Readability and Mayoral Characteristics:
Does the Mayor's Profile Play a Role in the Readability of Local Government Financial Statements?

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The topic of readability is central today, but most research has focused on the private sector, with limited studies in the public sector context. This study aims to address this gap by analyzing the readability of public sector financial statements and understanding the determinants influencing their readability. A sample of 103 Italian provincial capital municipalities' 2020 financial statements was selected to test readability levels and assess whether mayoral characteristics (gender, age, education) affect readability. Results show very low readability, with few variations linked to the mayor's characteristics, except gender. This study broadens the understanding of readability in the public sector and its influencing factors.

Keywords: readability, public sector, financial statement, local government, mayor

INTRODUCTION

This study examines the public sector's readability level of financial statements, focusing particularly on Italian municipalities and specifically on the managerial reports of consolidated financial statements. The main objective of this research is to evaluate how certain personal attributes of mayors might affect the readability of financial statements. The public sector has undergone significant transformation in recent decades, encompassing areas of intervention, the delivery of services, and the sector's relationship with citizens and stakeholders. These changes were brought about by the paradigms of New Public Management (NPM). NPM emphasised the need to apply private sector management principles and techniques to public administration (Hood, 1991; Osborne and Gaebler, 1992; Peters, 1994; Pollitt and Bouckaert, 2004), which led to a shift towards decentralisation and privatisation (Greenwood, 2017). Throughout the theoretical paradigms of NPM, transparency has emerged as a fundamental principle in public administration. It is

crucial for ensuring the public administration's efficiency, productivity, accountability and anti-corruption practices. Within NPM, decentralisation and privatisation have led to new independent agencies and the separation of policy-making and execution functions, making transparency a necessary accountability tool (Park and Gil-García, 2022; Lapuente and Van de Walle, 2020). Government officials in democracies should be transparent and trustworthy, which is why it is important to keep the public informed-even during emergencies (Kohtamäki and Sikorski, 2022). Thus, transparency is often viewed as one of the critical conditions for good governance and an essential mechanism for balancing power between the government and the public (Janssen and Van den Hoven, 2015). Although easy to grasp intuitively, transparency is hard to define and even harder to realise. At the same time, an argument is also advanced that the expectations towards digital technology to help create transparency in government are high (Bannister and Connolly, 2011). In particular, digital transparency refers to government organisations relying on digital technologies and networks to become more transparent. A common mechanism for digital transparency is opening government data to the public (Luna-Reyes *et al.*, 2014). Digital transparency, meant as openness and accessibility to information and decision-making processes, is closely linked to stakeholder theory, which asserts that organisations must consider the interests of all stakeholders. It is relevant because it enables stakeholders, such as citizens, civil society organisations, and other interested parties, to monitor and hold public officials accountable for their actions (Grossi *et al.*, 2021). Trust, transparency, and continuity are key elements that characterize the relationships between socially responsible organizations and their stakeholders (Mavroulidis et al., 2022). For digital transparency to be adequate, information must be provided in a way easily understood by the interests' categories. This means that readability is essential for ensuring stakeholders can access and comprehend the information. The GASB (Governmental Accounting Standards Board) statement No.34 states the same, establishing the accessibility of Management's Discussion and Analysis (MD&A). The requirement for the MD&A is meant to provide users with an easily readable assessment of the financial results to help determine whether the financial condition improved or declined over the reporting period (Yusuf and Meagan, 2017). The features of technologies will influence nearly every aspect of public organisations, from leadership and the multi-faceted view of interoperability to the social and organisational implications associated with ideas like public value, transparency, and accountability (Jiménez-Gómez et al., 2020). In this view, digital transparency should be ensured through access to open data and disaggregated data and especially by readable information availability provided. The topic of readability has been studied for over 50 years, but it has become increasingly important in the last 25 years, becoming a central theme. This aspect's significance has also been recognised by the Securities and Exchange Commission (SEC) in the United States, which issued the "Plain English Rule" in 1998 and the "Plain Writing Act" in 2010, recommending the use of clear and easy-to-understand language to make business information more accessible. The topic of readability has also been applied to the analysis of non-financial reports, and more recently, integrated reporting (Nicolò et al., 2021). However, most research has focused on the private sector and for-profit companies, with few studies exploring the topic of readability in the public sector context. This study contributes to addressing this gap by examining the determinants of readability in Italian municipalities' consolidated financial statements, with particular focus on the relationship between mayors' characteristics and the documents' readability levels. Moreover, in Western European nations like Italy, the mayor is the head of the executive and the political leader of the majority coalition chosen by residents (Araujo and Tejedo-Romero, 2018). They oversee local management, policy, and governance and, ultimately, are the party that determines decisions regarding digital transparency and public service delivery. According to scholars (Balaguer-Coll and Ivanova-Toneva, 2021; Bochel and Bochel, 2010; Vakulenko et al., 2023), the role of the mayor as a political leader is a crucial component of the local modernization agenda, as their political and strategic orientation can impact the success and proper functioning of a local administration (Garavaglia et al. 2021, Lu et al, 2020; Nicolò et al., 2024; Raimo et al. 2024). Considering these circumstances, it is reasonable to assert that the characteristics of mayors play an important role in defining the strategies and administrative approaches of local governments (Avellaneda and Gomes, 2017; Rocha et al., 2018; Tavares and Da Cruz, 2014). Furthermore, these characteristics can influence decisions regarding readability and transparency (Nicolo et al., 2024; Raimo et al. 2024), allowing local governments to better respond to the needs of citizens and

other stakeholders (Araujo and Tejedo-Romero, 2016; Guillamón et al., 2011; Lu et al., 2020). The Italian case is fascinating because the legislature, in compliance with European and International trends, approved a reform known as "accounting harmonisation" starting in 2015, in line with the principles of New Public Management (Mussari and Sorrentino, 2017). This reform was introduced to implement accrual accounting alongside cash-based accounting, which maintains its authorisation function, to achieve greater financial transparency and better comparability of the financial statements of public entities (Manes Rossi and Caperchione, 2018). Additionally, the accounting reform has mandated that municipalities with over 5,000 inhabitants approve a consolidated financial statement (Santis et al., 2018). Municipalities were required to aggregate the statements of municipal owned corporations in the municipal financial statement, according to the principles and rules established in "Annex 4/4". Furthermore, studying the determinants of the readability of Italian public financial statements is particularly interesting considering that Italy is generally perceived as a country with a high level of corruption and a low level of business ethics (World Economic Forum, 2014), an underdeveloped capital market, and limited law enforcement (Brown *et al.*, 2014; Ferri et al., 2023; Liberatore *et al.*, 2016). To this scope, a sample of consolidated financial statements of 2020 of 103 Italian provincial capital municipalities was selected. The choice of the financial year 2020 was motivated by two factors: the most recent year available at the start of the research and the COVID-19 pandemic highlighting the heightened importance of digital relationships and interactions between citizens and the public administration. The consolidated financial statements of 2020 were downloaded from the transparency section of the official websites of these municipalities. For each consolidated financial statement, the readability of the management report was calculated using the GulpEase Index (Lucisano and Piemontese, 1988), the most commonly used index for assessing the readability of Italian language documents. The sample of 103 observations was used to test the level of readability and the determinants that have been most extensively studied in the literature (Li, 2008; Reverte, 2009; Liberatore *et al.*, 2016) through multivariate analysis (ordinary least squares regression, or OLS). The results indicate a shallow level of readability, lower than that found in similar studies conducted in the private sector. Furthermore, the variables that significantly impact readability are the size of the municipality and its level of indebtedness, while the influence of economic performance is insignificant. The sample of 103 observations was used to test the level of readability and to examine whether it is influenced by the mayor's characteristics most studied in the literature: gender, age, and education level (Avellaneda and Gomes, 2017; Araujo and Tejedo-Romero, 2016; Nicolò et al., 2024; Raimo et al. 2024; Rocha et al., 2018; Tavares and Da Cruz, 2014). The analysis was conducted through a multivariate analysis (ordinary least squares regression, or OLS). The results indicate a very low level of readability, lower than that found in similar studies conducted in the private sector. Furthermore, the mayor's characteristics, except for gender, do not appear to affect the level of readability. This article contributes to the existing literature in several ways. First, it is the first study to measure the readability of municipalities' consolidated financial statements' management reports and to examine the correlation between mayors' characteristics and the readability level. Secondly, it expands our understanding of readability in the public sector. Thirdly, it highlights the need for greater readability of the consolidated municipal financial statement, stressing the need for regulatory intervention. Finally, it provides stakeholders with a useful model for assessing, comparing and improving the readability of a consolidated municipal financial statement. The remaining part of this study is as follows: the next section is dedicated to a literature review. The third section focuses on the theoretical framework and the development of hypotheses, and the fourth section explains the research methodology. The fifth section presents and analyses the findings; the last section provides the conclusions.

LITERATURE REVIEW

NPM has marked a paradigmatic shift within the public sector. Its diffusion has been propelled by escalating dissatisfaction with traditional bureaucratic models, which have proven inadequate in addressing the evolving needs of modern society and the challenges of economic globalization. NPM advocates for the application of private sector management principles and techniques to public administration (Hood, 1991; Osborne and Gaebler, 1992; Peters, 1994; Pollitt and Boukaert, 2004), encompassing a broad array of

management tools deemed suitable for the public sector. NPM places particular emphasis on efficiency, managerial accountability, adoption of results-oriented practices, and the imperative of enhancing transparency and accountability in the public sector (Pollitt & Bouckaert, 2011). Accountability stands as a cornerstone principle of NPM, emphasizing the responsibility of public actors towards citizens and stakeholders (Hyndman and Liguori, 2016). Through mechanisms such as monitoring, evaluation, and reporting, efforts are made to ensure transparent, efficient, and effective use of public resources (Munzhedzi, 2021). Therefore, the adoption of standardized accounting standards and reporting methodologies is considered crucial for improving the comparability and reliability of accounting and financial information (Sumaryati et al., 2020). This imperative is reflected in the accounting reform introduced by the Italian legislature through Legislative Decree 118/2011, commonly known as "accounting harmonization" (Manes Rossi et al., 2016, Mulazzani, 2016). A key provision of this reform entails the obligation for municipalities to adopt accrual accounting alongside cash accounting (Manes Rossi et al, 2023). This approach enables a more comprehensive evaluation of the assets of local authorities and furnishes detailed information on economic and financial outcomes. Additionally, the decree mandates the adoption of standardized financial statement templates to enhance comparability among the financial statements of various municipalities, facilitating improved analysis and oversight by regulatory bodies and stakeholders. Another noteworthy innovation introduced by Legislative Decree 118/2011 concerns the requirement for municipalities with over 5,000 inhabitants to prepare and approve consolidated financial statements, encompassing the results of subsidiary companies. This provision underscores the growing significance of municipal subsidiary companies, which play an increasingly pivotal role in service delivery and economic-financial management within local administrations (Bisogno and Teodori, 2018, Bisogno et al., 2022). This underscores the imperative of ensuring transparency in financial information, necessitating improvements in the readability of financial statements to facilitate accurate and accessible comprehension by citizens and stakeholders. There is no unique definition of readability in financial accounting. Smith and Taffler (1992, p. 85) state that readability "in relation to narrative accounting statements is defined as the difficulty of the text and success in the communication of accounting messages." Lehavy *et al.* (2011) add that readability can be measured by looking at the costs that the user must bear to process and interpret the company's written communication after analysing the complexity of the business operations. It should be highlighted that readability and understandability are two different concepts. Readability is a characteristic of the text, while understandability is a characteristic of the reader. Readability measures the difficulty of the text, while understandability measures the reader's ability to comprehend the text. Therefore, only the text itself needs to be considered to evaluate the readability, while evaluating understandability requires considering the intended audience. The objective (measurability) of readability makes it an interesting topic both in accounting (Gosselin *et al.*, 2021) and finance (Loughran and McDonald, 2014). Merkl-Davies and Brennan (2007) proposed that the readability studies can be grouped into four categories: reading difficulty of report narratives; variability of readability of different narrative sections of annual reports; association between the reading difficulty of annual report narratives and firm characteristics; studies focusing on methodological issues. Liberatore *et al.* (2016) categorized studies into two groups. In the first group, some authors have focused on the analysis of the determinants of readability (Courtis, 1986; Baker III and Kare, 1992; Li, 2008), while in the second group, there are authors who have examined the consequences of readability on performance, market variables, or similar (e.g. Bloomfield, 2008; Rutherford, 2002; Aymen *et al.*, 2018; Soriya and Rastogi, 2023). Studies on readability have focused on more than just calculation models and indicators. Instead, scholars interested in readability have mainly focused on annual reports, highlighting a low level of readability (Baker III and Kare, 1992; Courtis and Hassan, 2002; Li, 2008; Kumar, 2014; Bacha and Ajina, 2020). Chowdhury *et al.* (2020) pointed out that some unscrupulous firm managers may take advantage of stakeholders by using incomprehensive language in their annual financial reports to hide their self-serving behaviour. Scholars concur on the positive effect of a company's size on voluntary disclosures' quantity and quality (Frìas-Aceituno *et al.*, 2014; Sierra-Garcìa *et al.*, 2015; Marrone and Oliva, 2019; Vitolla *et al.*, 2020; Raimo *et al.*, 2022). In addition, Singhvi and Desai (1971), Merkley (2014), and Raimo *et al.* (2022) suggest that high-performing firms are strongly motivated to showcase their capabilities to enhance shareholder value, using clear and readable language. Seifzadeh *et al.* (2021)

examined the relationship between management characteristics and financial statement readability, finding a positive and significant relationship between real earnings management, managers' narcissism and overconfidence and financial statement readability. Nadeem (2020) found that board gender diversity positively influences readability. Healy and Palepu (2001), Marston and Polei (2004), Haniffa and Cooke (2005), Aymen *et al.* (2018), and Raimo *et al.* (2022) have conducted various studies that have shown a positive correlation between a company's level of indebtedness and the quality of its reporting. Hossain *et al.* (1994) further added that highly indebted companies tend to be more transparent as their creditors monitor them closely. However, a high score indicates a more readable text and, therefore, easy to interpret even for readers with less understanding (Raimo *et al.*, 2022). In the context of public sector, Allini et al. (2017) found a low level of readability in university financial statements. Khakbazian et al. (2025) analyzed readability techniques and the comprehensibility of public sector accounting standards, stressing the need for more effective methodologies. Göksu and Dumlupinar (2021) examined the readability of laws regarding public financial responsibility. Akgül (2019) highlighted the importance of improving readability in Turkish government websites to enhance usability and access. Ferri et al. (2023) showed that greater readability in official documents of Italian local administrations can help combat corruption by promoting accountability. Xu et al. (2022) emphasized that readability in American annual reports is an indicator of transparency, with less readable companies often associated with higher levels of political corruption. Lastly, Kinnersley and Fleischman (2001) compared the readability of government transmittal letters with those of public companies, underscoring the importance of clarity for citizens and investors' understanding. The literature review reveals that while significant attention has been devoted to examining the readability of corporate documents produced by for-profit entities, more needs to be done to investigate the readability of financial documents within the public sector. This research gap is particularly apparent in the case of municipal financial statements, which constitute a critical source of information for local authorities, citizens, and stakeholders. Therefore, this study aims to analyse the readability of municipal financial statements and evaluate how certain personal attributes of mayors might affect the readability of financial statements.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The authors that examined the readability of accounting narratives (e.g. Courtis, 1998; Li, 2008; Liberatore et al., 2016; Allini et al., 2017; Du Toit, 2017; Aymen et al., 2018; Caldarelli et al., 2022) used in their studies different theoretical perspectives, suggesting a deficiency in a fundamental theory to explain the varying readability levels of these kind of documents. The stakeholder theory (Freeman, 1984) provides a useful theoretical perspective for analyzing the influence of mayors' characteristics on the managerial reports of consolidated financial statements (Gomes et al., 2022; Nicolò et al., 2024). It posits the existence of a social contract between the organization and various groups of actors who have an interest or stake in the organization's activities—namely, the stakeholders (Parmar et al., 2010; Friedman and Miles, 2002). Stakeholders control strategic resources crucial for organizations' value creation processes and therefore have the power to influence their management and performance (Tornatzky, 1990). For this reason, the survival and continued viability of any type of economic organization depend on its ability to effectively manage relationships with stakeholders and meet their expectations, thereby obtaining their support (Lozano, 2005). In the stakeholder theory the readability of financial and non-financial reports is an element to respond to the expectations of the most influential stakeholders to obtain their approval and support and, consequently, improve performance (Deegan and Blomquist, 2006; Vitolla *et al.*, 2019a, 2019b). Therefore, the high readability of entity documents improves the organisation's holistic ability to create value (Stone and Lodhia, 2019; Bacha and Alina, 2020; Nicolò *et al.*, 2021; Raimo *et al.*, 2022). Indeed, from the stakeholder theory perspective, digital transparency can be a stable and efficient way of communication to fulfil accountability to entity stakeholders (Ismail and Bakar, 2011), guaranteeing the accessibility and readability of the data. A greater readability of financial and non-financial documents is essential for improving dialogue between public organizations and stakeholders (Allini et al., 2017; Lapeyre et al, 2022; Manes Rossi et al, 2020). Mayors can play a crucial role in promoting practices that enhance the readability

of financial and non-financial documents, thereby addressing the demands of all stakeholder groups, with citizens' needs being a top priority (Avellaneda and Gomes, 2017; Araujo and Tejedo-Romero, 2016; Nicolò et al., 2024; Raimo et al. 2024; Rocha et al., 2018; Tavares and Da Cruz, 2014). This study assumes that certain personal characteristics of mayors, such as gender, political ideology, age, and education level, are factors that can influence their values, beliefs, leadership style, competencies, and experiences, thereby affecting the orientation toward innovation, transparency, and readability (Avellaneda and Gomes, 2017; Ferreira and Gyourko, 2014; Gerber and Hopkins, 2011; Nicolò et al., 2024; Raimo et al., 2024; Siriwardhane and Taylor, 2014). A primary characteristic of mayors that could influence readability is gender. In recent years, women have increasingly taken on prominent political positions, such as that of mayor, where they can impact organizational and decision-making dynamics (Balaguer-Coll and Ivanova-Toneva, 2021; Ferreira and Gyourko, 2014; Nicolò et al., 2024). Studies have shown that women tend to adopt leadership styles more focused on collective well-being, participation, and transparency compared to men, who are more focused on economic outcomes and rules (Nicolò et al., 2024; Rodríguez-Garcia, 2015). Female leadership appears to be more inclined to promote innovative and transparent solutions that address community needs (Ferreira and Gyourko, 2014; Raimo et al., 2024). Indeed, female leaders tend to encourage greater communication and citizen participation, aspects closely related to the adoption of documents characterized by high readability (Alonso-Almeida, 2017; Guillamón et al., 2016; Balaguer-Coll and Ivanova-Toneva, 2021; Darmadi, 2011; Nicolò et al., 2024; Raimo et al., 2024). According to stakeholder theory, female mayors, by promoting readability and ethical behavior, can better meet stakeholders' needs, thereby encouraging the adoption of easily readable financial and non-financial documents (Akirav, 2021; Nicolò et al., 2024). Previous research has demonstrated that the presence of women in administrations encourages the use of digital platforms, improves transparency, and facilitates the dissemination of information via the web (Araujo and Tejedo-Romero, 2018; Nicolò et al., 2024; Raimo et al., 2024; Tavares and Da Cruz, 2014).

For these reasons, the following hypothesis has been formulated:

H1. *Local governments led by women adopt managerial reports of consolidated financial statements characterized by greater readability.*

Age represents a second characteristic of the mayor that could influence the readability levels of municipal documents, both financial and non-financial. Age affects the development and refinement of reasoning skills (Post et al., 2011) and contributes to different behaviors and choices (Darmadi, 2011). Piotrowski and Van Ryzin (2007) indicate that governments led by more experienced individuals tend to achieve higher levels of transparency compared to those led by younger individuals. Conversely, Tavares and Da Cruz (2014) have highlighted that younger leadership is generally more likely to ensure high levels of disclosure and transparency. According to stakeholder theory, it is reasonable to expect that local governments led by younger mayors are more inclined to disseminate clear information and meet the needs of a broader user base (Nicolò et al. 2024; Raimo et al. 2024). Therefore, in alignment with the theoretical model, it can be hypothesized that municipalities led by younger leaders are likely to adopt financial and non-financial documents with a higher level of readability. Thus, the following hypothesis can be formulated:

H2. *Municipalities led by younger mayors adopt managerial reports of consolidated financial statements characterized by greater readability.*

A third characteristic of mayors that could potentially influence the readability level of municipal documents is their education level. Just as professional experience plays a role, a leader's education level represents a significant factor that could impact their implementation of policies (Borgonovi, 2020; Dreher et al., 2009). According to Van Kerkhoff (2017), decision-making processes and approaches to participation are influenced by both socio-cultural contexts and education levels. In general, individuals with higher education levels are better equipped to enhance decision-making processes within their organizations, often

leading to more effective outcomes (Ramírez et al., 2022; Sallehudin, 2015). According to stakeholder theory, leaders with higher education levels possess a greater ability to understand and meet stakeholders' needs, particularly concerning transparency and accurate representation of the municipality's activities. While some studies have shown no relationship between a mayor's education level and the amount of information disseminated (Lu et al., 2020; Tavares and Da Cruz, 2014), various empirical studies have demonstrated that mayors' education levels are positively correlated with the use of new technologies (Ali et al., 2020; Hammouri, 2020). Nicolò (2024) found that the education level of mayors positively influences the dissemination of sustainability disclosures through the official websites of municipalities. Raimo (2024) also verified a positive correlation between the education level of mayors and the use of social media by local governments. Therefore, in light of the theoretical and empirical support, the following hypothesis can be formulated:

H3. *Municipalities led by mayors with higher education levels adopt managerial reports of consolidated financial statements characterized by greater readability.*

RESEARCH METHODOLOGY

Sample

In Italy, local government levels are divided into regions, provinces, and municipalities. This study investigates the municipal financial statements of a sample of municipalities made by 107 provincial capital municipalities. The sample selection covers almost 30% of Italy's population. The rationale behind selecting this particular sample is that previous literature has demonstrated its representativeness for all municipalities and the demographic and socio-economic diversity of the Italian population (Tommasetti and Ranucci, 2012). However, the sample's composition implies a limitation on the validity of the analysis. There are more populous municipalities than average-size municipalities in the sample. Therefore, the results cannot be extended to small (less than 20,000 inhabitants) and tiny (less than 5,000 inhabitants) municipalities (Tommasetti and Ranucci, 2012). For each municipality, we examined the management report attached to the 2020 consolidated financial statements. The choice to select the year 2020 was motivated by two primary factors. Firstly, it was the most recent year available at the start of the research. Secondly, the COVID-19 pandemic highlighted the heightened importance of digital connections and interactions between citizens and the public administration, underscoring the significance of digital transparency. The documents were found in the transparency section of the municipalities' websites. It should be noted that in 4 cases, it was impossible to find annual report disclosures. Therefore, the final sample comprised 103 municipalities. Table 1 shows the final composition of the sample.

TABLE 1
SAMPLE COMPOSITION

Geographical location	Municipalities	Population	% sample	% national
Central Italy	21	4,821,523	28.06%	8.17%
Islands	14	1,904,917	11.09%	3.23%
North Eastern Italy	21	3,112,010	18.11%	5.28%
North Western Italy	24	4,352,456	25.33%	7.38%
South Italy	23	2,993,146	17.41%	5.07%
Total	103	17,184,052	100.00%	29.13%

Dependent Variable

In this regard, the dependent variable of this study is represented by the degree of readability (READ) of the examined documents. To measure READ, we used the "GULPease" Index (Lucisano and Piemontese, 1988). The term "GulpEase" is an acronym created by combining the name of the Italian

linguist group at the University of Rome that developed it (Gruppo Universitario Linguistico Pedagogico) with "Ease", which describes the ease with which a text can be read. This index was implemented directly for the assessment of the Italian language, it is generally considered to be more reliable than other indexes and is traditionally the most used in the research of Italian documents and financial statements (Tonelli *et al.*, 2012, p. 41; Allini *et al.*, 2017; Del Gesso and Romagnoli, 2020).

The GULPease Index (GI) formula is based on the following algorithm:

$$GI = 89 + [300 \times (\text{number of sentences}) - 10 \times (\text{numbers of letters})] / (\text{number of words}) \qquad (1)$$

The GULPease Index (GI) results range from a minimum of 0, indicating low readability, to a maximum of 100, corresponding to the highest readability value. Researchers (Lucisano and Piemontese, 1988) provide a helpful interpretation of the scores obtained with the GULPease methodology. In particular, a score lower than 80 means that the examined text is complex for people with a level of education that corresponds to having completed primary school; a value between 40 and 60 indicates that the examined text is complex for people with a middle-school education level, and finally, a score lower than 40 implies that the examined text is not understandable even for those with the highest education level. The GI index presents a double advantage. First, it was explicitly developed for Italian texts. Moreover, it accounts for the number of letters, not the number of syllables, to avoid the risk of distortion caused by long words (Seah and Tarca, 2006). The study employs a "whole text" approach to readability analysis (Rutherford, 2003, p. 194) which is commonplace in textual analysis of corporate reports (e.g. Melloni *et al.*, 2017; Cheung and Lau, 2016; Jang and Rho, 2016; Stone and Lodhia, 2019). Whole text analysis is preferred to analysing potentially unrepresentative samples of prose. To calculate the readability, we prepared texts adopting the following steps. First, we manually downloaded the management report attached to the 2020 consolidated financial statements from the transparency section of the municipalities' websites. Second, we converted the files from PDF format to Word files. Third, we removed graphs, tables, and images, creating a single text file. Finally, we calculated the GI using a web-based statistical textual analysis platform: https://farfalla-project.org/readability_static/.

TABLE 2
STEP-BY-STEP METHODOLOGY FOR EVALUATING READABILITY IN MUNICIPAL FINANCIAL STATEMENTS

1. Manual download	Visit the transparency section of the municipalities' websites.
	Manually download the management report attached to the 2020 annual report.
2. File Conversion	Convert the downloaded files from PDF format to Word files.
3. Text Extraction	Remove graphs, tables, and images from the converted files.
	Create a single text file containing only the textual content.
4. Readability Calculation	Access the web-based statistical textual analysis platform at: https://farfalla-project.org/readability_static/.
	Utilize the platform to calculate the readability of the prepared text file.

Independent and Control Variables

The independent variables in this study are: Mayor's Gender (MG), Mayor's Age (MA), and Mayor's Level of Education (MLE). MG was measured using a dichotomous variable that takes the value of 1 for municipalities led by female mayors and 0 for the opposite cases. MLE was measured through another dichotomous variable that takes the value of 1 for municipalities led by mayors with at least a bachelor's

degree and 0 for those without a degree. MA represents the mayor's age in 2020 and is expressed in years. The econometric model included a set of control variables related to demographics, economics, governance, and geography. Specifically, the following variables were included: Size of the Board (SB), Gender Diversity on the Board (GDB), Average Age of the Board (AAB), Per Capita Indebtedness of the Municipality (PCIM), Net Income of the Consolidated Budget per Capita (NICB), Population (P), and Geographical Location (GL). SB is quantified as the number of board members. GDB is measured as the proportion of women within this municipal body. AAB represents the average age of the board members. PCIM is calculated as the total debt of the municipality divided by the population, expressed in euros per capita. NICB is defined as the total net income of the municipality divided by the population. Finally, GL is indicated by a dichotomous variable that assigns a value of 1 to municipalities located in Central and Northern Italy and 0 to those in Southern Italy and the islands.

The following equation illustrates the analysis model outlined in this work:

$$READ = \beta_0 + \beta_1\ MG + \beta_2\ MA + \beta_3\ MLE + \beta_4\ SB + \beta_5\ GDB + \beta_6\ AAB + \beta_7\ PCIM + \beta_8\ NICB + \beta_9\ P + \beta_{10}\ GL + \varepsilon \tag{2}$$

RESULTS AND DISCUSSION

Descriptive Analysis

Tables 3 and 4 illustrates the descriptive statistics and correlation analysis. An interesting data point is the mean of READ, the dependent variable in this study, which is 33.85, indicating very low readability. It is worth noting that this value is much lower than the values observed in the literature for for-profit companies (Stone and Lodhia, 2019; Du Toit, 2017; Raimo *et al.*, 2022). This data suggests lower readability in municipalities and highlights a lack of attention to the issue. In the analyzed sample, approximately 10.1% of municipalities are led by female mayors, indicating limited representation. The average age of mayors is around 54 years, reflecting a mature demographic, while the age range from 34 to 84 years indicates diversity in experience and perspectives. Additionally, a high mean of 0.81 reveals that a significant majority of mayors hold at least a bachelor's degree. The correlation matrix provides insights into the relationships between the variables. READ exhibits weak positive correlations with P_logn (0.2366) and PCIM (0.1643), suggesting that larger populations and higher levels of debt may be associated with higher readability scores.

TABLE 3
DESCRIPTIVE STATISTICS

Variable	Mean	Std. dev.	Min	Max
READ	33,850	4,022	24,648	41,580
MG	0,101	0,303	0,000	1,000
MA	53,734	9,974	34,000	84,000
MLE	0,812	0,390	0,000	1,000
SB	8,330	1,924	0,000	12,000
GDB	0,410	0,122	0,000	0,800
AAB	48,479	9,150	0,000	60,000
PCIM	1396,698	830,761	415,230	5049,572
NCIB	113,427	130,420	2,231	787,538
P_logn	11,459	0,859	9,941	14,831
GL	0,367	0,484	0,000	1,000

TABLE 4
CORRELATION MATRIX

	READ	MG	MA	MLE	SB	GDB	AAB	PCIM	NCIB	P_logn	GL
READ	1										
MG	0,0946	1									
MA	-0,0175	-0,0646	1								
MLE	-0,0653	0,0839	0,1085	1							
SB	0,1354	-0,2169	-0,0458	-0,0708	1						
GDB	0,1471	-0,3533*	-0,054	-0,1127	0,5115*	1					
AAB	0,0927	-0,2265	0,0109	-0,0186	0,6128*	0,4562*	1				
PCIM	0,1643	0,0176	-0,0835	0,0439	0,231	0,0529	0,0494	1			
NCIB	0,0053	-0,0878	-0,0055	0,0239	0,1355	0,0995	0,0257	0,5854*	1		
P_logn	0,2366	0,0167	-0,0627	0,0332	0,3843*	0,0431	-0,0597	0,3444*	0,1548	1	
GL	0,0862	-0,0023	0,0913	0,1238	-0,2407	-0,1582	-0,1258	0,1515	0,2692*	-0,1026	1
*Legend: * significant at 0,01%*											

Table 5 shows that the model has an R-squared value of 0.1522, which indicates that approximately 15.22% of the variability in readability scores can be explained by the independent variables included in the model. This suggests that there may be other factors outside the model that influence readability. Additionally, the F-statistic is 3.15 with a p-value of 0.0015, indicating that the overall model is significant and confirming that at least one of the predictors is associated with readability. According to Myers (1990), multicollinearity problems occur only when VIF values exceed 10. The VIF values in Table 6 indicate that there is no significant multicollinearity among the independent variables.

TABLE 5
MODEL SUMMARY AND FIT STATISTICS

Number of obs	=	103
F(10, 98)	=	3,15
Prob > F	=	0,0015
R-squared	=	0,1522
Root MSE	=	3,8878

TABLE 6
VARIANCE INFLATION FACTOR (VIF)

Variable	VIF	1/VIF
SB	2,65	0,376957
AAB	1,98	0,504272
PCIM	1,75	0,5725
NCIB	1,65	0,606238
GDB	1,58	0,633793
P_logn	1,54	0,648714
GL	1,22	0,822539

MG	1,18	0,847665
MLE	1,05	0,954388
MA	1,04	0,96143
Mean	VIF	1,56

Table 7 presents the results of the Ordinary Least Squares (OLS) regression model. Among the variables analyzed, only GDB (Gender Diversity on the Board) is significant at the 5% level (indicated by **), with a coefficient of 6.9372, suggesting that greater gender diversity on boards is associated with a significant increase in readability scores. Additionally, MG (Mayor's Gender) is significant at the 10% level (indicated by *), with a positive coefficient of 2.1983, indicating that municipalities led by female mayors tend to have higher readability scores.

TABLE 7
ORDINARY LEAST SQUARES (OLS). SIGNIFICANT VARIABLES

Variable	Active
MG	2,1982947*
MA	0,00879933
MLE	-0,97445768
SB	-0,18072814
GDB	6,9371535**
AAB	0,05239818
PCIM	0,00073201
NCIB	-0,00509886
P_logn	1,2216927**
GL	1,4296139
_cons	15,09795**

Legend: * p<.1; ** p<.05; *** p<.01

Other variables such as MA (Mayor's Age), MLE (Mayor's Level of Education), SB (Size of the Board), AAB (Average Age of the Board), PCIM (Per Capita Indebtedness), NCIB (Net Income of the Consolidated Budget), and GL (Geographical Location) do not exhibit statistical significance, and their coefficients are relatively low. This suggests that while some variables may have some impact, only GDB and MG are significant indicators in explaining the observed variability in readability scores. Only the first research hypothesis is supported, albeit weakly, by the results. In fact, Table 7 shows that MG (Mayor's Gender) has a positive coefficient of 2.1983, significant at the 10% level, suggesting a positive correlation between female leadership and the readability of documents. This supports the notion that women tend to promote leadership styles that are more oriented toward transparency and participation, which, as highlighted, can positively influence the readability of municipal documentation. With regard to age, hypothesis 2 is not confirmed: MA (Mayor's Age) has a non-significant coefficient (0.0088), and thus does not provide strong evidence in support of the hypothesis. The third hypothesis is also not confirmed. The Mayor's Level of Education has a negative but non-significant coefficient. This may suggest that, contrary to expectations, a higher level of education does not automatically translate into greater readability of documents, calling into question the idea that education can influence the readability of municipal documents. Regarding the control variables, it is particularly noteworthy that gender diversity on the board (GDB) has a positive and significant coefficient of 6.9372. This result indicates that greater gender diversity within the board is

associated with higher levels of readability. This finding supports the hypothesis that a more balanced gender composition in decision-making structures may promote a culture of enhanced transparency and clarity in communication. Additionally, the population variable (P_logn) also exhibits a positive and significant coefficient, suggesting that larger municipalities tend to ensure greater readability. This may be attributed to an increasing demand for transparency and clarity in complex urban settings. In contrast, the other control variables did not demonstrate significant effects on readability, indicating that their influences are less impactful compared to GDB and P_logn. While other studies have demonstrated that the characteristics of mayors significantly influence the online dissemination of sustainability disclosures (Nicolò et al., 2024) and the use of social media by municipalities (Raimo et al., 2024) the findings of this research indicate that the readability of municipal documents is not affected by the mayor's characteristics, such as age and level of education. Instead, it is primarily influenced by the mayor's gender, and even this effect is only marginally significant. This lack of significant impact suggests a concerning trend; there appears to be a pervasive lack of awareness among mayors regarding the importance of readability in municipal communications. As a result, this issue may not receive the necessary attention it deserves, ultimately hindering effective communication with citizens and other stakeholders.

CONCLUSIONS

To enhance transparency in local entities' financial records, the Italian government introduced accrual accounting in municipalities through the accounting harmonization process, along with the obligation to approve consolidated financial statements and publish them on their websites in the transparency section. Accrual accounting was added alongside the existing form of financial accounting, which still retains its authorization function (D'Alessio et al., 2015). Our research analyzed the level of readability of the management reports attached to the consolidated financial statements of Italian municipalities. The study also aimed to verify whether the characteristics of the mayor influence the readability of these documents. The findings of this study have significant implications for local government bodies. Firstly, they underscore the urgent need for additional efforts to enhance the transparency and readability of municipal documents in order to effectively address the information needs of citizens and other stakeholders. Moreover, these implications extend to central government and legislators, who must take action to improve the readability of municipal documents. In fact, the average readability score was found to be lower than the already inadequate levels identified in previous studies within the for-profit sector (Baker III and Kare, 1992; Liberatore et al., 2016; Stone and Lodhia, 2019). This highlights a concerning lack of awareness regarding the importance of readability in the public sector (Allini et al., 2017). The lack of influence of the mayor's characteristics on readability likely suggests a low level of awareness on the part of the mayors regarding the importance of this issue. This work contributes to readability studies in different ways. Firstly, the research advances the field of readability studies by expanding the knowledge of the readability of disclosures to public sector actors, particularly local governments. Additionally, it enhances our understanding of the factors that impact the readability of municipal documents, even though the results do not fully validate, if at all, the hypotheses formulated based on previous studies (Nicolò, 2024; Raimo, 2024). Finally, it extends the field of application of the instrumental perspective of stakeholder theory to the local public sector (Raimo et al., 2022). The research also has other important implications. Firstly, it highlights that the goal of greater clarity and transparency of the legislators who approved the accounting reform is still far from being achieved because municipal disclosures' readability level is still very low. To resolve this issue, lawmakers could adopt measures that include binding requirements on readability and not just simple recommendations, as highlighted by Nelson (2016) on the topic of risk factor disclosures, and as suggested by Perera *et al.* (2019) on environmental and climate disclosures. Legislative measures in this regard would improve communication and increase transparency. This would result in a better reputation among various stakeholder groups, lead to better evaluations from financial institutions, and facilitate the relationship between the institution and the citizen. Moreover, this study emphasises, even if only marginally, the need for digital transparency to be assessed in terms of the utility of the data provided. The publication of documents or disaggregated data cannot be a sufficient condition to increase

communication with stakeholders. It is necessary to assess the information's readability, comprehensibility, and usefulness. Transparency and accountability through digital tools represent essential objectives for non-profit companies, especially post-pandemic. Courtis (1998) states that the usefulness of a disclosure narrative depends on the extent to which its contents are readable and understandable. To create value, city officials must improve the documents and the analysis to be understandable to their citizens (Lutz *et al*., 2003). In other words, readability is the crucial key to understanding (Yusuf and Jordan, 2017). It is worth mentioning that this study has some limitations. Firstly, the sample of municipalities only allows for the analysis results to be extended to municipalities with more than 20,000 inhabitants. Secondly, the study was only conducted for one year instead of multiple years. Thirdly, the analysis focuses only on the disclosures of the consolidated financial statements. However, other financial and non-financial documents describing local governments' planned and carried-out activities could affect stakeholder groups. Lastly, the study does not include an organisational analysis of the processes leading to the disclosure preparation and the parties involved. Such an analysis would be instrumental in understanding the critical, non-structural elements that impact the readability of municipal disclosures. These limitations offer important insights for future research. Firstly, scholars could investigate the readability issue of small and tiny municipalities. Additionally, the analysis could be the starting point for extended research over multiple years. Thirdly, it would be important to investigate the readability of other financial and non-financial documents. Finally, the document preparation process could also be subject to an organisational analysis to understand the non-structural critical factors that influence the readability of municipal disclosures.

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