for each year under review		

3.7. Reliability and validity of the study

The reports were obtained directly from the organisation's website. The researcher captured and coded the data to ensure consistency. A test study was conducted on 10 JSE-listed companies to address inconsistencies identified during the process with the checklist. The principles of reliability and validity have been achieved in this study. The tests used below demonstrate how these principles have been established through the relevant variables and assumptions.

In terms of the assumptions of the Kruskal-Wallis and Mann-Whitney U tests the dependent variables should be ordinal or continuous, the sample drawn should be mutually independent and random (Leedy & Ormrod, 2019). The SDG-related disclosures collected are non-numerical data. As such, they were coded to be

measured on an ordinal scale, and to be analysed with Kruskal Wallis and Mann Whitney U Tests which will provide the most appropriate measurements. As such, the first assumption of these tests is illustrated with the dependent variable (extent of SDG disclosures) in this study being measured using an ordinal scale.

Independent variables should be categorical. The categories that were considered are company size, board members experienced in SDG reporting and sustainable development and industry. As these categories are the independent variables of this study, the next assumption in using Kruskal-Wallis and Mann-Whitney U tests is illustrated by the independent variables in this study being categorical. All observations noted from the above should also be independent. The data collected from the integrated report of one company and subsequently scored did not affect the data collected and scored from another company's integrated report. This illustrates the mutual independence between the different data units and scores. It is assumed that a related distribution of data within each independent variable category will be followed between the categories. Furthermore, each independent variable sample represents more than 5 companies. All data collected for the purposes of RQ2, demonstrates characteristics that align with the assumptions of the Kruskal-Wallis and Mann-Whitney U tests, further reiterating the appropriateness of these tests for analysing the data.

4. RESULTS AND ANALYSIS

This section will first provide the results and analysis which enable RQ1 to be addressed. Thereafter, the results related to RQ2 will be provided.

4.1. Total SDG disclosures (RQ 1)

The growing importance for organisations to fulfil their purpose in a sustainable manner prompted the analysis of the extent of the sustainable development activities of organisations. The total SDG disclosure scores from 2018 to 2020 have been analysed to assess the SDG disclosure extent of 40 JSE-listed companies. The SDG disclosure scores were analysed year-on-year and the results are presented at an overall level and have been categorised per disclosure theme. The SDG disclosure scores have also been presented by Industry.

Figure 4.1.1. illustrates that at an overall level, the extent of SDG disclosures has increased over the three-year period. The total disclosure scores have increased by 32.6% from 2018 to 2019; and 17.7% from 2019 to 2020. This shows that companies have been increasing SDG disclosures over the period. The scores can be viewed as low with regard to what companies need to make more progress in order to reach the maximum attainable score. The increasing trend identified promotes an optimistic outlook with regard to SDG disclosures

Figure 4.1.2. further analyses the SDG disclosure trends by theme in order to identify the area of the highest SDG disclosure extent. The results are presented at an overall level over the three-year period.

Figure 4.1.1. Total SDG Disclosure Scores per Year

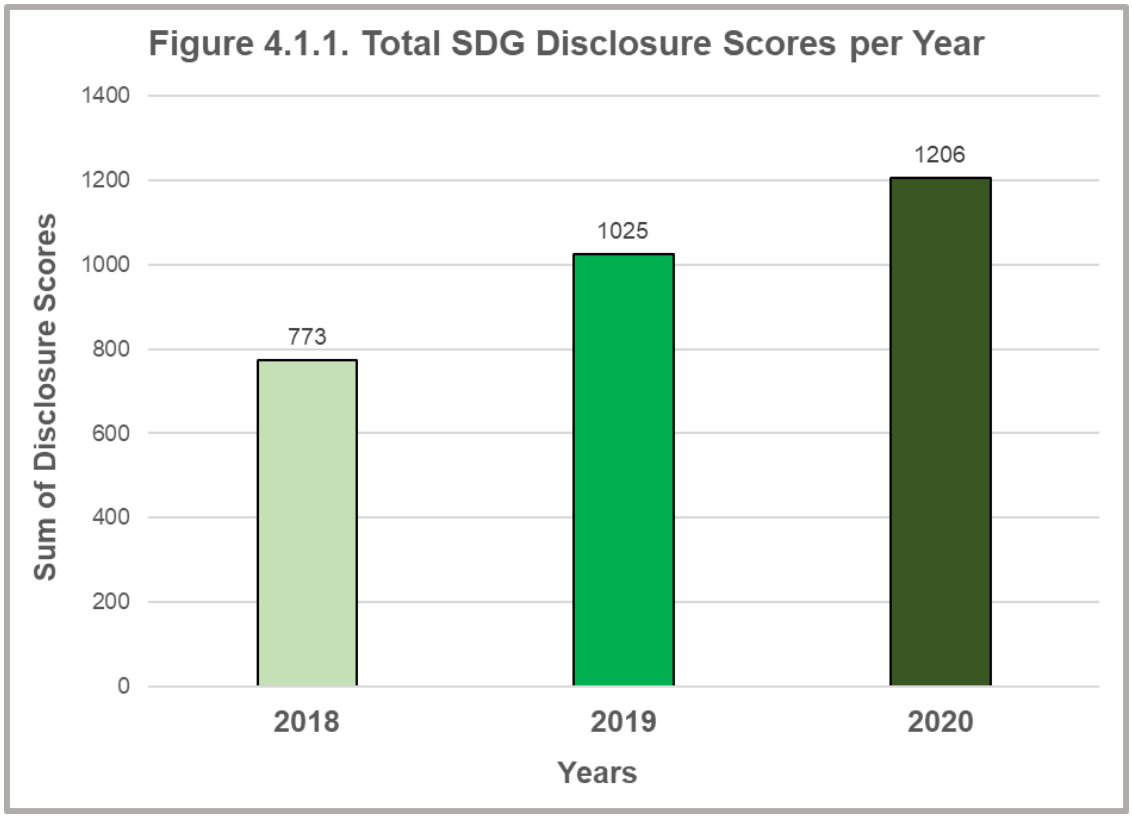


Figure 4.1.2. Total SDG Disclosure Scores per Theme

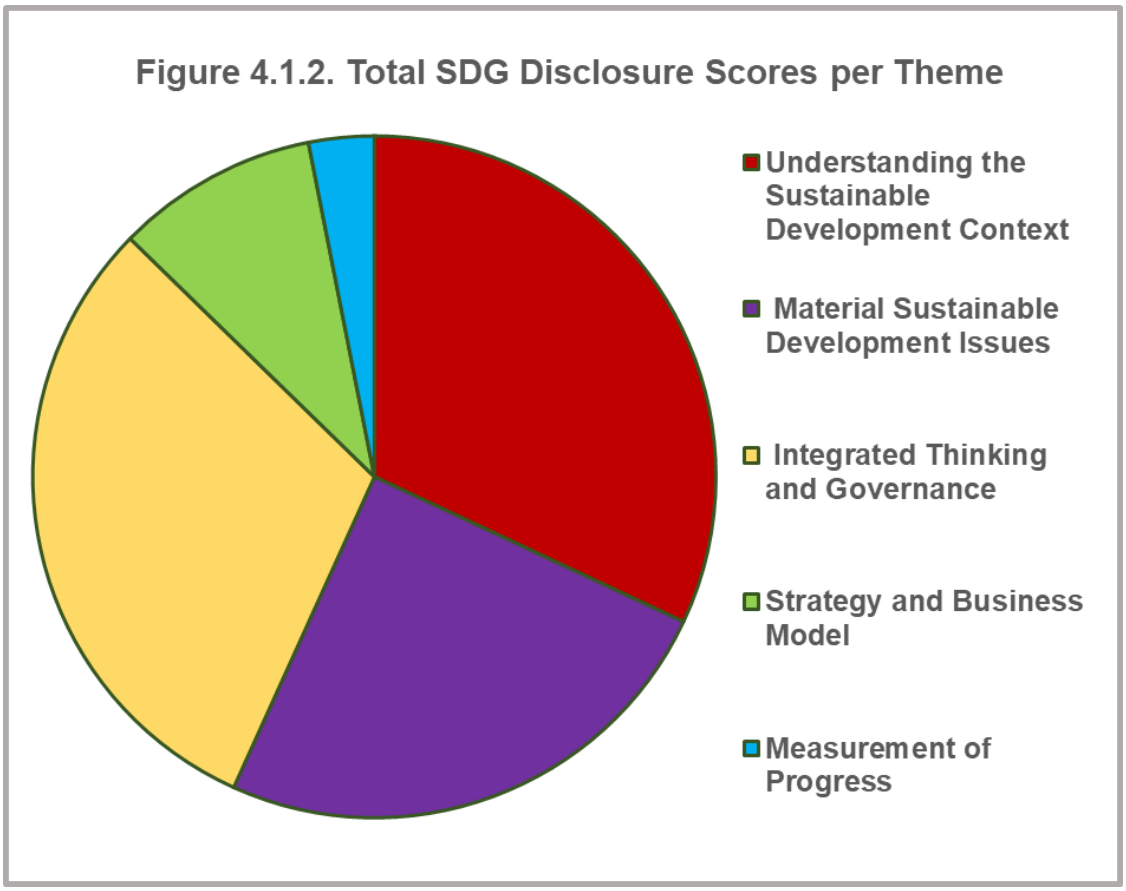
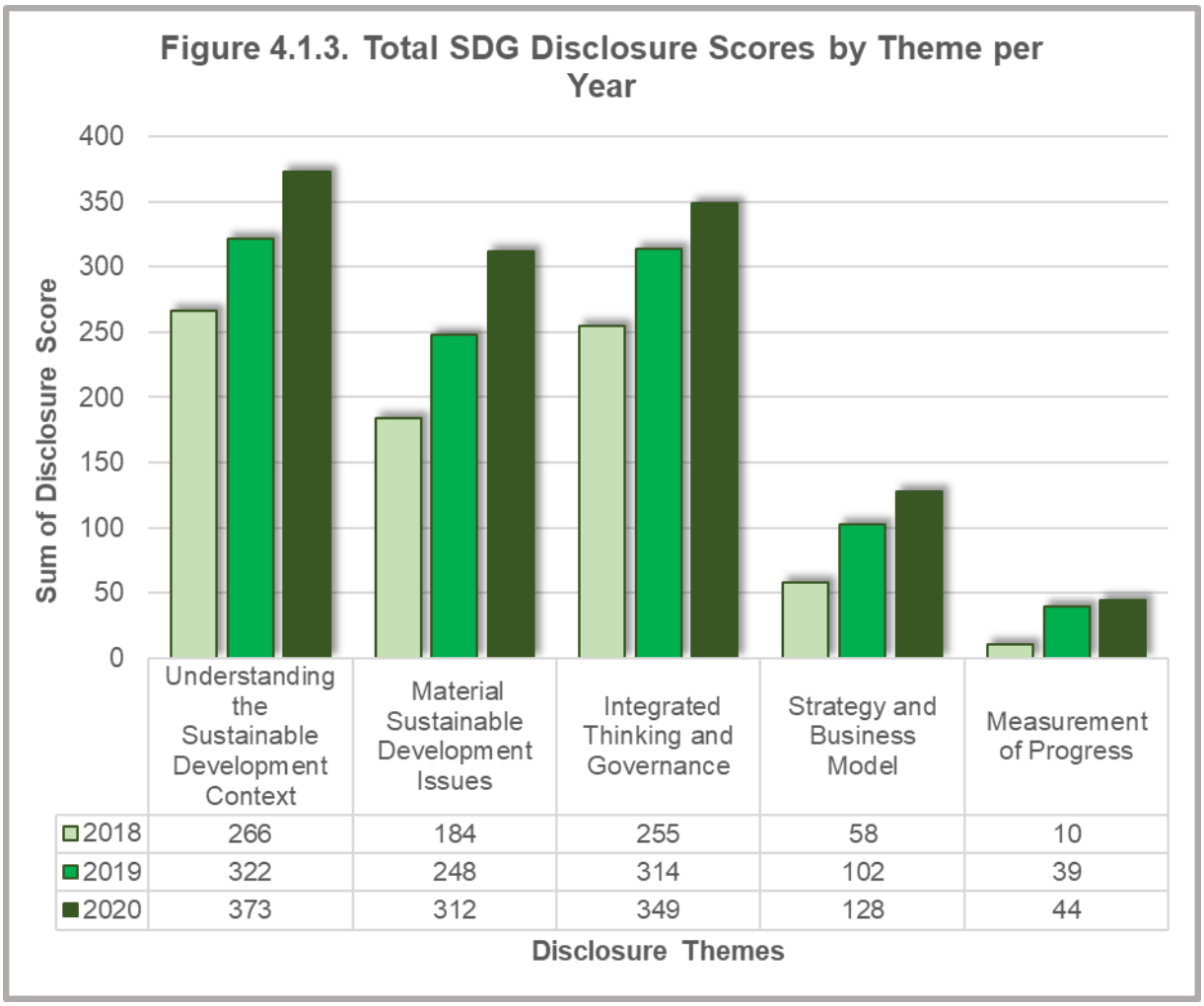


Figure 4.1.3. analyses the total disclosure score per theme per year. Each theme has shown improvement in its SDG disclosure scores over the three-year period. Overall, the total SDG disclosure score of the SDC theme is 4.7% higher than its nearest competing theme, ITG. The total disclosure score of the ITG theme is 19% higher than the *MAT* theme. The *MPG* theme has consistently produced the lowest disclosure scores in each year and has shown minimal improvement over the three-year period. Overall, the MPG theme has achieved an SDG disclosure score that is 90.3% lower than the most significant disclosure theme, SDC. MPG has also achieved an SDG disclosure score that is 67.7% lower than its nearest competing theme, SBM.

Figure 4.1.3. Total SDG Disclosure Score by Theme per Year



Understanding the sustainable development context (SDC) has proven itself to be the area in which the most SDG disclosures are made (32% of the total disclosure score over the three-year period have been made within this theme). This can be because

more disclosures which are included by this theme have been made, and higher disclosure scores have been achieved.

The next most significant theme where SDG disclosures have been made is the *Integrated thinking and Governance (ITG)* theme (31% of the total SDG disclosure score over the three-year period have been made within this theme). This can be as a result of governing bodies increasingly considering sustainable development and the SDGs within their duties, and the practice of integrated thinking promoting the disclosure of sustainable development and related issues as part of the integrated reporting process.

ITG is followed by the *Material sustainable development issues (MAT)* theme (24% of the total disclosure score over the three-year period have been made within this theme). The third place ranking achieved by this theme could be attributed to lacking consideration by companies of sustainable development and the SDGs within the materiality determination process in their integrated reports. Where sustainable development and the SDGs had been considered, disclosures were identified to be vague and minimal.

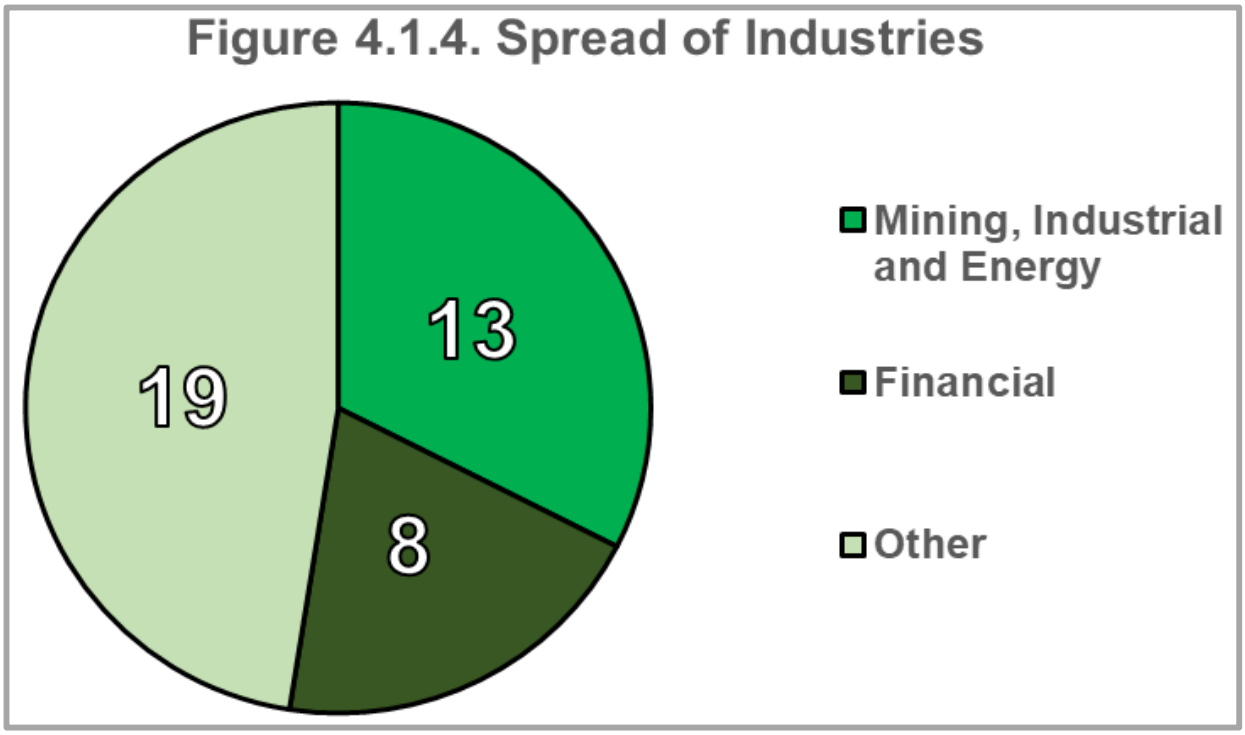
The *Strategy and business model (SBM)* theme (10% of the total disclosure score over the three-year period have been made within this theme) trails the MAT theme. Most companies lacked disclosures that explained how their strategy and business model considers sustainable development or the SDGs. Additionally, when disclosures were made, they were often vague and minimal, attracting a low score for the company in this regard.

The *Measurement of progress (MPG)* theme has established itself as the area where the lowest disclosure scores have been achieved overall (3% of the total disclosure score over the three-year period have been made within this theme). Companies consistently failed in providing disclosures which adequately provided measures which tracked progress. Often no SDG related targets were set for companies to show their progression, and where disclosures were made with regard to progress, these were vague and minimal.

Figure 4.1.4. represents the spread of industries from the sample of 40 companies. Industries were established based on the Industry Classification Benchmark (ICB) used by the JSE. This includes a total of 11 different industries. Eight (8) companies

(20%) fell into the *Financials* industry, thirteen (13) companies (32.5%) fell into the *Mining, Industrial and Energy* industries, and nineteen (19) companies (47.5%) fell into the *Other* industries category which comprised of six (6) different industries.

Figure 4.1.4. Spread of Industries



Within the sample of 40 companies, three ICB industries (Basic Materials, Energy and Industrials) were grouped into the *Mining, Industrials, and Energy* industry group. One ICB industry, after which the industry grouping is named, fell into the *Financials* industry. Six ICB industries (Healthcare, Consumer Staples, Consumer Discretionary, Telecommunications, Technology, Real Estate) fell into the *Other* industry category.

Figure 4.1.5. illustrates the total SDG disclosure scores per industry and theme. In line with the overall disclosure score trends, the SDC theme achieved the highest disclosure scores across all industry categories. This was followed by the ITG, MAT, SBM and MPG themes respectively. *Other* industries achieved the highest disclosure scores across all themes, except for the MAT and MPG themes, in which the *Mining, Industrials and Energy* industry category achieved the highest SDG disclosure scores. The *Financials* industry consistently achieved the lowest SDG score in each theme illustrating the lack of SDG-related disclosures made in this industry.

Figure 4.1.5. Total SDG Disclosure Scores per Theme by Industry

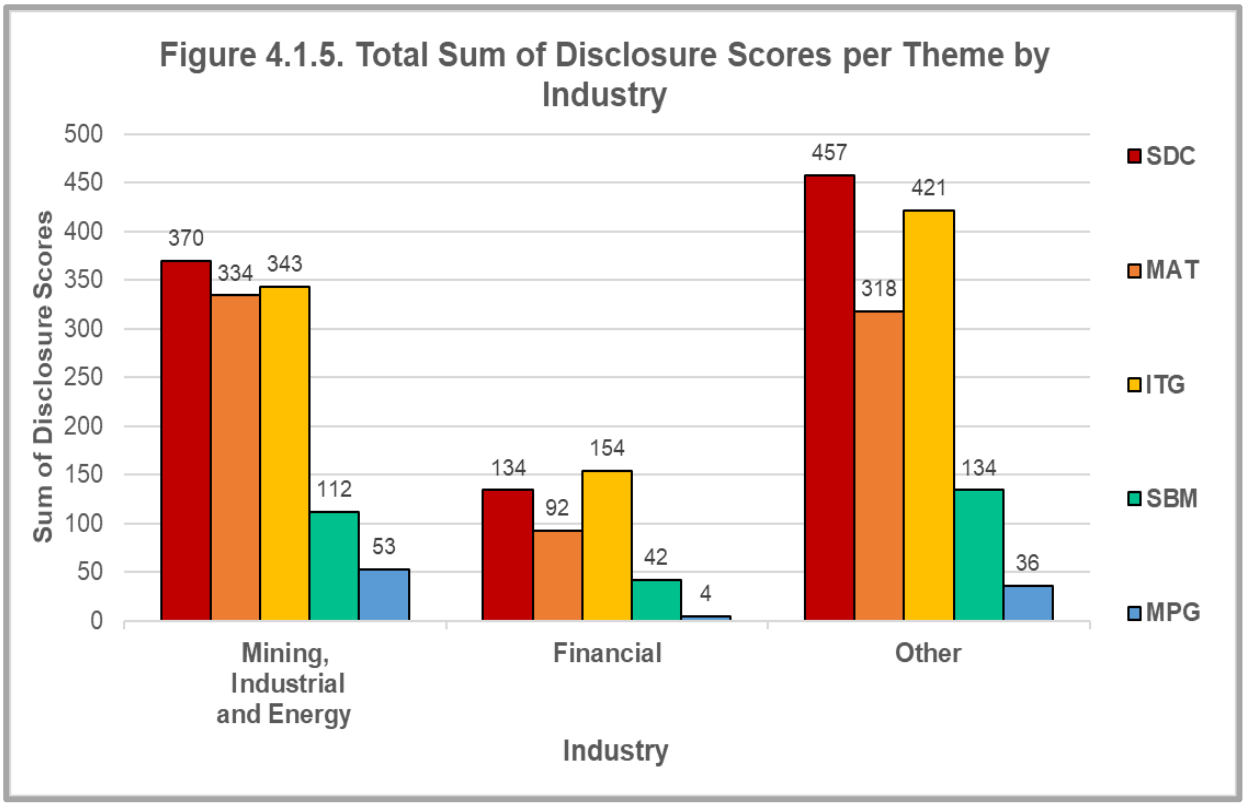


Figure 4.1.6. illustrates that *Other* industries have amassed the highest overall SDG disclosure score, followed by the *Mining, Industrials and Energy* industries. *Other* industries have exceeded the total SDG disclosure score of the *Mining, Industrials and Energy* industries by 11.3%. The *Financials* industry has achieved the lowest total SDG disclosure score and trails the *Other* and *Mining, Industrials and Energy* industries by 68.8% and 64.9% respectively. Over the three-year period, each industry has achieved increased SDG disclosure scores. *Other* industries have consistently achieved the highest SDG disclosure scores in each year, followed *by Mining, Industrials and Energy* and lastly, *Financials*.

Within the context of the industries, the *Mining, Industrial and Energy* industry group can be considered to have performed better than the *Other* industries because of only 3 ICB industries being represented within this grouping as opposed to 6. While *Other* industries comprising of 6 ICB industries has performed best from a total SDG disclosure score perspective, the *Mining, Industrials and Energy* grouping trailed the total SDG disclosure score by only 11.3%. and consisted of fewer ICB industries. As such, the *Mining, Industrials and Energy* grouping could be seen to be the industry in which the highest SDG disclosure extent is achieved

Figure 4.1.6. Total SDG Disclosure Scores per Year by Industry

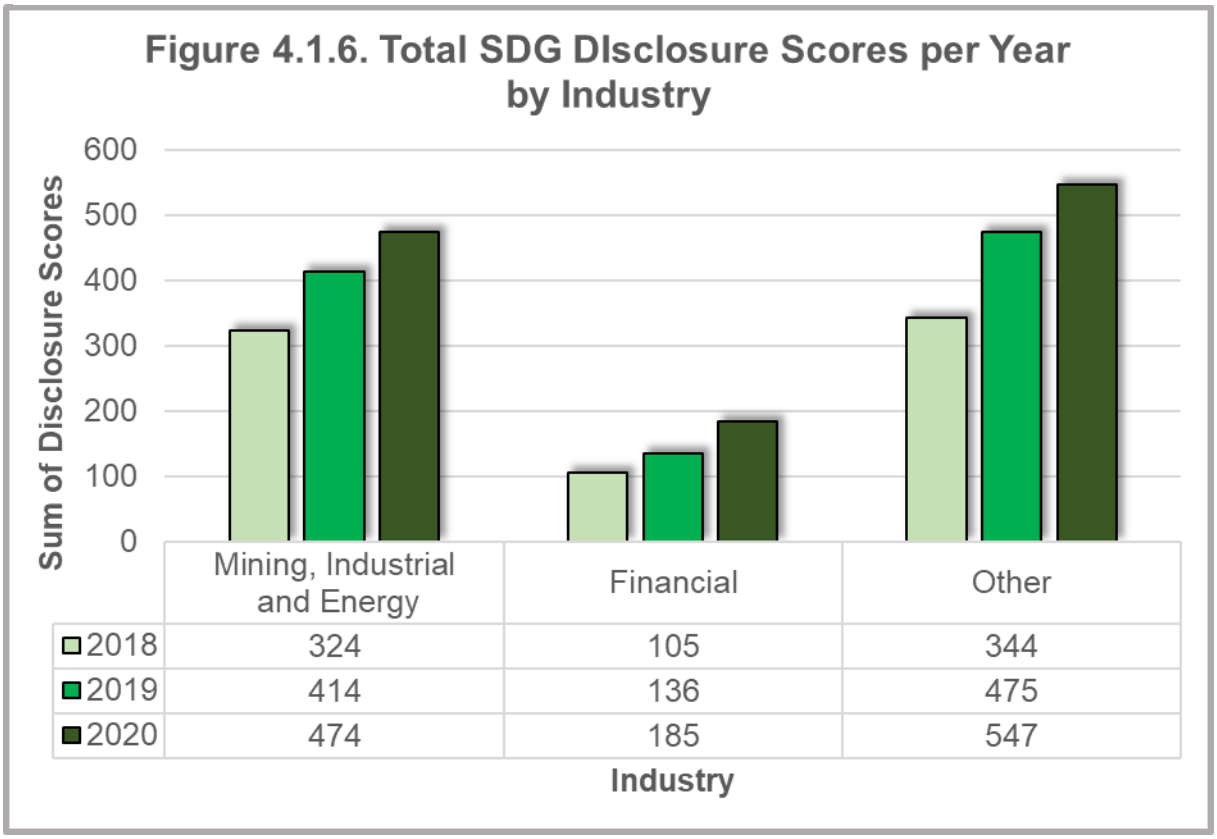


Table 4.1.1. presents the descriptive statistics for this study. The minimum, mean and maximum disclosure scores have been presented by year, industry and theme.

Table 4.1.1. Descriptive Statistics

	2018			2019			2020		
SDG Disclosure Scores	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Max**
SDC Theme	-	6,65	13,00	-	8,05	16,00	1,00	9,33	18,00
MAT Theme	-	4,60	15,00	-	6,20	15,00	-	7,80	18,00
ITG Theme	1,00	6,38	14,00	2,00	7,85	18,00	2,00	8,73	19,00
SBM Theme	-	1,45	4,00	-	2,55	8,00	1,00	3,20	8,00
MPG Theme	-	0,25	3,00	-	0,98	5,00	-	1,10	10,00
All disclosures	3,00	19,33	38,00	4,00	25,63	52,00	9,00	30,15	61,00
Mining, Industrial, Energy Industry	7,00	24,92	38,00	9,00	31,85	52,00	12,00	36,46	61,00
Financial Industry	3,00	13,13	34,00	6,00	17,00	39,00	12,00	23,13	45,00
Other Industries	3,00	18,11	33,00	4,00	25,00	44,00	9,00	28,79	48,00

It is evident from the statistics above that there have been improvements in the SDG disclosure scores. The minimum score of all disclosures in all entities has improved from a score of 3 to 4 in 2019, with a further increase to 9 in 2020. Similar increases have been seen in both the average scores and maximum scores at an overall level. There have been no decreases in the SDG disclosure scores, but, there have been several instances where no movement in the disclosure scores have occurred.

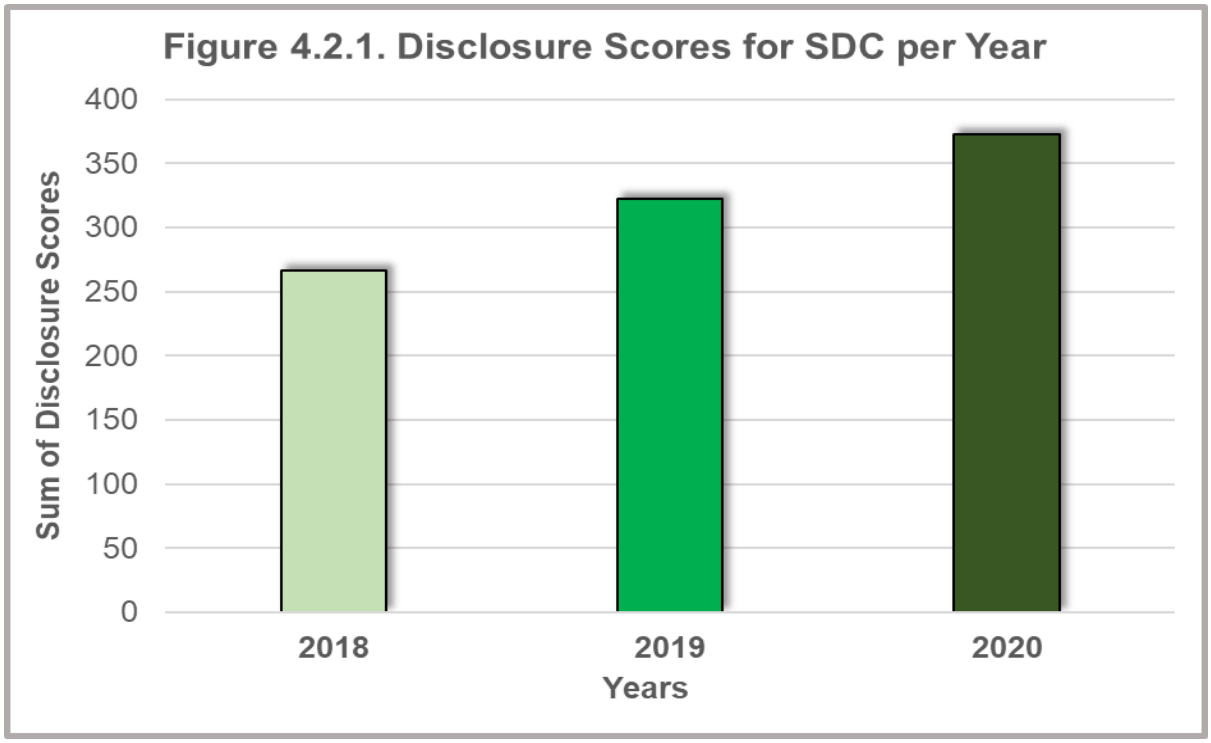
For example, within the MAT theme, the maximum score achieved by a company remained at 15 for both 2018 and 2019. Improvement was only seen in 2020 when the maximum score achieved increased to 18. The inertia of the scores presented in the table does not show regression with regard to SDG disclosures. This is iterated by subsequent increases in the disclosure scores after unchanged scores in most instances. The unchanging scores also iterate that companies are increasing their SDG disclosures at a slow pace. Whether the rate of improvement in SDG disclosures is sufficient in order for companies to demonstrate their contribution toward achieving the SDGs is questionable at the current improvement rate.

4.2. Understanding the Sustainable Development Context (SDC)

SDC is the theme where the highest SDG disclosure score has been achieved throughout the three-year period. Figure 4.2.1. illustrates the total SDG disclosure scores per year within the SDC thematic context. The extent of SDG disclosures has increased by 21% and 15.8% from 2018 to 2019 and from 2019 to 2020 respectively, within this theme.

The relative significance of the SDG disclosure scores achieved in this theme can be attributed to higher disclosure scores being achieved per disclosure item, as well as more disclosure items being disclosed. Companies achieved scores of 3 for disclosure items in this theme, more than in any other theme.

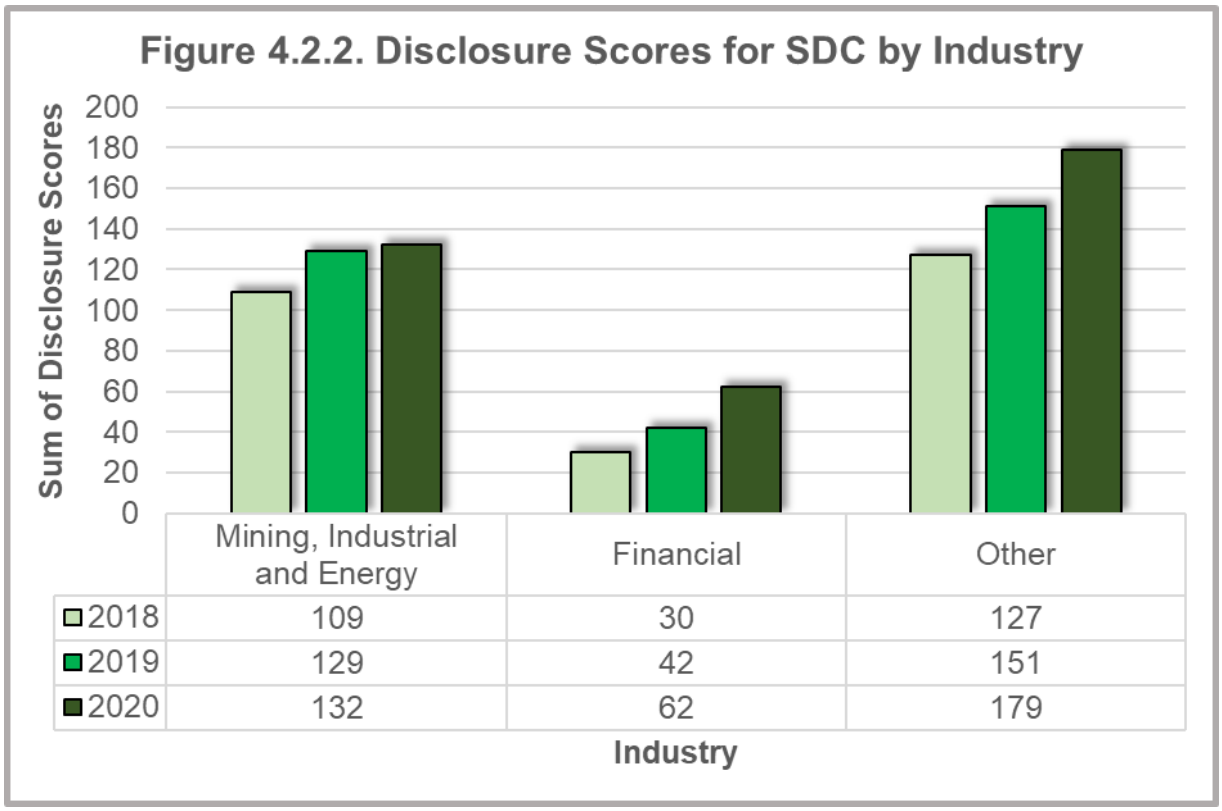
Figure 4.2.1. Disclosure Scores for SDC per Year



The overall increasing trend has also been illustrated within the industry groupings as shown in Figure 4.2.2. The SDG disclosure extent within each industry group is shown to have increased over the three-year period. Within this theme, *Other* industries have achieved the highest total SDG disclosure scores over the three-year period. This may be attributed to more companies being represented in this grouping. *Mining, Industrial and Energy* has achieved the second highest scores over the three-year period. The proportion of companies within each industry group may result in *Mining, Industrial and Energy* to be viewed as having achieved the highest score within this theme because of having fewer companies represented in the industry than *Other* industries.

The *Financial* industry has consecutively achieved the lowest SDG disclosure scores within this theme. The nature of the companies' business operations within the *Financial* theme is centred in banking and finance as opposed to activities which have strenuous environmental and external impacts such as the companies represented within the other industry themes. This may be a reason for limited contextual information regarding sustainable development and the SDGs to be disclosed within the *Financial* industry.

Figure 4.2.2. Disclosure Scores for SDC by Industry

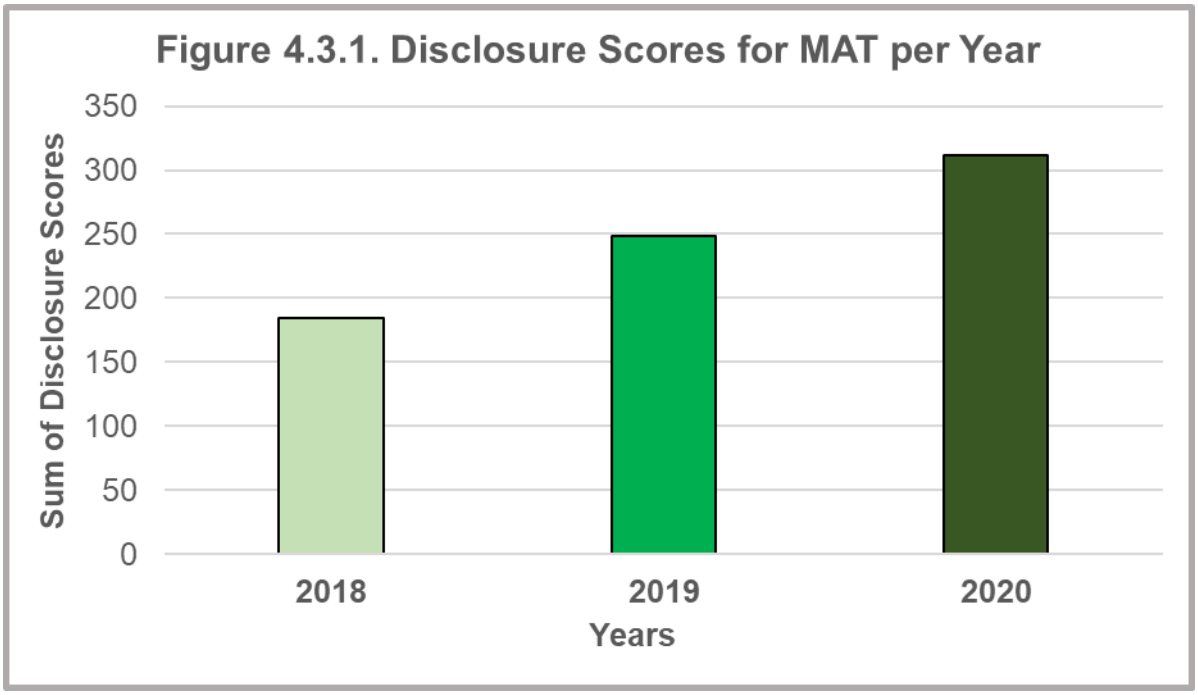


4.3. Material Sustainable Development Issues (MAT)

In alignment with the overall trends observed, the total SDG disclosure scores in this theme have increased year-on-year as illustrated. The number of SDG disclosure scores increased by 34.78% from 2018 to 2019. It has increased further by 25.81% from 2019 to 2020. This theme showcased the third-highest SDG disclosure scores.

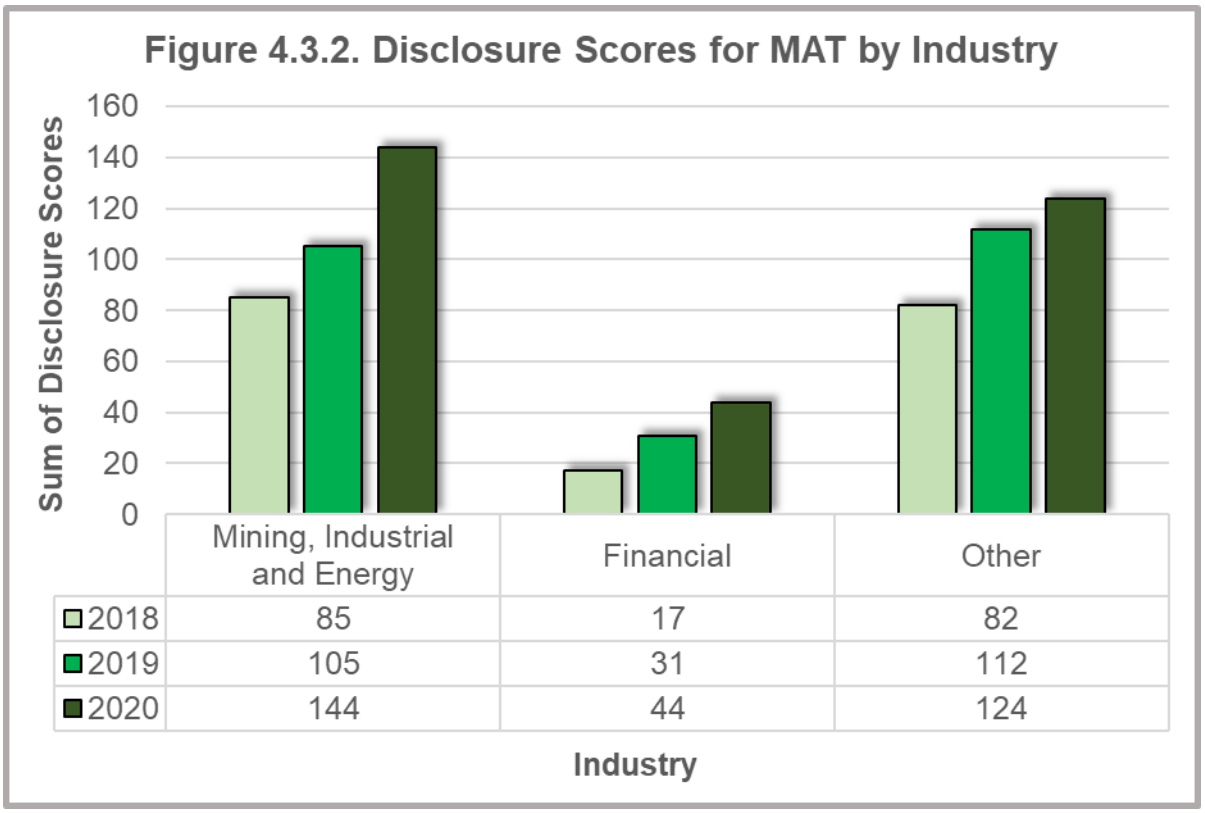
The results achieved in this theme may be attributed to companies not considering sustainable development within their materiality determinations. Where companies considered sustainable development within its materiality determinations, they would often disclose material issues meeting a higher disclosure score. Where companies considered the SDGs in their materiality or material matters, material SDGs related to the company are usually also disclosed. Consequently, where there was no consideration of the SDGs (as seen most in the *Financial* industry), these disclosures were not made, resulting in lower scores.

Figure 4.3.1. Disclosure Scores for MAT per year



As illustrated in Figure 4.3.2., the industry groupings have also demonstrated the overall increasing trend with regard to the disclosure scores. The SDG disclosure score have increased over the three-year period. With regard to this theme, *Mining, Industrial and Energy* achieved the highest SDG disclosure scores in 2018 and 2020. This group provided more disclosures which integrate materiality and material matters with sustainable development and the SDGs. During 2019, *Other* industries achieved the highest total SDG disclosure score but, this was only achieved by a 6% margin. The *Financial* industry has achieved the lowest SDG disclosure scores within this theme throughout the three-year period. The nature of the companies' business operations within the *Financial* theme could be a reason for limited consideration of the SDGs and sustainable development within materiality determinations.

Figure 4.3.2. Disclosure Scores for MAT by Industry



4.4. Integrated thinking and Governance (ITG)

Figure 4.4.1. illustrates the increase in SDG disclosures presented. The disclosure scores have increased by 23.14% from 2018 to 2019, and by 11.15% from 2019 to 2020. This theme ranked second for the highest SDG disclosure score. The relative significance of the SDG disclosure scores achieved in this theme can be attributed to higher disclosure scores achieved per disclosure item, as well as more disclosure items being disclosed. This may be attributed to governing bodies increasingly considering sustainable development and the SDGs throughout their duties, within the integrated report.

The overall increasing trend has also been illustrated within the industry groupings as shown in Figure 4.4.2. The SDG disclosure extent within each industry has increased over the three-year period. Within this theme, *Other* industries has achieved the highest total SDG disclosure scores over the three-year period. This could be attributed to more companies being represented in this grouping. *Mining, Industrial and Energy* has achieved the second-highest scores over the three-year period. The *Financial* industry has, once again, consecutively achieved the lowest SDG disclosure

scores within this theme. The *Financial* industry consistently lacks in providing disclosures related to sustainable development and the SDGs that are not vague and minimal.

Figure 4.4.1. Disclosure Scores for ITG per Year

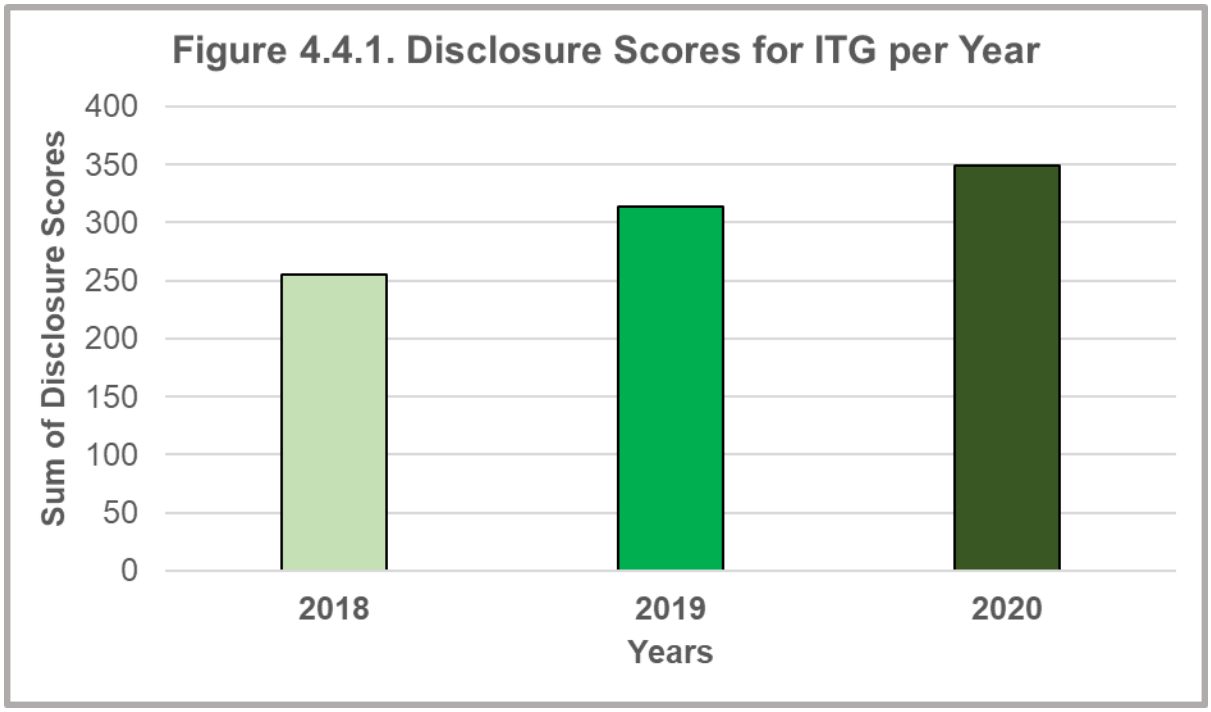
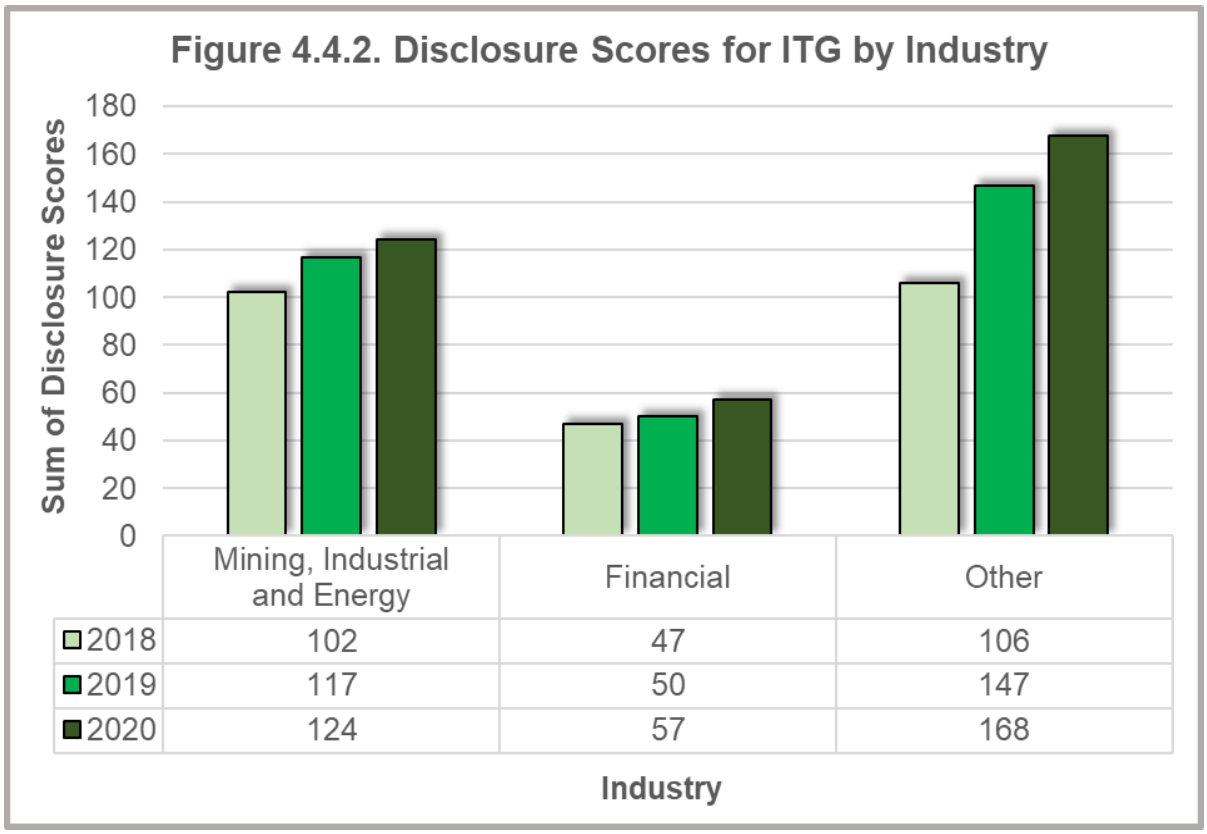


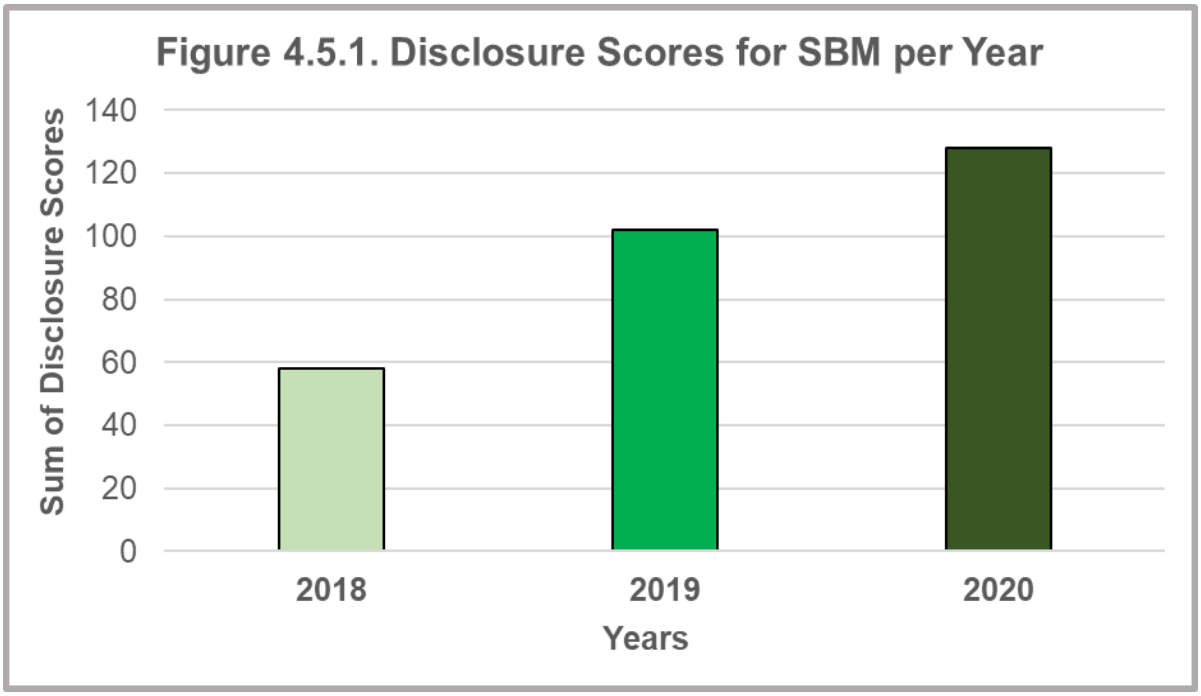
Figure 4.4.2. Disclosure Scores for ITG by Industry



4.5. Strategy and Business Model (SBM)

Figure 4.5.1 illustrates the year-on-year, overall increase in the extent of SDG disclosures observed, within this theme. The disclosures scores have increased by 75.86% from 2018 to 2019. It has increased by a further 25.49% from 2019 to 2020. The results are because companies often do not consider sustainable development within its strategy and business model. Where these considerations were made, they were often vague, implied or minimal. This caused the low SDG scores achieved within this theme.

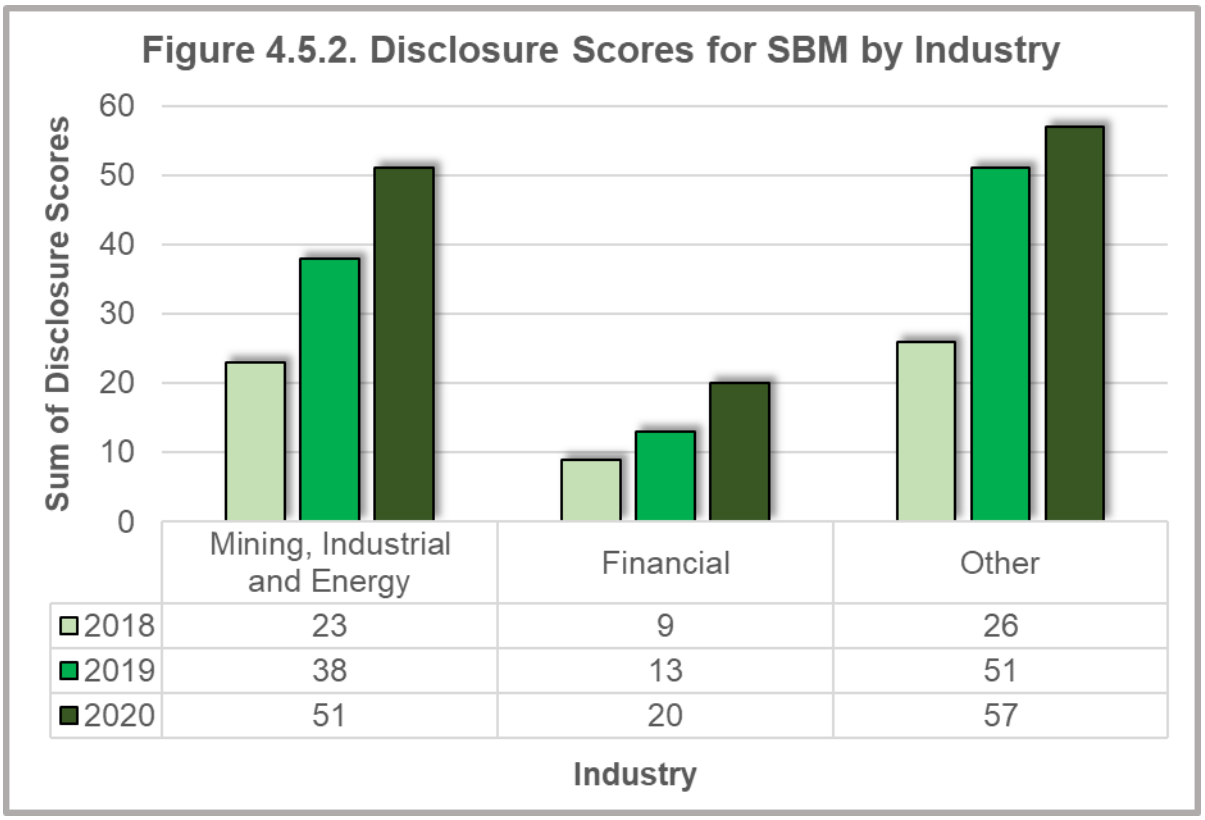
Figure 4.5.1. Disclosure Scores for SBM per Year



The increasing trend has also been illustrated in each industry group in Figure 4.5.2. Within this theme, *Other* industries has achieved the highest total SDG disclosure scores over the three-year period. *Mining, Industrial and Energy* has achieved the second highest scores over the three-year period, and the *Financial* industry has consistently achieved the lowest SDG disclosure scores within this theme. However, the *Financial* industry is the only industry group which has increased its growth from 2018 to 2019 (44%) and from 2019 to 2020 (54%). The other industry groups, have seen increases in the SDG scores achieved in each year but, the proportion of increase in scores has decreased for each group. *Mining, Industrial and Energy* has seen SDG disclosure score growth of 65% from 2018 to 2019, however, the growth

rate decreased to 34% from 2019 to 2020. Similarly, the *Other* industry group, has achieved an SDG disclosure score growth of 96% from 2018 to 2019, and severely diminished growth of only 12% from 2019 to 2020.

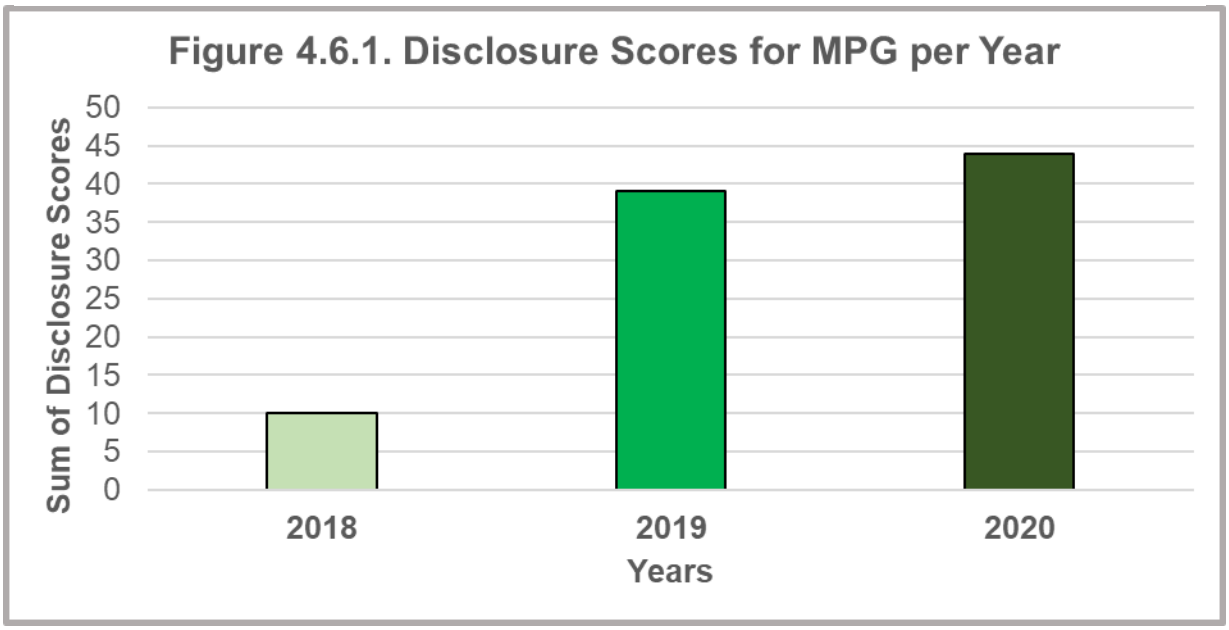
Figure 4.5.2. Disclosure Scores for SBM by Industry



4.6. Measurement of Progress (MPG)

Figure 4.6.1. illustrates the increase in SDG disclosures over the three-year period within this theme. The disclosure scores have increased by 290% from 2018 to 2019, and by 12.8%% from 2019 to 2020. While there have been increases in the SDG disclosure scores over the three-year period, the increases do not indicate sufficient progress measurement criteria with regard to the SDGs. Companies still lack disclosures which set targets which, if achieved, will help to achieve the SDGs. The total scores achieved in each year are significantly lower than in other themes. It is also evident that the progression of the increase in the disclosure scores has significantly decreased from 2018 to 2019, and from 2019 to 2020. Without explicit targets to enable the achievement of the SDGs, the disclosures made with regard to the SDGs can be seen to be mere words without action, and progress toward achieving the SDGs cannot be measured.

Figure 4.6.1. Disclosure Score for MPG per Year



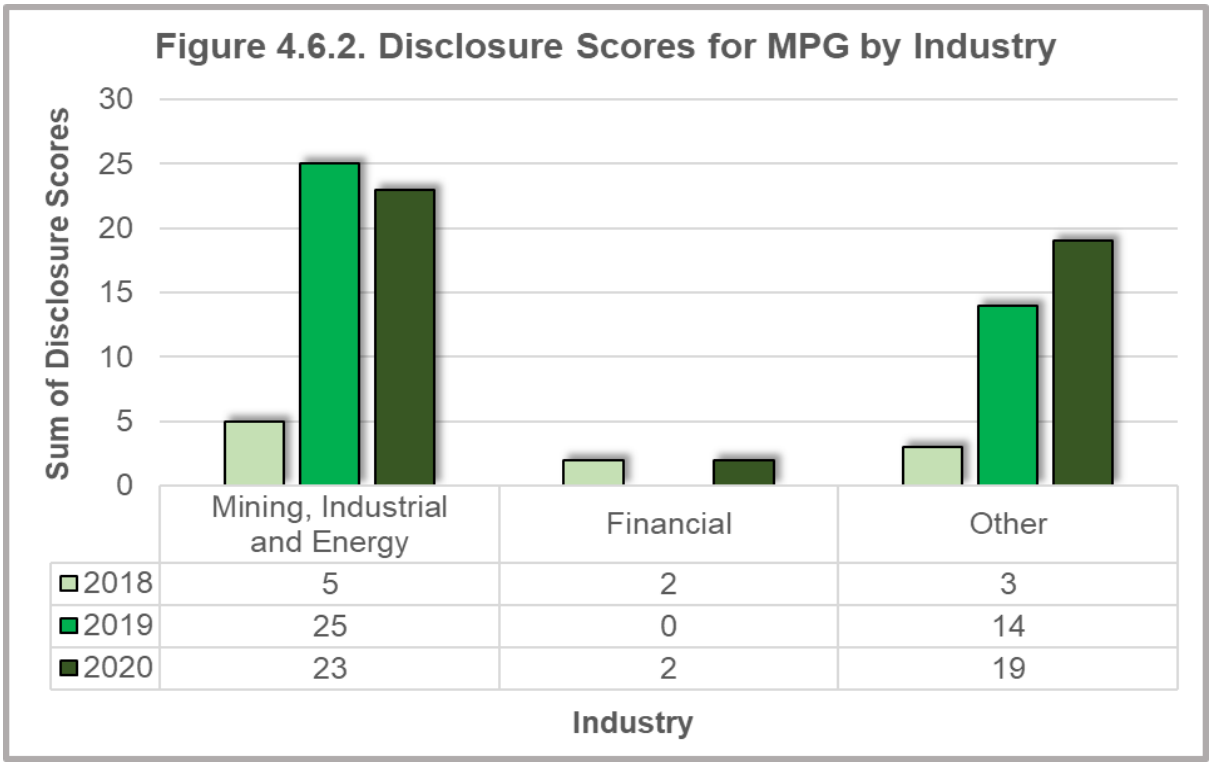
The industry groupings have also demonstrated the overall increasing trend of disclosure scores. This is illustrated in Figure 4.6.2. Within this theme, *Mining, Industrial and Energy* achieved the highest SDG disclosure scores throughout the three-year period. *Other* industries achieved the second highest total SDG disclosure score. The *Financial* industry has achieved the lowest SDG disclosure scores throughout the three-year period, and achieved a disclosure score of 0 in 2019.

The *Financial* industry has performed particularly poorly as total disclosure scores achieved range from zero to two for each year. This means that companies have not measured progress toward achieving the SDGs at all. While the *Financial* industry has performed poorly throughout all themes, these results can be seen to be proportionate with other the SDG disclosures made in this industry. However, these companies need to set targets within their business contexts in order to achieve the SDGs.

While the other industry groups have outperformed the *Financial* industry, the results achieved are poor. Total disclosure scores per year across these industries range from 3 to 25 in each year, which is significantly lower than the scores achieved in these industries in other themes. Since the *Mining, Industrial and Energy* and *Other* industry groups have performed well in the other themes, the proportion of measurement criteria and targets to achieve the SDGs should be higher than they currently are. In other words, since more SDG related disclosures are made, more progress measurement targets should be met and new ones made in order to assess whether

the disclosures have actually been enacted and improved upon year-on-year. It is concerning that within the Mining, Industrial and Energy industry group, there has been a decline in the disclosure score from 2019 to 2020. This corroborates that companies are not doing as well as they should do in achieving the SDGs.

Figure 4.6.2. Disclosure Scores for MPG by Industry



4.7.1. Statistical analysis (RQ 2)

Table 4.7.1. reflects the correlation matrix for all variables in this study.

Table 4.7.1. Correlation Matrix

Variables	SDC	MAT	ITG	SBM	MPG	IV1 - Size	IV2 - Experience	IV3 - Industry
SDC	**1**	.652**	.626**	.519**	.280**	-0,119	0,142	0,108
MAT	.494**	**1**	.568**	.646**	.511**	0,112	0,178	.251**
ITG	.472**	.434**	**1**	.702**	.458**	-0,061	0,135	0,143

SBM	.408**	.513**	.569**	**1**	.518**	0,059	0,081	0,028
MPG	.228**	.412**	.373**	.444**	**1**	.295**	0,153	.245**
IV1 - Size	-0,101	0,089	-0,052	0,050	.268**	**1**	-0,043	.411**
IV2 - Experience	0,114	.149*	0,109	0,069	0,142	-0,039	**1**	.358**
IV3 - Industry	0,082	.193**	0,117	0,021	.222**	.370**	.329**	**1**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
IV - Independent Variable
Spearman's rho above the diagonal; Kendal's tau-b below the diagonal

The correlation between SDC and MPG is moderate and positive ($r_s = .280$; $p < 0.01$). The correlation is statistically significant at the 1% level. This indicates that where SDG disclosures were made within the MPG theme, there would have been SDG disclosures categorised into the SDC theme.

Correlations between the disclosure themes and company size are moderate to weak. There are negative correlations with the SDC ($r_s = -0.119$; $p > 0.1$) and ITG ($r_s = -0.061$; $p > 0.1$) themes and the company size. These suggest that an increase in the company size is not associated with more disclosures in the SDC and ITG themes. The correlation between the MPG theme and company size ($r_s = .295$: $p < 0.01$) demonstrates a moderate positive relationship.

The correlations between the disclosure themes and board experience are positive and moderate to weak relationships. None is significant at the 1% or 5% level. This suggests that the existence of a sustainability committee or functions of a sustainability committee integrated within other committees does not significantly influence the extent of SDG and sustainable development disclosures within any disclosure theme. The correlation between company size and board experience ($r_s = -0.043$; $p > 0.1$) demonstrates a negative, weak relationship, suggesting that instituting a sustainability committee or its functions is not influenced by the size of the company.

The correlations between the disclosure themes and industry demonstrate positive and weak relationships. Correlations between the MAT (r_s = .251; p < 0.01) and MPG (r_s = .245; p < 0.01) theme and industry are significant at the 1% level. The moderate, yet statistically significant correlations indicate that the industry influences whether disclosures within these themes will be produced. The correlation also suggests that disclosures related to considerations of sustainable development and the SDGs within materiality, and progress measurement of SDG achievement, are not sufficient within the relevant industries.

4.7.2. Non-parametric tests

Table 4.8.1. shows the results from the non-parametric tests. This shows the relationships between the SDG disclosure themes and the independent variables (company size, board experience and industry) in this study.

Table 4.8.1. Non-Parametric Tests Results

	Grouping Variables					
	Size		Experience		Industry	
Themes	KW-Test (H)	Std. JT-Test	KW-Test (H)	Std. JT-Test	KW-Test (H)	Std. JT-Test
SDC	9,130 **	-1,382	2,435	1,525	12,715 ***	1,121
MAT	6,555 *	1,216	3,786	1,976 **	19,743	2,619 ***
ITG	6,308 *	-0,707	2,225	1,443	7,227 **	1,569
SBM	0,774	0,649	1,536	0,879	4,499	0,277
MPG	15,915 ***	3,274 ***	7,284 **	1,686 *	13,530 ***	2,696 ***

**** Significant at the 1% level*
*** Significant at the 5% level*
** Significant at the 10% level*

Size

The results presented in Table 4.8.1. demonstrate that there is a positive relationship between company size and SDG disclosures in each theme. Reiterating the results established in the correlation matrix, particularly significant relationships can be seen between the SDC theme [(H = 9.130; p < 5%) and (J = -1.382; p > 10%)] and the MPG theme [(H = 15.915; p < 1%) and (J = 3.274; p < 1%)]. This suggests that larger companies are more likely to produce SDG and related disclosures which can be categorised into contextual and progress measurement criteria (SDC and MPG themes).

The same can be concluded for which can be categorised into the MAT [(H = 6.555; p < 10%) and (J = 1.216; p > 10%)] and ITG [(H = 6.308; p < 10%) and (J = -0.707; p > 10%)] themes, despite the lower statistical significance. The SBM theme does not conform to the relationships established between the other themes and company size, the likelihood of larger companies producing SDG related disclosures with regard to an entity's strategy and business model is unlikely.

Board experience

Table 4.8.1. shows positive relationships between each of the disclosure themes and board experience. The statistical significance of the relationships is low. This iterates that the establishment of a sustainability committee or its relevant functions within other board committees does not necessarily increase the likelihood of SDG and related disclosures within the disclosure themes.

The MPG theme is the only theme where a strong relationship with board experience has been presented [(H = 7.284; p < 5%) and (J = 1.686; p < 10%)]. The statistical significance suggests that establishing a sustainability committee or sectioning its relevant functions within other board committees could increase the likelihood of disclosure of performance measurement criteria with regard to achieving the SDGs.

Industry

The findings demonstrate a positive relationship between each disclosure theme and the industry group. The SDC [(H = 12.715; p < 1%) and (J = 1.121; p > 10%)], ITG [(H = 7.227; p < 5%) and (J = 1.569; p > 10%)], and MPG [(H = 13.530; p < 1%) and (J = 2.696; p < 1%)] themes in particular are statistically significant. Consequently, companies in the *Mining, Industrial and Energy* industries which were allocated

grouping variable values of 3, are expected to produce more SDG related disclosures, with particular emphasis on the above themes, than companies in the *Financial* industry which were allocated a grouping variable value of 2.

The nature of the industries can be the reason that these results have been established. For example, mining companies have higher external and environmental impacts than banking companies which could warrant additional disclosure of its external impacts within integrated reports. The relationships established between the relevant industries and the disclosure themes indicate that companies operating in industries with inherently higher environmental and external impacts provide more SDG and related disclosures than companies that operate in industries with lower environmental and external impacts.

5. SUMMARY AND CONCLUSION

This paper develops a checklist for SDG and related disclosures based on the preliminary starting point of the SDGD Recommendations created by Adams et al. (2020). The researcher applied the checklist to the integrated reports of 40 South African listed companies for the purpose of evaluating the extent of SDG disclosures within the South African context. The extent of SDG disclosures was evaluated over the three-year period spanning from 2018 to 2020 by allocating scores to companies based on the extensiveness of the SDG and related disclosures in the integrated reports.

The results showed that the overall extent of SDG disclosures has increased year-on-year (RQ1). The increase was further seen throughout all descriptive statistics over the three-year period. While the increases demonstrate that South African companies are becoming more cognisant of sustainable development and using the SDGs as a means to achieve it, the improvement is minimal. South African companies are ahead of their African competitors with regard to SDG reporting and disclosure but, there is still a long way to go in order to achieve a sufficient level of SDG disclosure (Erin & Bamigboye, 2021).

The extent of SDG disclosures was also evaluated thematically. The themes were *Understanding the Sustainable Development Context* (SDC), *Material Sustainable Development Issues (*MAT), *Integrated Thinking and Governance* (ITG), *Strategy and*

Business Model (SBM) and *Measurement of Progress* (MPG). The extent of SDG disclosure increased year-on-year in each theme, reiterating the overall improvement. The SDC and ITG themes were most notable themes where SDG disclosures had been made, followed by MAT, SBM and MPG. While companies provided adequately extensive information with the SDC, ITG and MAT themes, the sentiments at an overall level are still applicable: companies do not provide sufficient SDG disclosures across all themes.

The MPG theme demonstrated lowest results throughout the three-year period. This indicates that companies are not setting measures or targets to enable the achievement of the SDGs. The extensive disclosures provided in other themes in proportion to the MPG theme shows that companies are providing disclosures related to sustainable development and the SDGs, and are doing so across different aspects in the business. This is represented by the large proportion of the total disclosure score being distributed mostly on the SDC, ITG and MAT themes.

Companies are lacking in providing disclosures to enable the contribution toward achieving the SDGs and sustainable development to be tracked. Additionally, where these disclosures have been provided, they are often vague and makes no sense. The disclosures falling into SBM theme have also been scarce and, where these disclosures had been provided, they were minimal and vague. In order to provide users with a holistic outlook into the company's sustainable development actions and contributions, companies should provide disclosures which align with each theme established. This will promote a better understanding of the company's sustainable development practices as well as provide users with the methods of tracking changes and improvements in these practices.

Further analysis was performed to identify possible drivers of SDG reporting within integrated reports (RQ2a). In alignment with the initial expectations, the size of the company appears to influence reporting on sustainable development and the SDGs. Although this did not hold true for disclosures within the SBM theme, for all other themes, strong relationships were demonstrated. As explained in Section 2, the strong relationships observed may be because of the underlying normative pressure on organisations to provide sustainable development and SDG related disclosures.

Larger organisations will be exposed to more pressure, leading to adoption of SDG reporting in their respective integrated reports.

Contrary to the initial expectations, board experience represented through the establishment of a sustainability committee (Malola & Maroun, 2019) does not influence the extent of sustainable development and SDG disclosures in integrated reports (RQ2b). The results demonstrated that while, at an overall level, the existence of a sustainability committee does not influence the extent of SDG and related disclosures, the existence of a sustainability committee can increase the likelihood of progress measurement SDG-related disclosures.

These findings may be attributed to the source-based limitation imposed by the study. No sustainability reports were evaluated for the purposes of this research. Many companies prepare separate sustainability reports which include additional and more comprehensive sustainable development related information. Analysis of these reports may indicate that the establishment of a sustainability committee does, in fact, influence the sustainable development and SDG disclosures provided by a company. However, within integrated reports, companies have not demonstrated that the existence of a sustainability committee contributes to and increases the extent of SDG and related disclosures. For the purposes of this study, the integrated reports do not demonstrate a relationship between SDG and related disclosures and the establishment of a sustainability committee.

Finally, in alignment with the initial expectations, the industry of operations (RQ2c) influences the extent of sustainable development and SDG disclosures. This is probably attributable to the nature of the business operations of the different entities. As a result, companies with high external impacts on the environment, people and surrounding communities (such as mining, industrial, and food companies) may be prompted to provide more disclosures regarding these impact. Providing these disclosures can enable the companies to uphold their social contract and demonstrate their contribution to reducing any and all negative impacts caused by the company. The normative pressures to provide disclosures which demonstrate accountability by the company are stronger for high-impact companies than for low-impact companies such as banks. As such, the results have presented that companies in the *Mining,*

Industrial and Energy and *Other* industry categories provided more extensive disclosures than the companies in the *Financial* industry.

These findings contribute toward academic literature and business practices. As this study is one of the first studies to evaluate the extent of SDG disclosures in South Africa, it provides a useful basis upon which to expand the evaluation of SDG reporting in the country. The results can be compared to and are in alignment with similar studies performed overseas to develop the progression of South Africa's SDG disclosure extensity (Erin & Bamigboye, 2021; Erin et al., 2022). In practice, the results enable companies to re-evaluate their SDG disclosure strategy and improvements can be made based on the minimum checklist requirements.

This research can be extended through reducing the limitations imposed on this study. For example, extending the study to include other reports such as Sustainability reports could provide additional insight into the SDG reporting practices of entities as these reports are still widely used. As this research was based on a relatively small sample size, future research can increase sample sizes and the period under review can be extended. Increasing the scope of the research in these regards can result in more refined and extensive conclusions which could increase the understanding of SDG disclosure extensiveness. The limitation of not invoking the preparers of integrated reports, may be reduced in future studies by incorporating the preparers' perceptions and judgements. This could increase the understanding of the interrelatedness between the SDGs and other business aspects. Despite the limitations imposed on the study, this study provides a starting point for future studies grounded in SDG reporting to be based.

Continuing research and further studies in the fields of sustainability and the SDGs could iterate their importance in corporate environments. Companies could heed the advice given by researchers to take cognisance of the SDGs and take responsibility for their actions. It could prompt the companies to take action in their own capacities to try to achieve the SDGs.

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7. APPENDICES

Appendix A - Companies randomly selected

JSE Code	Company Name	Market Cap (R '000 000)
ABG	Absa Group Limited	161 446
AMS	Anglo American Platinum Limited	532 314
ANG	Anglogold Ashanti Limited	146 598
ANH	Ab Inbev Limited	1 542 672
APN	Aspen Pharmacare Holdings Limited	90 397
BHG	BHP Group Limited	2 883 499
BID	Bid Corporation Limited	106 665
BTI	British American Tobacco Limited	1 515 021
BVT	Bidvest Group Limited	76 119
CFR	Richemont Limited	987 206
CLS	Clicks Group Limited	75 399
CML	Coronation Fund Managers Limited	16 213
CPI	Capitec Bank Holdings Limited	271 854
DCP	Dis-Chem Pharmacies Limited	32 786
EXX	Exxaro Resources Limited	77 382
FSR	Firstrand Limited	434 567
GFI	Gold Fields Limited	203 248
GLN	Glencore Limited	1 402 463
IMP	Impala Platinum Limited	190 868
KIO	Kumba Iron Ore Limited	211 085
MEI	Mediclinic International Plc	50 929
MNP	Mondi Group Limited	141 539
MRP	Mr Price Group Limited	55 609
MTN	MTN Group Limited	358 011
NPN	Naspers Limited	724 743
PPH	Pepkor Holdings Limited	86 009
REM	Remgro Limited	79 287
RNI	Reinet Investments Limited	64 222
S32	South32 Limited	262 569
SAP	Sappi Limited	32 261
SBK	Standard Bank Group Limited	305 623
SHP	Shoprite Holdings Limited	139 946
SLM	Sanlam Limited	160 788
SRE	Sirius Real Estate Limited	28 460
SSW	Sibanye-Stillwater Limited	169 221
TBS	Tiger Brands Limited	30 192
TRU	Truworths International Limited	24 531

TSG	Tsogo Sun Gaming Limited	12 644
VOD	Vodacom Group Limited	293 738
WHL	Woolworths Holdings Limited	60 786

Appendix B – List of integrated and annual reports analysed

Company Name	2020		2019		2018	
	Integrated Report	Annual Report	Integrated Report	Annual Report	Integrated Report	Annual Report
Absa Group Limited	✓	×	✓	×	✓	×
Anglo American Platinum Limited	✓	×	✓	×	✓	×
AngloGold Ashanti Limited	✓	×	✓	×	✓	×
Ab Inbev Limited	×	✓	×	✓	×	✓
Aspen Pharmacare Holdings Limited	✓	×	✓	×	✓	×
BHP Group Limited	×	✓	×	✓	×	✓
Bid Corporation Limited	✓	×	✓	×	✓	×
British American Tobacco Limited	×	✓	×	✓	×	✓
Bidvest Group Limited	✓	×	✓	×	✓	×
Richemont Limited	×	✓	×	✓	×	✓
Clicks Group Limited	✓	×	✓	×	✓	×
Coronation Fund Managers Limited	✓	×	✓	×	✓	×
Capitec Bank Holdings Limited	✓	×	✓	×	✓	×
Dis-Chem Pharmacies Limited	✓	×	✓	×	✓	×
Exxaro Resources Limited	✓	×	✓	×	✓	×
Firstrand Limited	✓	×	✓	×	✓	×
Gold Fields Limited	×	✓	×	✓	×	✓
Glencore Limited	✓	×	✓	×	✓	×
Impala Platinum Limited	✓	×	✓	×	✓	×
Kumba Iron Ore Limited	✓	×	✓	×	✓	×
Mediclinic International Plc	×	✓	×	✓	×	✓
Mondi Group Limited	✓	×	✓	×	✓	×
Mr Price Group Limited	✓	×	✓	×	✓	×

MTN Group Limited	✓	×	✓	×	✓	×
Naspers Limited	✓	×	✓	×	✓	×
Pepkor Holdings Limited	✓	×	✓	×	✓	×
Remgro Limited	✓	×	✓	×	✓	×
Reinet Investments Limited	×	✓	×	✓	×	✓
South32 Limited	×	✓	×	✓	×	✓
Sappi Limited	✓	×	✓	×	✓	×
Standard Bank Group Limited	✓	×	✓	×	✓	×
Shoprite Holdings Limited	✓	×	✓	×	✓	×
Sanlam Limited	✓	×	✓	×	✓	×
Sirius Real Estate Limited	×	✓	×	✓	×	✓
Sibanye-Stillwater Limited	✓	×	✓	×	✓	×
Tiger Brands Limited	✓	×	✓	×	✓	×
Truworths International Limited	✓	×	✓	×	✓	×
Tsogo Sun Gaming Limited	✓	×	✓	×	✓	×
Vodacom Group Limited	✓	×	✓	×	✓	×
Woolworths Holdings Limited	✓	×	✓	×	✓	×