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Irish local government accounts—general accessibility, complexity and confidence of financial statements narrative content

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IMPACT

This article presents the findings of a study of the annual financial reports of 10 Irish local government authorities. The accessibility of the statements and the readability of the narrative elements was assessed. Using the Linguistic Inquiry and Word Count (LIWC) software, complexity and confidence expressed within the report narratives was examined. The findings will be of help to local government finance managers as they strive to improve usability of annual financial statements.

ABSTRACT

This article has two objectives: to evaluate the accessibility of local government financial reports; and to assess the readability, complexity and confidence of a narrative element of these financial reports. A custom scoring system is used to evaluate accessibility, the Bog Index is used to assess readability, and confidence is assessed using semantic variables representing complexity available within the LIWC software. The findings show accessibility could be improved, readability is good to average, and the text in the reports is not overly complex.

KEYWORDS

Annual financial report; content analysis; internet financial reporting; Ireland; local government

Introduction

As the internet became publicly accessible in the early to mid 1990s, organizations quickly adopted it as a medium for publishing financial information, particularly annual reports (Debreceeny & Gray, 1999). 'Internet financial reporting' (IFR) is now the *de facto* medium for publishing financial information such as annual reports, quarterly earnings and other shareholder related information. While local governments and other non-profit and governmental bodies do not have shareholders, they still use the internet to publish key stakeholder information such as annual reports, financial statements, and approved budget plans. Peebles and Dalton (2022, p. 180) emphasise that councillors are not the only stakeholder group to consider when preparing local government financial reports. They argue that local governments must account for the needs of a wider range of stakeholders, suggesting that financial reports should be accessible and user-friendly. This includes using clear and concise language, visually appealing layouts, and improved design elements. While acknowledging the legal requirements for local government financial statements, Peebles and Dalton (2022) also advocate for enhancements that make reports more understandable and engaging for stakeholders, such as the use of visual elements and simplified language. Although the literature on the transparency of local government financial statements, such as Heald (2012), does not always explicitly address IFR, it highlights the role of the internet in enhancing transparency (Pina et al., 2010; Heald, 2012).

As will be detailed later, there is some limited prior literature on local government and IFR. In that literature, little has been written on local governments in the UK and/or Ireland—the latter being the context of this article. The Irish local government system today closely mirrors that of

the UK and has its historic roots in the UK system. Taking the comments of Peebles and Dalton (2022) on board, and building on the prior work of Roundy et al. (2023), this article has two objectives:

- To evaluate the accessibility of financial reports of Irish local governments using a sample of 10 local governments—five urban and five rural.
- Taking the suggestions of Peebles and Dalton (2022) a step further by assessing the readability of narrative elements of financial reports using a more finance-specific readability index (the Bog Index, detailed later), and by analysing the confidence of the language.

More specifically on the second objective, semantic variables reflecting complexity of language available within the Linguistic Inquiry and Word Count (LIWC) software are used—see more detail later. Taking readability and the semantic variables together allows an assessment of how the report elements may be understood by or useful to a wider audience.

The article contributes to the extant literature by considering readability using a more finance-specific readability index than prior work such as Peebles and Dalton (2022). The article also offers a more extensive analysis of narrative elements of local government financial statements than previous work. The remainder of the article is organized as follows. A literature review follows, providing an overview of the literature on transparency of local government accounting reports and IFR, analysis of accounting narratives and Irish local government. Then, the data sources and methods used to obtain and analyse the data are detailed. The findings are then noted, followed by some discussion. The final section offers some concluding

comments, limitations of the study and some areas for future research.

Literature review

A review of literature follows covering three areas, namely transparency of local government accounting reports and IFR, content analysis studies of accounting type reports and studies of Irish local government. The literature is initially discussed in a general fashion and then provides more detail in a local government context.

Transparency of local government accounting reports and IFR

The transparency of local (and central) government accounting reports has been examined in the literature, and a summary of some key issues precedes the exploration of IFR literature. Transparency in a public expenditure context has been noted as ‘fundamentally important but difficult to achieve’ (Heald, 2012, p. 20) and has been the subject of much research—see Krah and Mertens (2020) for a review of literature on transparency in local government. Haustein and Lorson (2023) note three levels of transparency, from access to information, through genuine understanding, to shared meaning. They and others link transparency and understandability, although the former does not imply the latter. The literature has also linked transparency of local government accounting reports to users and content. Brusca and Montesinos (2006) repeat earlier arguments that citizens should be the defining user of local government accounting reports. They also provided evidence suggesting that citizens tended to examine accounting data from the year prior to an election to help inform their voting choice. Similarly on citizen participation, Manes-Rossi et al. (2020) suggest that a simplified version of the financial statements (or popular report) can improve understanding of financial issues and, in turn, increase participation in local government.

However, none of the literature discussed addresses IFR. Despite the significant focus on transparency, the role of IFR in enhancing accessibility and interactivity is often overlooked. This is a notable gap, given the shift toward digital reporting. On digital or internet reporting, while Langella et al. (2023, p. 586) suggest that ‘the availability and accessibility of information, however, do not necessarily translate into the understandability of the disclosed information’, they do not address some of the tenets of the IFR literature (see later). Similarly, Manes-Rossi et al. (2020) and Pina et al. (2010) mention technology and the internet in their work but also do not engage with the IFR literature. According to Debrecey et al. (2002, p. 392), while referring to commercial entities, IFR ‘has policy implications [and] if policy makers encourage firms to adopt better disclosure technologies it should make markets more transparent’. Taking this on board and considering the debate on the transparency of, and participation in local government, it is reasonable to suggest that IFR is beneficial to local government—indeed IFR is representative of the ‘access to information level’ of transparency noted by Haustein and Lorson (2023).

While today it is commonplace, although not typically a legal requirement, IFR emerged as the internet itself emerged in the mid to late 1990s. From an academic

perspective, an early study by Debrecey and Gray (1999) was one of the first to highlight a shift from traditional paper-based reporting to an internet-based format. Since then, a basic framework of the elements of IFR has been developed through ongoing research—some of which are used here. From a general IFR view, many studies considered the timeliness, accessibility, comparability, and credibility of internet financial reports. Many studies, generally of for-profit organizations, have developed a metric, index or list of items to evaluate the degree of IFR. For example, the original study by Debrecey and Gray (1999) examined the presence (or not) of reports on the internet and how the reports linked to the auditor’s report. A useful example of a more detailed list of IFR attributes is provided by Allam and Lymer (2003), who offer a 36-point scoring sheet by which to assess IFR. Perhaps more interesting than IFR ‘scores’ through the application of scoring systems such as Allam and Lymer (2003) is research on the determinants of IFR. The studies reviewed consistently highlight size, political competition and public visibility as determinants of IFR adoption in local government. Debrecey et al.’s (2002) study was of 660 large companies in 22 countries to identify the firm and environmental determinants of IFR. For the former, the variables explored were firm size (by market capitalization), whether the firm had foreign share listing, had a US share listing, the level of technology in the firm and market value to book value; for the latter, the variables explored were the internet penetration in the country and the national disclosure environment. Debrecey et al. (2002) find that size, listing on US stock exchanges and technology were the firm specific determinants of IFR, while the country disclosure environment was the most relevant environmental determinant.

There are some studies of IFR with a local government focus. Laswad et al. (2005) study the IFR practices of New Zealand local governments exploring six disclosure incentives: political competition, size, leverage, municipal wealth, press visibility, and type of authority influenced the level of IFR. At the time of their study, Laswad et al. (2005) note that about 30% of their sample provided financial information on their websites, with many not providing full financial statements at year end. Although a different internet environment than today, they noted leverage, municipal wealth, press visibility and local government type as potential predictors of IFR. Styles and Tennyson (2007) focus more on availability and accessibility of financial reporting on the internet. They use a sample of 300 municipalities in the USA of various sizes to determine whether an annual financial report was available and to assess its accessibility. For the latter, they use an index, which for example includes scoring for items such as whether the financial report could be found in less than three clicks of the municipality home page. Their results suggest accessibility of the annual financial reports is positively related to population, income per capita, the level of debt and financial position of the municipality. García and García-García (2010) examine the IFR of Spanish local governments based on five potential determinants similar to Laswad et al. (2005)—size, leverage, capital investment, political competition and press visibility. Like Styles and Tennyson (2007), García and García-García (2010) also use an index to determine the level of IFR. Their index

examines items categorized as informative content (reports and explanations), format and interaction with the user. Their findings suggest size, capital investment and political competition are positively associated with the degree of IFR. Size and capital investment report the greatest association. Pina et al. (2010) explore internal and contextual factors affecting IFR. They also reported size as a determinant, but also whether an external auditor was appointed as a key determinant. Bearfield and Bowman (2017), while examining broader open government and transparency in US municipalities, provide valuable insights for the current study. Their findings demonstrate that financial reporting and budgeting documents were the most commonly available, and they assessed document accessibility through practical measures, such as the number of clicks required to locate information from the homepage. Building on these findings, this research draws upon the IFR literature to assess the accessibility of financial reports in Irish local government authorities, the first objective of this study. As noted, the existing literature on IFR in a local government context is limited and this study contributes to the field by considering the dimensions of IFR and its application in the local government sphere.

Studies of financial report narrative

Annual reports of companies, public bodies (such as local governments) and charities are essential tools for communicating financial performance and organizational strategy to stakeholders. These reports typically contain management narratives, financial statements and governance information, among other elements, which together provide a holistic picture of an organization's performance and impact. Both quantitative and qualitative content analysis methods have been used to examine the narratives in these reports, with quantitative methods gaining prominence due to advances in computerized analysis tools (Quinn et al., 2023).

Annual reports of commercial enterprises are often lengthy, and research has focused on elements of the annual report as a data source. The chair's statement (or equivalent) document has been noted as being the most widely read element of the annual report (Moreno et al., 2019), providing an overview of activities and information about operations, strategies, values and current performance. Such content implies it is a useful reporting medium for many purposes, including impression management (Moreno et al., 2019). Moreno et al. (2019) use the chair's statement as a longitudinal data source, revealing how companies' narratives evolve over time to shape corporate image and manage stakeholder impressions. Some of these studies use manual content analysis methods to search for themes, while others use computerized methods. Moreno et al. (2019), for example, use off-the-shelf software (LIWC, as in this article) whereas Quinn et al. (2023) use a combination of manual themes and a customized word search.

Apart from Quinn et al. (2023), the above noted content analysis studies are of commercial enterprises. Literature examining the content of the narrative of local government annual reports or other accounting documents is not widespread. Unlike corporate reports, which primarily serve investors and creditors, local government financial reports

are key tools for democratic accountability, as elected officials must answer to their constituents (Ferry et al., 2023; Ferry & Midgley, 2024). This distinction necessitates a different approach to narrative analysis, focusing not only on financial performance but also on how local governments communicate their responsibilities and achievements to the public. Keeping this in mind, some relevant content analysis studies of local government reports are now summarised. Using manual content analysis methods, Stanley et al. (2008) analyse a community financial report legislated for in Queensland, Australia; and Marcuccio and Steccolini (2009) explore additional performance reporting by Italian local government. While studying central rather than local government, Hyndman and Liguori (2018) conduct a thematic content analysis of policy and similar documents to study changes in central government accounting. Their studies were aided by software to classify relevant themes to be analysed. More recently, Greer et al. (2023) study the narrative within proposed budgets of 39 counties in California. They use computerized analysis techniques to explore how local government narratives (in the budget reports) helped build resilience towards creditworthiness. Finally, Roundy et al.'s (2023) study of the annual financial statements of over 400 US cities and counties is close in nature to the present study. They utilize LIWC software to ascertain complex words as an input to a variant of the Gunning Fog Index, a readability index. They then test for correlations between the length of the annual report, their Gunning Fog Index (together considered a measure of report complexity in their study) and variables such as size, organizational complexity and financial complexity. Their results suggest that the annual reports of poor-performing local governments are less understandable. Interestingly, Roundy et al. (2023) do not draw on any LIWC variables to assess the text of their sample city and county reports, which is the method used in this study.

Research on Irish local government

Research on local government finances and management practices has gained significant attention, especially considering austerity measures (Ahrens & Ferry, 2015; van der Kolk et al., 2015) and the growing demands for transparency (see Krah & Mertens, 2020 for a review). In the context of Irish local government, however, relatively few studies have explored the nuances of budgeting, financial reporting, and performance management. Generally, and similar to trends observed in UK and Dutch local governments during periods of economic austerity (Ahrens & Ferry, 2015; van der Kolk et al., 2015), Irish local authorities have also faced challenges in adapting to fiscal pressures. Bertz et al. (2023) highlight the reform efforts in Irish local authorities to enhance budgetary efficiency and financial stewardship, reflecting a broader trend towards public sector accountability. An earlier study by McGeough (2014) on performance targets suggests Ireland lagged behind similar UK organizations.

A search of the existing literature on Irish local government financial reporting reveals a notable gap, with few studies examining the content or impact of annual financial reports. This scarcity of research highlights the need for greater exploration of financial transparency in

Irish local authorities. To determine what the literature contains in an Irish context, a Scopus search was performed. The search used the terms 'local government' and 'annual report' and revealed 700+ matches. However, a search for 'local government', 'Ireland' and 'annual report' returns 14 studies with only three of those studies being relevant here. A search for 'Irish local government' and 'annual financial statements' returns no results. This apparent lack of literature is notable given the volumes of narrative produced by public sector and local government organizations.

Based on the above search, an outline of relevant literature is now presented chronologically. Wall and Borland's (2003) study made an important early contribution to understanding transparency in Irish public sector reporting, particularly in relation to the disclosure of key performance indicators (KPIs). However, their focus on non-financial indicators leaves room for further investigation into how financial data is communicated and its role in enhancing public accountability. Callanan (2020) discussed the evolution and future of local government reform in Ireland. He examines both broad trends in public service reform and unique initiatives in the local government sector, such as managerial reforms, digitization, and efforts to enhance transparency and accountability. Callanan (2020) highlights how local government's service portfolio has changed, pointing to an expanded role in economic development and enterprise support, while noting areas of reduced responsibility. He does not focus on local government financial statements but refers to the audited expenditure figures contained therein.

Summary of literature review

The literature reviewed above can be summarised according to the article's objectives. Regarding the first objective, which is to assess the accessibility of local government financial statements, the literature reveals a considerable body of work on transparency and the use of local government accounting reports. However, there is a noticeable gap in research examining the accessibility of financial reports through the lens of IFR, particularly in an Irish context. Similarly, with respect to the second objective, there are few relevant studies and none specifically focused on Ireland. While the literature shows some use of Irish local government annual financial statements (AFS) for research on fiscal performance and transparency, no studies have directly assessed the accessibility of these reports. This article addresses that gap by focusing on how accessible these reports are to stakeholders. Roundy et al.'s (2023) is one of the few studies to examine the readability of local government reports, using LIWC software to assess the complexity of the language. However, their focus was primarily on word complexity, while this article extends that approach by analysing additional semantic features to provide a more comprehensive assessment of readability and complexity/confidence in the context of Irish local government financial reports.

Data sources and method

Typically, Irish local governments produce and publish an annual report and AFS. The former is a summary report of

the authorities' activities for a year (for example policies, reports on services, finances), the latter has specific focus on finances and includes financial statements and notes thereon. Both are required, but some local governments publish a combined document (for example Dublin), others publish two separate documents (for example Clare). The AFS is of interest here and the primary data source for this article is a narrative element of the AFS of 10 Irish local governments. Four urban authorities (Dublin, Cork, Limerick and Waterford), four rural authorities (Clare, Donegal, Mayo and Sligo), and two authorities bordering Dublin (Kildare and Wicklow) were chosen to represent the various geographic and demographics of Ireland. Some detail of each is shown in Table 1. All 10 had a combined revenue and capital expenditure of just under €4.9 billion in the most recent financial year analysed for this article. The choice was largely random but to an extent determined by availability of the AFS on each local government's webpage—some initially examined for this article only published the previous two to three years reports. In Ireland, the AFS is prepared in accordance with the Accounting Code of Practice on local government accounting issued (and revised) by the Department of Housing, Local Government and Heritage. The 2018 Code of Practice notes the use of FRS102 as the applicable financial reporting standard. Given the Code of Practice, the financial statements and accompanying notes of the AFS used here are relatively standardized and of similar format. The AFS also includes a financial review (or similar title) which is a narrative section and is signed by the chief financial officer (CFO) of each authority. It is this financial review section which is the key data source. While the Code of Practice states that a financial review must be provided, it does not specify its content in any way. A PDF copy of the AFS of each mentioned local government for five years was downloaded from their respective websites in early 2024. In most cases, this represented the AFS from 2018 to 2022. Exceptions were Cork and Sligo, where we obtained the AFS from 2017 to 2021. The financial review pages were extracted from each AFS in their original PDF format for analysis.

To assess the accessibility of the 10 chosen local governments' AFS, a 10-point accessibility index was used. The components of the accessibility index are a combination of reference points drawn from prior IFR literature within local government, and particularly the work of Styles and Tennyson (2007) and García and García-García (2010). Table 3 shows the components of the accessibility index. Generally, the index employed a yes/no score, represented as 1 (yes) or 0 (no). However, a five-point range from 0 to 5 is used to assess the number of clicks to access the AFS on websites—subject to a maximum of five clicks. This ensured a more representative scoring of accessibility of the AFS. In a more localized context, local governments were scored on whether their AFS is in both the English and Irish (*Gaeilge*) languages—the Official Languages Act (2003) states that public bodies must ensure that any information in writing distributed to the public in general, or to a class of the public in general, must be in Irish only or in English and Irish. Therefore, public bodies are required to publish AFS simultaneously in both Irish and English. Also, to reflect updates in technology since the work of Styles and Tennyson (2007) and García and García-García (2010), the chosen local governments were

Table 1. Detail of local authorities studied.

Local authority	Demographic type	Population (Census 2022)*	Annual revenue expenditure €M (most recent at time of analysis)	Annual capital expenditure €M (most recent at time of analysis)	% central funding (most recent at time of analysis)
Clare	Rural - west	127,938	137.38	88.23	38
Cork	Urban - south	224,004	261.95	143.97	36
Donegal	Rural - north	167,084	181.32	110.18	35
Dublin City	Urban - east	592,713	1,143.90	400.42	36
Kildare	Urban/rural - east	247,774	202.13	152.17	39
Limerick	Urban - west	209,536	905.03	184.30	67
Mayo	Rural - west	137,970	185.77	149.47	42
Sligo	Rural - west	70,198	78.79	62.21	44
Waterford	Urban/rural - south	127,363	151.55	71.58	43
Wicklow	Urban/rural - east	155,851	134.33	153.20	36

*Source: <http://data.cso.ie>, table FY003A.

Note: the annual expenditure, capital expenditure and % central funding figures are the most recent per the AFS used in this study and are intended only as indicative of local authority size.

evaluated on whether the AFS were accessible on a mobile device, due to the proliferation and popularity of mobile devices. Finally, local governments were scored on whether their AFS could be found and assessed via a Google search. This is because Google is the most popular search engine used today, potentially allowing end users to instantly access the AFS in a single click.

The extracted AFS files were then loaded into two pieces of software. First, Stylewriter was used to assess the readability of the financial review. Readability was calculated using the Bog Index, a multi-faceted measure capturing almost all the Securities and Exchange Commission's (SEC) plain English guidelines for corporate reporting. Given it incorporates these plain English guidelines, the Bog Index is recommended for assessing readability in corporate financial disclosures (Bonsall IV et al., 2017) of private sector firms. An alternative index is the Gunning Fog Index, which has been critiqued by Loughran and McDonald (2014) as it classifies business and finance texts as complex, but such texts would be understood by the business community. While the Gunning Fog Index (with slight variation) has been used in a public sector context by Roundy et al. (2023) for example, its use here is likely to show readability as complex in all documents. Given this study attempts to highlight variations in readability across local governments, the Bog Index is used as it better captures readability of financial documents and it 'captures the plain English writing attributes [of financial reports] recommended by linguistic experts' (Bonsall IV et al., 2017, p. 333). The Bog Index score can be interpreted as follows—0–20 = excellent; 21–40 = good; 41–70 = average; 71–100 = poor; 101–130 = bad; 131–1000 = dreadful. Thus, the Bog Index can be considered as a measure of the complexity of a document. Similar to Roundy et al. (2023), the Bog Index and word count (see Table 6) of each report were assessed to determine readability.

Finally, LIWC (more specifically LIWC2022) was used to analyse the financial review pages according to selected inbuilt language dimensions as shown in Table 4. In line with Roundy et al. (2023), the *bigwords* variable is included here to assess complexity. The variables *analytical thinking* and *clout* are also included as indicators of complexity. The variables *authentic*, *emotional tone*, *cognitive processes*, *insight*, *causation*, *discrepancy*, *tentative*, *certitude*, *differentiation*, *past focus*, *present focus* and *future focus* are

used to assess confidence conveyed in the text. Some of these variables have been used previously in the accounting literature (for example Moreno et al., 2019); see also Boyd et al. (2022) for general comment on LIWC variables and their reliability and validity. The variables *cognitive processes*, *insight*, *causation*, *discrepancy*, *tentative*, *certitude* and *differentiation* all measure forms of cognition, which may be reflective of an underlying confidence of the author of any text. In LIWC22, *cognitive processes* consist of 1,365 words in total, with the sub-variables *insight*, *causation*, *discrepancy*, *tentative*, *certitude* and *differentiation* used to explore components of cognition. For example, *causation* and *insight* words reflect an individual's active processing of events and are shown to be present at higher levels within emotional writing (Tausczik & Pennebaker, 2010); *tentative* words are more frequent when individuals are unsure of a topic (Tausczik & Pennebaker, 2010). For simplicity of presentation, the sub-variables of *cognitive processes* are combined in this article as a single variable which is termed *sum_cog*—Table 2 shows all individual variables. With the accessibility scores and LIWC output variables (see Appendix) compiled in a spreadsheet, we manually inspected the data for notable items. Where applicable, findings were compared with similar prior literature and any contrasts were noted.

Findings

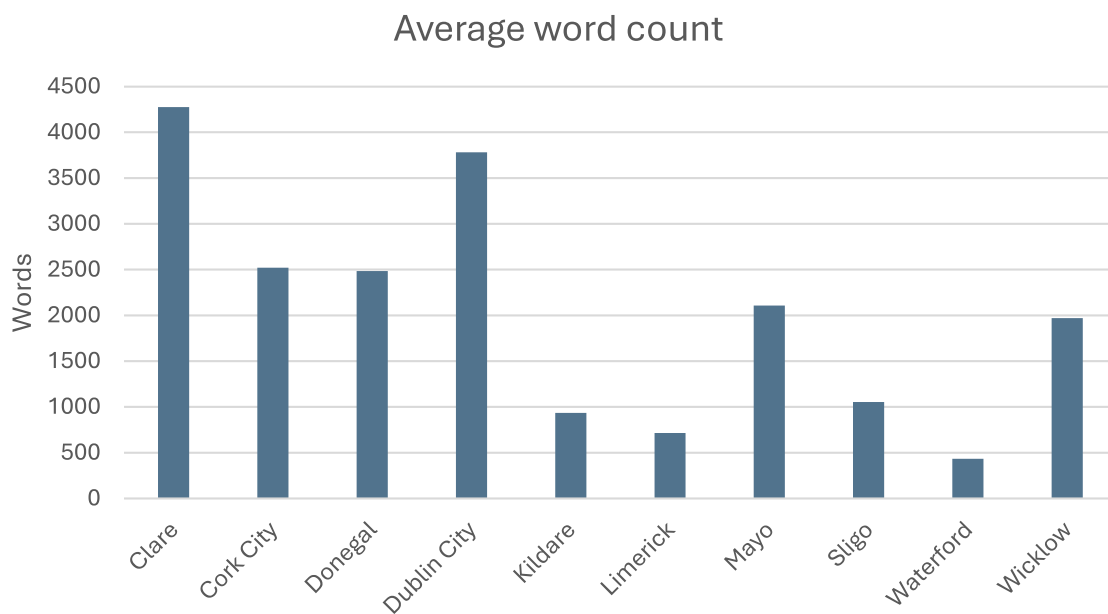
The findings are now presented in two sections. First the accessibility of the AFS is reported, followed by readability of the financial review and an assessment of complexity. Then, the LIWC variables reflecting the confidence of the language used in the financial review are detailed and commented on. Each section includes a discussion of the findings.

Accessibility, readability and complexity

Table 5 shows the results of the scoring according to the accessibility index utilized—see also Table 3. While Bearfield and Bowman (2017) use a different scoring system to here, their average score for accessibility of financial documents was 7.38/10, similar to the average score here at 8.02, giving some reassurance in the results. Some items from Table 5 are worthy of further comment. Interestingly, none of the local governments analysed have their AFS available

Table 6. Bog Index and word count of Financial Review pages.

Local authority	Year	Bog Index	#Words	Local authority	Year	Bog Index	#Words
Dublin	2018	60	3796	Donegal	2018	72	1896
	2019	59	3663		2019	78	1789
	2020	55	3997		2020	72	3061
	2021	56	3968		2021	70	3077
	2022	55	3486		2022	66	2594
Cork	2017	54	1987	Kildare	2018	59	988
	2018	57	2108		2019	59	1203
	2019	58	2605		2020	64	948
	2020	56	3018		2021	62	754
	2021	59	2882		2022	61	782
Limerick	2018	45	651	Mayo	2018	64	2116
	2019	49	685		2019	63	1923
	2020	49	794		2020	63	2152
	2021	50	742		2021	69	2248
	2022	48	699		2022	65	2101
Waterford	2018	47	443	Sligo	2017	60	1598
	2019	57	404		2018	53	1033
	2020	48	441		2019	67	912
	2021	48	443		2020	65	903
	2022	47	440		2021	56	818
Clare	2018	68	2579	Wicklow	2018	73	2035
	2019	70	3036		2019	72	2164
	2020	65	4752		2020	75	1776
	2021	69	5509		2021	76	1518
	2022	71	5504		2022	72	2357

**Figure 1.** Average word count of Financial Review.

reported an average Gunning Fog Index of 27 for the entire annual report of their case local governments. A score of 27 equates to the reading level of a postgraduate. The results of the Bog Index here suggest the AFS are less complex, assuming a business audience as the reader. Figure 1 and Table 6 present the average word count for the analysis period and for each year. With the exception of Clare, the word count of the financial review remains relatively constant over the five years analysed. In Clare's case, the word count approximately doubles over this period. A closer examination of the text shows no change in the individual signing off the review, or in its general layout and structure. However, the increase in report length in 2020 and 2021 seems to be due to the additional commentary on the challenges of managing during the Covid 19 pandemic. Figure 1 also shows that Clare has a

higher average word count than Dublin City. Dublin City is one of four local government areas associated with Ireland's capital, and it might be expected to contain more narrative content. Nonetheless, the stable document lengths across the sample suggests a standardized approach may be adopted by local governments (Bisogno et al., 2022). Reflecting on the first part of the second objective of this article, assessing readability, the results thus suggest that, on average, the financial review element of AFS of Irish local governments are of average readability and not excessively long.

In addition to the above, the LIWC variables *analytical thinking*, *clout* and *big words* provide some insights on readability and complexity (see Figure 2). *Analytical thinking* (Pennebaker et al., 2014) and *clout* (Kacewicz et al., 2014) are LIWC non-transparent summary variables, while *big words*

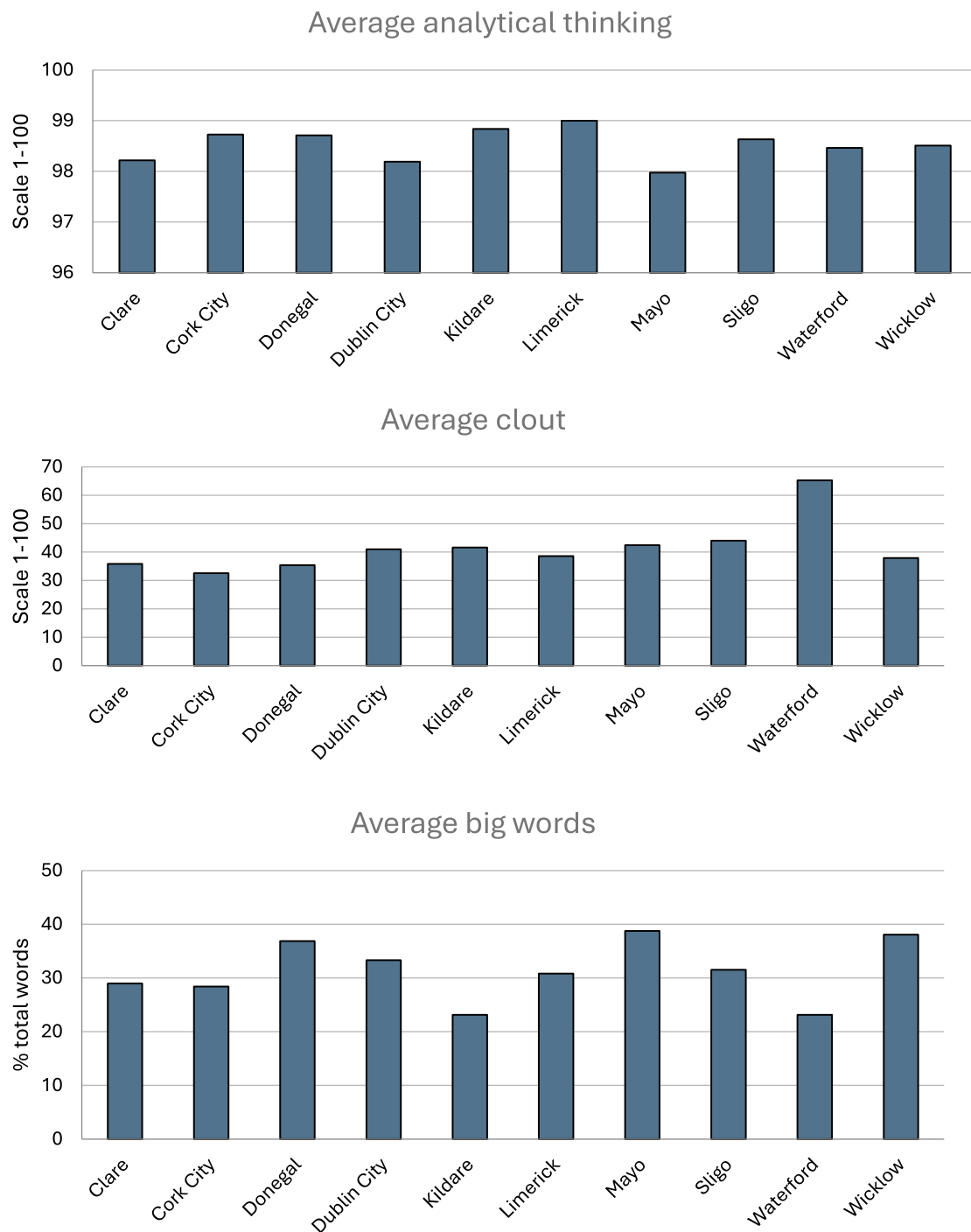


Figure 2. Average score of analytical thinking, clout and big words.

are words with seven letters or more. According to Boyd et al. (2022), *analytical thinking* reflects logical and formal thinking, with *clout* reflecting the language of leadership and status. Both reflect the complexity of a text with higher scores suggesting more complexity. As can be seen in Figure 2, the value of *analytical thinking* is above 98 (on a scale of 1 to 100) on average across all authorities. This suggests a relatively complex text, which may be expected in a document like the financial review. The score for *clout* is in a range from 35–45 (on a scale of 1 to 100) on average, except for Waterford, which shows a score of 65. Waterford also has the lowest average word count, and an inspection of the text shows it is very standardized in a legalistic way and contains little additional comment—hence the higher *clout* score. As regards *big words*, all local governments show a similar average range of 28–35% of all words. The lower

clout and *big words* scores suggest local governments are making efforts to keep the language of the financial review readable. This is in general agreement with the Bog Index scores referred to earlier (see Table 6). Thus, in summary of readability and understandability—considering that this study has used the arguably more suitable Bog Index—it is reasonable to state that the text of the financial review element of the AFS is readable and understandable.

Confidence

While readability and the LIWC variables above give some indication of complexity of a text, additional variables from LIWC enhance our understanding of the level of complexity of the financial review. To this end, linguistic variables which reflect confidence are drawn upon, namely *authentic*,

emotional tone, cognitive processes, insight, causation, discrepancy, tentative, certitude, differentiation, past focus, present focus and future focus. Of these, the variables *insight, causation, discrepancy, tentative, certitude* and *differentiation* are summarised as *sum_cog* and reflect cognition (as mentioned earlier), which in turn supports confidence.

The average scores for the *sum_cog* variable can be seen in Figure 3. Each of the components of this variable are a percentage. The scores range from 4.01 to 6.13% of the total words, averaging 5.02%—the full results of the LIWC analysis can be seen in the Appendix. Of the variables making up *sum_cog*, the *insight, causation* and *differentiation* variables account for most of the score, averaging between 1.4% and 1.5% each. This is not surprising given the commentary within the financial review element of the AFS aims to explain the financial results for the previous year. All local governments reveal a broadly similar percentage of *insight, causation* and *differentiation* words, although the *insight* words are slightly higher in the three larger cities in the sample—Dublin, Cork and Limerick.

The variables *emotional tone, past focus, present focus* and *future focus* give some additional insights. Figure 4 reveals more words on average focus on the past and present, than on the future—with the greatest focus on the past. Again, this is not surprising given the nature of the financial review i.e. it reports on previous years' finances. The *future focus* for Waterford, while relatively small at about 1.5% of words is higher than all others. A closer examination of the AFS of Waterford reveals it is more reliant on central government funding over the entire analysis period, i.e. it has less income raised locally from rentals and local taxes and runs a deficit. In for-profit entities, impression management studies show managers' language in documents such as the chair's Statement tends to focus more on the future when present performance is poor—see Moreno et al. (2019), who interestingly note future focus words averaging at 0.91% for the Guinness company. In local government research, some literature also suggests that authorities with more central funding face legitimacy issues (Sørensen, 1997), which may imply language use focuses on the future (and the regaining of legitimacy). The variable *emotional tone* is on a scale from 0 to 100, with numbers below 50 representing a negative tone (Boyd et al., 2022). Figure 5 shows the score on average by local

government. The overall average is 31.3, and as can be seen from Figure 5, all are in a relatively close range (approximately 23–38). Thus, all analysed local government's reports contain a more negative tone. A closer examination reveals the pandemic years 2020 and 2021 have scores closer to zero, reflecting the consequences of that period on local government finances and service provision. Waterford's *emotional tone* is the most negative overall (at 23.13) which would seem to align with the highest *future focus* as noted above. Regardless of the pandemic years, no values above 50 were found for *emotional tone*. While local governments do not have investors—at least in the Irish context—it has been shown that positive tone in text affects how investors respond to text (for example Gao et al., 2023). This lack of any 'investors' may partially explain the negative tone, but the local governments here do have many stakeholders, including local representatives, citizens and central government.

Reflecting on the second objective of this article—assessing semantic complexity—what is perhaps a surprising finding is the more negative tone, suggesting an area for future research. The relatively low portion of *insight, causation* and *differentiation* words within the reports suggests they are not overly complex due to extended explanations. However, confidence and negativity are related. The more negative score here across all authorities for *emotional tone* is potentially reflective of the increasing funding pressures of local government and their restructuring over time in the Irish context to incorporate features of for-profit organizations in an accounting and cost control context (for example Bertz et al., 2023). While not specifically explored in this article, the AFS samples used contained two years—2020 and 2021—of the Covid 19 pandemic, which may affect the emotional tone.

Concluding comments

This article set out to assess the accessibility and the readability/confidence/complexity of financial reports of Irish local governments. The article was motivated to an extent by the relative lack of recent literature exploring the IFR of local governments and a lack of studies exploring the narrative elements of the financial reports. While acknowledging existing literature on transparency in a local

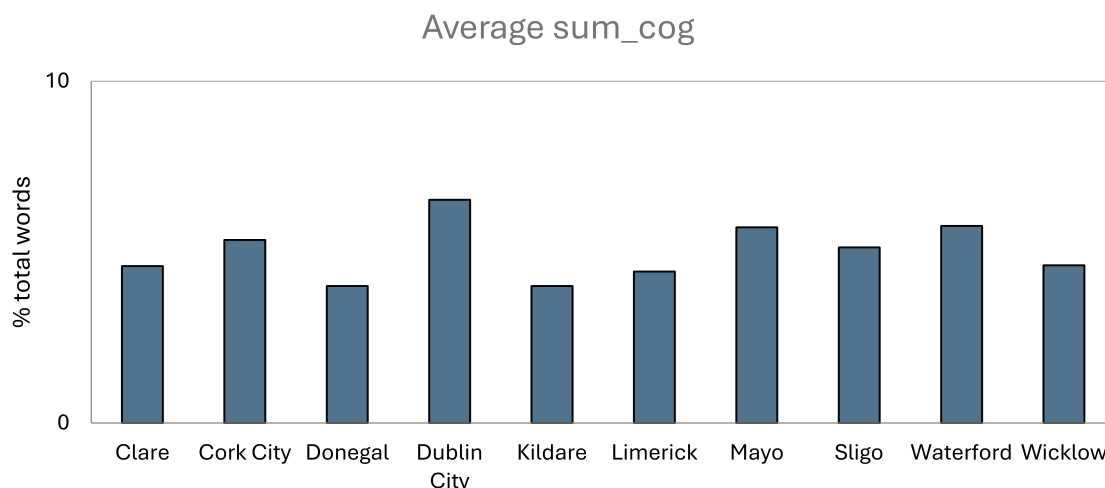


Figure 3. Average score of *sum_cog*.

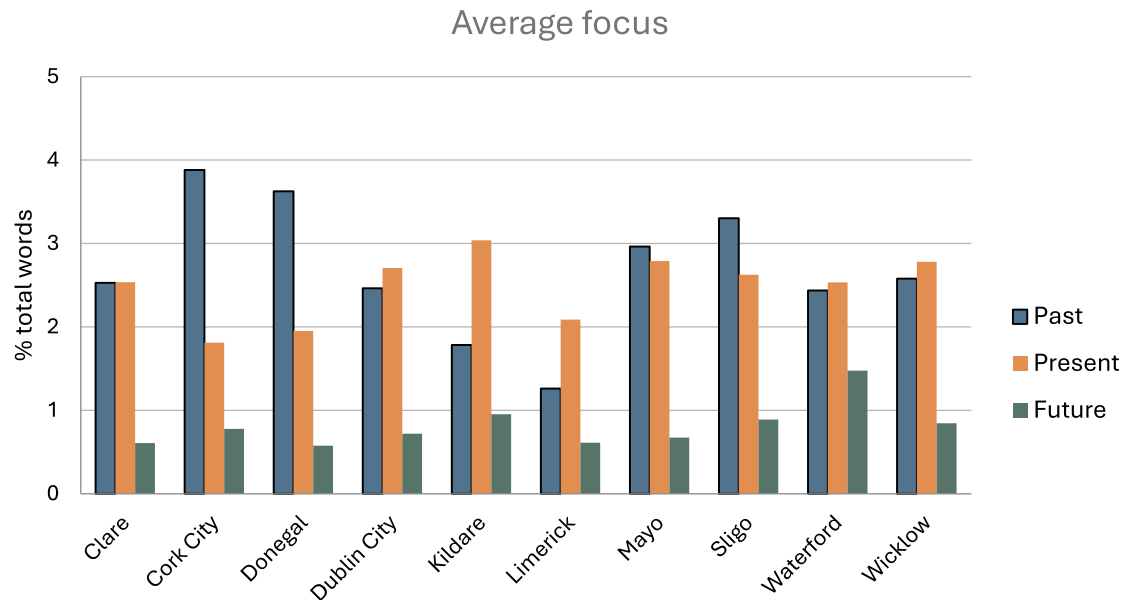


Figure 4. Average score of focus (past, present, future) words.

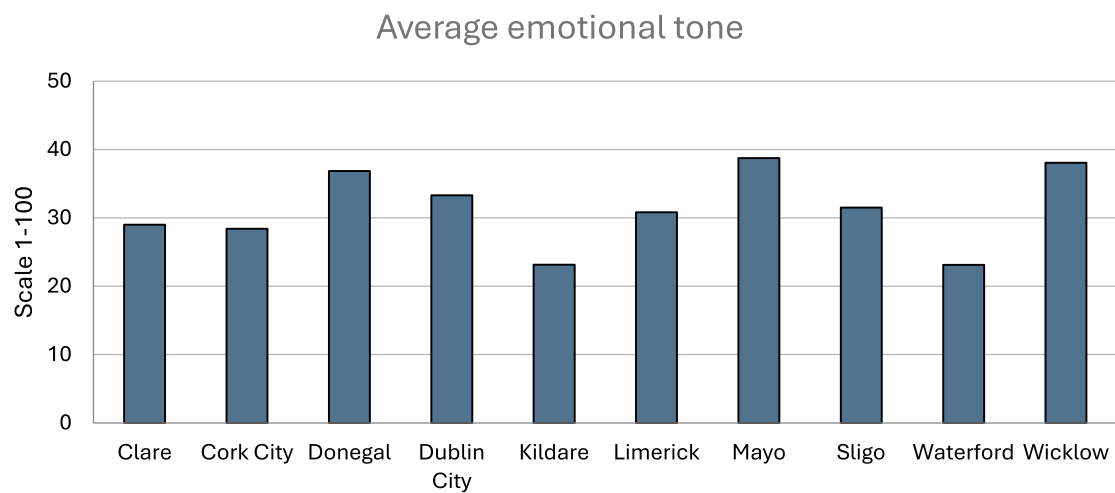


Figure 5. Average score of emotional tone.

and central government context, this article offers some more detailed insights on the accessibility of, and complexity/confidence of the language of local government annual reports. This augments existing work on transparency.

The article offers contributions to the literature from the objectives. On the first objective, as shown in Table 5, the accessibility of the AFS in the sample used is generally good. However, no local government had a link from its home page to financial aspects of its operations, i.e. no link similar to the 'investors relations' link typically used by quoted companies. On the second objective, it has been noted that the readability of the text elements of the AFS is generally average. As argued earlier, the Bog Index (see Table 6) is more suited to assessing the readability of financial texts, and thus the findings here augment those of Roundy et al. (2023). Furthermore, the general findings based on the LIWC variables can be summarised as the text analysed is not complex in nature. This, to an extent, may appeal to the call by Peebles and Dalton (2022) to ensure local government financial statements can be deciphered and understood to paraphrase their words—

understandability has also been noted by other researchers such as Manes-Rossi et al. (2020). The finding of note is the generally negative tone of the text—see Figure 5. While the local governments analysed do not have investors, intuitively it might be expected that some appeals to stakeholders would be conveyed through a positive tone in the text of the reports analysed. More in-depth future research, possibly drawing on interviews, could pursue this line of research to tease out the drivers of a negative tone.

Some other areas for future research can also be highlighted. More research using the methods here, or similar, is to be encouraged. Readability and semantic variables could be analysed in other contexts and languages, and also within other financial documents by local governments. Studies using a documentary source similar to that here are particularly welcomed to enable comparisons. A second area of future research lies in further engagement with the IFR literature in a local government/public sector context. As highlighted earlier, there is a body of literature of IFR by for-profit organizations, which seems under-utilized in the local government/public sector context.

Limitations

This study has some limitations of course. The first limitation is the context of the AFS used. Irish local governments are similar to their UK counterparts in terms of reporting, and thus more studies in a UK context and other contexts would be useful to add to the work here. A second limitation is the use of the LIWC software. While it is well used and tested (Boyd et al., 2022), its use is restricted to its inbuilt dictionary. Other more custom methods such as those of Quinn et al. (2023) may be useful in future studies to extract more specific content from the financial review or equivalent document. Despite such limitations of LIWC, given the current lack of studies of the type presented here, we would encourage more studies using LIWC to provide a comparative base for debate on the narrative content of local government financial reporting.

Lessons for practice

For local government and public sector (accounting) practitioners, this study offers some points for action. First, and referring to Table 5, policy-makers could consider establishing minimum accessibility standards for financial reporting in local governments. This could include implementing uniform website navigation guidelines to ensure AFS documents are easily accessible across all local government websites. For example, Irish local governments could (quite easily) improve accessibility of their AFS by making it accessible from the homepage in one click; and providing contact details for queries about the AFS. Second, some of the text content of the AFS in the sample showed poor readability on the Bog Index. This index can be easily calculated using StyleWriter as here or using a Python plugin—a task which a practitioner seeking to improve readability can engage in. Indeed, practitioners reading this article can look to the text elements of the AFS here which show better readability scores (for example see Limerick and Waterford in Table 6) as an example to learn from.

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