A TOOL FOR MEASURING INTEGRATED REPORTING QUALITY: THE CASE OF LISTED COMPANIES IN THE EMERGING MARKET

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Abstract

This study aims to develop an innovative weighted alternative polychotomous accountability index (PAI) tailored to assess both the extent and quality of information disclosure within integrated annual reports (IARs) of South African listed companies. The study utilised a qualitative approach based on the Delphi technique. The study culminates in a weighted PAI comprising eight comprehensive categories housing 44 distinct constructs. The resulting PAI achieves a cumulative weight capacity of 100% and a total scoring potential of 152 points. The developed PAI addresses limitations in current measurement tools, providing an advanced means to evaluate IAR disclosure quality and extent. The study contributes to the literature by constructing a valid, contextually relevant PAI that aligns with integrated reporting (<IR>) requisites and the socio-political context of a specific country. This study's findings hold the potential to significantly impact integrated reporting practices and enhance corporate transparency within the context of emerging markets and beyond.

Keywords: Dichotomous Accountability Index, Delphi Technique, Integrated Reporting, Integrated Annual Reports, Polychotomous Accountability Index

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1. INTRODUCTION

Concerns surrounding the limitations of traditional financial reporting and the exclusive focus on shareholder value creation have spurred increasing interest in the adoption of integrated reporting (<IR>) (Dumay et al., 2016). <IR> aims to enhance the quality of information available to stakeholders who provide financial capital, thereby facilitating a more effective allocation of resources (International Integrated Reporting Council [IIRC], 2021). The initial integrated annual report (IAR) released by PricewaterhouseCoopers (PwC) in 1999 marked a significant milestone, inspiring companies worldwide to voluntarily embrace IARs (Cheng et al., 2014). Notably, South Africa took a pioneering step by mandating all companies listed on the Johannesburg Stock Exchange (JSE) to either publish an integrated report or provide an explanation for their choice against doing so (De Villiers et al., 2017; Donkor et al., 2022; Leukhardt et al., 2022).

However, in the context of South Africa, Melloni et al. (2017) doubt whether compulsory IARs effectively enhance accountability and improve information quality for users. Regarding the standard of information accessible to users, De Villiers et al. (2017) note the absence of consensus regarding the metrics to gauge such quality while Songini et al. (2023) concur that the literature and practice should concentrate on creating shared principles and practices for implementing <IR>. Consequently, they advocate for further research in this domain. The absence of a universally accepted metric to evaluate quality remains unresolved (Dyczkowska & Fijałkowska, 2021; Hutchings & Deegan, 2022; Botosan, 1997). As a result, a primary challenge lies in the assumption made by researchers that often assumes a positive correlation between quantity and quality.

Kılıç and Kuzey (2018), Rivera-Arrubla et al. (2017), and Haji and Anifowose (2016) have devised measurement tools for integrated reporting by introducing dichotomous accountability indices, while Haji and Anifowose (2016) and Tsalavoutas et al. (2010), among others, developed polychotomous accountability indices. These measurement tools use proxies to ascertain information quality, as the direct measurement of quality remains elusive (Beattie et al., 2004; Donkor et al., 2022; Haji & Anifowose, 2016; Menicucci, 2018).

It is evident that the accountability indices discussed harbour significant limitations when it comes to gauging the scope and quality of IARs. Consequently, this paper introduces an alternative polychotomous accountability index (PAI), serving to assess both the extent and quality of IARs.

A distinctive facet of the PAI formulated in this study is its incorporation of expert validation — a facet absent in extant literature's PAIs. This methodological enhancement adds a layer of credibility and reliability to the indices, ultimately yielding more dependable <IR> disclosure scores. This improvement in measurement ultimately bolsters companies' accountability toward their stakeholders. Moreover, this study responds to the call made by Hutchings and Deegan (2022) for further research into the exploration and establishment of metrics within diverse sustainability domains, including <IR>. The tool devised by this study lays the foundation for developing and formulating the aforementioned metrics. Additionally, the study addresses the call by Dyczkowska and Fijałkowska (2021) to conduct interventionist research that influences organisations' application of integrated reporting. The tool developed herein provides the basis for evaluating organisations' adoption of <IR>. Lastly, this study aligns with the appeal to assess the information quality disclosed through <IR> and to scrutinise variations in levels of compliance with <IR>. The tool crafted by this study will serve the purpose of commensuration, signifying the transformation of intangible qualities into quantifiable metrics that express discernible differences in magnitude. Furthermore, this tool condenses extensive information into a simplified format for decision-making, in line with stakeholders' needs (Hutchings & Deegan, 2022).

The study makes significant contributions to the existing body of knowledge concerning integrated reporting, encompassing four key aspects. The research presents an innovative alternative index designed to gauge both the extent and quality of information disclosure within IARs. This novel index addresses the existing limitations in current measurement tools, offering a refined and comprehensive means to evaluate the content and calibre of IAR disclosures. Furthermore, the study underscores the necessity for constructing a valid and reliable PAI within a contextual framework that not only aligns with <IR> requisites but also resonates with the socio-political landscape of a specific country. This nuanced contextualisation ensures that the PAI goes beyond a mere checklist, encompassing dimensions that reflect the unique socio-political context in which <IR> operates.

A notable third contribution stems from the impracticality of devising a universal PAI that can be seamlessly applied across diverse jurisdictions. The research underscores the diverse socio-political environments in which <IR> is practiced, emphasising that a one-size-fits-all approach fails to encapsulate the contextual intricacies of each jurisdiction. Methodologically, the study significantly contributes by advocating for expert validation of the PAI, a departure from relying solely on author-driven finalisation. This methodological enhancement aligns with the proposition by Hutchings and Deegan (2022) that signifies a progression towards more robust and credible measurement tools within the realm of <IR>.

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 outlines the diverse methodologies adopted throughout the research process. These methodologies offer insights into the analytical approaches, data collection, and evaluation methods employed in the study. Section 4 provides an extensive exposition of the results of the study. This section explains the intricacies of the index's design, detailing its key components, underlying principles, and methodological considerations. A comprehensive understanding of the PAI is pivotal for appreciating its significance within the context of <IR>. Section 5 presents a discussion of the results and Section 6 draws conclusions and discusses overarching implications. This section also encapsulates the synthesised insights from the study, highlights its contributions to the existing body of knowledge, and presents avenues for further research and exploration.

2. LITERATURE REVIEW

2.1. Accountability indices

An accountability index serves as a tool comprising predefined components that, upon scoring, yield a quantified measure reflecting the disclosure extent within an IAR (Haji & Anifowose, 2016; Hutchings & Deegan, 2022; Marston & Shrives, 1991; Tsalavoutas et al., 2010). These indices may be weighted or unweighted, each bearing distinctive attributes. In weighted indices, certain disclosure elements garner higher scores based on their perceived significance. On the other hand, unweighted indices, often referred to as dichotomous accountability indices, consider each disclosure item equally

important, leading to consistent scores across all disclosed items (Joseph & Taplin, 2011).

Unweighted indices, specifically the dichotomous accountability index (DAI), have been criticised for their uniform treatment of diverse disclosures, disregarding variations in their importance. This critique is rooted in the understanding that not all disclosures hold equal weight. The landscape of accounting reporting indices primarily encompasses two categories: 1) the dichotomous accountability index and 2) the polychotomous accountability index, both of which are delineated below.

2.1.1. Dichotomous accountability index

The dichotomous accountability index (DAI) represents an unweighted method within content analysis, assigning equal values to coded variables regardless of their presentation in integrated reports (Haji & Anifowose, 2016). This approach, often employed in quantitative studies for its perceived objectivity, operates under the assumption that a higher score signifies greater reporting quality (Boesso & Kumar, 2007).

The DAI index gauges whether a company discloses a specific theme while noting the volume of disclosures. Operating within a simple binary coding framework, it records the presence or absence of an item. Each category receives a binary score of 0 or 1, irrespective of the extent or comprehensiveness of its disclosure (Coy & Dixon, 2004). DAI indices are particularly suitable for quantitative content analyses. Prior research has effectively employed DAIs (Moloi, 2015; Barac & Moloi, 2010; Rivera-Arrubla et al., 2017).

Despite their widespread use, dichotomous accountability indices have limitations. One notable shortcoming lies in their reliance on a straightforward binary coding scheme that merely records the presence or absence of items (Menicucci, 2018; Ruiz-Lozano et al., 2021). Consequently, they fail to capture trends that gauge the comprehensiveness and clarity of disclosures within IARs which means that they lack the ability to differentiate between poor and exemplary item disclosure. Additionally, they treat all individual disclosures as having equal significance (Manes-Rossi et al., 2021). However, Singleton and Globerman (2002) counterargue that, in certain cases, the weighting of disclosures can occur due to the variation in disclosure items across different categories. Moreover, DAIs attribute equal importance to all individual disclosures (Manes-Rossi et al., 2021). Thus, the focus of this study was to rectify these deficiencies through the development of an accountability index that transcends dichotomous constructs by delving into the comprehensiveness and meaningfulness of disclosures.

2.1.2. Polychotomous accountability index

A contrasting group of studies introduced PAIs aimed at evaluating the quality of information disclosure within IARs (Coy & Dixon, 2004; Donkor et al., 2022; Haji & Anifowose, 2016; Tsalavoutas et al., 2010). Scholars, such as Sofian and Dumitru (2017), Zhou et al. (2016), and Stent and Dowler (2015), further explored these indices. A PAI is a coding scheme integrating ordinal measures, enabling the assessment of disclosure quality for specific aspects (Beattie et al., 2004).

In contrast to the binary nature of dichotomous indices, a PAI employs a finite range of values tied to internally defined descriptive criteria. These values reflect varying degrees of quality across the reports under study (Coy & Dixon, 2004). Consequently, the PAI adopts a multidimensional approach to narratives. This approach considers multiple dimensions when analysing narratives, resulting in a scale that ranges from zero to the number of attributes being investigated (Beck et al., 2010). PAIs offer an advantage by measuring both the quality and scope of narrative disclosures, in contrast to DAIs that solely assess the presence or absence of variables (Beck et al., 2010).

Critics of PAIs contend that these indices exhibit several notable shortcomings. The criticisms centre around the omission of crucial concepts, largely stemming from the foundational framework developed by the IIRC in 2021, which subsequently underwent several revisions. The initial prototype framework transitioned to the "consultation draft" and eventually evolved into the final <IR> framework in 2013, with further improvements culminating in the 2021 version (IIRC, 2021).

One of the key omissions in the indices is the guiding principle of connectivity, which bridges the gap between financial and non-financial reports and links various content elements. The significance of the principle of connectivity is due to its influence on integrated thinking and on the success of <IR> (Chikutuma, 2019). Another critical omission is the value creation process, which involves the augmentation, reduction, or transformation of capitals through a business model. Additionally, the notion of outcomes stemming from the business model is disregarded (Flower, 2015). The value creation process encompasses the strategic infusion of capitals into a business model, considering opportunities, performance, and business prospects to enhance the value of these capitals (IIRC, 2021).

Equally significant omissions relate to the guiding principles of reliability and materiality. Reliability pertains to the accuracy and balance of information, devoid of material errors. It is fortified by mechanisms such as robust internal controls, stakeholder engagement, internal audit functions, and external assurance (IIRC, 2021). Materiality, on the other hand, entails disclosing information about matters substantially affecting an organisation's capacity to create value across the short, medium, and long term (IIRC, 2021).

In the context of PAIs, their focus on content elements arguably overshadows the guiding principles, which carry equal importance within the realm of <IR> (Thomson, 2015). Another concern related to the prototype framework is the reorganisation of certain elements and headings in the newer <IR> framework (Thomson, 2015), potentially distorting the weighting of constructs within the indices found in the existing literature. Consequently, these criticisms underscore the need for more comprehensive and adaptable measurement tools to capture the evolving dimensions of <IR>.

Moreover, the existing polychotomous accountability indices suffer from certain drawbacks, notably, their status as researcher-developed tools without validation from external experts, posing potential concerns regarding their reliability

(Tsalavoutas et al., 2010). An externally validated PAI carries greater credibility and reliability than one solely developed by authors (Hutchings & Deegan, 2022). Additionally, these indices employ a 0 to 2 measuring scale, which is deemed insufficient for capturing the breadth and quality of IARs, especially concerning overarching constructs like governance, business models, risks and opportunities, strategy and resource allocation, performance, and basis of preparation and presentation (Haji & Anifowose, 2016). These constructs would benefit from a broader measuring scale, such as 0 to 4 or 0 to 5. The PAI functions, as a structured coding framework encompassing ordinal measures, enable the assessment of the quality of specific disclosures (Beattie et al., 2004). Unlike the DAI, the PAI employs a finite range of values established by index developers to capture varying levels of quality (Coy & Dixon, 2004). This unique approach adopts a matrix perspective on narratives, considering multiple dimensions during narrative analysis. Consequently, the resultant scale varies between zero and the number of attributes under scrutiny (Beck et al., 2010). Several studies have employed the PAI to gauge the extent and quality of integrated reporting quality (IRQ), including works by Sofian and Dumitru (2017), Haji and Anifowose (2016), Leukhardt et al. (2022), Zhou et al. (2016), and Stent and Dowler (2015).

The discourse above highlights the existing deficiencies in both DAI and PAI within the extant literature. These limitations encompass the binary coding system's inherent simplicity, neglecting nuanced trends in comprehensiveness and clarity of IAR disclosures. Furthermore, dichotomous indices fail to distinguish between inferior and exceptional disclosures, treating all individual disclosures as uniformly important (Coy et al., 1993).

Considering these identified shortcomings, this study's primary aim was to cultivate an alternative comprehensive PAI to provide a potential resolution to the existing weaknesses inherent in current DAI and PAI methodologies thereby enhancing the integrated reporting evaluation frameworks.

2.2. Categories of studies in integrated reporting

The literature surrounding <IR> encompasses a diverse array of themes, each shedding light on different facets of this multidimensional concept. This body of work can be classified into seven distinct categories, each addressing a specific perspective of <IR> implementation and impact.

The first category discusses the foundational constructs of <IR>. These studies explore the theoretical underpinnings and fundamental principles of <IR>. Contributors to this category include De Villiers and Sharma (2020), De Villiers et al. (2017), Del Baldo (2017), Dumay et al. (2017), Dumay et al. (2016), and Flower (2015).

The second category presents empirical examinations of various sub-constructs within <IR> and their implications. Studies within this realm include De Villiers and Dimes (2023), Nwachukwu (2022), Soriya and Rastogi (2022), Steyn (2014), Stubbs and Higgins (2014), Pigatto et al. (2023), Trébucq and Magnaghi (2017), Van Bommel (2014), and Velte (2022).

The third category scrutinises the role and application of <IR> within the context of not-for-profit organisations. Studies in this category deal with the unique dynamics and challenges of implementing <IR> in non-profit settings. Examples include Brusca et al. (2018), Veltri and Silvestri (2015), and Adams and Simnett (2011).

The fourth category involves economics-based archival studies that align with capital markets research. These studies apply economic methodologies to explore the impact of <IR> on capital markets and financial performance. Contributors include Bernardi and Stark (2018), Barth et al. (2017), Leukhardt et al. (2022), Oshika and Saka (2017), Pavlopoulos et al. (2017), Senani et al. (2022), Sun et al. (2022), among others.

The fifth category comprises case studies on the motivations and dynamics driving the adoption of <IR> across entities, especially in voluntary jurisdictions. Case studies within this genre include De Graaff and Steens (2023), Lueg et al. (2016), Macias and Farfan-Lievano (2017), and Pigatto et al. (2023). This category investigates the role and implications of assurance within the context of <IR> by exploring the extent and impact of external validation in enhancing the credibility of <IR> disclosures. Contributions encompass Maroun (2018), Briem and Wald (2018), and Maroun and Atkins (2015).

The sixth category examines the alignment of entities' IARs with the <IR> framework. Utilising either DAIs or PAIs, these studies assess the quality of <IR> implementation. Contributions include Iredele and Moloi (2020), Kılıç and Kuzey (2018), Haji and Anifowose (2016), Raimo et al. (2022), and Vitolla et al. (2019), among others. The current study's alternative PAI construction fits seamlessly within this category, enhancing the toolkit for evaluating <IR> implementation quality.

In summary, the <IR> literature landscape comprises a rich tapestry of research spanning conceptual foundations, empirical investigations, sector-specific studies, economic analyses, case examinations, assurance implications, and <IR> framework adherence assessments. Each category contributes to the multifaceted understanding of <IR's> significance, challenges, and implications.

3. RESEARCH METHODOLOGY

To fulfil the research objective of this study, a qualitative approach employing the Delphi technique was adopted. This choice aligns with the methodologies employed in prior research, including the studies conducted by Denhere and Moloi (2020), Grisham (2009), Schneider and Samkin (2008), and Mitchell (1991). The Delphi technique was originally devised by Norman Crolee Dalkey and his colleagues at Rand Corporation in the 1950s (Grisham, 2009).

The primary goal of the Delphi technique is to garner the most dependable consensus from a group of experts, facilitated through questionnaires and controlled feedback (Mitchell, 1991). The technique can manifest in two forms: a questionnaire-based method with multiple iterations, or the Real-Time Delphi (RTD) approach where participants offer immediate input. The Delphi technique leverages the collective judgment of experts, operating under the premise that a group is superior to an individual expert when precise knowledge is elusive (Jones, 2000).

In executing the Delphi technique, the "conclusion statements" framework, proposed by Okoli and Pawlowski (2004), was employed. This approach presents participants with predefined statements for evaluation. A key advantage of this method lies in preventing the omission of crucial information, a potential drawback associated with open-ended questions in the initial round.

For this study, a panel of experts was curated using well-defined criteria. The prerequisite was that panellists must be authorities equipped with knowledge and insights into corporate reporting or <IR>. Additionally, Delphi inquiry participants were expected to demonstrate: 1) an active interest evidenced by publications and/or contributions to the <IR> framework; 2) advanced degrees in corporate reporting or <IR>; 3) supervision of students pursuing higher degrees in these domains; 4) research grants from international organisations, such as Chartered Institute of Management Accountants (CIMA) or Association of Chartered Certified Accountants (ACCA) for corporate reporting or <IR> research; 5) membership in the IIRC (especially <IR> framework panel members); 6) affiliation with auditing professional bodies, such as Independent Regulatory Board for Auditors (IRBA) (South Africa), South African Institute of Chartered Accountants (SAICA) (South Africa), Agility Association of Canada (AAC) (Canada), ACCA, CIMA, or Certified Practising Accountant (CPA) (the US & Australia); 7) employment as preparers of IARs in listed companies; and 8) substantial experience, although not necessarily formal qualifications, in corporate reporting or <IR>.

Twenty-five experts consented to participate in the Delphi exercise, encompassing nine academics, seven IAR preparers, six auditors, and three IIRC members. Invitations to partake in the study were extended via email to all selected individuals. Once their willingness to engage was confirmed, they were granted access to the platform hosting the Delphi interviews. This real-time platform allowed participants to contribute, revise, and amend their opinions based on their insights and responses from fellow panellists. This dynamic interaction among the Delphi panellists ensured a robust exchange of perspectives and comprehensive input.

A six-stage process was adopted to construct the PAI, ensuring its robustness and validity and contributing to the comprehensive nature of the index. In the first stage, a thorough review was conducted of the <IR> framework introduced by the IIRC in December 2013. Concurrently, a comprehensive exploration of existing <IR> literature was undertaken to identify the constructs essential for inclusion in IARs. The formulation of PAI constructs is grounded in the core concepts, guiding principles, and content elements of the <IR> framework.

The second stage entailed delineating the objectives of the PAI to gauge both the extent and quality of IARs. Beyond the identification of variable presence or absence, the PAI assesses the meaningfulness of disclosures, transcending the binary nature of variable existence. The third stage identified the constructs for disclosure within IARs. These constructs align with the content elements and guiding principles articulated in the <IR> framework. The fourth stage was the development of a preliminary PAI draft informed by the <IR> framework and relevant literature. This draft encompassed the constructs, alongside weight allocations for sub-definitions of these constructs.

The fifth stage involved seeking expert insights and validation through the Delphi inquiry methodology. The draft PAI was disseminated to a panel of experts, who offered their perspectives on the rationality of different constructs and sub-constructs, potential omissions, and adequacy of variables. The feedback aided in refining the draft PAI, ensuring its comprehensiveness and robustness. The sixth and final stage refined the PAI based on expert feedback and assessed its feasibility and practicality. The feedback gathered from experts was integrated into the draft PAI, culminating in its validation through the Delphi Inquiry. The consensus among the panellists reinforced the PAI's formulation and the results were integrated into the final disclosure index.

The PAI's construction was guided by a synthesis of literature and key constructs that included:

- organisational overview and external environment;
- governance;
- business model;
- risks and opportunities;
- strategy and resource allocation;
- performance;
- outlook;
- basis of preparation and presentation.

The final version of the weighted polychotomous accountability index featured a comprehensive six-point ordinal scoring system ranging from 0 to 5. Section 4 presents the findings yielded by the Delphi process.

Table 1. Polychotomous accountability index ordinal scoring system

Disclosure level	*Explanation*
0	No disclosure at all.
1	Undetailed disclosure (pure narrative).
2	Detailed disclosure (pure narrative).
3	Narrative and quantitative disclosures.
4	Narrative, quantitative, and comparative disclosures.
5	One each up to a maximum of five.

Source: Author's construction.

The PAI had a total of 44 constructs, and total score of 152 points, and carried a 100% potential cumulative weight (details are presented below in Section 4).

4. RESULTS

Table 2 below illustrates the final PAI that contained eight categories. A discussion of these categories follows below the Table 2.

Table 2. Final polychotomous accountability index

No.	*Category*	*Number of constructs*	*Total score*	*Weight calculation*	*Weight, %*
1	Organisational overview and external environment	6	25	25/152 x 100	16.45
2	Governance	6	18	18/152 x 100	11.84
3	Business model	4	17	17/152 x 100	11.18
4	Risks and opportunities	4	14	14/152 x 100	9.21
5	Strategy and resource allocation	7	25	25/152 x 100	16.45
6	Performance	6	23	23/152 x 100	15.13
7	Outlook	4	11	11/152 x 100	7.24
8	Basis of preparation and presentation	7	19	19/152 x 100	12.50
Total		44	152	152/152 x 100	100

Source: Author's construction.

The finalised PAI encompassed eight distinct categories with 44 individual constructs. This produced a cumulative score of 152 points, collectively weighted at 100%. Notably, two categories: 1) "organisational overview and external environment" (comprising six constructs) and 2) "strategy and resource allocation" (comprising seven constructs) — commanded the highest weights, each accounting for 16.45% of the cumulative score. In contrast, the category "outlook", consisting of four constructs, carried the lowest weight contribution at 7.24%. The remaining six constructs had weights ranging from 9.21% to 15.13%.

Certain categories entailed a greater number of disclosure items compared to others, giving different weights for information categories (Singleton & Globerman, 2002). The scores for each construct included the inputs, suggestions, and recommendations provided by the Delphi Inquiry panellists. This established the credibility and reliability of the data.

The outcome was the refined, condensed and alternative PAI, presented as a viable tool for measuring the extent and quality of IARs. The PAI is presented in Table A.1, Appendix.

5. DISCUSSION

The final iteration of the PAI comprised eight comprehensive categories with a total of 44 constructs. This cohesive index gave a cumulative scoring potential of 152 points, substantiated by a collective weighting of 100%. While the majority of constructs were universally applicable across various jurisdictions, two constructs specifically pertained to the context of South Africa.

The first unique construct was the "broad-based black economic empowerment" (BBBEE) level, which resides within the "key quantitative information" encompassed by the category of "organisational overview and external environment". This construct quantified the extent to which organisations adhered to BBBEE legislation. The evaluation of an entity's compliance with BBBEE benchmarks is undertaken by an independent third-party service provider.

The second construct, "transformation", was in the "basis of preparation and presentation" category. This construct shows how organisations assess their progress in addressing the legacies of apartheid by uplifting historically disadvantaged members of society.

Employing the PAI involves a comparative analysis between an IAR and the index. This encompasses all constructs within the PAI, where the scope and depth of disclosures are evaluated across a six-point ordinal scoring spectrum ranging from 0 to 5. In quantifying the IRQ score, the actual cumulative score disclosed by an entity is divided by 152 and then multiplied by 100%. Mathematically, this equation can be expressed as:

$$IRQ\ score = (Total\ actual\ score / 152) \times 100\% \quad (1)$$

By employing this formula, the resulting IRQ score effectively characterises the level of IRQ exhibited by a company.

6. CONCLUSION

This study aimed to construct a universally applicable PAI to address the deficiencies present in existing models. In doing so, the limitations of the current models were examined, followed by an in-depth review of pertinent literature. The initial constructs of the PAI were outlined based on this foundation. The study then adopted the Delphi Technique, leveraging a panel of experts that consisted of academics, IAR preparers, standard setters, and representatives from accounting bodies.

The draft PAI was presented to this panel of <IR> experts using the Delphi Inquiry. This collaborative effort led to the development of the weighted PAI, which is illustrated in Table 1 and Table 2. This refined PAI incorporates eight overarching categories housing 44 constructs. It attains a cumulative weight capacity of 100% and a total scoring potential of 152 points.

These categories encompass critical aspects such as organisational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, and the basis of preparation and presentation. Notably, the PAI employs a six-point ordinal scoring system from 0 to 5, wherein 0 signifies a complete absence of disclosure, while 5 denotes the highest achievable score based on the nature of the disclosure.

Additionally, the PAI employs an intricate six-point ordinal scoring system. A score of 1 reflects undetailed disclosure through pure narrative, while a score of 2 denotes detailed disclosure employing a purely narrative approach. The scale incorporates both narrative and quantitative disclosures at level 3, followed by the inclusion of narrative, quantitative, and comparative disclosures at level 4. The highest attainable score remains at 5, with each construct being evaluated against this nuanced framework.

The study has implications for practitioners, regulatory bodies, and standard setters. The PAI,

crafted and endorsed by experts in this study, emerges as a tool for effectively implementing <IR> to enhance reporting practices and accountability standards. <IR> fosters interconnections among financial capital, human capital, intellectual capital, manufactured capital, natural capital, and social and relationship capital. This could manifest as value creation for organisations (Deegan, 2013). The newly developed PAI will contribute substantively to the ongoing discourse surrounding the future trajectory of integrated reporting.

The study had some limitations. Firstly, the development of the tool may have been influenced by subjectivity and bias. The selection and weighting of integrated reporting elements in the measurement tool may be subjective, potentially affecting its objectivity and generalisability in other emerging markets. Secondly, the tool may have a limited scope. This means that the tool may not capture all aspects of IRQ, particularly qualitative aspects such as the depth of analysis, clarity of communication, and stakeholder engagement. Thirdly, a universal tool may not effectively assess IRQ across diverse companies with varying industries and business models. Company-specific variations may not be effectively captured by a universal tool.

The results of this study, along with its limitations, suggest several areas for future research. Firstly, the tool used in this study could be refined to make it more dynamic and adaptive to reflect evolving integrated reporting practices and emerging market contexts by assigning company-specific weights to integrated reporting elements based on their materiality to specific industries or company types. Additionally, the refined tool could be evaluated for generalisability across diverse emerging market contexts and institutional environments. Secondly, future studies could explore specific aspects of integrated reporting in emerging markets, paying attention to the role of cultural factors on integrated reporting, examining the challenges of data availability and reliability, and studying the impact of international standards and frameworks on integrated reporting practices. Lastly, future studies could investigate the impact of measured IRQ on financial performance, corporate governance, and its impact on regulators and policymakers.

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APPENDIX

Table A.1. Polychotomous accountability index (abridged version)

Construct	*No. of constructs*
1. Organisational overview and external environment	
1.1. Mission/purpose and vision/ambition.	3
1.2. Culture, value, and ethics/philosophy.	2
1.3. Ownership and operating structure.	2
1.4. Competitive landscape, market positioning, and positioning within the value chain.	6
1.5. Key quantitative information.	4
1.6. Operation context.	8
Total	25
2. Governance	
2.1. Leadership structure.	2
2.2. Governance and strategic decisions — actions undertaken to monitor and influence strategic direction and risk management.	4
2.3. Reflection of organisational culture, ethics, and values in use of and effect on capitals, relationship with key stakeholders.	3
2.4. Governance practices exceed legal requirements.	2
2.5. Promotion and enabling of innovation.	3
2.6. Link between remuneration (incentives) and value creation in the short, medium, and long term; the link between remuneration (incentives) and an organisation's use of and effects on capitals.	4
Total	18
3. Business model	
3.1. Major variables of the business model.	7
3.2. Narrative flow of the business model.	2
3.3. Stakeholder dependencies.	4
3.4. Connectivity between business model and other content elements.	4
Total	17
4. Risks and opportunities	
4.1. Major risks including Key Risk Indicators (KRIs).	4
4.2. Major opportunities.	4
4.3. Assessment of the likelihood of occurrence of risk or opportunity and magnitude of effects.	4
4.4. Steps to mitigate/manage risk or capitalise on the opportunity.	2
Total	14
5. Strategy and resource allocation	
5.1. Strategic objectives.	4
5.2. Strategy implementation plan as per business model.	3
5.3. Resource allocation plan as per business model.	4
5.4. Measurement criteria for achievements and target outcomes in the short, medium, and long term.	4
5.5. Competitive advantage as influenced by innovation, intellectual capital, environmental and social considerations.	4
5.6. Stakeholder consultations performed in formulating strategy and resource allocation plan.	3
5.7. Link between strategy and information from other content elements.	3
Total	25
6. Performance	
6.1. Key performance indicators (KPIs).	4
6.2. Explanation of KPIs.	5
6.3. Entity's effects on capitals.	4
6.4. Stakeholder relationships.	3
6.5. Past, current, and future performance.	3
6.6. Connectivity and financial.	4
Total	23
7. Outlook	
7.1. Expected changes.	3
7.2. Potential implications.	3
7.3. Organisational readiness.	2
7.4. Estimates.	3
Total	11
8. Basis of preparation and presentation	
8.1. Materiality determination process.	4
8.2. Frameworks and methods used in the materiality determination process.	2
8.3. Reporting boundary.	3
8.4. Conciseness and linkages.	2
8.5. Reliability.	3
8.6. Responsibility for an IAR.	2
8.7. Transformation.	3
Total	19

Source: Author's construction.