

A review and synthesis of contemporary sustainability accounting research and the development of a research agenda

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Abstract

The study provides a comprehensive overview of contemporary sustainability accounting research, comprising 1,283 academic articles published in 54 journals (2014-2020). Sustainability disclosure is the most frequently researched topic and a substantial proportion of publications analyse a national setting, examine a European context, investigate listed firms, adopt the quantitative methodology and an empirical archival research method, apply social and political theories, or focus broadly on sustainability. Based on this analysis, we develop a conceptual framework of sustainability accounting influences. We discuss prevalent themes, empirical findings and apparent inconsistencies, reflecting on recent trends and the state of sustainability accounting knowledge, developing an agenda for future research.

Keywords: Sustainability accounting, Corporate social responsibility, Social and environmental, Sustainable development, Management system, Stakeholder engagement, Disclosure, Assurance

Paper type: Research paper

1. Introduction

Global efforts for sustainable development have been insufficient to deliver the change we need, with environmental degradation continuing at an alarming rate and the Covid-19 pandemic threatening to scale back years of progress on reducing poverty and inequality (United Nations 2020; World Economic Forum 2021). It is now more urgent than ever to address global sustainability risks and accounting scholars have an important role to play through advancing research that supports sustainable development (Bebbington and Unerman 2018, 2020; Unerman and Chapman 2014). Sustainability accounting broadly focuses on accounting for, and the integration of, social and environmental dimensions of organisational activities, including consideration of eco-justice, effectiveness and efficiency (Burritt and Schaltegger 2010; Gray 2010). There are multiple interpretations of the term ‘sustainability accounting’, including: an umbrella term that covers existing environmental and social accounting approaches, a measurement and management concept for corporate sustainability, and a stakeholder engagement process used to develop tools for measuring and managing dimensions of sustainability and the links among them (Burritt and Schaltegger 2010).

Sustainability accounting research (SAR) has been on the rise over the past three decades, leading to a substantial body of knowledge in this field (Andrew and Baker 2020; Mathews 1997; Marrone et al. 2020; Parker 2011). Many reviews on SAR have emerged since the late 1990s, all identifying similar concerns and future prospects. Mathews (1997) and Gray (2002) document the transition from social accounting research to environmental accounting research during the 1970s to 1990s. Gray (2002) warned that an inconsistent focus of research projects over time, and the tendency for accounting research to be subject to trends and fashions, prevent advancements in new forms of accounting. Mathews (1997) and Gray (2002) encourage future research to reactivate interest in social accounting and advocate for accounting academics to collaborate with other disciplines and professionals in producing research that helps address sustainability problems. Subsequent reviews by Parker (2005, 2011) reached similar conclusions, though noting a gradual shift towards balanced research focuses and research methods in SAR. More recently, reviews on specific aspects of sustainability accounting have emerged, such as sustainability management systems (Lueg and Radlach 2016; Morioka and de Carvalho 2016), sustainability reporting (Andrew and Baker 2020; Dienes, Sassen, and Fischer 2016; Hahn and Kühnen 2013), and sustainability assurance (Farooq and de Villiers 2017). Further, there are reviews on the interplay between integrated management systems and sustainability performance (Gianni, Gotzamani, and Tsiotras 2017), and management control systems and sustainability reporting (Traxler, Schrack, and Greiling 2020). Reviews on environmental accounting and disclosure are also plentiful (Alrazi, de Villiers, and van Staden 2015; Marrone et al. 2020; Velte, Stawinoga, and Lueg 2020).

Albeit insightful, isolated focuses on aspects of sustainability accounting do not facilitate overarching reflections on the state of SAR. Moreover, except for Marrone et al. (2020) which adopted a machine learning method to review environmental accounting research, extant reviews have assessed a narrow subset of available research. It is typical for scholars to review 50 to less than 300 articles, either assessing SAR published in a handful of accounting journals (Adams and Larrinaga 2019; Andrew and Baker 2020; Parker 2011) or reviewing an aspect of sustainability accounting and identifying publications using keyword

searches in Web of Science or Google Scholar (Farooq and de Villiers 2017; Traxler, Schrack, and Greiling 2020; Velte, Stawinoga, and Lueg 2020). In contrast to prior reviews, the purpose of this study is to provide a comprehensive and integrated overview of contemporary SAR to reflect on recent trends and the state of sustainability accounting knowledge and chart a path forward for future research.

We review 1,283 academic articles published during 2014 to 2020 in 54 accounting, management and multidisciplinary journals. We assessed the research topics and findings, jurisdiction, country, organisational focus, research methodology and method, theory applied and area of sustainability of each article. The profiling analysis presents trends across recent years and compares publication tendencies of journals based on the Fields of Research (FoR) classification. We further synthesised research topics and findings to develop a conceptual framework of sustainability accounting influences. The framework presents sustainability accounting in two main components (internal systems and processes, and external engagement, communication and audits) and indicates a range of determinants and consequences as evidenced by the empirical findings of recent SAR.

The results of profiling analysis show fairly consistent themes and types of research published over time. Contemporary SAR is diverse in its research focuses, methods and theories employed. Though diverse, research efforts tend to concentrate on particular themes and have neglected important research areas. There is a disproportionate focus on disclosure. While research on internal systems and processes are also common, research on assurance and certification and stakeholder engagement are lacking. Studies that investigate specific industries or conduct in-depth analyses on organisations are less common when compared to those on broad national or supranational contexts. Much attention has been devoted to the United States, Australia, China, United Kingdom and Italy settings and studies on other contexts are warranted. Similarly, much research has examined listed or large organisations and there are few on public sector organisations, small and medium enterprises (SMEs), not-for-profits and from stakeholder perspectives. The majority of recent SAR has been empirical in nature, with empirical archival and survey approaches being the most frequent. Scholars have applied a range of theories and they largely centre on social and political theories. Research has predominantly examined the area of sustainability (e.g., corporate social responsibility (CSR) or broadly social and environmental) and environmental dimension of sustainability, while studies on social accounting and accounting for sustainable development are comparatively limited. Additionally, our review shows that SAR is widely published in both accounting and non-accounting journals, with management journals publishing around the same number of articles as accounting journals. There are minimal differences in the types of research published, notable dissimilarities include country settings, organisational focus, publication of viewpoints/commentaries and area of sustainability.

Synthesis of research topics and empirical findings facilitated identification of interrelationships between sustainability accounting components and various determinants and consequences of sustainability accounting. Apart from unanimous agreement on a few influences of sustainability accounting (namely: national policies and regulations, regulatory pressure, management/employee support and commitment, shared values and alignment with strategy and mission, and motivated to improve image and manage reputational risk), mixed results are reported for investigated determinants and consequences. There is also an apparent

disconnect between sustainability accounting practices and accountability and legitimacy. While sustainability accounting can foster accountability and legitimacy, and demonstrating accountability and legitimacy is a motivator for organisations to implement such practices, a prevailing theme in recent SAR surrounds criticisms that organisations' sustainability actions reflect impression management and a means to maintain social legitimacy, rather than genuine commitment to accountability and sustainability. Overall, more research on social accounting, accounting for sustainable development and stakeholder engagement is warranted, as well as studies that resolve apparent inconsistencies identified in the review and research on insufficiently researched areas. Our study contributes to the development of sustainability accounting knowledge by establishing foundations that advancements on prior research can be built upon and propose key directions for future research.

The paper is structured as follows. Section 2 details the research method. Section 3 reports results from the research profiling analysis, discussing patterns across time and comparisons by journals' discipline. Section 4 presents our conceptual framework of sustainability accounting influences and discusses themes and empirical findings of contemporary SAR. Section 5 provides a discussion and concludes with directions for future research.

2. Research method

2.1 Review scope

Consistent with prior reviews in the accounting discipline, we initially defined our review scope using the Australian Business Deans Council (ABDC) journal quality list and the Chartered Association of Business Schools' Academic Journal Guide (AJG), which are commonly used as measures of journal quality and research performance (Alhossini, Ntim, and Zalata 2021; de Villiers and Hsiao 2018; He et al. 2021; Kotb, Elbardan, and Halabi 2020; Zengul et al. 2021). To mitigate criticisms associated with peer-based journal rankings (Guthrie et al. 2019), we broadened our scope to include journals in the top two quartiles of the SCImago Journal Rank Indicator (SJR) metric. To provide a comprehensive review of contemporary SAR, we included specialist SAR accounting journals and multidisciplinary journals with a prominent focus on SAR. We identified 90 academic journals based on the following criteria:

- Journals ranked A* or A in the 2019 ABDC journal ranking list with a FoR code of 1501 (Accounting).
- Journals ranked 4*, 4 and 3 in the AJG 2018 list in the field of accounting.
- Journals in the top two quartiles of the 2020 SCImago ranking classified under the 'Accounting' subject category.
- Peer-reviewed specialist SAR journals ranked in the ABDC and AJG lists, identified based on journal title and stated purpose (e.g., *Social and Environmental Accountability Journal* and *Sustainability Accounting, Management and Policy Journal*).
- Peer-reviewed management or multidisciplinary journals ranked in the ABDC and AJG lists with a prominent focus on SAR, identified using Web of Science (e.g.,

Business Strategy and the Environment, Journal of Business Ethics and Journal of Cleaner Production)¹.

2.2 Working definition of sustainability accounting

We define sustainability accounting as the measurement, management and communication of organisations' social and environmental impacts (Burritt and Schaltegger 2010; Gray 2010).

Our working definition can be broken down into three parts:

1. 'Measurement, management and communication' includes performance measurement systems, planning and control systems, accounting techniques and systems, stakeholder engagement, disclosure and communication, and assurance and certification.
2. 'Organisations' comprises entities operating in private, public or not-for-profit sectors. Stakeholder views on organisations also applies.
3. 'Social and environmental impacts' includes, but are not limited to, CSR, corruption, human rights, health and safety, biodiversity and climate change.

All articles that satisfy our working definition are included in the review scope.

Examples of articles excluded are as follows. Baker and Brewis (2020) investigates gender inequality in the accounting profession and Iloga Balep and Junne (2020) explores the potential of using accounting as a pedagogical instrument to foster resocialisation of prisoners. Although these studies relate to accounting and social issues in organisational settings, they are not related to measurement, management or communication of sustainability impacts. Alvaredo, Atkinson, and Morelli (2016), Oikonomou, Platanakis, and Sutcliffe (2018) and Mallapragada et al. (2018) examine income inequality on a macro-level, construction of socially responsible investment portfolios and optimisation approaches, and life cycle analysis on power generation, respectively. While these studies relate to sustainability, they are not focused on internal systems or communication in an organisational context. Studies such as Belz and Binder (2017) and Walls and Berrone (2017) focus on management and entrepreneurship perspectives, rather than an accounting perspective.

To set a clear boundary for our review and maintain a focus on accounting, studies investigating sustainability performance using databases such as MSCI KLD or Thomson Reuters ASSET4/Eikon (Davis et al. 2016; Francoeur et al. 2019) and research on sustainability attributes such as greenhouse gas emissions or charitable contributions (Moussa et al. 2020; Qian, Gao, and Tsang 2015) were excluded if they do not include a focus on internal systems, disclosure or assurance practices. We include studies on integrated reporting if they relate to sustainability information (e.g., Bernardi and Stark 2018; Oshika and Saka 2017), while those that investigate characteristics of integrated reports or disclosure quality in general were excluded if there were no explicit focus on sustainability information (e.g., Barth et al. 2017; Hsiao and Kelly 2018).

¹ The search strings used are "sustainability accounting", "sustainability reporting", "sustainability assurance", "sustainability management accounting" and the same phrases repeated with 'social' and 'environmental' replacing 'sustainability'. Journals that published more than one SAR article per year during 2014 to 2020 were reviewed.

2.3 Search and analysis process

For the 90 journals identified, we read the title and abstract of all articles published during 2014 to 2020 and downloaded any that could fall under our working definition of sustainability accounting. We considered all research articles published in these journals, inclusive of reviews, commentaries and editorials. Publications such as book reviews, article reviews, dedications and calls for papers were excluded. The bibliographic information and PDF of 1,815 articles were stored in EndNote and imported into NVivo 12 for data analysis.

This search process enabled identification of relevant studies that would have been omitted if common search terms related to sustainability and CSR were relied on (e.g., see: Aguinis and Glavas 2012; Hahn and Kühnen 2013). For instance, our review captures articles with niche or specific focuses, such as ‘Managers’ green investment disclosures and investors’ reaction’ (Martin and Moser 2016), which investigates environmental disclosure and CSR investment, ‘An Analysis of Firms’ Self-Reported Anticorruption Efforts’, which relates to anticorruption disclosure, and ‘The Interplay Between Private and Public Regulations: Evidence from ISO 14001 Adoption Among Chinese Firms’ (He, Yang, and Choi 2018), which focuses on environmental management systems and certification. The manual search process was complemented by a keyword search using Harzing’s Publish or Perish to ensure that no articles have been omitted due to human error. Publication data extracted from Google Scholar was searched using the following keywords: ‘sustainab*’, ‘CSR’, ‘social’, ‘employ*’, ‘human’, ‘worker’, ‘environment*’, ‘natur*’, ‘climate’, ‘green’, ‘inequal*’, ‘GRI’, ‘ISO’, ‘triple bottom’, ‘nonfin*’ and ‘non-fin*’. No additional articles were identified.

For each article, we assessed the research topics and findings, jurisdiction, country, organisational focus, research methodology and method, theory applied and area of sustainability. Articles were coded on the full text based on their explicit focus and findings to avoid subjectivity and misinterpretation. Apart from jurisdiction, research methodology and area of sustainability, coding into multiple categories was allowed. Two authors conducted a pilot test on 30 randomly selected articles. Their individual assessment was compared and any discrepancies were discussed until a consensus was reached. One author then manually coded all the articles to ensure consistency, while the other authors checked the coding consistency. Articles that do not satisfy our working definition were excluded from the final sample. The dataset has received three major updates since the start of the project and the coding categories used remain robust to inclusion of new articles.

The profiling analysis were guided by Dumay et al. (2018) and Parker (2005, 2011). This includes analysis on:

- Research topic – We initially coded research topics and findings in accordance with the themes of prior reviews. Collectively, nine categories were identified: management system, accounting, stakeholder engagement, performance, reporting, assurance, legitimacy, determinants, and consequences (Alrazi, de Villiers, and van Staden 2015; Dienes, Sassen, and Fischer 2016; Farooq and de Villiers 2017; Gianni, Gotzamani, and Tsiotras 2017; Morioka and de Carvalho 2016; Traxler, Schrack, and Greiling 2020; Velte, Stawinoga, and Lueg 2020). As our review scope is significantly broader than prior reviews and because we aim to provide an integrated overview of contemporary SAR, we modified initial categories and created sub-

categories to reflect the articles analysed. The research topics and findings were used to develop a conceptual framework of sustainability accounting influences (see Section 4).

- Jurisdiction – ‘Supranational: General’ includes research that is generalisable to an international setting and research making comparisons between multiple countries and industries. ‘Supranational: Industry’ relates to international comparison of a single industry and ‘Supranational: Organisational’ are case studies on multinational enterprises. The same logic is applied to ‘National: General’, ‘National: Industry’ and ‘National: Organisational’ but on a national scale.
- Country – Reflects the research setting and is presented in terms of geographic regions defined by the Department of Homeland Security (2021). For instance, cross-country comparisons of organisations operating in United Kingdom and Australia are coded under ‘United Kingdom’ and ‘Australia’, which are grouped under ‘Europe’ and ‘Oceania’, respectively. Studies on, for instance, Fortune Global 500 companies or all firms in a global database are classified under ‘Cross regions’. Non-empirical research or those that do not specify a country setting are included in ‘N/A’.
- Organisational focus – Reflects attributes of the research sample or targeted research group. Includes ‘Private’ with subcategories of ‘Listed’, ‘SME’ or ‘Other’; ‘Public sector’ and ‘Not-for-profit’. Studies investigating stakeholder perspectives of organisational actions are included in ‘Stakeholder’. Non-empirical research with no specified organisational focus is captured in ‘N/A’.
- Research methodology – ‘Quantitative’ includes studies based on the positivist paradigm and focus on collecting and analysing numerical data. ‘Qualitative’ relates to studies based on the interpretivist paradigm and focus on collecting and analysing data comprising written or spoken words and images. ‘Mixed-method’ captures studies that combine quantitative and qualitative research. ‘N/A’ includes purely conceptual papers, reviews and viewpoints.
- Research method – Field research, inclusive of case studies, interviews, action research and participant observations, are in ‘Case study/field study/interview’. ‘Content analysis/historical analysis’ includes document analysis. ‘Survey/empirical archival/experimental’ incorporates surveys or questionnaires, empirical archival research and experimental approaches. Studies proposing conceptual frameworks or methodologies are in ‘Conceptual/methodological’. ‘Literature review/general review’ comprises literature reviews, general reviews on a topic and meta-analysis. ‘Viewpoint/commentary’ captures viewpoints, commentaries, discussions and editorials.
- Theory applied – Categorized into ‘Economic’, ‘Social and political’, ‘Management’, ‘Psychology’, ‘Accounting and finance’ and ‘Science and other’. Non-empirical studies and those that draw on relevant literature but do not explicitly adopt a theory or theoretical framework are included in ‘N/A’.
- Area of sustainability – Categorized into ‘Environmental’, ‘Social’, ‘Sustainability’ and ‘Sustainable development’. Studies on CSR, social and environment, integrated reporting or non-financial information are grouped under ‘Sustainability’.

Table 1. Journals, rankings and publication year

Journal	Rankings			Publication Year							Total
	ABDC	AJG	SCImago	2014	2015	2016	2017	2018	2019	2020	
Abacus	A	3	Q2	1	0	0	1	0	1	3	6
Accounting & Finance	A	2	Q2	0	2	0	1	0	4	4	11
Accounting and Business Research	A	3	Q1	0	4	3	3	5	1	0	16
Accounting Forum	B	3	Q1	10	2	2	4	10	5	3	36
Accounting History	A	2	Q2	0	0	0	1	1	0	0	2
Accounting History Review	B	2	Q3	0	0	0	2	0	0	0	2
Accounting Horizons	A	3	Q1	0	0	0	1	0	0	2	3
Accounting in Europe	A	2	Q2	0	1	0	2	0	0	0	3
Accounting, Auditing & Accountability Journal	A*	3	Q1	10	14	10	21	16	31	25	127
Accounting, Organizations and Society	A*	4*	Q1	6	1	3	2	1	0	3	16
Advances in Accounting	A	2	Q2	3	1	2	0	0	0	1	7
Auditing: A Journal of Practice & Theory	A*	3	Q1	0	6	2	0	1	1	1	11
Australian Accounting Review	B	2	Q2	1	4	0	3	3	6	0	17
Behavioral Research in Accounting	A	3	Q1	0	2	0	0	2	0	0	4
Business Strategy and the Environment	A	3	Q1	11	13	9	21	25	22	36	137
China Accounting and Finance Review	A	N/A	N/A	0	0	0	1	1	0	0	2
China Journal of Accounting Research	B	2	Q2	0	0	0	0	0	1	1	2
Contemporary Accounting Research	A*	4	Q1	0	0	1	3	0	0	4	8
Critical Perspectives on Accounting	A	3	Q1	5	13	0	6	2	4	4	34
Ecological Economics	A	3	Q1	1	5	3	1	3	2	0	15
European Accounting Review	A*	3	Q1	1	0	2	1	2	3	2	11
Financial Accountability & Management	A	3	Q1	0	0	0	2	3	3	0	8
Financial Analysts Journal	A	3	Q1	0	0	0	0	1	0	0	1
Fiscal Studies	B	2	Q2	1	0	0	0	0	0	0	1
International Journal of Accounting & Information Management	B	2	Q2	0	0	1	2	0	3	4	10
International Journal of Accounting Information Systems	A	2	Q2	0	0	2	0	0	0	0	2
International Journal of Auditing	A	2	Q2	0	0	1	1	1	0	1	4
Journal of Accounting and Economics	A*	4*	Q1	0	1	1	1	1	0	0	4
Journal of Accounting and Public Policy	A	3	Q1	2	1	1	3	4	0	1	12
Journal of Accounting Literature	A	3	Q1	0	1	1	0	0	0	0	2
Journal of Accounting Research	A*	4*	Q1	0	0	0	0	0	0	2	2

Journal of Business Ethics	A	3	Q1	23	14	10	14	40	18	5	124
Journal of Business Finance & Accounting	A*	3	Q1	0	0	0	2	0	0	0	2
Journal of Cleaner Production	A	2	Q1	35	41	49	40	40	22	36	263
Journal of Contemporary Accounting & Economics	A	2	Q2	1	0	1	3	0	1	0	6
Journal of Emerging Technologies in Accounting	B	1	Q2	0	0	0	0	0	1	0	1
Journal of Environmental Management	A	3	Q1	1	5	4	4	6	3	3	26
Journal of Information Systems	A	1	Q2	0	1	0	0	0	0	0	1
Journal of International Accounting Research	A	2	Q3	0	0	3	0	2	1	1	7
Journal of International Accounting, Auditing and Taxation	B	3	Q2	0	0	0	0	0	1	2	3
Journal of International Financial Management & Accounting	B	2	Q2	1	0	0	0	0	0	1	2
Journal of Management Accounting Research	A*	2	Q1	0	0	7	0	1	0	0	8
Journal of Management Control	A	2	Q2	1	0	1	2	0	3	1	8
Management Accounting Research	A*	3	Q1	1	1	0	0	0	0	0	2
Managerial Auditing Journal	A	2	Q3	2	2	3	5	0	0	1	13
Meditari Accountancy Research	A	1	Q2	0	4	7	6	6	11	8	42
Qualitative Research in Accounting & Management	A	2	Q2	0	3	1	0	2	0	0	6
Review of Accounting Studies	A*	4	Q1	0	0	1	0	0	0	0	1
Social and Environmental Accountability Journal	B	1	Q3	10	8	8	9	10	2	5	52
Social Responsibility Journal	B	N/A	Q2	10	12	9	10	6	11	10	68
Sustainability Accounting, Management and Policy Journal	B	2	Q1	5	12	13	10	12	12	29	93
The Accounting Review	A*	4*	Q1	1	0	2	0	0	0	0	3
The British Accounting Review	A*	3	Q1	7	4	4	2	5	4	6	32
The International Journal of Accounting	A	3	Q2	1	0	1	1	1	0	0	4
Total				151	178	168	191	213	177	205	1283

2.4 Final sample

Our review comprises 1,283 articles published during 2014 to 2020 in 54 journals. Table 1 shows the list of journals, associated rankings and publication year distribution. Based on ABDC FoR classifications, 50.35% of publications are in accounting journals, 48.17% in management journals, and 1.48% in finance or economic journals. Articles published in *Journal of Cleaner Production* account for the highest proportion of the final sample (20.50%), followed by *Business Strategy and the Environment* (10.68%), *Accounting, Auditing & Accountability Journal* (9.90%), *Journal of Business Ethics* (9.66%) and *Sustainability Accounting, Management and Policy Journal* (7.25%). Overall, there is an increasing trend in the number of publications related to sustainability accounting in both accounting journals and management journals, though there is fluctuation from year to year and no consistent trend across individual journals.

3. Profiling analysis

3.1 Research topic

We classified research topics into four categories: internal systems and processes, stakeholder engagement, disclosure, and assurance and certification. Internal systems and processes cover sustainability management and accounting systems and sustainability accounting approaches. Stakeholder engagement relates to bi-directional engagement with stakeholders, whereas disclosure reflects communication of sustainability-related information, often in the form of sustainability reports. Assurance and certification comprise third-party assurance or certification of sustainability systems, performance or reports.

The topics under investigation remain fairly consistent across the years. Figures 1 and 2 indicate that studies examining sustainability disclosure, most notably sustainability/CSR reports and environmental information, are the most frequent (averaging 45.85% of publications per year). This is followed by internal systems and approaches (33.65%), which has environmental management systems and environmental accounting as the dominant themes. Studies on assurance and certification (16.51%) and stakeholder engagement (3.99%) are relatively uncommon. Of the 1,283 articles reviewed, 8.26% explores multiple facets of sustainability accounting (e.g., disclosure and assurance or management system and disclosure).

Figure 1. Research topic by year

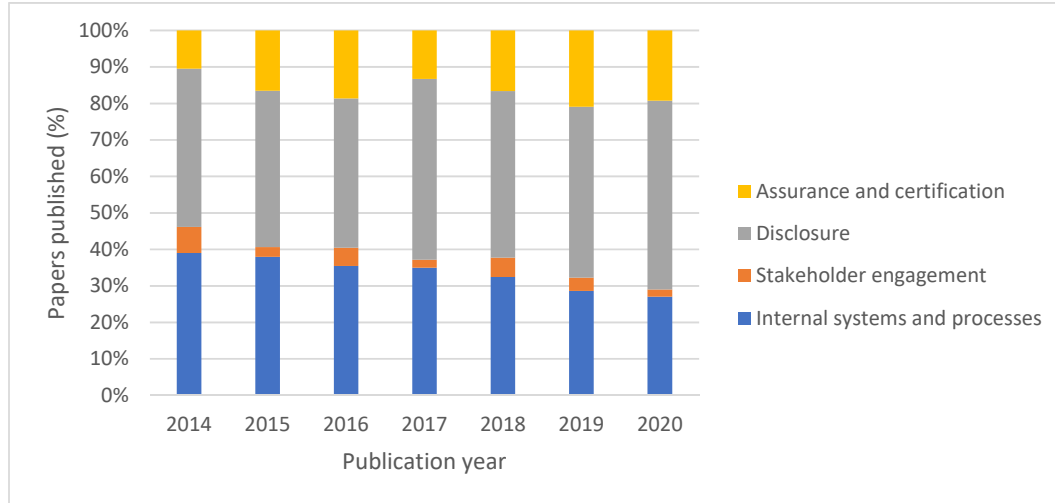
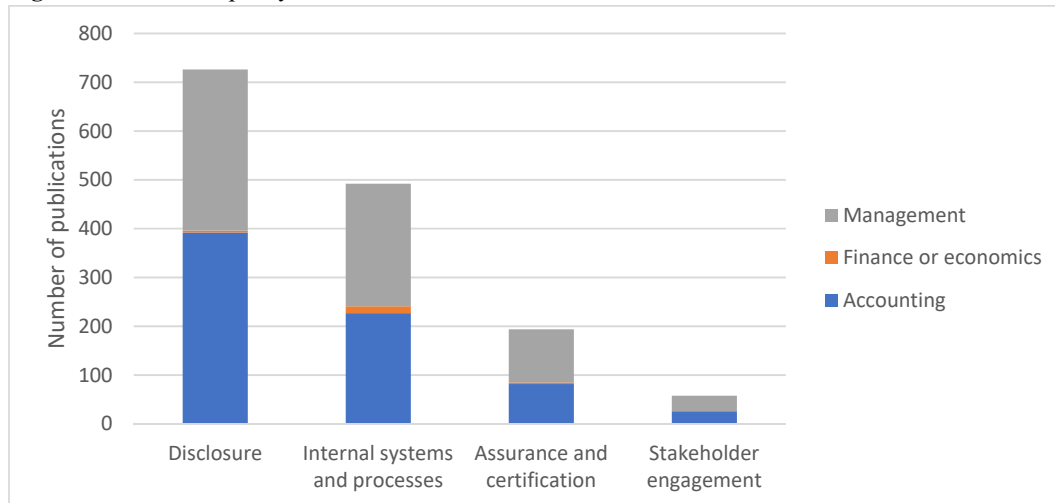


Figure 2. Research topic by FoR classification



3.2 Jurisdiction, country and organisational focus

As shown in Figures 3 and 4, a large proportion of empirical studies are set in one country (averaging 34.15% of publications per year). Although studies generalisable to an international setting have a similar number of publications (32.99%), approximately half are non-empirical in nature (e.g., reviews or commentaries). Investigations into specific industries or organisations on a national level are relatively less common, 14.42% and 9.56%, respectively. Least common is research on multi-country comparisons of one industry (5.24%) and in-depth case studies on multinational enterprises (3.64%).

Figure 3. Jurisdiction by year

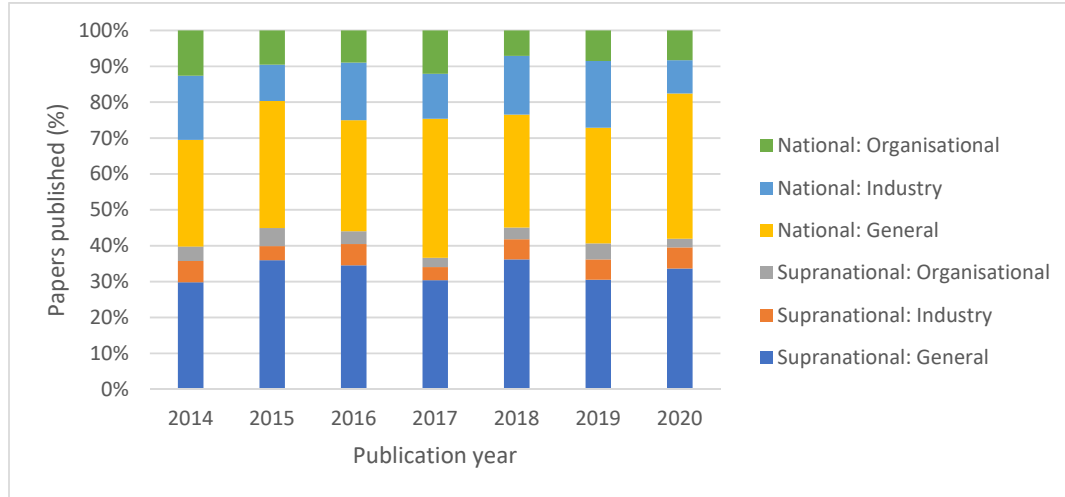
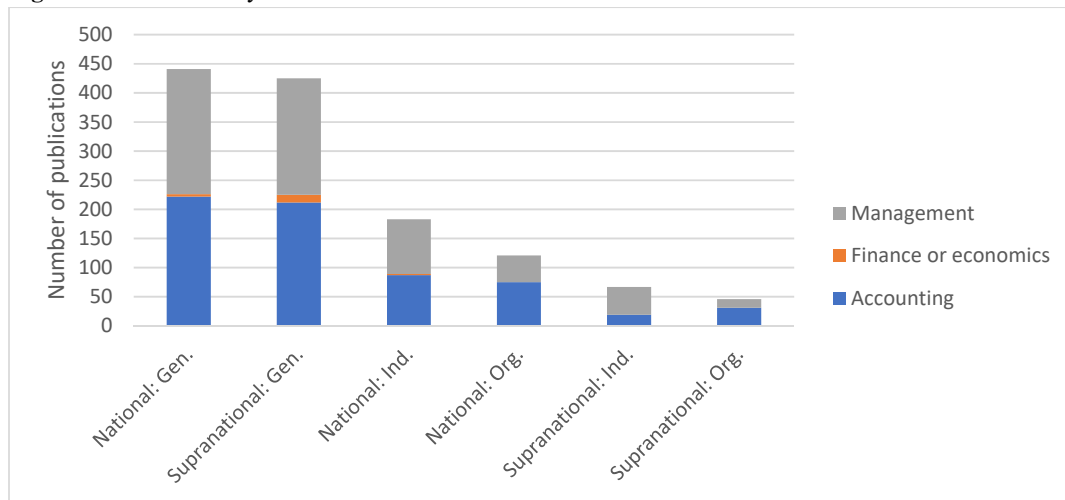


Figure 4. Jurisdiction by FoR classification



Based on the number of associated publications, the top five countries researched are United States (115 articles), Australia (113), China (98), United Kingdom (95) and Italy (63). Studies set in European or Asian countries account for 45.23% of publications per year on average (see Figures 5 and 6). Those based on a European setting frequently examine the contexts of United Kingdom and Italy. Other European settings with 10 or more articles include: the European Union member states/broadly the Europe region (46), Spain (36), Germany (33), France (31) and Finland (10). Studies based on an Asian setting concentrate on China (98). Other Asian settings with 10 or more articles include: Malaysia (25), Bangladesh (25), India (25), Indonesia (17) and Japan (14). There are 154 articles that adopted a global focus, often basing samples on firms in Fortune Global or Forbes Global lists or all firms included in databases (e.g., Compustat Global, Bloomberg, Thomson Reuters or CDP). Comparison by journals' discipline shows that a higher proportion of studies set in Asia and South America are published in management journals, whereas more studies set in Oceania are published in accounting journals (see Figure 6).

Figure 5. Country by year

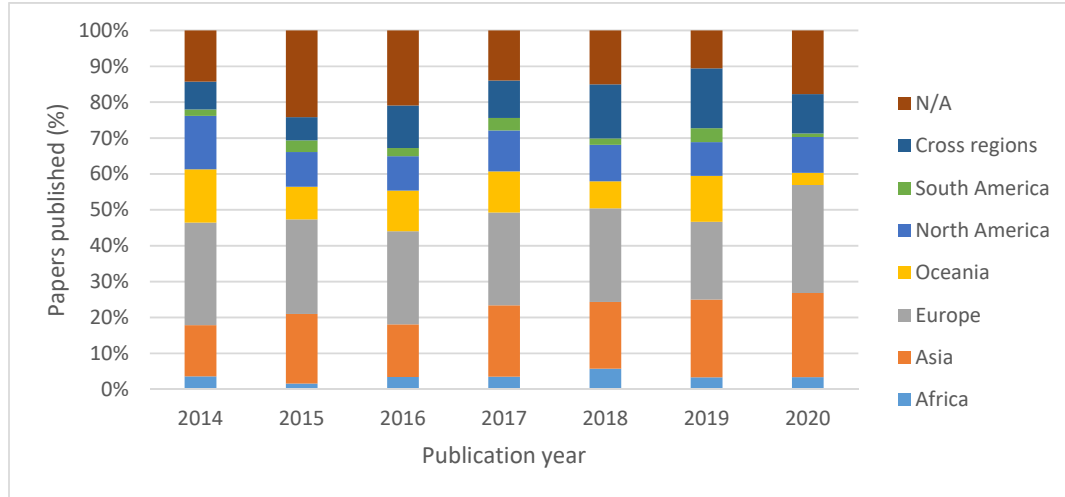
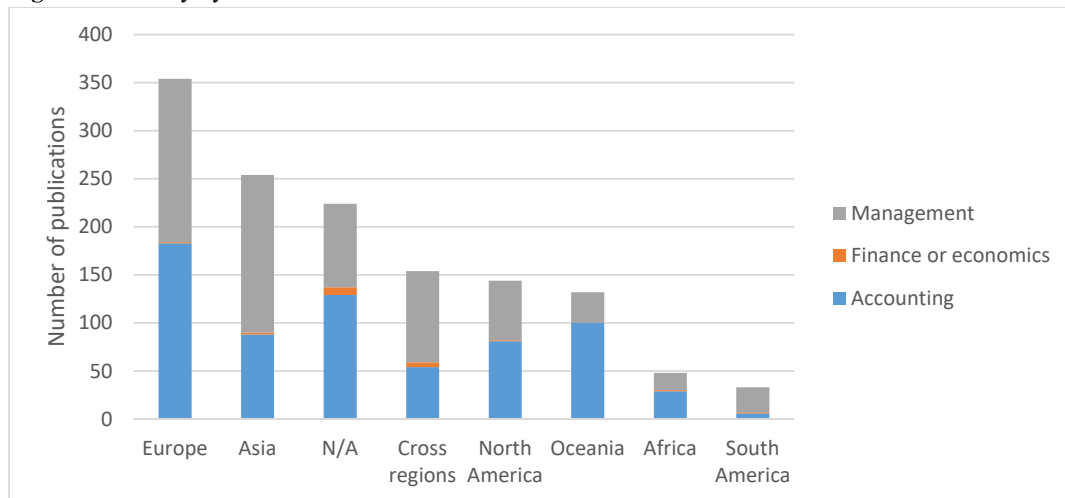


Figure 6. Country by FoR classification



For organisational focus, Figures 7 and 8 indicate that private organisations have been the main group under investigation (averaging 66.01% of publications per year), mainly driven by a focus on listed firms (36.84%). The high number of publications on listed firms is largely attributed to empirical archival studies, which often rely on databases for analysis. Studies on other private entities (e.g., large private companies or unlisted financial institutions) are common with research that employs surveys, content analysis or case studies (23.42%). Relatively few studies investigate public sector organisations (10.04%), stakeholder perspectives (7.73%), SME (5.75%) or not-for-profits (2.19%). Of the 1,283 articles reviewed, 15.79% spans across multiple organisational classifications (e.g., private and public sector organisations or private organisations regardless of size and listing status). Comparison by journals' discipline shows that management journals publish relatively more on non-listed private entities, whereas accounting journals publish more on not-for-profits (see Figure 8).

Figure 7. Organisation focus by year

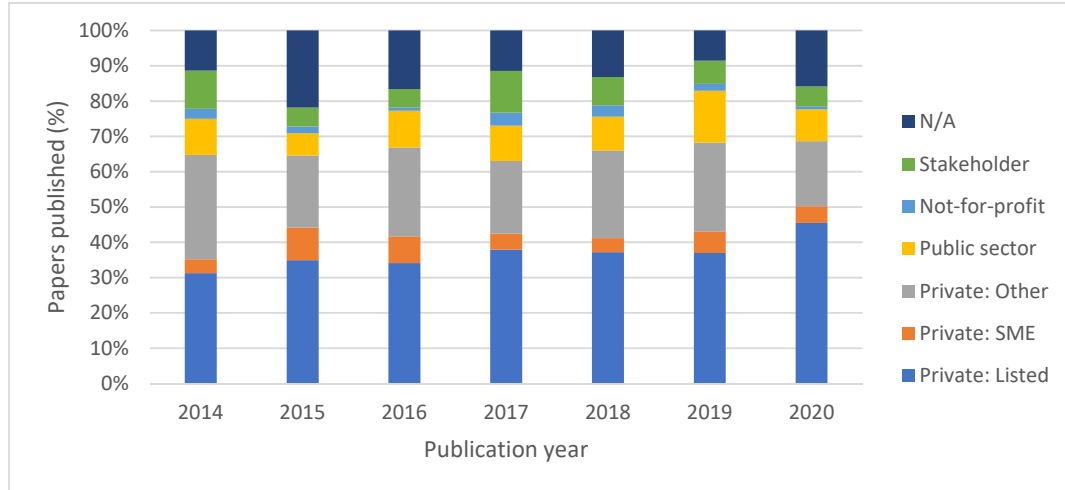
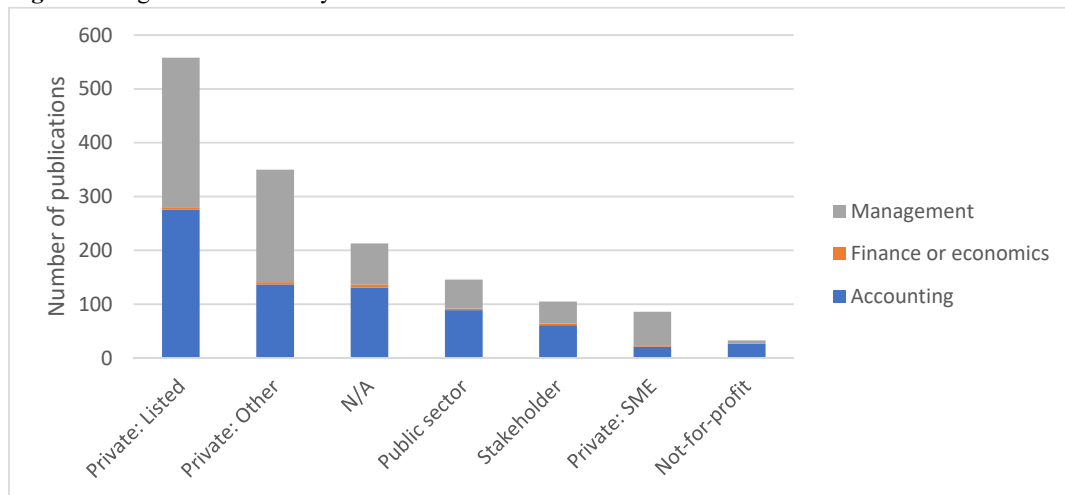


Figure 8. Organisation focus by FoR classification



3.3 Research methodology and method

Recent studies adopting the quantitative methodology accounts for, on average, 62.84% of publications per year (see Figures 9 and 10). Relatively fewer studies adopt the qualitative methodology (17.81%) or a mixed-method approach (7.17%).

Figure 9. Research methodology by year

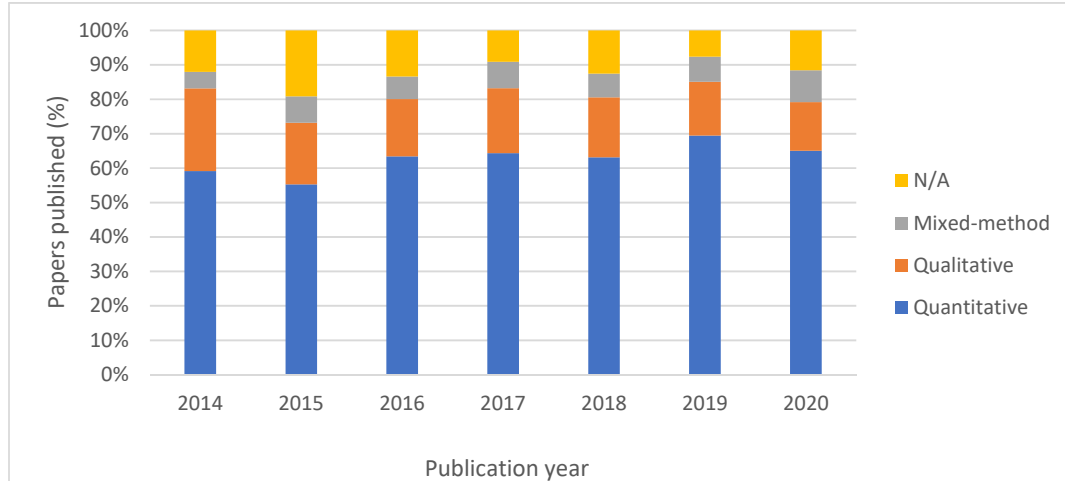
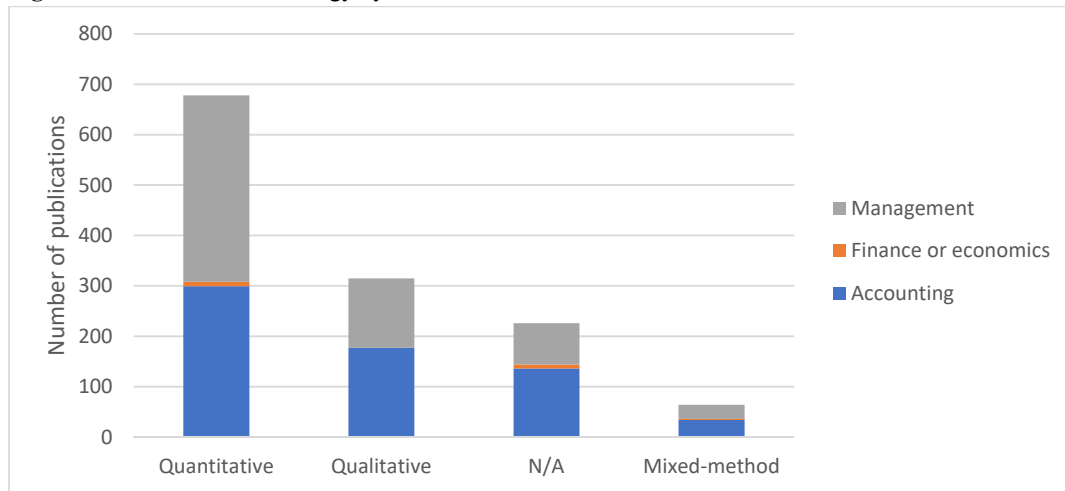


Figure 10. Research methodology by FoR classification



In terms of research method, as shown in Figures 11 and 12, methods used to conduct empirical research accounts for 87.52% of publications per year on average. Survey/empirical archival/experimental is the highest ranked category and is associated with 616 articles. Content analysis/historical analysis ranks second (421) and is followed by case study/field study/interview (324). Examination of subcategories reveals that the most frequently adopted method is empirical archival (534), which largely comprises studies utilising regression analysis (428). Content analysis (413) is also often employed, with the majority being quantitative in nature (334). Other common methods include case study (194), survey (142) and interview (115). As for non-empirical methods, conceptual or methodological (98) stands out as the most frequent, followed by viewpoint/commentary (69), general review (50) and literature review (49). Figure 12 shows that viewpoints/commentaries are more common in accounting journals when compared to management journals. Of the 1,283 articles reviewed, 25.64% either adopts multiple methods (e.g., using content analysis for a measure of disclosure that is used in regression analysis or content analysis supplemented by interviews

of a subsample) or proposes a framework or method and demonstrate its application through a case study.

Figure 11. Research method by year

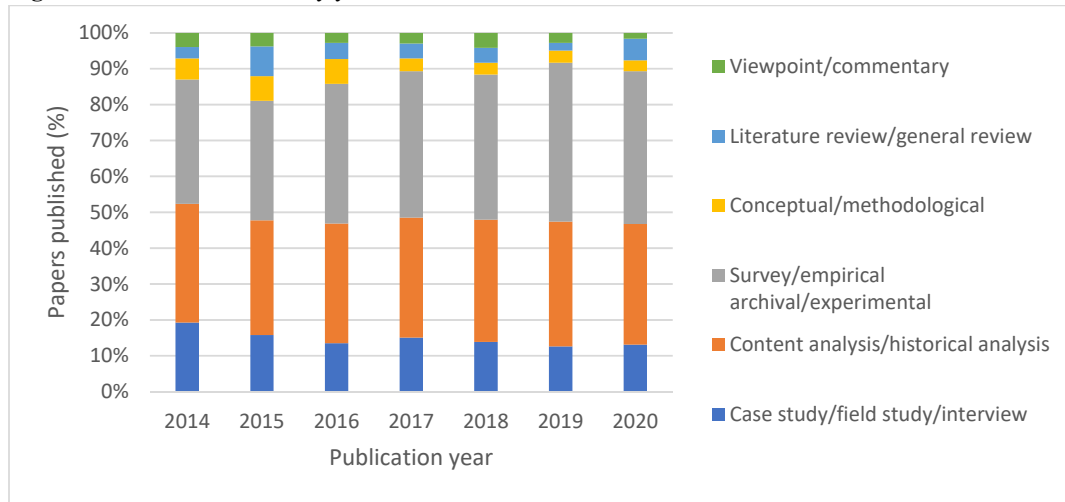
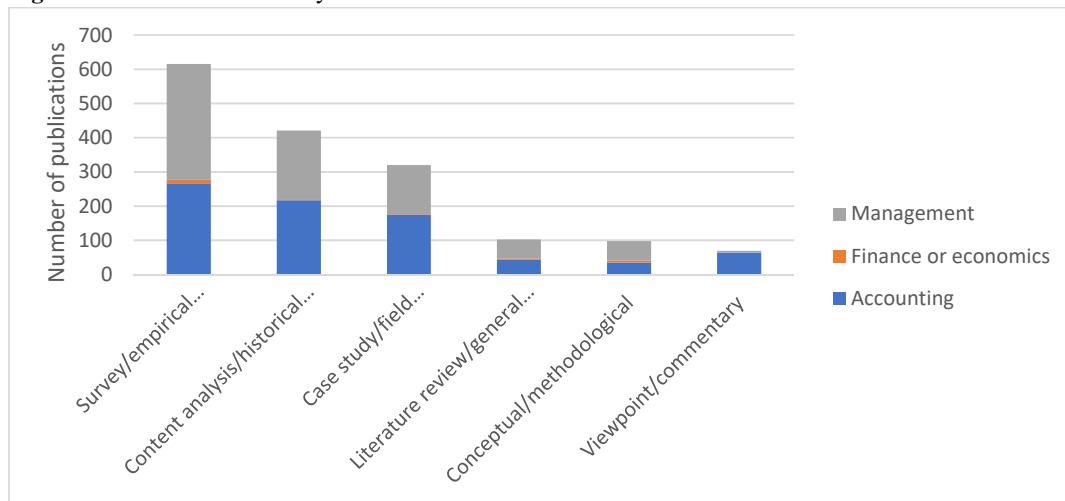


Figure 12. Research method by FoR classification



3.4 Theory applied

We identified 195 theories or frameworks and classified them into six categories: economic, social and political, management, psychology, accounting and finance, and science and other. Figures 13 and 14 indicate that SAR scholars predominantly refer to social and political theories (577 articles). Within this category, legitimacy theory (inclusive of impression management theory) is the most common and has been adopted by 219 articles, and stakeholder theory and institutional theory (inclusive of institutional logic) have been adopted by 193 and 156 articles, respectively. Scholars have applied various other social and political theories or frameworks, examples include: an accountability lens (20), critical theory (17), agenda-setting theory (8), actor network theory (7), structuration theory (5), social movement theory (4), feminine theory (2), theory of practice (1), economies of worth (1), Pythagorean

ethics (1), collective action theory (1), heroic bureaucracy (1), shift of policy paradigm theory (1) and so on.

Figure 13. Theory applied by year

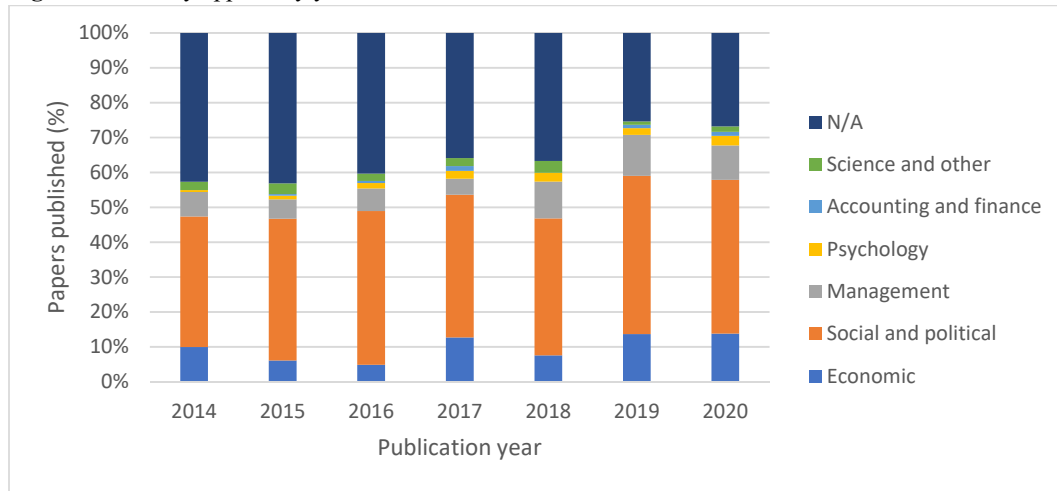
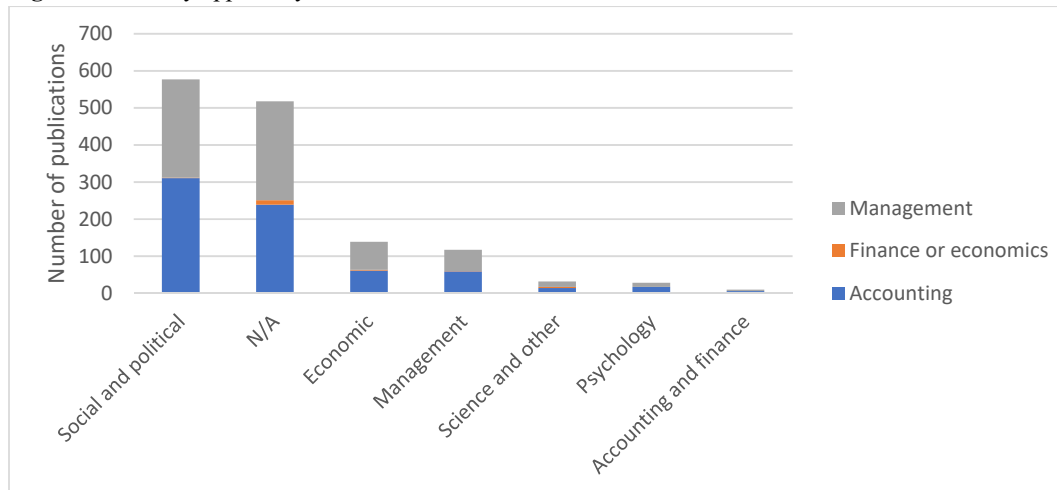


Figure 14. Theory applied by FoR classification



Ranked second is studies not founded on a theory or framework (518), which incorporates non-empirical studies and those that draw on relevant literature but do not explicitly state a theory or framework has been adopted. Economic theories rank third (139), most commonly agency theory (61), signalling theory (42) and discretionary disclosure theory (33). This category is closely followed by management theories (117), including: a resource-based view (30), resource dependency theory (19), contingency theory (9), diffusion of innovation theory (7), levels of control framework (5), upper echelons theory (5), dynamic capabilities (4), crisis communication theory (2) and many more. Science and other (32) includes: weak and strong sustainability (3), Grey relational theory (2), Planetary Boundaries Framework (1), Memetic theory (1) and others. Psychology theories (28) are typically adopted by experimental research and it covers: social identity theory (5), attribution theory (4), theory of planned behaviour (4), general evaluability theory (2), self-presentation theory

(1), persuasion theory (1) and others. Accounting and finance theories (10) are the least common, which includes: decision-usefulness theory of accounting (3), theorisation auditability process (2), investor recognition hypothesis (1), peaking order theory (1) and so on. Of the 1,283 articles reviewed, 12.00% adopted two or more theoretical perspectives (e.g., a combination of agency theory, institutional theory, stakeholder theory and resource dependency theory, or institutional theory and absorptive capacity theory).

3.5 Area of sustainability

Figures 15 and 16 show that contemporary SAR is dominated by research that broadly investigates sustainability accounting (averaging 51.25% of publications per year), typically referred to as ‘sustainability’, ‘CSR’ or ‘social and environmental’. Environmental accounting has also been a focus (37.18%), with climate change (9.51%), biodiversity (3.12%) and water (2.18%) being the most common environmental issues investigated by studies examining a specific environmental topic. Comparatively, few studies investigate social accounting (10.12%), with corruption or ethical considerations (2.10%), human rights (1.48%), human resource or social capital (1.17%) and health and safety (0.94%) being the focus of studies that examined a specific social issue. Research on accounting for sustainable development is scant (1.45%). Comparison by journals’ discipline indicates that management journals publish relatively more on environmental accounting, whereas accounting journals publish more on social accounting (see Figure 16).

Figure 15. Area of sustainability by year

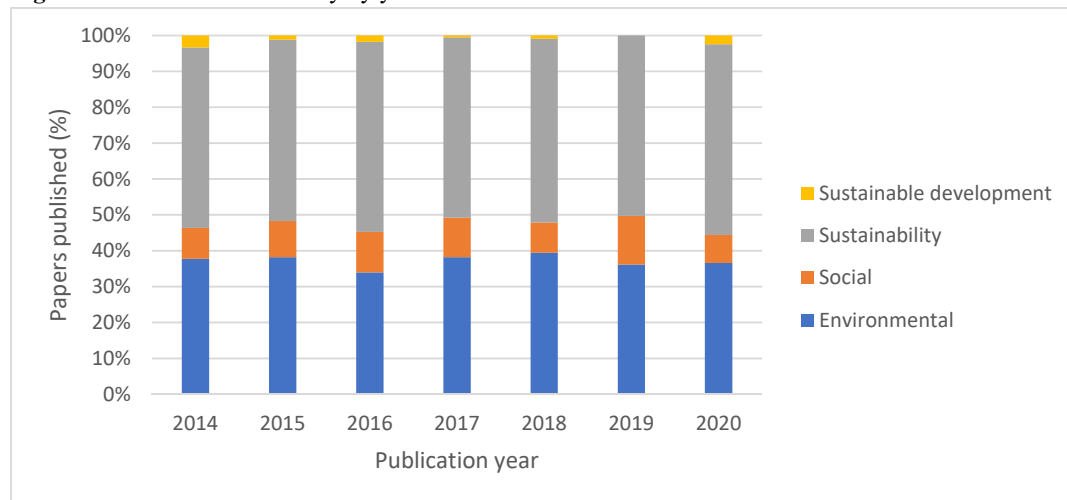


Figure 16. Area of sustainability by FoR classification

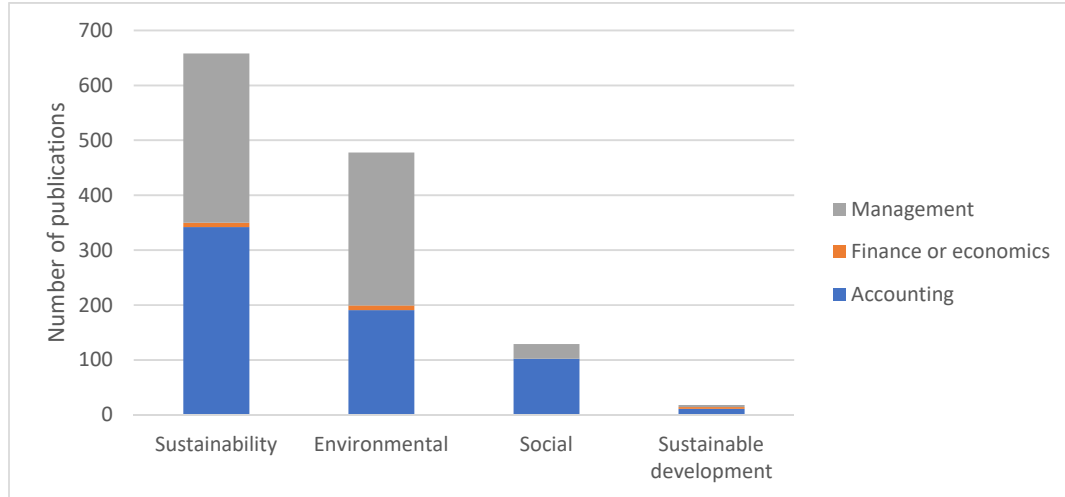
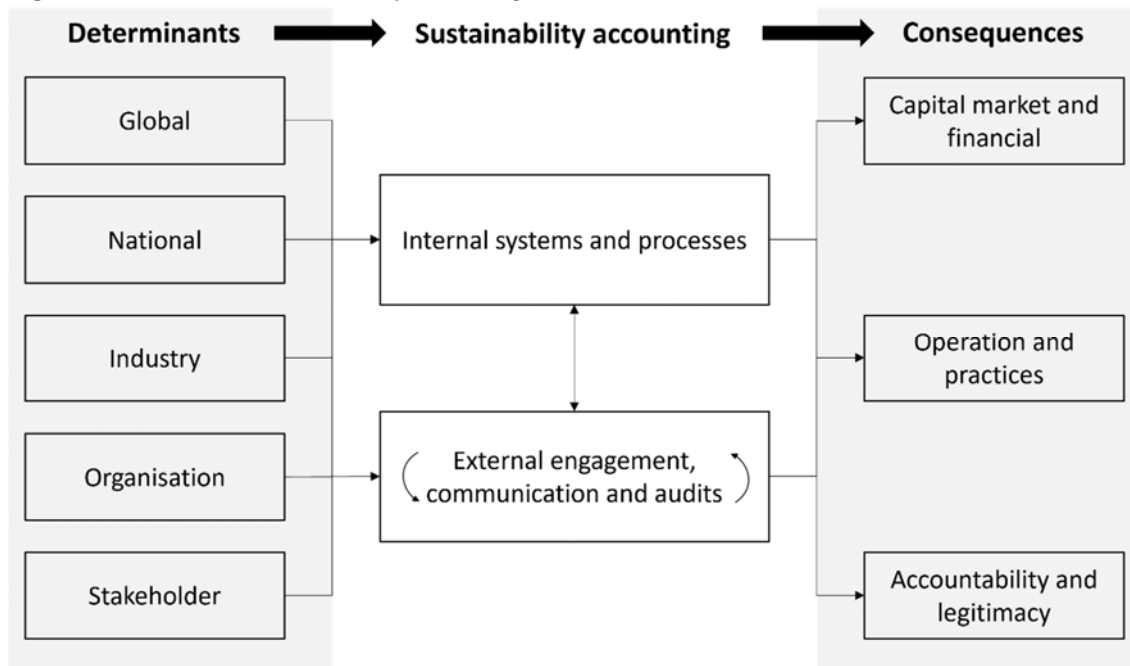


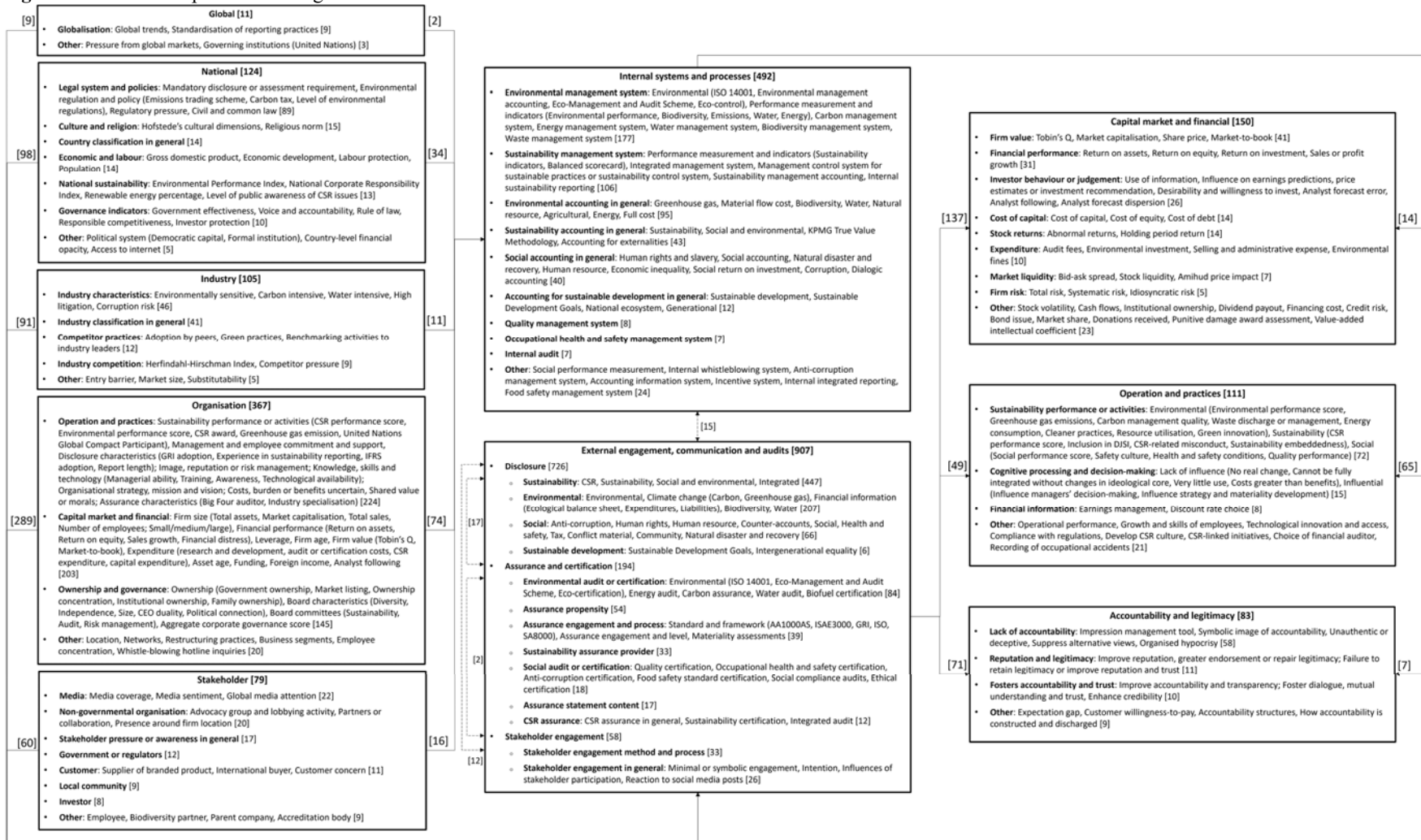
Figure 17. Framework of sustainability accounting influences



4. Framework for sustainability accounting influences

Figure 17 presents a conceptual framework for sustainability accounting influences, as derived from the topics and empirical findings of articles reviewed. The framework presents identified relationships among ten components. Contemporary SAR has provided evidence of ‘global’, ‘national’, ‘industry’, ‘organisation’ and ‘stakeholder’ influences on organisations’ sustainability accounting practices pertaining to ‘internal systems and processes’ and ‘external engagement, communication and audits’. Interrelationships have been identified between ‘internal systems and processes’ and ‘external engagement, communication and audits’ and within the latter. Recent studies have also investigated the influence sustainability accounting practices have on a range of consequences relating to ‘capital market and financial’, ‘operation and practices’ and ‘accountability and legitimacy’.

Figure 18. Research topics and findings



Details of the ten components are presented in Figure 18. Given the diversity of research topics and findings, numerous codes were created to capture information and it is not practical to list every one of them. Hence, for presentation purposes, subcomponents are listed separately in descending order if more than five articles have the same research focus, otherwise studies are aggregated under ‘other’. Where applicable, examples of common themes coded in the subcomponents are listed. Subsequent discussions focus on the prevalent themes and findings.

In terms of interpreting Figure 18, the number in square parentheses beside each theme represents the number of articles coded in it. For instance, ‘Environmental management system: Environmental (ISO 14001, Environmental management accounting, Eco-Management and Audit Scheme, Eco-control), Performance measurement and indicators [...] [177]’ is under ‘Internal systems and processes [492]’, showing that there are 492 articles on sustainability-related internal systems and processes, of which 177 articles include a focus on environmental management systems. Most commonly, studies examined ISO 14001, environmental management accounting and so on, and the next most common theme is environmental performance measurement and indicators. The same interpretation applies to identified relationships, where the number in square parenthesis beside the links reflects the number of articles with findings related to the linked components. For example, the ‘[34]’ beside the arrow from ‘National [124]’ to ‘Internal systems and processes [492]’ indicates that 34 studies specifically commented on national factors influencing internal systems and processes. As another example, the ‘[17]’ beside the double-headed arrow connecting ‘Disclosure [726]’ and ‘Assurance and certification [194]’ indicates that 17 studies reported disclosure influencing assurance or vice versa.

4.1 Sustainability accounting

As shown in Figure 18 and aforementioned in the profiling analysis, the most prolific topic in recent SAR is sustainability disclosure. In terms of the types of information assessed, 61.57% of disclosure studies focused on sustainability (e.g., CSR or social and environmental), 28.51% on environmental (e.g., climate change or biodiversity), 9.09% on social (e.g., anti-corruption or human rights), and 0.83% on sustainable development (e.g., Sustainable Development Goals or intergenerational equality). Disclosure studies concentrate on assessing adoption, level, quality, discourse or specific information in reports, often in combination with examining determinants and consequences (Abdullah et al. 2020; Cahan et al. 2016; Tregidga, Milne, and Kearins 2014). Additionally, studies that use content analysis to assess disclosure level or quality have primarily evaluated periodic disclosure, namely annual reports, sustainability reports or integrated reports (273 articles), and relatively few have assessed websites (55) or social media (11). Common databases used for disclosure measures in empirical archival studies are the CDP database (33), Bloomberg database (27) or Rankins/Runling CSR Rankings (7).

Research on internal systems and processes largely comprise studies on the environmental dimension of sustainability. Most publications broadly investigate environmental systems or accounting, and a few have centred on specific topics within the environmental domain, more notably: greenhouse gas/carbon (33), biodiversity/extinction (23), material cost flow (19), water (17), energy (10) and waste (3). Research on

sustainability management systems or accounting are also common. Studies on sustainability management systems tend to broadly investigate management or control systems or management accounting tools (Hörisch et al. 2015; Wijethilake, Munir, and Appuhami 2017), whereas most studies on sustainability accounting are reviews or viewpoints (Isil and Hernke 2017; Lehman and Kuruppu 2017). The most notable themes in this subcategory are sustainability performance measurement or indicators (49) and integrated management systems (21). Research on the social dimension of sustainability is relatively scant and a range of topics have been considered, more commonly: human rights and slavery (10), quality (8), health and safety (8), anti-corruption/anti-bribery (6), whistleblowing (5), social performance measurement (5) and natural disaster and recovery (4).

Publications on assurance and certification includes systems or performance certification and disclosure assurance. While most studies on environmental or social certification are also included in the internal systems and processes category, as they relate to internal system certification often based on ISO standards, a few have investigated particular types of environmental or social audits such as carbon assurance, water audit or social compliance audits (Barrington and Ho 2014; Datt, Luo, and Tang 2020; Islam, Deegan, and Gray 2018). Studies commonly investigate into the determinants of voluntary assurance adoption and choices of assurance scope and assurer (Clarkson et al. 2019; Shan, Simnett, and Green 2016). There are also studies on assurance engagements and processes (Ackers and Eccles 2015; Boiral, Heras-Saizarbitoria, and Brotherton 2020), and the content of assurance statements are often used as a measure of assurance quality (Gürtürk and Hahn 2016; Herda, Taylor, and Winterbotham 2014).

Although stakeholder engagement is an important aspect of sustainability accounting, it has received the least attention in recent SAR (mentioned by 4.52% of articles). Research focuses have been scattered, with the main theme being investigations on stakeholder engagement methods and processes in reporting and assurance (Ardiana 2019; Kaur and Lodhia 2018). Some studies have concentrated on understanding the intentions of engagement or characteristics that influence stakeholder participation (Erdiaw-Kwasie, Alam, and Kabir 2017; Luís et al. 2018). Others have documented concerns with stakeholder engagement, often suggesting stakeholder engagement is limited or symbolic (Haque, Deegan, and Inglis 2016; Rodrigue 2014).

4.2 Interrelationships among sustainability accounting

There are 43 articles evidencing connections among internal systems and processes, disclosure, assurance and certification, and stakeholder engagement. For the relations between 'internal systems and processes' and 'external engagement, communication and audits', recent studies support the connections identified by Morioka and de Carvalho (2016) finding that performance indicators feed into management systems and eventually reflect the indicators externally reported (Adler et al. 2017; de Villiers, Rouse, and Kerr 2016). Studies further evidence that appropriate and effective management and control systems are keys to institutionalising sustainability reporting within organisations (Contrafatto 2014; Farooq and de Villiers 2019), and that stakeholder engagement is critical in establishing efficient stakeholder-centric accountability systems for management and reporting (Kaur and Lodhia 2018). Other research has examined the role internal auditors play in preparing sustainability

reports (Aureli et al. 2020; Trotman and Trotman 2015), and the influence certified internal systems have on disclosure decisions and quality (Ott, Schiemann, and Günther 2017; Qian, Hörisch, and Schaltegger 2018).

Research on the links between ‘stakeholder engagement’ and ‘disclosure’ has investigated stakeholder engagement processes, strategies and the types of stakeholders engaged in the reporting process (Bellucci et al. 2019; Herremans, Nazari, and Mahmoudian 2016; Kaur and Lodhia 2018; Safari and Areeb 2020). There is also criticism of limited stakeholder engagement in the reporting process (Haque, Deegan, and Inglis 2016). Similar concerns with stakeholder engagement have been identified in the relation between ‘stakeholder engagement’ and ‘assurance and certification’. Studies that assessed assurance statement content have commented on a lack of stakeholder engagement in assurance processes (Bepari and Mollik 2016) and found that stakeholder engagement is positively associated with higher quality sustainability audits (Dalla Via and Perego 2020).

Interrelationships between ‘disclosure’ and ‘assurance and certification’ have been examined, with findings evidencing that higher disclosure extensiveness or quality is positively associated with greater assurance propensity or quality (Cho et al. 2014; Dalla Via and Perego 2020; Sethi, Martell, and Demir 2017a), and vice versa with assurance adoption increasing disclosure level (Braam et al. 2016; Dias et al. 2019; Hummel and Schlick 2016). Studies also report a positive association between assurance and restatements in sustainability reports (Ballou et al. 2018; Michelon, Patten, and Romi 2019), and found firms with more transparent carbon reporting prefer consulting firms as assurance providers (Datt, Luo, and Tang 2020).

4.3 Determinants of sustainability accounting

The 430 articles related to determinants of sustainability accounting provide evidence that sustainability accounting is influenced by a range of global, national, industry and organisation factors and stakeholder groups.

While few studies specifically comment on global influences, there is consistent evidence of global trends and standardisation influencing reporting practices (Abeydeera, Tregidga, and Kearins 2016; Ismaeel and Zakaria 2020; Khan, Lockhart, and Bathurst 2020) and increasing pressure from global markets to adhere to environmental management standards (Heggen, Sridharan, and Subramaniam 2018).

For national-level characteristics, the most common theme relates to legal system and policies. There is undisputed evidence of national policies and regulations (e.g., mandatory CSR disclosure, environmental regulations and emission trading schemes) and regulatory pressure being positive stimuli for sustainability systems, disclosure, assurance and certification (Arena, Liong, and Vourvachis 2018; Bui and Fowler 2019; Christ 2014; Demirel, Iatridis, and Kesidou 2018; George et al. 2016; Passetti, Cinquini, and Tenucci 2018). It is evident that reporting and assurance practices vary across countries (Datt et al. 2018; Islam and van Staden 2018; Thijssens, Bollen, and Hassink 2015), with differences often attributed to: the legal system, with common law/stakeholder-orientated countries disclosing more information (Bui, Moses, and Houque 2020; Luo and Tang 2016); cultural system, despite inconsistent results on the direction of influence characteristics such as uncertainty avoidance and individualism have on disclosure (Ben-Amar and Chelli 2018;

Gallego-Álvarez and Pucheta-Martínez 2020; Luo and Tang 2016); economic and labour systems, with firms in wealthier countries more likely to provide sustainability information (Baldini et al. 2018; Hassan and Romilly 2018) and less likely to seek assurance and have lower assurance quality (Dalla Via and Perego 2020; Datt et al. 2018); and national sustainability performance and orientation, where higher national sustainability level increases disclosure and assurance (Cahan et al. 2016; Datt et al. 2018; Sethi, Martell, and Demir 2017b). Various other governance indicators and country-level factors have been assessed (Cahan et al. 2016; Shan, Simnett, and Green 2016).

For industry-level characteristics, there is consensus that sustainability accounting practices vary across industry sectors (Casey and Grenier 2015; Dissanayake, Tilt, and Xydias-Lobo 2016; Fisher, van Staden, and Richards 2020). Generally, studies have reported that firms operating in environmentally sensitive industries are more likely to implement sustainability management systems, disclose information and engage in assurance (Adler, Mansi, and Pandey 2018; Cho et al. 2014; Passetti, Cinquini, and Tenucci 2018). There is also evidence of mimetic isomorphism and consideration of competitor practices (Robertson and Samy 2015; Wijethilake, Munir, and Appuhami 2017). The influence of industry competition has been inconclusive and some scholars have argued the relationship is non-linear (Meng et al. 2019; Zhou et al. 2020).

Organisational-level characteristics have been widely examined in recent SAR and, consistent with prior reviews by Hahn and Kühnen (2013) and Dienes, Sassen, and Fischer (2016), many factors show mixed results when compared across studies. For instance, the directional effect of analyst following on disclosure can either be positive or negative (Clarkson et al. 2019; Dhaliwal et al. 2014), and the same applies to the effect profitability has on voluntary assurance (Ballou et al. 2018; Datt et al. 2018). Additionally, while studies have typically found a positive relation between firm size and sustainability accounting, a few outlier studies have found a negative relationship instead. There are also mixed results for characteristics such as leverage, financial slack, Tobin's Q, board gender diversity, board independence, CEO duality, presence of a CSR committee, family ownership, institutional ownership and sustainability performance. However, there is uniform support that management/employee support and commitment plays a critical role in sustainability accounting (Boiral, Heras-Saizarbitoria, and Brotherton 2018; George et al. 2016; Lisi 2018; Qian et al. 2020), organisations with shared values and sustainability as part of their mission and strategies are more proactive in sustainability accounting (Burrirt et al. 2019; Higgins, Milne, and van Gramberg 2015; Solovida and Latan 2017; Wijethilake 2017), and organisations are motivated to adopt sustainability accounting to improve image and manage reputational risk (Bhimani, Silvola, and Sivabalan 2016; Dobbs and van Staden 2016; Khan, Lockhart, and Bathurst 2020; Qian et al. 2020; Salim et al. 2018).

Moreover, it has been consistently documented that stakeholder groups influence sustainability accounting, often indicating media exposure, stakeholder awareness, the need to meet stakeholder expectations and pressure from non-governmental organisations as motivations for managers to engage in sustainability practices and increase sustainability disclosure (Abdalla and A.K 2015; Bhimani, Silvola, and Sivabalan 2016; de Villiers, Rouse, and Kerr 2016; Deegan and Islam 2014; Robertson and Samy 2020).

4.4 Consequences of sustainability accounting

The 323 articles related to consequences of sustainability accounting have examined various consequences that can be categorised into capital market and financial, operation and practices, and accountability and legitimacy. It is common for studies on internal systems and processes to assess their impacts on operations and practices, whereas research on external engagement, communication and audits tends to concentrate on capital market and financial consequences and scholars often draw links to accountability and legitimacy. Similar to research on determinants, findings for consequences are typically mixed when compared across studies.

For capital market and financial consequences, there is evidence of capital markets reacting to sustainability accounting practices. Experimental studies and empirical archival studies have found sustainability reporting and assurance influence investor behaviour, judgement and analyst forecasts (Dong 2017; Guiral et al. 2020; Muslu et al. 2019). However, consistent with the review by Huang and Watson (2015), study results have been mixed with the reporting of opposing directional relationships. For example, while many studies document a positive association between sustainability accounting practices and firm value (Clarkson et al. 2019; Griffin, Lont, and Sun 2017), a few report a negative association or no statistical evidence of a relation (Cho et al. 2015; Wang and Zhao 2020). Mixed results have also been identified for capital market consequences such as cost of capital and stock returns, and financial measures related to performance.

In relation to operation and practices, much focus has been on the impact of sustainability accounting on sustainability performance or activities. Although research findings typically support the argument that implementation of environmental management systems improves environmental performance and environmental capabilities (Böttcher and Müller 2016; Gomez-Conde, Lunkes Rogerio, and Rosa Fabricia 2019; Mungai, Ndiritu, and Rajwani 2020; Solovida and Latan 2017), this relationship is not straightforward as it differs by circumstances and settings. Symbolic adoption may lead to minimal or no improvement in sustainability performance (Cong, Freedman, and Park 2014; Heras-Saizarbitoria, Boiral, and Díaz de Junguitu 2020), there may be no differences between the performance of certified and non-certified companies (Arimura et al. 2016), and the impact can differ in the short-term and long-term (Testa et al. 2014). In terms of disclosure, studies have found CSR reporting decreases incidences of future misconduct (Christensen 2016), improves sustainability performance and is indicative of better sustainability performance (Chen, Hung, and Wang 2018; Papoutsis and Sodhi 2020; Qian and Schaltegger 2017). More varied results have been reported on internal use of sustainability information. Some studies suggest sustainability information is largely meaningless due to ambiguity and impreciseness and it does not result in transformative changes in operations (Laine et al. 2017; Passeti et al. 2020; Recuero Virto, Weber, and Jeantil 2018), while others suggest that sustainability accounting does instigate change management for sustainability (Le Roux and Pretorius 2019; Lozano, Nummert, and Ceulemans 2016; Steinmeier and Stich 2019).

In terms of accountability and legitimacy, although sustainability accounting can foster accountability and trust and organisations engage in sustainability practices to discharge accountability (Costa and Goulart da Silva 2019; Hyndman and McConville 2018), scholars have often criticised that organisations' sustainability actions reflect a means of

impression management, reputation management and maintaining social legitimacy, rather than a genuine commitment to accountability and sustainability (Adler, Mansi, and Pandey 2018; Cooper and Slack 2015; Lauwo, Kyriacou, and Julius Otusanya 2020; Mahmud Khalid, Atkins, and Barone 2019). Studies have also identified expectation gaps, suggesting there is a disconnection between the views and interests of stakeholders and the information disclosed in sustainability reports (Bradford et al. 2017; Haque, Deegan, and Inglis 2016). Results on the influence sustainability accounting has on reputation and legitimacy has been mixed, with findings suggesting that sustainability disclosure and assurance enhances environmental reputation and stakeholder endorsements (Birkey et al. 2016; Dai et al. 2018; Patten and Zhao 2014), and other findings suggesting organisations failed to retain legitimacy through sustainability accounting (Alexander, Tiron-Tudor, and Dragu 2018; Belal and Owen 2015; López-Navarro, Tortosa-Edo, and Llorens-Monzónis 2015).

5. Discussion and conclusion

The profiling analysis and conceptual framework show diversity in the focuses of contemporary SAR. Publication themes have been fairly consistent across time and there are few differences in the types of studies published in journals of different disciplines. The following discussion concentrates on three main inadequacies identified through our analysis: a lack of research on social accounting and accounting for sustainable development, few studies on stakeholder engagement and examining stakeholder perspectives, and unresolved inconsistencies across studies and insufficiently researched areas.

While considerable progress has been made in advancing sustainability accounting knowledge, the SAR literature has not necessarily advanced past the observations and concerns voiced by Mathews (1997) and Gray (2002) dating back over two decades. The literature remains focused on measuring information in disclosures and research directed at the self-interest of individual or specific groups of enterprises. It remains important for future research to reactivate interest in social accounting, while maintaining a consistent focus on diverse research projects (Gray 2002). The valuation of externalities and a focus on sustainable development remain areas of considerable interest that have not received appropriate attention (Bebbington and Larrinaga 2014; Mathews 1997). Recent SAR does investigate aspects of sustainable development, such as corruption, climate change and biodiversity, but there are few attempts at assessing sustainable development from a systems perspective and organisations' contribution to it. Given global attention on sustainable development (United Nations 2020; World Economic Forum 2021), a greater focus on measuring and assessing our progress towards it is critical and consistent with the role accounting research plays in furthering these goals (Bebbington and Unerman 2018, 2020; Unerman and Chapman 2014). Hence, research on the following topics is warranted:

- Social accounting practices in relation to management systems, disclosure, and assurance and certification.
- The role of accounting in supporting sustainable development, including research on accounting for intergenerational and intragenerational equity, and accounting for eco-justice, effectiveness and efficiency.

- How accounting for social and environmental aspects are integrated with economic imperatives in practice, and how this affects internal processes and reporting practices. Investigation into integration of different capitals and connectivity of information would also link with integrated reporting.
- How management systems that support sustainable development can be developed and what they encompass.
- How national policies and regulations can be used to drive sustainable development and accountability.

Our analysis also reveals a comparative dearth of research on stakeholder engagement and investigations on stakeholder perspectives. Although stakeholder engagement is core to sustainability accounting and potentially fosters accountability and legitimacy, it is unclear as to what extent sustainability accounting helps improve accountability and retain legitimacy. There is a need for direct evidence on the influence organisations' sustainability accounting practices have on stakeholders' perspectives of organisational accountability and legitimacy, as a common critique of organisations' practices is that it does not demonstrate genuine accountability nor represent commitment to sustainability. Often the criticism is on communication practices, where disclosures reflect impression management or are used in a manner to maintain social legitimacy. Accordingly, we call for more research on stakeholder engagement and investigations into stakeholder perspectives to enhance understanding of flow-on effects from sustainability accounting practices:

- Assessment of the quality of sustainability accounting practices from stakeholder perspectives, including developing models for measuring stakeholder satisfaction with sustainability accounting.
- The flow-on effects from shaping management and reporting practices based on stakeholder engagement, and the subsequent outcomes for accountability and legitimacy.
- Any real effects on accountability and legitimacy from sustainability accounting.

Close examination of contemporary SAR shows a number of inconsistencies in the findings across studies and insufficiently explored research areas. We identify a need for broader frameworks or theorisations with the potential to reconcile the apparently conflicting results for certain relationships identified in our review. We note that these inconsistencies are a particular feature of papers following quantitative research methods, where some papers show a positive link between two constructs, while others report a negative relation (e.g. between board characteristics and disclosure or between disclosure and firm value). The quantitative research literature explains that these inconsistencies may be due to sample selection, time periods analysed, choice and measurement of variables and the use of proxies for complex phenomena. However, these reasons are most often used to justify another study on the same research topic, which simply adds to the inconsistencies and does not provide an overall explanation that could unify the seemingly inconsistent results into a coherent whole. Instead of advancing our knowledge by providing explanations for prior conflicting results, each new empirical study appears to add to the uncertainty by falling into one camp or the other. Such theory development is not a strength of the quantitative method and paradigm. These inconsistencies reveal the illusory nature of replicability in quantitative research, and

the lack of insight that can be gleaned from attempting to explain multifaceted social constructs using mathematical models. By contrast, new theory development is a feature of qualitative accounting research. Studies embedded in the interpretive paradigm tend to focus on particular circumstances/contexts that represent particularly good or bad examples, which provides new insights that add to our overall understanding of the phenomena involved. Therefore, it may fall to interpretive researchers to bring their skillset to bear to provide broad explanations for some of these seemingly intractable problems where conflicting results have stumped quantitative researchers for decades. Through our analysis, we identify the following areas, effects and linkages that has opportunities for further research:

- Institutional contexts beyond United States, Australia, China, United Kingdom and Italy.
- Organisational contexts in relation to public sector organisations, SMEs and not-for-profits.
- Internet-based communication forms such as websites and social media platforms.
- Interrelationships amongst sustainability accounting practices, such as how and the extent to which sustainability disclosure reflects internal processes and is used by management.
- Developing new theoretical frameworks or providing a broader explanation of the reasons for the conflicting results for the determinants and consequences of sustainability accounting.

This study has provided a comprehensive and integrated overview of recent SAR, contributing to the development of sustainability accounting knowledge by establishing foundations researchers can build on. In particular, we conduct research profiling analysis and introduce a conceptual framework of sustainability accounting influences based on synthesising research topics and empirical findings. These analyses enabled identification of trends and key areas that would benefit from further research. Despite the contributions, a number of caveats are worth noting. The review focuses on recent publications in 54 journals. Although we reflect on prior reviews throughout the discussions, research outside our scope could potentially contribute relevant knowledge. Additionally, the review is restricted to academic journal articles and other outlets may be worth consideration (e.g., practitioner's journals, books and conference proceedings).

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Figure 18. Research topics and findings

