

THE INTEGRATED REPORTING FRAMEWORK ACROSS PUBLIC ADMINISTRATION: A THEMATIC REVIEW

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ABSTRACT

Background and Purpose: The Integrated Reporting framework as emphasised by The International Integrated Reporting Council (IIRC) in 2013 (revised 2021), was accepted as one of the mechanisms nationwide to enhance public accountability. However, far fewer studies examined the intersection of the Integrated Reporting (IR) framework and the public sector. Addressing the gap, reviews of the literature were presented synthesising the adoption of the IR framework across public administration.

Methodology: By drawing upon SCOPUS, Science Direct and Mendeley databases were employed to generate academic literature beginning in 2011 through 2020. Following the inclusion and exclusion processes, 23 articles were selected and analysed by using ATLAS.ti 8.

Findings: The findings of the review were discussed qualitatively and quantitatively. Particular discerning were the qualitative findings; the findings outlined insights into key developments on the IR framework across the following groups, namely, 'Fundamental Concepts', 'Guiding Principles', and 'Content Elements'. Key aspects of challenges concerning the adoption of existing frameworks in public administration were discussed.

Contributions: Future research might better consider developing a more appropriate IR framework for public administration, a framework that integrates policy and practice. By focusing on the academic literature emphasising the IR framework, academics, regulators, and reporting organisations could formulate appropriate strategies for public administration.

Keywords: Framework, integrated reporting, public sector, thematic review.

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1.0 INTRODUCTION

The Integrated Reporting framework, as emphasised by The International Integrated Reporting Council (IIRC) in 2013 (revised 2021) was accepted as one of the mechanisms nationwide to enhance public accountability. The IIRC refers to a global coalition of legislators, investors, companies, standard-setters, accounting professionals, and non-governmental organisations (NGOs) that has issued a comprehensive Integrated Reporting (IR) framework to offer guidance and guidelines for exclusive reporting (IIRC, 2013; Flower, 2015). While the framework of the IIRC could be used for both, public and private organisations, the application of the reporting framework in public administration raised concerns (Caruana & Grech, 2019; Oprisor, Tiron-Tudor, & Nistor, 2016; Oprisor, 2016). Firstly, specific information and required indicators/metrics were unavailable, making it challenging to prepare the required reports (Dumay, Bernardi, Guthrie, & La Torre, 2017; Manes-Rossi, 2018, 2019). Secondly, studies found that some of the fundamental elements of the IIRC framework, ‘Fundamental Concepts’, ‘Guiding Principles’, and ‘Content Elements’ did not contextualise the public administration (Bartocci & Picciaia, 2013; Cohen & Karatzimas, 2015; Manes-Rossi, 2018; Guthrie, Manes-Rossi, & Orelli, 2017; Katsikas, Manes-Rossi, & Orelli, 2017; Ștefănescu, Oprisor, & Sîntejudeanu, 2016).

While several reviews of academic literature emphasising the IR framework in private settings were conducted across the world, far fewer studies examined academic literature on the IR framework across public administration. Addressing the gap, reviews of the literature beginning in 2011 through 2020 were presented, synthesising the adoption of the IR framework across public administration. Thus, the central, overarching question was: "How does the academic literature on IR framework describe the application of IR framework in the public sector?"

2.0 LITERATURE REVIEW

It is theoretically acknowledged that transparency is key to public administration. The public administration generally draws upon accurate and comprehensive information concerning

activities and outcomes to disclose information (Bartocci & Picciaia, 2013). As an entity mandated to render services for the public interests and holds responsibility for the use of public resources (Oprisor, 2016), public accountability is one of the cornerstones. For context, public sector accountability could be understood as a process in which the public sector is accountable to various groups of stakeholders. Typically, studies equated public accountability with the provision of a holistic explanation for all actions because stakeholders are generally entitled to such clarification (CIPFA & IFAC, 2014; Coy, Fischer, & Gordon, 2001).

Traditional reporting methods were implausible. Traditional reporting systems that were once recognised as the primary means of accountability did not provide adequate information (Adams & Simnett, 2011; Bartocci & Picciaia, 2013; Cohen, Holder-Webb, Nath, & Wood, 2012; Flower, 2015), may have solely emphasised past performances (Adams & Simnett, 2011), and failed to capture complete stakeholders' decisions and predict future expectations (Du Toit, Van Zyl, & Schütte, 2017; Guthrie et al., 2017). In addition, traditional reporting may have used technical and sophisticated vocabulary that affected stakeholders' comprehension (Brusca, Labrador, & Larran, 2018) and caused a lack of stakeholders' involvement (Curtin & Meijer, 2006). Subsequently, several initiatives to improve new forms of reporting were later introduced, for instance, the Sustainability Report, Corporate Governance Report, Corporate Social Responsibility Report, and Intellectual Capital Report. Although the alternative forms of reporting provided slightly higher levels of transparency, stakeholders were not satisfied because the alternative forms of reporting were not detailed in some contexts (Katsikas et al., 2017). Thus, calls for holistic forms of reporting were generated to meet stakeholders' expectations. One of the approaches to holistic forms of reporting is Integrated Report that was emphasised by The New Public Governance (NPG) to manage public entities (IIRC 2013, 2021; Cohen & Karatzimas, 2015; Oprisor et al., 2016).

The new form of reporting is generally comprehensive. The IR framework was issued by the IIRC in 2013 (CIMA, 2019; IIRC 2013) and was revised in January 2021 to allow for more decision-useful reporting. The IR framework was found to improve accountability because it incorporated "governance, financial capital, intellectual capital, social capital, and environmental capital onto a common platform" (Abeysekera, 2013, p. 232). Additionally, the IR framework was considered as a strategic communication tool because it combined different perspectives of value creation. Through the IR framework, innovation in the context of providing information to stakeholders could be generated.

The characteristics of the IR framework were three-fold: 1) 'Fundamental Concepts', 2) 'Guiding Principles', and 3) 'Content Elements' (CIMA, 2019; IIRC, 2013, 2021).

‘Fundamental Concepts’ were governed by value creation, capital, and value creation processes. For context, organisations’ capital was made up of increased, decreased, and transformed values, depending on the organisations’ actions and outputs. Nevertheless, the capital was understood from financial, manufactured, intellectual, human, social and natural capital perspectives. The value creation processes were “not created by or within an organisation alone. The value creation processes are influenced by the external environment, created through relationships with stakeholders and the processes are dependent on various resources” (IIRC, 2021, p. 15). ‘Guiding Principles’ explained IR-related principles. These include strategic focus and future orientation, connectivity of information, stakeholder relationships, materiality, conciseness, reliability and completeness, and consistency and comparability. The objectives of ‘Guiding Principles’ were three-pronged: 1) to explain the scope and limitations, 2) to provide a selection of content (materiality, reliability, and completeness), and 3) to achieve a quality of reports (conciseness, connectivity of information, consistency, and comparability) (Katsikas et al., 2017).

‘Content Elements’ determined the types of reporting information. ‘Content Elements’ were found to be governed by several criteria. Future strategies, networking activities, and governance mechanisms should reflect the holistic information needed by different stakeholders. Information overloads could impede comprehension because studies found that too much data discouraged citizens. As such, ‘Content Elements’ promoted conciseness, comprehensibility, and explicit links between the section of the reporting. Thus, the objectives of ‘Content Elements’ were to provide 1) overview and information on the external environment, 2) information on governance, risks, and opportunities, 3) information on strategy and resource allocation, 4) information on the business model, 5) information on performance, 6) information on outlook, and 7) provide the basis of preparation and presentation (IIRC, 2013, 2021).

Despite the efforts noted in prior studies to assess the IR framework content for the public sector, mostly those seemed to concentrate on the three core contents in isolation instead of in integration. The three core contents refer to: (1) Fundamental Concepts (Bartocci & Picciaia, 2013), (2) Guiding Principles (Manes-Rossi, 2018), and (3) Content Elements (Katsikas et al., 2017; Stefanescu et al., 2016). Additionally, past studies disregarded the needs of various public sector stakeholders, but merely applied the perspective of those reporting (Farneti, Casonato, Montecalvo, & de Villiers, 2019). In the context of the public sector, addressing the needs of stakeholders via reporting is crucial for accountability purposes. As such, this present study bridges the gap identified in the literature by adopting a more holistic

approach to the IIRC Framework application, which also is in response to the calling made by Stefanescu et al. (2016), Manes-Rossi (2018), and Katsikas et al. (2017).

Past reviews on IR only focused on the corporate sector by looking into research trends (Dumay, Bernardi, Guthrie, & Demartini, 2016), as well as IR barriers, determinants, and implications (Vitolla, Raimo, & Rubino, 2019), thus widening the gap for research findings on the application of the IR framework in other settings. Undeniably, the literature on IR framework suitability in the context of the public sector seeks expansion. Such contextual reporting should display a significant impact on the public sector entity, especially in discharging accountability to various groups of stakeholders.

3.0 METHODOLOGY

This study adopted a qualitative research design, in which the qualitative data is typically described in the context of thematic analysis. Specifically, the thematic content analysis is usually described as “a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes data set in (rich) detail” (Braun & Clarke, 2006, p. 79). While there are several qualitative research methodologies available, the thematic content analysis was adopted and used as a tool for analysis in the investigation emphasising the IR framework.

Until recently, technological innovation influenced nearly all aspects, namely, economy, research, and the research processes. Computational resources were increasingly used in scientific research beginning in the 1980s. Some of the many software programmes were used for qualitative and quantitative research (Flick, 2009). The Computer-Assisted Qualitative Data Analysis (CAQDAS) was developed to help with qualitative data analysis. An example of CAQDAS is ATLAS.ti, which is widely used by professionals and researchers from many different fields of knowledge (Mahmud et al., 2015; Zairul, 2020; Okello, Abbo, Muhwezi, Akello, & Ovuga, 2014). The ATLAS.ti software package could be used with a variety of theoretical models and multiple data analysis processes.

Five important steps governed the process for selecting academic literature. Firstly, only articles in scientific journals were used as primary sources. Other sources such as reference books and chapters in books were also considered because academic literature on IR focusing on public administration was quite restricted. Secondly, only top quartile indexed journals were considered. SCOPUS, Mendeley Literature Search, and Science Direct databases were used to explore related studies that were published through October 2020. Searches in Science Direct used “integrated reporting” AND “framework” AND “public sector”, while

(TITLE – ABS – KEY ("integrated reporting" AND "framework") AND ("public sector")) were entered into the SCOPUS database. Mendeley database extracted Elsevier's publications using the keywords "integrated reporting" AND "framework" AND "public sector." Table 1 demonstrates the results of the literature search.

Table 1: Search strings from SCOPUS, Science Direct, and Mendeley

Database	Search String	Result
SCOPUS	(TITLE-ABS-KEY ("integrated reporting" AND "framework") AND ("public sector"))	74
Science Direct	"integrated reporting" AND "framework" AND "public sector"	76
Mendeley	"integrated reporting" AND "framework" AND "public sector"	23

Thirdly, the review of academic literature emphasising the IR framework was restricted to publications beginning in 2011 through 2020. The search of the three databases returned 173 publications. Out of the 173 publications, only relevant scientific journal articles, titles, keywords, and abstracts in PDF format available in the Mendeley database were considered. Fourthly, through extractions across academic literature, ten publications were removed due to similarity in content. Finally, after the removal of articles due to irrelevant and similarity in content, only 23 papers were selected for the thematic review. Fig. 1 summarises the selection procedure.

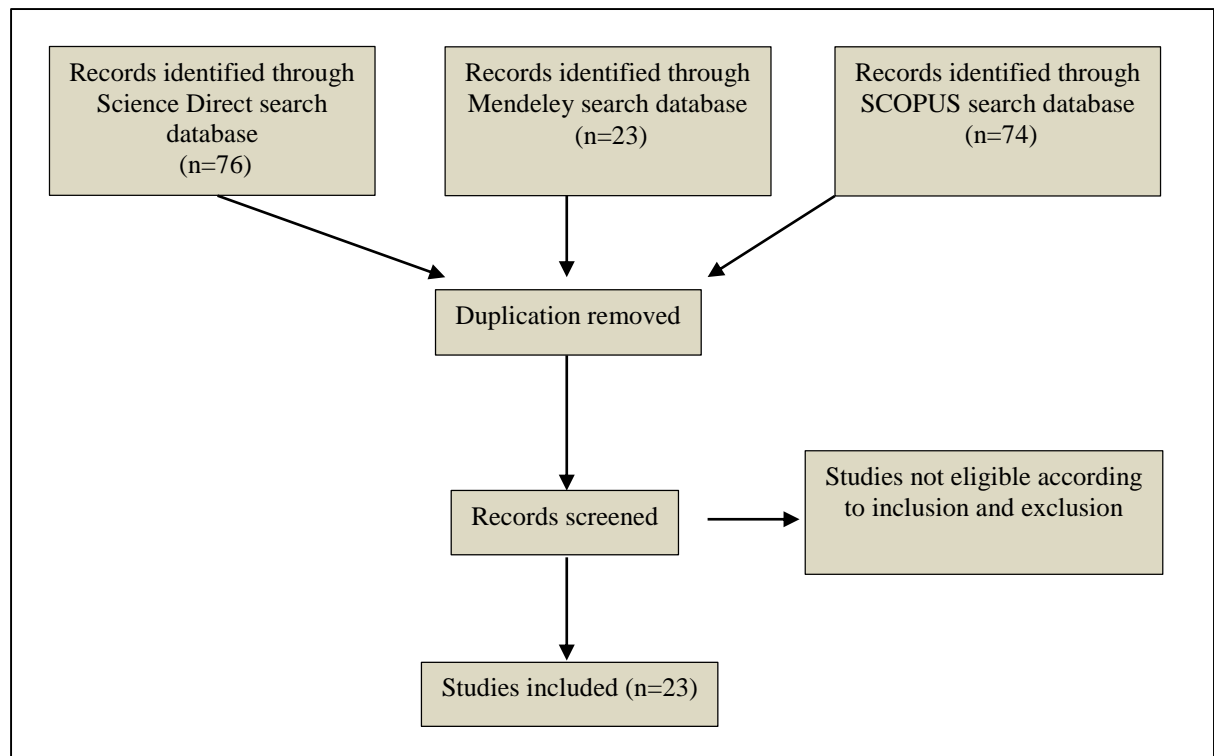


Figure 1: Inclusion and exclusion criteria in the thematic review

This manuscript reflects a thematic review due to the execution of thematic analysis (Zairul, 2020). Braun and Clarke (2006) defined *thematic analysis* as developing themes through extensive reading on the selected subject matter. The gathered 23 publications were transferred to ATLAS.ti 8 after the academic literature was carefully selected and sequenced. Several groups were formed automatically by using code and code groups derived from the metadata in Mendeley. ATLAS.ti 8 was deployed for it eased the systematic classification and sorting of the selected publications.

Subsequently, the code-building process was repeated by examining the similarities and differences of the selected article contents to identify data patterns. Next, the codes were evaluated to determine their relevance to one another in order to form a specific group or category (Merriam & Tisdell, 2016). The codes were organised into several themes that addressed the following research question: "How does the academic literature on IR framework describe the application of IR framework in the public sector?" Three themes emerged from the analysis, namely Fundamental Concepts, Guiding Principles, and Content Elements. From these three themes, the application of IR framework within the public sector is elaborated in section five.

of 46.07 times. Similarly, Dumay et al. (2016) reported that the trend indicates the growing interest among researchers in this area. The academic literature was slightly higher in 2018 (Caruana & Grech, 2019). Secondly, ten papers (43%) proposed metrics for the IR framework components that could potentially be contextualised in public administration. Thirdly, other studies that were retrieved elaborated on the opinions of the concept or perspectives of the framework in the context of public administration in bolstering public reporting systems (Oprisor et al., 2016). Specifically, the practical applications of the report in public administration required time and subsequent perspectives among miscellaneous stakeholders (Manes-Rossi, 2018). Fig. 3 illustrates the number of papers per year:

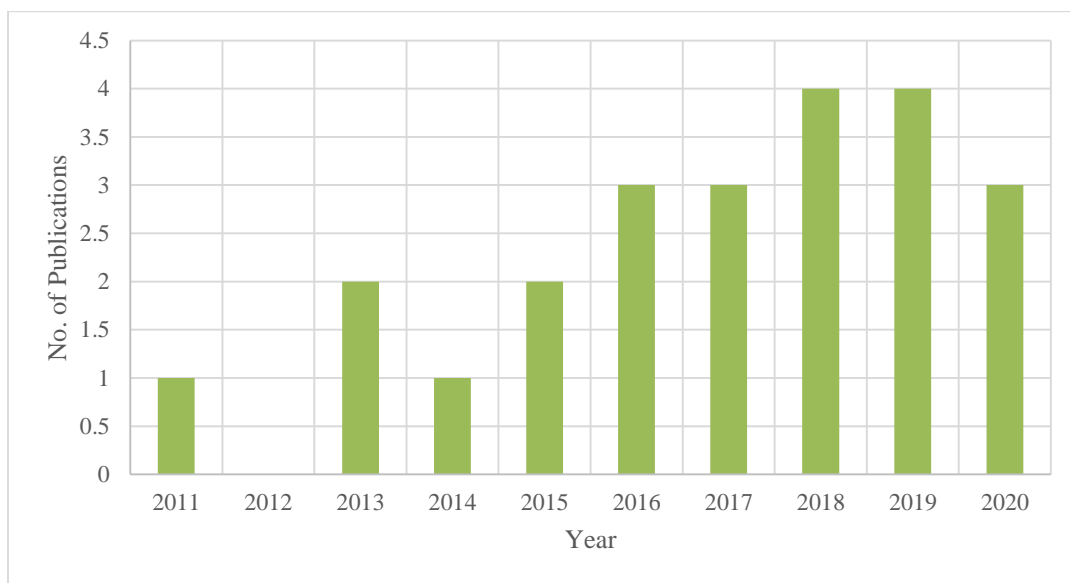


Figure 3: Publications according to the year of publication

The publication emphasising the IR framework in the context of categories of publication centralised two points. Firstly, the academic literature was divided into two categories, namely, accounting and non-accounting publications (Abu Bakar & Saleh, 2011). Accounting publications were included in the literature of accounting (Abu Bakar & Saleh, 2011). Non-accounting articles were published in multidisciplinary journals that may appear collectively with issues on social responsibility, sustainability, public administration, the environment, governance, economics, and information technology. Secondly, it was found that 75% of the extracted academic literature on accounting were published in accounting journals highlighting the dominance of accounting in accounting-related journals. Table 2 categorises the publication by the types of journals.

Table 2: Publications according to the types of journals

Subject Area	Journal Type	2011	2013	2014	2015	2016	2017	2018	2019	2020	Total
Accounting	Meditari										
	Accountancy						2		1		3
	Research										
	Journal of										
	Intellectual		1		1						2
	Capital										
	Public Money and										
	Management							1	2	1	4
	Accounting										
	Forum					1					1
	Audit Financier					1					1
	Australian										
	Accounting										
	Review	1									1
	Accounting,										
	Auditing &										
	Accountability			1							1
	Journal										
	Journal of										
	Accounting and										
	Management										
	Information					1					1
	Systems										
	Journal of										
	Financial										
	Reporting and								1		1
	Accounting										
	Others: Springer										
	Publications		1				1				2

Subject Area	Journal Type	2011	2013	2014	2015	2016	2017	2018	2019	2020	Total
Non-accounting	Business Strategy and the Environment									1	1
	International Journal of Public Sector Management				1						1
	Journal of Cleaner Production							1			1
	South African Journal of Business Management							1			1
	Sustainability (Switzerland)							1		1	2
Total		1	2	1	2	3	3	4	4	3	23

Literature on the IR framework in the context of countries of publication centralised two points. Firstly, the reviews of the literature tended to focus on developed countries. Publications released in The European Union, including Italy, Malta, Greece, Romania and Spain, were found to have dominated the study with sixteen articles (e.g. Biondi & Bracci, 2018; Brusca et al., 2018; Caruana & Grech, 2019; Guthrie et al., 2017; Marasca, Montanini, D'Andrea, & Cerioni, 2020; Mauro, Cinquini, Simonini, & Tenucci, 2020). Researchers from Italy dominated the study of IR in both public sector and global studies. In fact, Othman and Basnan (2021) found that Italy yielded the highest Total Publications (TP) globally with 87 TPs, along with 1300 citations and 72 Cited Publication Numbers (NCPs). Several factors that led to this interesting trend are a more well-established strategy towards the New Public Governance, the availability of information to report value for money (Manes-Rossi, 2018), and municipal regulation that sought non-financial reporting (Nicolo, Zanellato, Manes-Rossi, & Tiron-

Tudor, 2020). The dominance of publications in developed countries bore a resemblance to prior studies (Dumay et al., 2016; Manes-Rossi, 2018). Secondly, out of the 23 journal articles, none were conducted in the context of developing countries.

Firstly, it could be deduced that the literature emphasising the IR framework centralised on developed countries because developed countries tended to ‘enjoy’ transparency in disclosing financial information (Nistor, Stefanescu, Oprisor, & Crisan, 2019). Secondly, it was found that the study of the normative and empirical public sector that focused on developing countries was minimal. Fig. 4 presents a summary of publications based on countries.

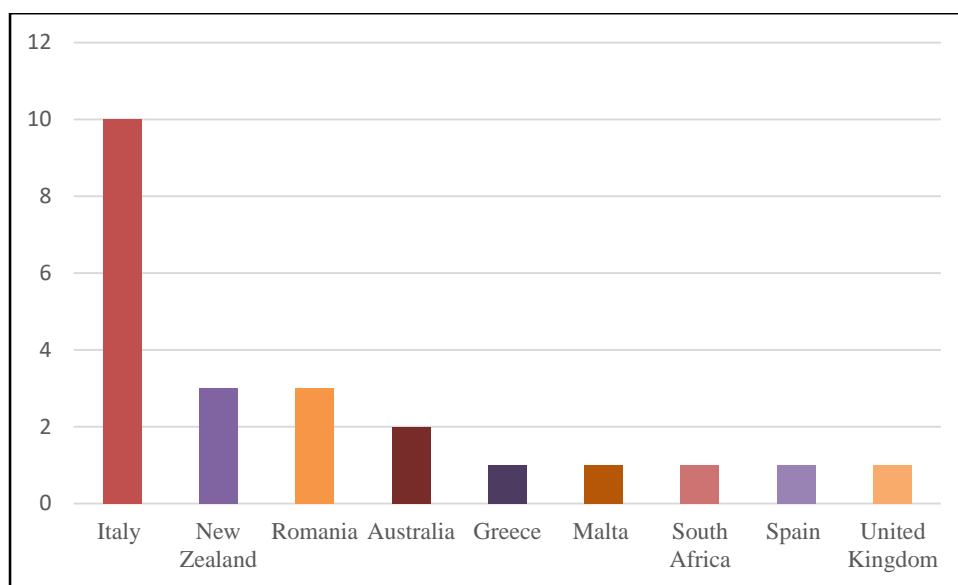


Figure 4: Publications according to the distribution of countries

Repeated evaluations were carried out for accuracy. Subsequently, the papers were grouped based on views and suggestions on the components of the IR framework that could be contextualised in public administration. To revisit, the components included ‘Guiding Principles’, ‘Content Elements’, and ‘Fundamental Concepts’. The IR framework laid out the ‘Guiding Principles’ and ‘Content Elements’ that must be included in the report to demonstrate how businesses were operationalised (Manes-Rossi, 2018). Firstly, ‘Guiding Principles’ were used to decide what information to be included and how the information was reported. Secondly, the IR framework was employed to bolster the use of ‘Fundamental Concepts’ (IIRC, 2021). In an overview, 19 publications centred on the use of views and suggestions to incorporate ‘Content Elements’ or a combination of IR Framework components. Three articles highlighted suggestions and views related to ‘Fundamental Concepts’. One article discussed

recommendations on 'Guiding Principles'. Table 3 demonstrates a list of publications in the context of thematic categories.

Table 3: Thematic categories of publications

Documents	Fundamental Concepts	Guiding Principles	Content Elements
(Adams & Simnett, 2011)	1		
(Abeysekera, 2013)	1		
(Bartocci & Picciaia, 2013)	1		
(de Villiers et al., 2014)			1*
(Cohen & Karatzimas, 2015)			1*
(Veltri & Silvestri, 2015)			1*
(Dumay et al., 2016)			1*
(Oprisor et al., 2016)			1
(Ștefănescu et al., 2016)			1*
(Dumay et al., 2017)			1
(Guthrie et al., 2017)			1*
(Katsikas et al., 2017)			1*
(Biondi & Bracci, 2018)			1
(Brusca et al., 2018)			1
(Manes-Rossi, 2018)		1	
(Montecalvo et al, 2018)			1
(Caruana & Grech, 2019)			1
(Farneti et al., 2019)			1*
(Manes-Rossi, 2019)			1
(Nistor et al., 2019)			1*
(Marasca et al., 2020)			1
(Mauro et al., 2020)			1
(Nicolo et al., 2020)			1
Total	3	1	19

* - Combination of Fundamental Concepts/Guiding Principles/Content Elements

Based on Table 4, four points could be raised to summarise the quantitative analysis. Firstly, the papers were grouped based on views and suggestions on 'Fundamental Concepts', 'Content Elements,' and 'Guiding Principles' that could be contextualised in public administration. Articles that centred on the use of views and suggestions to incorporate 'Content Elements' or

all elements to the IR framework were 19. However, three articles raised suggestions and views related to 'Fundamental Concepts'. One article discussed recommendations on 'Guiding Principles'. Secondly, journal articles concentrating on IR were dominant in accounting-related journals. Thirdly, while academic literature emphasising the IR framework increased dramatically every year, a majority of the studies investigated the IR framework within developed nations, including European countries, and Australasia. Future investigation on the IR framework might better consider other countries to provide comprehensive accounts of IR. Finally, 'accounting,' 'sustainability,' 'information,' 'social,' and 'management' were five keywords that were frequently used by authors.

Table 4: Results of quantitative analysis

A Year		C Country of Research	
2011	1	Italy	10
2012	0	New Zealand	3
2013	2	Romania	3
2014	1	Australia	2
2015	2	South Africa	1
2015	3	Malta	1
2017	3	Spain	1
2018	4	Greece	1
2019	4	United Kingdom	1
2020	3	Total	23
Total	23		
B Theme		E Most Frequent Words (After Exclusion of Core Keywords)	
Fundamental Concepts	3	Accounting	1189 (0.46%)
Guiding Principles	1	Sustainability	1138 (0.44%)
Content Elements*	19	Information	1046 (0.41%)
Total	23	Social	882 (0.34%)
		Management	845 (0.33%)
C Journal Type			
Accounting	17		
Non-Accounting	6		
Total	23		

* - Including Combination of Fundamental Concepts/Guiding Principles/Content Elements

4.2 Qualitative Findings

Views and suggestions concerning the potential application of the IR framework in public administration were categorised based on the themes, ‘Fundamental Concepts’, ‘Guiding Principles,’ and ‘Content Elements.’ Firstly, ‘Fundamental Concepts’ were subdivided into: 1) value creation, 2) the value creation process, and 3) the capital (financial, human, intellectual, social, natural, and manufactured capital). Secondly, ‘Guiding Principles’ was split into: 1) strategic focus & future orientation, 2) connectivity of information, 3) stakeholder relationships, 4) materiality, 5) conciseness, reliability, and completeness, and 6) consistency and comparability. Thirdly, ‘Content Elements’ were understood in the context of :1) organisational overview and external environment, 2) governance, 3) business model, 4) risks and opportunities, 5) strategy and resource allocation, 6) performance, 7) outlook, and 8) basis of preparation and presentation. Fig. 5 illustrates the categories of the themes.

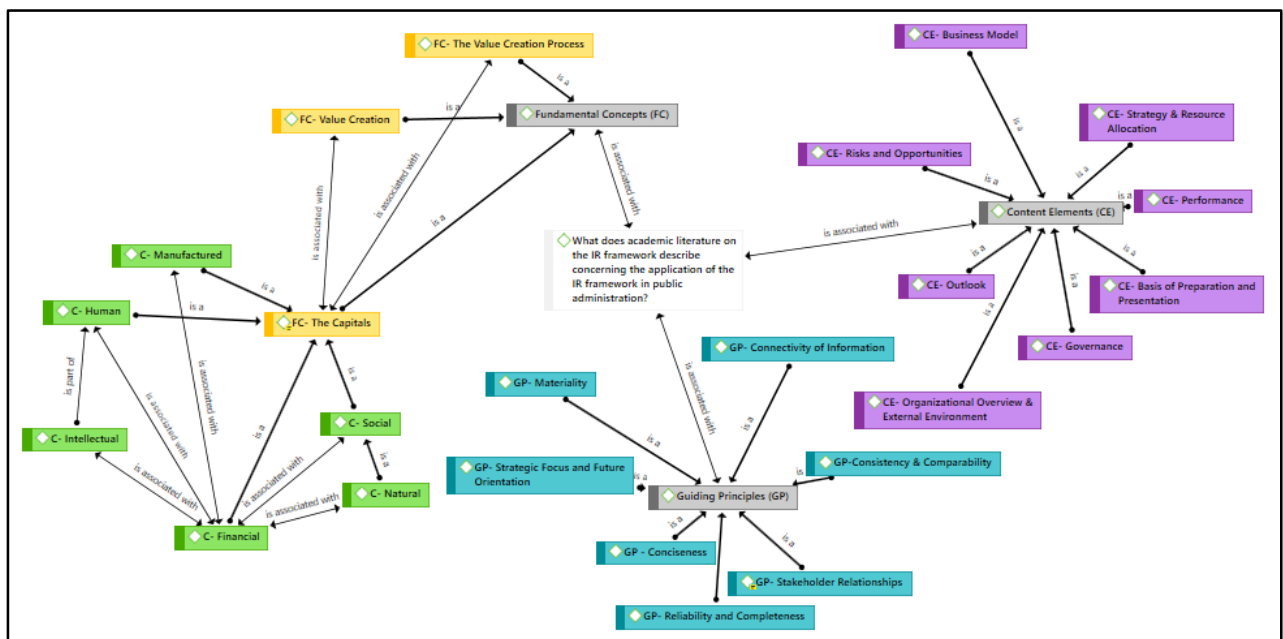


Figure 5: A network view on review of themes

4.2.1 Fundamental Concepts

Three ‘Fundamental Concepts’, value creation, the processes of value creation, and capital used in reporting, were central in the context of the IR framework (Katsikas et al., 2017). Firstly, studies revealed that clarity in meanings, concepts, and methods of disclosure might better be considered. In public administration, capital disclosures, sufficient information, transparency, and obstacles needed to be acknowledged. Secondly, a re-conceptualisation of integrated thought and value formation raised critical agendas in public administration. Thirdly, it was

found that the method of generating public value necessitated active stakeholders' participation.

The central focus of the IR framework was value creation. Firstly, public value reporting involved the identification of relevant financial and non-financial information that was deemed important to be reported (Guthrie et al., 2017). As such, the identification of financial and non-financial information established the creation of value through the public stakeholders' involvement (Stefanescu et al., 2016). Secondly, the creation of 'public values' must be developed in public organisations (Manes-Rossi, 2018). By acknowledging the differences between the public and private organisations, the processes of value creation must be coordinated (Abeysekera, 2013; IIRC & CIPFA, 2016). Thirdly, the IIRC's main strength was integrated thinking and the processes of realising integrated decision-making. Also, short, medium and long-term value creation actions were integral.

However, studies revealed two points concerning limitations to integrated thinking. Firstly, 'silo-mentality' across the public administration might restrict the incorporation of integrated thinking (Bartocci & Picciaia, 2013). Secondly, the interpretation of the concepts of integrated thinking and value creation in the context of the IR framework was not clearly defined. As such, a reconceptualisation involved professional consideration and adaptation of integrated thinking to public organisations was needed (Dumay et al., 2017).

The IIRC framework introduced various types of capital, namely, finance, manufactured, intellectual, human, social, and natural capital (Adams & Simnett, 2011; Cheng, Green, Conradie, Konishi, & Romi, 2014; IIRC, 2013, 2021). Firstly, an investigation into IIRC 2013 revealed that the varying interpretation of capital depended upon the context of the organisations. It should be noted here that not all capital applications were uniformed across all organisations because capital interpretation should be practised flexibly based on the characteristics of public administration (Bartocci & Picciaia, 2013; Cohen & Karatzimas, 2015). As such, a clearer definition of capital was needed (Veltri & Silvestri, 2015). Secondly, the use of other appropriate terms was also considered in a variety of organisational contexts. For example, the term 'manufactured' capital in the context of public administration may be explicitly linked to 'infrastructure' capital (IIRC & CIPFA, 2016).

Thirdly, the information on the other five types of capital was rarely found in public administration reports (Cohen & Karatzimas, 2015). Fourthly, adjustments needed to be made across capital items of public organisations in the context of reconceptualising the definition of capital. Accompanying details including capital values, methods of use, specific disclosure, transparency requirements, and measurable quantitative indicators might better be made

explicit (Adams & Simnett, 2011; Bartocci & Picciaia, 2013). Several suggestions concerning indicators or metrics for measuring ‘Fundamental Concepts’ across public administration were presented in Appendix (Farneti et al., 2019; Nistor et al., 2019; Ștefănescu et al., 2016). Fig. 6 illustrates a network view on ‘Fundamental Concepts.’

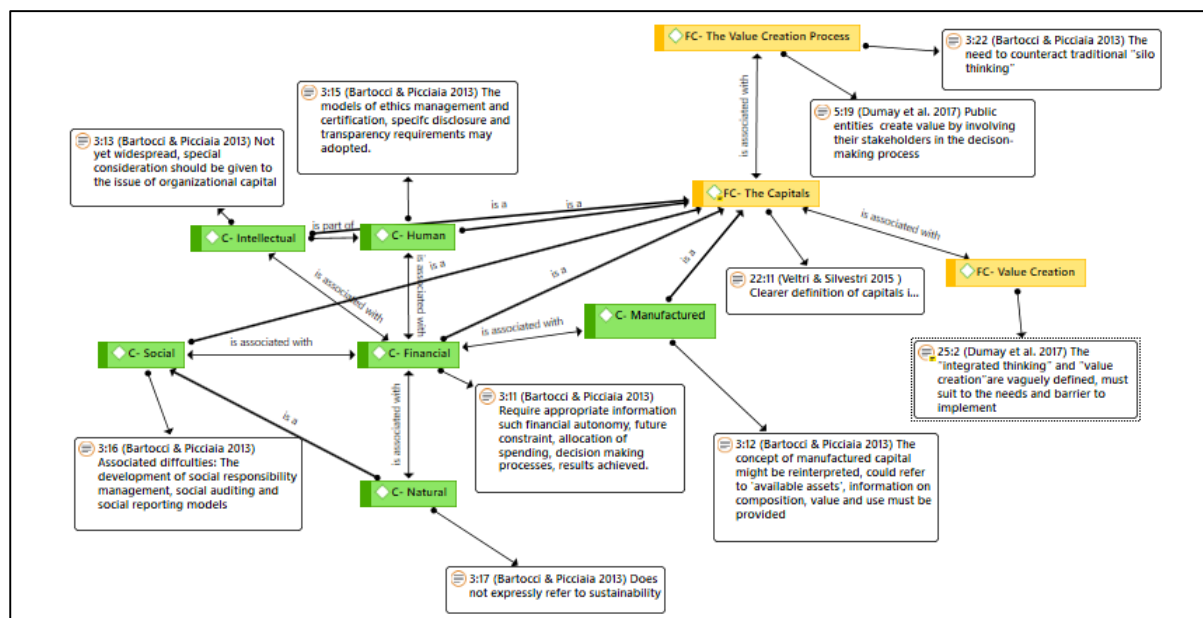


Figure 6: Network view on ‘Fundamental Concepts’

4.2.2 Guiding Principles

To revisit, the ‘Guiding Principles’ are broadly understood as principles for preparing and presenting integrated reports. In other words, the ‘Guiding Principles’ outline how overall content and instructions are provided and presented. The principles dictate how decisions based on the employment of balanced principles are made (Katsikas et al., 2017). It was found that the use of flexible principles across public administration was suggested to capture a holistic understanding and strategies. A combination of meaningful and relevant information related to public value was also central. As such, an improvisation concerning the interactions across stakeholders might better be considered through engaging new communication tools.

Three recommendations were raised in the context of applying the IR framework into public administration practice. The points emphasising the IR framework included: 1) increased interaction capacity (Bartocci & Picciaia, 2013; Cohen & Karatzimas, 2015); 2) new communication tools (Cohen & Karatzimas, 2015), and 3) the incorporation of different stakeholders’ views on strategic changes (Guthrie et al., 2017; Katsikas et al., 2017). One of the issues raised in the context of public administration concerned the inadequate information

and indicators (Manes-Rossi, 2018). Studies revealed that public administration that decided to incorporate the IR framework might better consider materiality aspects. For context, materiality aspects involve the incorporation of financial and non-financial information that is required to be reported. Failure to report the financial and non-financial information could jeopardise the understanding of values among stakeholders of public administration and the reputation of public administration (Guthrie et al., 2017; Stefanescu et al., 2016). As such, the academic literature revealed the importance of establishing intervention programmes to alleviate issues of 'resistance to change' among public administrators in the context of using the IR framework.

Three points concerning strategies on value creation were raised. Firstly, public administrators might better explain the strategies on value creation and how the strategies impacted the value creation, in short, medium, and long-term plans (Katsikas et al., 2017). Specifically, public administration offices might better illustrate the inter-relationships, inter-connectedness, and dependencies between the factors that influenced the ability of public organisations to generate value. Secondly, public disclosures might better present a 'holistic' picture of its citizens' statuses (Cohen & Karatzimas, 2015). Thirdly, several criteria related to 'Guiding Principles' might be clarified so the criteria could be contextualised in public administration (Stefanescu et al., 2016). The criteria emphasising 'Guiding Principles' that needed reconceptualisation were: 1) the meaning of disclosed information (conciseness), 2) the relegation of significant or fair errors (reliability), 3) the long-term conflicts involved in reporting policies (consistency), 4) the access to information comparing specific period and organisations (comparability). Recommendations concerning indicators or metrics for measuring 'Guiding Principles' were presented in Appendix (Katsikas et al., 2017; Manes-Rossi, 2018; Nistor et al., 2019; Stefanescu et al., 2016). Fig. 7 illustrates the network view on 'Guiding Principles'.

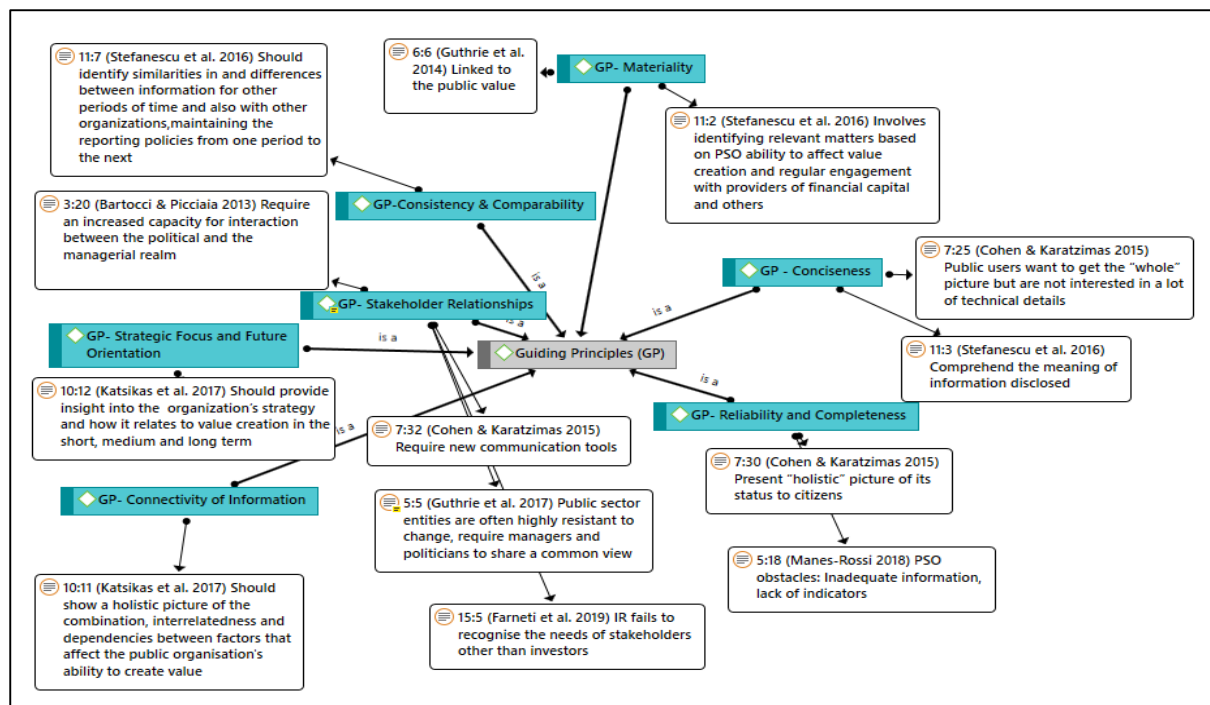


Figure 7: Network view on 'Guiding Principles'

4.2.3 Content Elements

Content Element emphasising the IR framework typically guides public administrators to make decisions concerning what information is included and how the information is reported. Firstly, the content meets specific characteristics: 1) relevance in public domains: 2) clarity of business model, 3) quantified information, and 4) capability of explaining risks. Secondly, disclosures in public reports provide information on performance assessment, operational circumstances, and supports in the governance structure.

Service-oriented, public entities played different roles from profit-driven, private organisations (Abeysekera, 2013). Firstly, challenges across public administration included measuring strategic objectives, identifying specific key performance indicators, and disseminating sensitive forward-looking information (Nicolo et al., 2020). Secondly, public administration required linkage between changes in operations and strategies, and the critical role played by strategic management accounting. Through the linkage emphasising the changes and accounting, public organisations met their strategic goals (Guthrie et al., 2017). The operating models of public entities and the relevance of the model to materialise missions, visions and strategic plans were used to measure the performance of public organisations. Thirdly, the IR framework of public administration worked in specific conditions and institutional structure in which public offices operated (Katsikas et al., 2017). Specifically, it

was found that differences between the different forms of public bodies existed. Local authorities (who held legislative power and tax collection) differed from institutions, semi-governmental bodies, legislative bodies (with functional duties), and other public bodies (Bartocci & Picciaia, 2013). Thus, a more comprehensive definition of a business model might better be considered (Veltri & Silvestri, 2015).

The main strength of IIRC approach is integrated thinking, which leads to integrated decision-making and value creation actions across short, medium, and long-term plans. The incorporation of the IR framework in the context of public administration might better consider explicit definitions of content of value creation and decision-making, available information, and measurable quantitative indicators (Bartocci & Picciaia, 2013; Katsikas et al., 2017). Furthermore, the inclusion of the IR framework might better consider appropriate public resource disclosure strategies to stakeholders to ensure transparency concerning how public administration generated value (IIRC & CIPFA, 2016). Several indicators or metrics for measuring the ‘Content Elements’ of public administration were presented in Appendix (Farneti et al., 2019; Katsikas et al., 2017; Manes-Rossi, 2018; Mauro et al., 2020; Nicolo et al., 2020; Ștefănescu et al., 2016; Veltri & Silvestri, 2015). Thus, the exchange of views among public stakeholders, particularly, in the context of management and policymakers, was found to be central to the values and strategies of public entities (Guthrie et al., 2017; Katsikas et al., 2017).

Several other recommendations across academic literature emphasising the IR framework were found. Firstly, public administration might better consider a detailed analysis of the opportunities and risks of institutions (Veltri & Silvestri, 2015). Secondly, studies revealed that the exposure to these risks was kept sensitive at a reasonable level (Adams & Simnett, 2011). Thirdly, the IR framework might better consider specific outlook disclosure metrics (Dumay et al., 2017). Fourthly, the internal reporting systems of public administration might better be linked to performance measurement reports and social and environmental reports (Cohen & Karatzimas, 2015). Finally, public offices might better include information related to the support of governance structure in the context of value creation (Katsikas et al., 2017). Figure 8 demonstrates a network view on ‘Content Elements’.

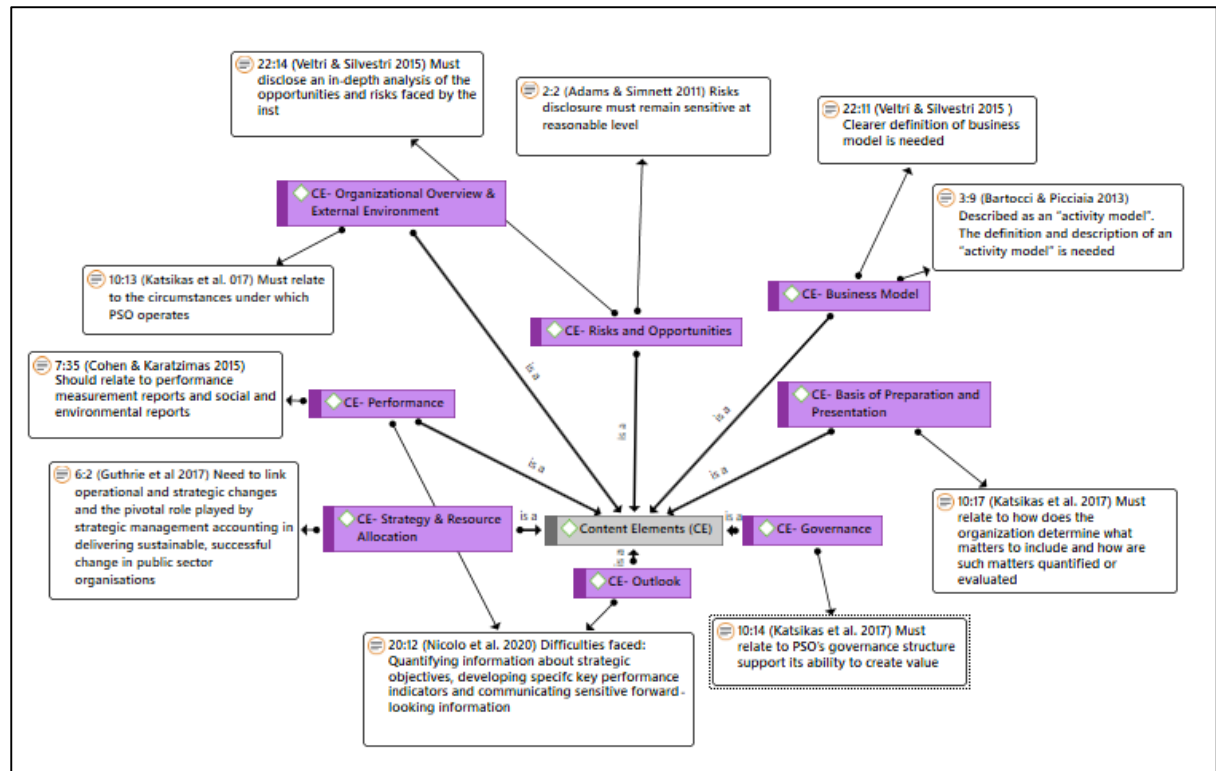


Figure 8: Network view on 'Content Elements'

However, the investigation of academic literature emphasising the IR framework highlighted two points. The incorporation of the IR framework across public administration highlighted the needs of providing a more holistic approach. Issues concerning the inclusion of public integrated thinking and value creation, types of information presented in reports, and possible roles of stakeholders continued to exist. Figure 9 summarises the classification themes on existing applications of the IR framework in public administration.

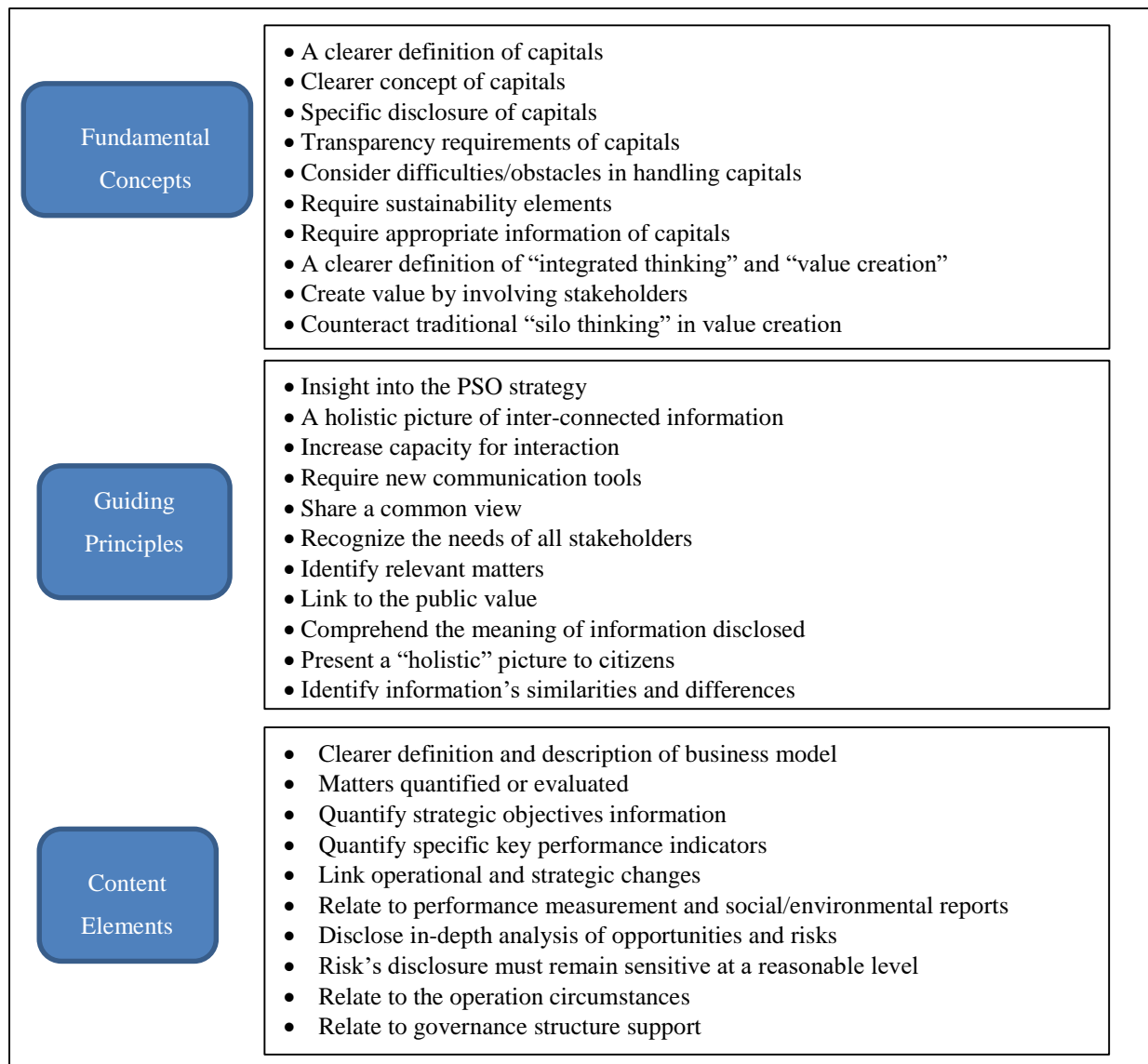


Figure 9: Results of qualitative analysis

5.0 CONCLUSION

Generally, the academic literature emphasising the IR framework presented insights into the potential applications of the IR framework in public administration. Given the prevalence of the IR framework, far fewer studies examined how academic literature could be contextualised across public administration. Firstly, several issues related to the potential applications of the IR framework in public administration were investigated. Secondly, the issues emphasising the IR framework in public domains were categorised based on views or suggestions on specific components (‘Fundamental Concepts’, ‘Guiding Principles’, and ‘Content Elements’).

The investigation concerning the specific components of the IR framework across public administration revealed three important points. Firstly, the lack of explicit information

on definitions, concept, transparency, disclosure, and appropriate capital information might better be considered for improvisation in the context of 'Fundamental Concepts'. Furthermore, recommendations to overcome barriers to value and capital management were also dominant in the literature on 'Fundamental Concepts'. Secondly, the existing IR framework in the context of 'Guiding Principles' lacked explanation in terms of measurement methods, strategic insights, inter-linkages, comprehensive information, and disclosure of trivial information. Moreover, the review of academic literature on 'Guiding Principles' found greater interaction capacity, new communication tools, and collaboration to reach agreements determined stakeholders' needs. Investigation on academic literature on 'Content Elements' found descriptions of business models, strategic objectives, specific key performance indicators, operational changes, performance measurement, and governance structure support was dominant.

The investigation of academic literature emphasising the IR framework is not without limitations. Firstly, the search process was limited to certain keywords. Secondly, the literature gathered was not comprehensive, given the massive publication databases. Databases that only listed abstracts were excluded. Prospective research might better consider an expansion of thematic review using a specific lens. As such, investigations using other keywords associated with reporting systems and types could be launched. Google Scholar and Dimensions could also yield more complete and relevant results. Finally, appropriate strategies to develop a more appropriate IR framework for the public administration might better be conceptualised.

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APPENDIX

Themes	Codes	Indicators
Fundamental Concepts	Financial Capital	<ul style="list-style-type: none"> • Economic performance • Financial costs incurred by externalities • Financial accountability
	Human Capital	<ul style="list-style-type: none"> • Work conditions/Employee relations • Labour practices • Human rights /equity • Employee related measure • Employee safety/welfare • Training and development
	Manufactured Capital	<ul style="list-style-type: none"> • Inputs and deliverables • Tangible resources
	Intellectual Capital	<ul style="list-style-type: none"> • Innovation • Intangible infrastructural assets • Information technology • Intellectual property • Organizational structures
	Social Capital	<ul style="list-style-type: none"> • Product or service responsibility • Program and policies effectiveness • Connections with society
	Natural Capital	<ul style="list-style-type: none"> • Environmental relationships • Environmental impact and use of resources
Guiding Principles	Strategic focus and future orientation	<ul style="list-style-type: none"> • Use of ‘the capitals’ and the impact of business activities on the capitals • Time frames (short, medium, and long-term) associated with strategic objectives • Importance of material risks and opportunities in business strategy
	Connectivity of information	<ul style="list-style-type: none"> • Relationships between the content elements • How financial and non-financial performance impact each other

Themes	Codes	Indicators
	Stakeholder Relationships	<ul style="list-style-type: none"> • The stakeholders been involved in the definition of the material issues • The needs and expectations of the stakeholders been considered in the definition of the external environment • The stakeholders been identified in the definition of the business model • The organisation activates stakeholder engagement activities • The stakeholder engagement used in the definition of the strategy
	Materiality	<ul style="list-style-type: none"> • Material risks and opportunities effects on financial, environmental, social, or governance performance • The time frames (short, medium, and long-term) associated with material risk and opportunities • Prioritise material risks and opportunities based on their magnitude/importance • Prioritise the perspectives of stakeholders consulted • Quantitative and qualitative factors • Engagement/role of Board of Directors
	Conciseness	<ul style="list-style-type: none"> • Information includes sufficient context to understand the organisation's strategy, governance, performance, and prospects with relevant information • There is a balance between conciseness and the other guiding principles, particularly completeness and comparability • Access to information • Avoid unfamiliar terms • Logical structure • Clear concepts
	Reliability and completeness	<ul style="list-style-type: none"> • Mechanism for reliability (internal control, stakeholder engagement, external assurance) • Mechanism reported • Original source of information • Favourable and unfavourable results • Reporting format
	Consistency and comparability	<ul style="list-style-type: none"> • Reporting frequency/consistent over time • Benchmark/enables comparison with others

Themes	Codes	Indicators
		<ul style="list-style-type: none"> • Key performance indicators • Explanations for changes
Content Elements	<p>Organizational overview and external environment</p> <p>Governance</p> <p>Business model</p> <p>Risks and Opportunities</p>	<ul style="list-style-type: none"> • Identifies Mission • Identifies Vision • Context on culture and values • Context on operating structure/principal activities • Key quantitative information • SOP/significant changes from prior periods • Information system • Stakeholder Engagement • The organization's leadership structure • Skills and diversity of those charged with governance • No. of Meetings • Specific processes used • Particular actions/governance practices that exceed legal requirements • Promoting and enabling innovation • Remuneration and incentives • Information on Input/Capital • Relation between key inputs and capital in creating value • Differentiation strategies • The extent to business model relies on revenue generation • Approaches to innovate • Adaptation to change • Information on Outputs • Internal outcomes (e.g., employee morale, organizational reputation, revenue and cash flows) • External outcome (e.g., customer satisfaction, social and environmental effects) • The specific source of risks and opportunities: Financial environmental, social, or governance • The organization's assessment of the risk or opportunity • Key risks control

Themes	Codes	Indicators
	Strategy and resource allocation	<ul style="list-style-type: none"> • The organization's short, medium and long-term strategic objectives • The resource allocation • Measurement of achievements and target outcomes for the short, medium and long-term
	Performance	<ul style="list-style-type: none"> • Quantitative indicators on targets and risks • The organisation's effects on capitals • The state of key stakeholders' relationships • Linkages with past and future performance • KPIs that combine financial measures with other components
	Outlook	<ul style="list-style-type: none"> • The organization's expectations about the external environment the organization is likely to face in the short, medium and long-term • How the organization is currently equipped to respond to the critical challenges and uncertainties that are likely to arise • Implication for future financial performance: The external environment
	Basis of preparation and presentation	<ul style="list-style-type: none"> • Summary of materiality determination process • Identification of reporting boundary and explanation of its determination • Summary of significant frameworks and methods used to quantify and evaluate material matters
	General reporting guidance	<ul style="list-style-type: none"> • Disclosure of material matters • Disclosure about the capitals • Time frames for short, medium and long-term