# Corporate Tax Avoidance and Narrative Disclosure Tone: A Developing Country Perspective

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## Abstract

**Purpose:** This research examines the link between tax avoidance, corporate governance and narrative disclosure tone using a sample of public companies in Pakistan.

**Design/methodology/approach:** Data for 125 companies listed on the Pakistan Stock Exchange (PSX) are collected over ten years from 2011 to 2020. Sentiment analysis is conducted to determine the disclosure tone, and regression analysis is used to test the association between the variables.

**Findings:** We find that firms that engage in tax avoidance tend to use a more positive disclosure tone and are more likely to engage in impression management. Moreover, promoting sound governance through board independence and gender diversity is associated with a less positive disclosure tone. However, firms with more family board members and higher foreign ownership are more likely to use a more positive disclosure tone.

**Originality:** Our study contributes to the literature by examining corporate tax avoidance as a determinant of narrative disclosure tone, a relationship that has not been widely explored. Moreover, as most disclosure tone research has been conducted in developed countries, we provide valuable evidence from a developing country.

**Practical Implications:** Regulators can use this information to develop better guidelines to protect investors and ensure faithful disclosures to address both positive and negative news.



**Keywords**: Narrative Disclosure Tone, Tax Avoidance, Corporate Governance, Board Characteristics, Ownership Structure, Pakistan

## 1. Introduction

Within the constantly evolving landscape of accounting literature, narrative disclosure tone has emerged as a critical topic for researchers, practitioners, and regulators (e.g., Cazier *et al*., 2020; Huang *et al.*, 2014; Shan, 2019). Narrative disclosures are considered a valuable information source that augments numerical financial data and helps improve decision-making by creditors, investors and other stakeholders (Courtis, 1995; Rjiba *et al.,* 2021; Smith and Taffler, 2000). However, as evidenced by major accounting scandals over the past two decades, the tone of narrative disclosures is susceptible to manipulation. For instance, prior to Enron's collapse, their annual reports had a positive bias aimed at influencing and manipulating the stakeholders' perceptions rather than providing relevant, helpful information (Merkl-Davies and Brennan, 2007). This suggests that managers utilize positive tones as a self-serving attempt to distort how others perceive the firm (Courtis, 2004; Yuthas *et al*., 2002).

Previous research on impression management shows that firms utilize thematic manipulation of narrative tone in annual reports and sustainability reports (Cho *et al*., 2010; García-Sánchez *et al*., 2019; Guillamón-Saorín *et al*., 2017; Leung *et al*., 2015; Osma and Guillamón-Saorín, 2011; Patelli and Pedrini, 2015). However, while the literature on narrative disclosure tone is growing, there is still limited research on the determinants of narrative disclosure tone. Specifically, tax avoidance is a key factor that has rarely been studied in the context of narrative disclosures. The existing literature links corporate tax avoidance with financial reporting quality (Frank *et al*., 2009), firm risk (Guenther *et al*., 2017), and corporate governance (Armstrong *et al*., 2015). Hence, tax avoidance may be linked with the narrative tone of corporate disclosures.

While some academics and tax authorities have considered tax avoidance and tax evasion synonymous terms (Dowling, 2014), it is crucial to differentiate between them (Hasseldine and

Morris, 2013). Tax avoidance is the usage of legal tax planning strategies to reduce the amount of a firm's tax liability, whereas tax evasion is using illegal means to evade taxes (Knuutinen, 2014). Hence, firms view tax avoidance as a legitimate and prudent behavior (Bird and Davis-Nozemack, 2018; Dowling, 2014). However, it is important to note that although tax avoidance may strictly comply with the letter of the law, it does not comply with the spirit of the law (De la Cuesta-González and Pardo, 2019). Therefore, stakeholders might consider tax avoidance to be unethical and irresponsible because it encourages the use of aggressive tax planning strategies to avoid paying a fair share of the taxes (De la Cuesta-González and Pardo, 2019; Dowling, 2014). In this case, to distort stakeholder perception, tax-avoiding firms may manipulate the narrative tone of their annual reports (Liu *et al*., 2022; Xu *et al*., 2022). Nevertheless, there is a scarcity of research on tax avoidance as a determinant of disclosure tone, and only a few existing studies document a link between tax avoidance and disclosure tone (e.g., Law and Mills, 2015; Morton *et al.*, 2022). Therefore, this study investigates the link between tax avoidance and narrative disclosure tone.

Based upon the underpinnings of agency theory, conflicts between managers and shareholders can result in the utilization of impression management strategies (e.g., Davidson III *et al*., 2004). Managers may use voluntary disclosures to manipulate and control the impression conveyed to the users of corporate reports (Clatworthy and Jones, 2001, 2006; Hooghiemstra, 2000). By engaging in thematic manipulation of narrative disclosures, managers can strategically distort how other stakeholders perceive the organization (Yuthas *et al*., 2002). Therefore, firms potentially engaging in tax avoidance may use disclosure tone as a strategic tool to portray a good and upright image of the firm.

Furthermore, corporate governance as a determinant of disclosure tone has also been scarcely explored. For instance, existing research examines the association between firm value and disclosure tone, assesses a specific disclosure type, or considers only accounting strategies and

firm characteristics as key tone determinants (Iatridis, 2016; Li, 2010a). In line with agency theory, effective governance structures can help mitigate the utilization of impression management strategies (Iatridis, 2016). Therefore, agency theory provides a relevant conceptual conduit for studying the association between corporate tax avoidance, corporate governance, and narrative disclosure tone.

We utilize a sample of firms listed on the Pakistan Stock Exchange (PSX) between 2011 and 2020 to investigate the association between tax avoidance, corporate governance, and disclosure tone. We conduct sentiment analysis using the Loughran-McDonald dictionary to measure disclosure tone from annual reports.[1] We find that firms that engage in tax avoidance tend to use a more positive disclosure tone and are more likely to engage in impression management. This may help these firms portray a morally upright facade. Turning to corporate governance, firms with higher board independence and greater gender diversity are more likely to use a less positive disclosure tone. In contrast, firms with a higher proportion of family board members and higher foreign ownership are more likely to have a more positive disclosure tone.

To further analyze the findings of the multivariate regression analysis, we conduct two additional analyses. First, we consider the different disclosure tones defined by the Loughran-McDonald dictionary as dependent variables. The findings of this additional analysis are consistent with the main results and suggest that tax-avoiding firms are more likely to use more positive and superfluous tones and less negative tones in their corporate disclosures. Second, we assess firms' disclosure practices at different tax avoidance levels. The results suggest that firms with low tax avoidance levels are more likely to use a less positive disclosure tone. In comparison, firms at higher tax avoidance levels are more likely to use a more positive disclosure tone.

[1] The use of Loughran-McDonald dictionary is appropriate because disclosures provided by Pakistani companies are in the English language.

This study contributes to the literature in several ways. First, we address the call of Bassyouny *et al*. (2022) to examine tax avoidance as an important determinant of narrative disclosure tone. Existing studies (e.g., Nguyen, 2021) only explore whether firms that engage in tax avoidance reduce the readability of their financial statements. Thus, we add to the literature by going beyond readability and showing that tax-avoiding firms are more likely to utilize a more positive disclosure tone. Therefore, we provide evidence that tax avoidance may act as an important determinant of narrative disclosure tone.

Second, even though narrative tone provides potential for managerial opportunism, only a few studies analyze the impact of board independence and gender diversity on the tone of disclosures (e.g., Arena *et al*., 2015; Bassyouny *et al.*, 2020; Martikainen *et al*., 2022; Mather *et al*., 2021; Osma and Guillamón-Saorín, 2011; Seebeck and Vetter, 2021). However, these studies find inconsistent results. In this context, we provide additional evidence that higher board independence and gender diversity are associated with a less positive disclosure tone. Apart from that, there is a lack of research that explores the impact of family board members on narrative disclosure tone. Hence, we add to the literature by providing evidence that family board members are associated with the use of a more positive disclosure tone.

Third, we expand the literature on the association between ownership structure and narrative disclosure tone. Hadro *et al.* (2017) highlight two key ownership types that can potentially impact a firm's impression management behavior, i.e., foreign and managerial ownership. Our results suggest that managers in firms with higher foreign ownership are more likely to use a more positive disclosure tone, while managerial ownership does not seem to impact the tone of narrative disclosures.

Finally, the majority of research on the tone and readability of narrative disclosures utilizes data from the United States (U.S.) and other Western countries (Courtis, 1995; Mousa *et al.,* 2022).

The analysis of impression management and narrative disclosure tone is not well-studied in the case of developing countries. In particular, there is a severe dearth of research outside the U.S. context, where the regulatory frameworks differ (Bassyouny *et al*., 2022). Due to differences in the contextual factors and national culture, studying this relationship in developing countries is valuable. For instance, research shows that cultural differences can impact the quality of operational risk disclosures (Basto and Marques, 2024). Therefore, we contribute to the literature by examining impression management and narrative disclosure tone in the context of Pakistan.

The rest of the paper is structured as follows. Section 2 provides the theoretical framework and literature review. Section 3 describes the methodology. Section 4 presents the results and findings. In Section 5, we summarize and conclude.

## 2. Theoretical framework and review of the literature

### *2.1.Theoretical framework*

According to agency theory, a conflicting relationship exists between shareholders and managers. Managers have access to more information than shareholders, and this information asymmetry leads to moral hazard and adverse selection problems (Jensen and Meckling, 1976). In the context of corporate disclosures, managers can exploit this information asymmetry to distort the communication about the firm's performance or achievements (Bozzolan *et al*., 2015; Merkl-Davies and Brennan, 2007). In this sense, the agency problem manifests the utilization of impression management strategies. Impression management is how entities manage how others perceive them (Leary and Kowalski, 1990). Specifically, in the financial accounting and corporate disclosure literature, impression management has been used to explain that the voluntary disclosure strategies of managers are based on self-interest and are an attempt to manipulate and control the impression (vis a vis corporate achievements and image) that is conveyed to the users

of corporate reports (Clatworthy and Jones, 2001; Hooghiemstra, 2000). Therefore, managers can use corporate reports to distort stakeholders' perceptions and influence their decisions (Merkl-Davies and Brennan, 2007; Yuthas *et al*., 2002).

With respect to corporate reporting, impression management can occur in various forms (Merkl-Davies and Brennan, 2007), and one of these forms is thematic manipulation, i.e., the use of negative and positive tones (Fisher *et al*., 2020). A positive tone can be utilized in corporate disclosures to form a good and upright image of the firm. For instance, firms that aggressively avoid taxes may use an excessively positive tone to develop a good corporate image. Although there are regulations on the information disclosed, the wording of disclosures is more arbitrary and gives managers the power to manipulate. Therefore, disclosure tone, as a strategic tool to manipulate the perception and views of stakeholders, is a vital technique in impression management (Bozzolan *et al*., 2015; Yuthas *et al*., 2002).

Nevertheless, impression management issues resulting from the agency problem can be mitigated by utilizing effective corporate governance structures because they can significantly impact the quality and language of reported information (Iatridis, 2016). In the absence of robust governance mechanisms, weak monitoring and control may be exercised, resulting in a more positive disclosure tone. Therefore, agency theory provides an appropriate theoretical framework to study the link between tax avoidance, corporate governance, and narrative disclosure tone.

### *2.2.Tax avoidance and disclosure tone*

Corporate tax avoidance has become a widespread phenomenon both globally and locally in the Pakistani context (Anwar *et al.*, 2024; Hasan *et al*., 2024). While tax avoidance can increase the cash available to firms for investment, it may also enhance information asymmetry between shareholders and managers (Chen *et al*., 2018). This increased information asymmetry ultimately

leads to moral hazard and adverse selection problems (Jensen and Meckling, 1976). In this sense, tax avoidance manifests type I agency (principal-agent) conflicts.

The impact of tax avoidance on disclosure tone may have competing predictions. For instance, Law and Mills (2015) explore the association between financial constraints and tax avoidance using linguistic cues in qualitative disclosures. They find that firms that disclose more negative words engage in higher tax avoidance, as evidenced by lower effective tax rates, a more significant presence in tax havens and more unrecognized tax benefits. Similarly, a recent study by Morton *et al.* (2022) also suggests that a low effective tax rate is linked with a more negative tone of voluntary tax reports. This would suggest that firms that engage in higher tax avoidance would adopt a more negative disclosure tone in their annual reports to signal more severe financial constraints. Therefore, in such situations, tax avoidance may be linked with a negative disclosure tone.

In contrast, based on the notion of opportunistic managerial behavior, it is also likely that firms that engage in tax avoidance would manipulate the disclosure tone to influence stakeholders' perceptions (Huang *et al*., 2014; Liu *et al*., 2022; Xu *et al*., 2022). Therefore, while engaging in tax avoidance, managers may utilize a more positive disclosure tone to distract from their aggressive tax practices and extract rents (Kim *et al*., 2011; Liu *et al*., 2022). This contention is also consistent with Lanis and Richardson (2012), who find evidence of a positive relationship between CSR and tax avoidance. They interpret their results as evidence that firms use CSR disclosure to achieve organizational legitimacy, which aligns with the risk-management perspective. Additionally, Xu *et al*. (2022) document that firms that engage in aggressive tax behavior tend to provide more readable CSR disclosures as a hedging strategy against tax avoidance. Another recent study by Liu *et al.* (2022) finds that firms that use higher political sentiment in their earnings conference calls engage in higher tax avoidance. This enables them to

mislead investors and distract them from bad news. In this context, firms that engage in tax avoidance may use a positive disclosure tone as an impression management strategy.

Based on competing theoretical and empirical evidence, firms that engage in tax avoidance may use either a more positive or a more negative tone in corporate disclosures. In the Pakistani context, there is a lack of studies that explore the impact of tax avoidance on disclosure tone. However, previous literature finds that, in Pakistani firms, managers utilize tax avoidance as a tool for opportunism and rent extraction (Hasan *et al*., 2024). In this context, it is likely that firms that engage in tax avoidance may use a more positive disclosure tone as an impression management strategy. Therefore, the following is hypothesized:

*H1: Firms with higher engagement in tax avoidance have a more positive disclosure tone.*

### *2.3.Board characteristics and disclosure tone*

Previous research links corporate disclosures with the board of directors (e.g., Iatridis 2016; Osma and Guillamón-Saorín 2011). Hence, it is vital to explore the impact of board characteristics on narrative disclosure tone. Through effective monitoring, the board can reduce managerial incentives to provide a biased presentation of information (Ben-Amar *et al*., 2024; Osma and Guillamón-Saorín, 2011; Uang *et al*., 2006) and improve the quality of corporate disclosures (Li, 2010b). Therefore, strong corporate governance helps improve the quality of financial reporting and enhances transparency (Iatridis, 2016; Nadeem, 2022; Rezaee, 2005).

Independent members on the board are a vital factor for strong corporate governance and are popularly used to examine the efficiency of corporate governance mechanisms (Iatridis, 2016). According to agency theory, independent members are more likely to provide advice that is free from conflicts of interest (Fama and Jensen, 1983). Previous studies show that independent directors enhance board effectiveness by decreasing opportunistic behavior (Srinidhi *et al*., 2011). Specifically, in terms of corporate disclosures, independent members help to increase transparency

and reduce information asymmetry by encouraging higher quantity (Allini *et al*., 2016) and quality of disclosures (Jennings and Marques, 2011).

Prior research also shows that higher board independence can reduce impression management by managers (e.g., Osma and Guillamón-Saorín, 2011), resulting in more readable disclosures (Nadeem, 2022). This decrease in impression management is due to the notion that they have no vested interests in the company; thus, maintaining a less optimistic tone is more reasonable for protecting stakeholders' interests. In this context, Osma and Guillamón-Saorín (2011) demonstrate that board independence improves transparency and reduces self-serving disclosure by management. Similarly, Martikainen *et al*. (2022) highlight that higher board independence is associated with a more negative disclosure tone. This is also consistent with Bassyouny *et al.* (2020), who find that board independence is negatively associated with a more positive disclosure tone.

In contrast, Wu *et al*. (2021), in their sample of Chinese firms, find that the information value of disclosure tone decreases in firms with higher independent directors, suggesting that independent directors do not effectively monitor managers to protect shareholders. Specifically, in the Pakistani context, there is a lack of empirical studies that explore the impact of board independence on narrative disclosure tone. However, previous Pakistani studies link board independence with higher corporate social responsibility (CSR) disclosure (Naseem *et al.,* 2017) and improved financial reporting quality (Hasan *et al.*, 2022).

Although the empirical evidence is conflicting, theoretically, higher board independence represents a more robust corporate governance structure and is expected to be associated with a less positive disclosure tone. Therefore, the following hypothesis is formulated:

*H2a: Firms with higher board independence have a less positive disclosure tone.*

Another factor that has been purported to increase board efficiency is gender diversity (e.g., Griffin *et al*., 2021). Previous literature suggests that female members improve the monitoring capacity and enhance the board's overall effectiveness (Adams and Ferreira, 2009; Ben-Amar *et al*., 2024; Brammer *et al.,* 2009; Nadeem, 2022). Research also suggests that female members promote informational positions and discourage managerial opportunism (Seebeck and Vetter, 2021). Thus, previous studies link higher board gender diversity to greater financial reporting discipline and enhanced stakeholder confidence in the disclosed information (Srinidhi *et al*., 2011; Wang *et al*., 2022).

Moreover, it is argued that emphasis on the disclosure of positive words is a manifestation of the impression management strategy (Osma and Guillamón-Saorín, 2011). Thus, if female members enhance accountability, they will encourage more neutral disclosures. This is consistent with recent empirical research, which finds that female board members are less opportunistic than males and, thus, use more uncertain words in disclosures to draw a more realistic picture of the firm's situation (Seebeck and Vetter, 2021). Similarly, studies also find that female directors disclose more neutral information (García-Sánchez *et al*., 2019) and are more ethical in financial reporting (Gul *et al.*, 2011). In addition, Nadeem (2022) finds that female board members provide more readable disclosures in 10-K reports, while Wahid (2019) demonstrates that female members are negatively associated with mistakes in financial reporting.

In contrast, Marquez-Illescas *et al.* (2019) find that firms with female CEOs are more likely to have positive tones in their earnings announcements than firms with male CEOs. In line with this, Martikainen *et al*. (2022) find that compared to female directors, male board members are linked with a more negative disclosure tone. Furthermore, the literature also suggests that the characteristics of female and male board members do not significantly differ (Adams and Funk, 2012). For instance, Lara *et al*. (2017) highlight that in a context where there is no discrimination,

the behavior of female directors does not differ from that of male directors. This is because females in leadership positions do not depict the same behavior as females in the general population. The absence of such differences negates their incremental impact in improving the quality of corporate disclosures. Furthermore, Triana *et al.* (2014) indicate that female board members only improve strategic decision-making when firm performance is good. Therefore, the positive impact of female members may be context-dependent.

Specifically, in the Pakistani context, there is a lack of studies that explore the association between gender diversity and disclosure tone. However, existing studies link higher gender diversity with greater tax responsibility disclosure (Anwar *et al.,* 2024) and higher CSR disclosure quality (Khan *et al.,* 2019). Although the empirical evidence is conflicting, theoretically, gender diversity positively impacts monitoring effectiveness and accountability while negatively impacting impression management. Therefore, we hypothesize the following:

*H2b: Firms with higher board gender diversity have a less positive disclosure tone.*

Another essential governance attribute, especially in developing countries such as Pakistan, is the presence of family members on the board of directors (Anwar *et al.,* 2024). A key feature of family firms is their involvement in routine, day-to-day operations, which is ensured through family board members (Deephouse and Jaskiewicz, 2013). The presence of family board members can help resolve type I agency (principal-agent) problems; however, they can also produce type II (principal-principal) agency problems. The mitigation of type I agency problems results from the notion that family board members can monitor managers' actions closely and effectively. Thus, due to the low separation between ownership and control, such problems are not as severe (Ali *et al*., 2007). However, this may produce type II agency problems between the majority and minority shareholders. Therefore, due to the differences in the agency problems, it is likely that the disclosure practices in these firms also differ from others (Ali *et al*., 2007).

A higher proportion of family members can entrench themselves in the firm's control and, thus, have enhanced control over management (Anderson and Reeb, 2003). More control over management suggests that information asymmetry would be lower, and previous literature indicates that firms with lower information asymmetry tend to have more positive disclosures (Li, 2010a). Furthermore, due to heightened type II conflict, firms with a higher proportion of family board members may be more inclined to reduce disclosure and transparency (Ali *et al*., 2007). Therefore, they may seek private benefits rather than providing more extensive disclosures and may use a more positive tone in their disclosures. Moreover, the association between family board members and positive tone may also be linked to firm performance. For instance, empirical studies find that firms with more family board members have higher earnings quality and better firm performance (Anderson and Reeb, 2003; Basco *et al.,* 2019). Since disclosure tone is linked with current and future firm performance, firms with a higher proportion of family board members are likely to use a more positive disclosure tone.

In contrast, research shows that family firms are also concerned with the risks of litigation and reputational costs and, therefore, are more likely to provide earnings warnings (Chen *et al.*, 2008). Similarly, Ali *et al.* (2007) provide evidence that family firms tend to provide more warnings for bad news. In this context, firms with a higher proportion of family board members may use a more negative tone in their corporate disclosures. Specifically, in the Pakistani context, there is a lack of studies that explore the impact of family board members on disclosure tone. However, previous studies find that family board members negatively impact internal control disclosure (Jadoon *et al.*, 2021) and positively impact tax responsibility disclosure (Anwar *et al.,* 2024).

Although there is competing empirical evidence about the impact of family board members on disclosure tone, theoretically, family board members may use impression management

strategies to enhance their reputation and preserve their social capital (Van Gils *et al*., 2014). Therefore, the following is hypothesized:

*H2c: Firms with a higher proportion of family board members have a more positive disclosure tone.*

### *2.4.Ownership structure and disclosure tone*

The ownership structure is important in determining the tone of corporate disclosures. Two key types of ownership structures that impact a firm's impression management behavior are foreign ownership and managerial ownership (Hadro *et al*., 2017).

Due to its independent and international position, foreign ownership enhances decision-making quality (Hasan *et al*., 2024). Furthermore, foreign shareholders improve the information environment, decrease earnings management, promote shareholder value, and encourage good governance practices (Guo *et al*., 2015; Shan, 2019). However, foreign shareholders are geographically distant from management, which creates a greater divide between ownership and control and increases information asymmetry. Due to this geographical divide, foreign shareholders demand higher corporate disclosures (Haniffa and Cooke, 2005). This is corroborated by Tsang *et al*. (2019), who show that foreign ownership is associated with increased voluntary disclosures. Therefore, by encouraging a greater quantity of disclosures, foreign investors help reduce this information asymmetry between the firm (managers) and the market (outside investors) (Jiang and Kim, 2004).

Regarding impression management, empirical studies show that foreign-owned firms are less likely to produce positive disclosures but are more likely to produce disclosures that argue they can enhance performance despite adverse financial conditions, i.e., conquering adversity (Hadro *et al*., 2017). In contrast, previous empirical studies also link foreign ownership with higher financial performance (Chen and Liao, 2011). In such cases, the disclosures are more likely to

have a more optimistic tone. While foreign ownership is argued to be a channel for transferring business practices from developed to developing countries (Agrawal and Knoeber, 1996; Guo *et al*., 2015), empirical evidence shows that foreign ownership does not necessarily promote good governance practices. For instance, Salihu *et al*. (2015) find that foreign ownership is positively associated with higher tax avoidance.

Specifically, in the Pakistani context, there is a lack of studies that explore the association between foreign ownership and narrative disclosure tone. However, previous literature links foreign ownership in Pakistani firms with higher financial reporting quality (Hasan *et al.,* 2022) and improved firm performance (Hasan *et al.,* 2023). Overall, there is conflicting theoretical and empirical evidence regarding the impact of foreign ownership on corporate disclosures and governance practices. However, given the demand for greater transparency by foreign investors and potentially higher financial performance of such firms, foreign ownership may be associated with a more positive disclosure tone. Therefore, we hypothesize the following:

*H3a: Firms with higher foreign ownership have a more positive disclosure tone.*

Furthermore, managerial ownership has been argued to be an essential tool for aligning the goals of management and shareholders (Singh and Davidson III, 2003). Research shows that as managerial ownership declines, the severity of agency problems increases (LaFond and Roychowdhury, 2008). Interestingly, the literature shows that if managerial ownership is in small percentages, it can help to align managerial interests; however, if ownership is in large blocks, it can have an undesired impact and increase managerial opportunism through entrenchment (Fan and Wong, 2002; Singh and Davidson III, 2003). This is corroborated by Hasan *et al*. (2024), who document that higher managerial ownership leads to more opportunistic behavior and results in higher engagement in corporate tax avoidance. Similarly, Shuto and Takada (2010) find that at

intermediate levels, managerial ownership is associated with a higher demand for accounting conservatism, which is consistent with the entrenchment effect.

In addition, when managerial power is high, they are more likely to manipulate and whitewash the information disclosed in the annual reports to support their own interests (Cao *et al*., 2022). Therefore, managers can bypass internal corporate regulations and influence the tone of narrative disclosures. Essentially, firms with higher managerial ownership are more likely to be optimistic and overconfident in their narrative disclosures, and this notion is corroborated by Cao *et al*. (2022), who show that firms with greater managerial power tend to use a more positive tone in their annual reports.

Specifically, in the Pakistani context, there is a lack of empirical studies that explore the impact of managerial ownership on disclosure tone. However, Anwar *et al*. (2024) show that Pakistani firms with higher managerial ownership provide greater tax responsibility disclosures and suggest that it can be an appropriate tool to align managerial interests with those of the shareholders. In this context, we expect firms with higher managerial ownership in Pakistan to have a less positive disclosure tone. Therefore, we hypothesize the following:

*H3b: Firms with higher managerial ownership have a less positive disclosure tone.*

## 3. Research methodology

### *3.1.Sample and data collection*

We utilize companies listed on the Pakistan Stock Exchange (PSX) to examine the relationship between tax avoidance, corporate governance, and disclosure tone. The data cover a ten-year period from 2011 to 2020, as this timeframe provides a comprehensive view of the post-financial crisis and the pre-COVID eras (Richardson *et al*., 2015). The significance of this period is twofold. First, it allows us to remove the impact of the financial crisis and the pandemic. Second, it overlaps

with the amalgamation of three different stock exchanges under the PSX, enabling us to identify and understand the effects of corporate governance amendments in this period.

To accomplish the study objectives, we employ various sampling criteria, with the availability of annual reports playing a significant role in determining the sample. Moreover, we eliminate financial institutions from the study due to varying reporting standards. As a result, the final sample size amounts to 125 Pakistani companies and encompasses 1,250 firm-year observations. Since a relevant database does not exist, secondary sources such as company websites are used to obtain annual reports. All the collected sample annual reports are in English.

*3.2.Dependent variable*

The dependent variable in the study is the net positive tone (NPT). To determine the NPT for each firm-year observation, we utilize sentiment analysis, which is a procedure that aids in the quantification and classification of narrative content within text into various emotion categories. Sentiment analysis has been widely popularized as a relevant technique for categorizing the tone of corporate disclosures (Mousa *et al.,* 2022).

Generally, sentiment analysis can be conducted using a corpus or lexicon-based approach. A corpus-based approach utilizes texts depicting a paragraph to determine the type of tone, while the lexicon-based approach utilizes an existing lexicon/dictionary to determine the tone of the content (Zhang *et al.*, 2023). Although there are numerous popular lexicons/dictionaries for sentiment analysis, we perform sentiment analysis on the annual reports of the sample firms by utilizing the Loughran-McDonald dictionary. More specifically, we utilize the Loughran-McDonald lexicon in RStudio's *textdata* package. Loughran and McDonald (2011) argue that other dictionaries tend to misclassify words found in financial texts. Thus, the Loughran-McDonald dictionary addresses this issue and is explicitly developed for financial texts, such as annual reports. Furthermore, the Loughran-McDonald dictionary is more comprehensive than

other word lists and does not include cultural or regulatory words. Hence, it can be applied across various regulatory and cultural contexts in both developed and developing countries.

Using this approach, we quantify the six categories defined by the Loughran-McDonald dictionary, i.e., negative, positive, constraining, litigious, uncertain, and superfluous. The negative and positive categories include optimistic and pessimistic words normally used in financial texts, with 2,355 negative and 354 positive words. The litigious category has 904 words, and the uncertain category has 297 words. The constraining category is based on Bodnaruk *et al*. (2015) and contains 184 words. Lastly, the superfluous category, which directly impacts the readability of disclosures (Loughran and McDonald, 2014), contains 56 words.

Following previous literature (e.g., Frankel *et al*., 2022; Henry and Leone, 2016; Zhang *et al.*, 2022), we measure NPT as the spread between the number of positive and negative words expressed as a ratio of the sum of negative and positive words in the annual report. Therefore, a positive value of NPT indicates a more positive tone in the annual report, and a negative value of NPT indicates a more negative tone. Furthermore, our additional analysis considers all six disclosure tone categories as dependent variables.

### *3.3.Independent and control variables*

The independent variables used in this research are divided into three main categories. First, we measure tax avoidance by utilizing three different proxies, namely, effective tax rate (ETR), cash tax rate (CTR), and book-tax differences (BTD). Generally, a high value of BTD indicates more aggressive tax behavior; thus, it is directly associated with tax avoidance. In contrast, a high ETR and CTR value indicates a lower engagement level in tax avoidance. Therefore, we deduct the calculated ETR and CTR values from 1 to obtain a direct proxy for tax avoidance (Hasan *et al*., 2024; Kim *et al*., 2022). Furthermore, we divide the calculated BTDs by the total assets to

generalize the data (Hasan *et al*., 2024). Moreover, consistent with previous studies (e.g., McClure *et al*., 2018; Pan *et al*., 2024), we truncate ETR, CTR, and BTD between 0 and 1.

Regarding board characteristics, we consider the impact of board independence, gender diversity, and family board members. In terms of ownership structure, we analyze the impact of foreign and managerial ownership. Furthermore, we use firm size, financial leverage, asset liquidity, and growth opportunities as control variables. All variables, their measures, and definitions are described in Table I.

***Insert Table I around here***

*3.4.Research model*

To examine the association between tax avoidance, corporate governance, and disclosure tone, we utilize the following research model:

$$NPT_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 CTR_{it} + \beta_3 BTD + \beta_4 BIND_{it} + \beta_5 BGEN_{it} + \beta_6 BFAM + \beta_7 FOWN_{it} + \beta_8 MOWN_{it} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} LIQ_{it} + \beta_{12} MTB_{it} + \varepsilon_{it} \quad (1)$$

where NPT refers to net positive tone, ETR denotes the effective tax rate, CTR refers to the cash tax rate, BTD denotes the book-tax difference, BIND refers to board independence, BGEN denotes board gender diversity, BFAM refers to family board members, FOWN refers to foreign ownership, MOWN denotes managerial ownership, SIZE refers to firm size, LEV denotes financial leverage, LIQ refers to asset liquidity, and MTB refers to growth opportunities.

## 4. Results and discussions

*4.1.Preliminary analyses*

We perform several preliminary analyses to determine the most appropriate test based on the data. First, we conduct the Breusch and Pagan Lagrange multiplier (LM) test to ascertain whether the data are panel or pooled (Hasan *et al*., 2024). The significance level of the LM test is less than

0.05, suggesting that the panel estimation model is more appropriate. Second, we conduct the Hausman test to determine whether the appropriate panel data model is fixed effects or random effects. The significance level of the Hausman test is less than 0.05, suggesting that the fixed-effects model is more appropriate for the data.

Finally, we conduct the Wooldridge test to determine whether autocorrelation exists in the panel dataset. The significance level of the Wooldridge test is less than 0.05, suggesting the presence of autocorrelation in the panel data. Therefore, this study employs nonparametric random effects generalized least squares (GLS) regression analysis to address this issue. This technique reweights the error variance and addresses the autocorrelation and heteroscedasticity in the dataset (Bergh and Holbein, 1997). Furthermore, GLS regression addresses biased estimates that may result from omitted variables in the model, as it allows us to directly estimate both the bias and the effect of the regressors (Benson *et al*., 2011; Hasan *et al*., 2024).

*4.2.Descriptive statistics*

Table II presents the descriptive statistics for the study variables. The average value for NPT is -0.197, suggesting that, on average, the disclosure tone depicted by our sample is more pessimistic.[2] The average negative tone is 29.7%, positive tone is 20.4%, uncertain tone is 18.3%, litigious tone is 17.7%, superfluous tone is 0.3%, and constraining tone is 13.2% of the total identified words.[3] Regarding tax avoidance, the average effective tax rate is 45.9% (1-0.541), the average cash tax rate is 47.2% (1-0.528), and the average book-tax difference is 56.6%.[4] Regarding board characteristics, the average board independence is 18.1%. Furthermore, the average gender

[2] The more pessimistic tone is comparable to the analyses by Frankel *et al*. (2022) and Henry and Leone (2016) in the U.S. context.

[3] These average values are higher than the ones reported by previous studies in the U.S. context e.g., Andreou *et al*. (2022), Bodnaruk *et al.* (2015), and Loughran and McDonald (2011, 2013).

[4] These average values are higher than the ones reported by previous studies, e.g., Kim *et al.* (2011) and McClure *et al*. (2018) in the U.S. and Australian context, respectively.

diversity is 8.8%.[5] In addition, the average family board membership is 33%.[6] Regarding ownership structure, the average stockholding percentage by foreign investors is 16.5%, while managerial ownership is 17.7%.

***Insert Table II around here***

Regarding the control variables, the average size of the firm after logarithmic transformation is 2.694, while the average financial leverage in our sample is 67.2%.[7] Moreover, the average asset liquidity is 1.045 times, and the average market-to-book ratio (i.e., growth opportunities) is 2.059 times.

*4.3.Correlation matrices*

Table III presents the results of the Pearson and Spearman correlation analyses. The results indicate statistically significant correlations between NPT and independent variables, thus supporting further analysis of our model through multivariate regression. Some variables have an inverse correlation with the NPT (e.g., board independence, board gender diversity, managerial ownership), while others depict a positive correlation (foreign ownership, size, growth opportunities). In addition, the correlation analyses also highlight that the correlation coefficients between the independent and control variables are less than 0.6, thus suggesting that there is no collinearity issue. Finally, the variance inflation test (VIF) is also used, and the results (VIF = 1.24) suggest that there is no multicollinearity issue in the dataset.

***Insert Table III around here***

[5] The average board independence and gender diversity in our sample is lower compared to previous studies, e.g., Martikainen *et al*. (2022), Nadeem (2022) and Osma and Guillamón-Saorín (2011). This is because Pakistan's Code of Corporate Governance requires only 1/3rd of the board to be independent and have at least one female member.
[6] The average percentage of family board members is lower than those reported by Basco *et al*. (2019) in the Spanish context and comparable to the figures reported by Jaskiewicz and Klein (2007) in their analysis of German firms.
[7] The leverage values for our sample are higher than the ones reported in previous studies in the U.S. context, e.g., Armstrong *et al.* (2015) and Nadeem (2022).

*4.4.Multivariate results*

Table IV presents the regression analysis results where the net positive tone is the dependent variable. Consistent with *H1*, we find that ETR ($p < 0.10$), CTR ($p < 0.10$) and BTD ($p < 0.05$) are positively associated with net positive tone. These results align with the conjecture that firms that engage in tax avoidance tend to use a more positive disclosure tone and are more likely to engage in impression management. This may help them influence how other stakeholders perceive the firm (Huang *et al*., 2014; Kim *et al*., 2011; Liu *et al*., 2022). These results are inconsistent with previous studies that link tax avoidance with a more negative disclosure tone (Law and Mills, 2015; Morton *et al.,* 2022). However, our results align with the findings of Lanis and Richardson (2012), who show that tax-avoiding firms tend to use CSR disclosure to achieve legitimacy and manage risks. Similarly, our results provide evidence that positive disclosure tone as a form of thematic manipulation (Bozzolan *et al*., 2015) may be used as an impression management strategy by firms that engage in tax avoidance. This may allow them to create a 'good' and upright image of the firm.

***Insert Table IV around here***

In terms of board characteristics, the results of this study suggest that board independence negatively impacts net positive tone ($p < 0.01$), which is consistent with *H2a*. These results suggest that firms with a higher proportion of independent directors are less likely to use a more positive tone in corporate disclosures. Thus, independent members may help discourage thematic impression management strategies (Osma and Guillamón-Saorín, 2011). In this manner, independent directors may be able to protect the key stakeholders by encouraging more neutral disclosures. These results align with the contention of agency theory that independent members promote good governance (Fama and Jensen, 1983), enhance monitoring effectiveness (Martikainen *et al*., 2022; Srinidhi *et al*., 2011) and encourage greater transparency (Allini *et al*.,

2016). Furthermore, these results are consistent with previous empirical studies on narrative disclosure tone (Bassyouny *et al.,* 2020; Martikainen *et al*., 2022; Osma and Guillamón-Saorín, 2011).

Similarly, board gender diversity has a negative impact on the net positive tone ($p < 0.10$), which is consistent with *H2b*. These results suggest that firms with a higher proportion of female board members tend to use a less positive disclosure tone and are less likely to engage in impression management. Our results align with previous empirical studies that find that female members are less opportunistic (Seebeck and Vetter, 2021), provide more neutral disclosures (García-Sánchez *et al*., 2019) and encourage ethical financial reporting (Gul *et al*., 2011). However, our results are inconsistent with the findings of previous studies that link male directors with a more negative tone (Martikainen *et al.*, 2022) and female CEOs with a more positive tone (Marquez-Illescas *et al*., 2019).[8]

Moreover, family board members positively impact net positive tone ($p < 0.05$), which is consistent with *H2c*. These results align with the notion that family board members can entrench themselves in the firm's control and, therefore, have higher control over management (Anderson and Reeb, 2003). This enhanced control results in lower information asymmetry. In such situations, firms tend to have more positive disclosures (Li, 2010a). In addition, due to heightened type II (principal-principal) agency conflicts, family board members may reduce transparency (Ali et al., 2007) and seek private benefits rather than providing more accurate and extensive disclosures. From the impression management perspective, our results suggest that firms with a higher proportion of family board members are more likely to manipulate the disclosure tone and provide more positive disclosures. These positive disclosures may help them enhance their reputation and preserve their social capital (Van Gils *et al*., 2014).

[8] Note that, out of the sample of 280 CEOs, only 2% are females.

Regarding ownership structure, the regression results show that foreign ownership positively impacts net positive tone ($p < 0.01$), which is consistent with *H3a*. These results align with previous literature suggesting that foreign-owned firms typically have higher financial performance (Chen and Liao, 2011), which may be reflected more positively in their annual report disclosures. Furthermore, these findings are inconsistent with the results of Hadro *et al.* (2017), who show that foreign-owned firms are less likely to provide positive disclosures. Our results also suggest that foreign ownership may be linked with higher impression management in the Pakistani context. Due to increased geographical separation, foreign owners tend to demand more disclosures (Haniffa and Cooke, 2005). However, when providing these disclosures, managers in Pakistani firms are more likely to use a more positive tone. This may help them manage the firm's perception using impression management strategies.

We also find that managerial ownership has a negative impact on net positive tone. However, this impact is statistically insignificant. The direction of impact is consistent with the notion that managerial ownership can help align managerial interests (LaFond and Roychowdhury, 2008; Singh and Davidson III, 2003) and mitigate type I (principal-agent) agency problems. However, the statistical insignificance suggests that the impact may be trivial. In terms of control variables, financial leverage has a negative impact on net positive tone ($p < 0.05$), while the market-to-book ratio (i.e., growth opportunities) has a positive impact on net positive tone ($p < 0.01$). These results suggest that firms with higher debt are more likely to follow a more negative tone in their corporate disclosures. In contrast, firms with higher growth opportunities are more likely to be more positive in their narrative disclosures.

### *4.5.Additional analyses*

To further analyze the findings of the multivariate regression analysis, we conduct an additional analysis by considering the different disclosure tones defined by the Loughran-McDonald

dictionary as dependent variables. As shown in Table V, the results of the additional analysis suggest that ETR ($p < 0.05$) and CTR ($p < 0.05$) have a negative impact on negative disclosure tone. Moreover, BTD positively impacts positive disclosure tone ($p < 0.10$). These results suggest that firms with higher tax avoidance are more likely to use a less negative and more positive tone, which is consistent with our multivariate regression analysis. Furthermore, CTR has a positive impact on superfluous tone ($p < 0.05$), which also aligns with the notion that firms that engage in higher tax avoidance are more likely to provide unnecessary disclosures to distort the perceptions of stakeholders (Yuthas *et al*., 2002). This may help them distract from their aggressive tax planning activities (Liu *et al*., 2022).

In terms of board characteristics, consistent with the multivariate results, the additional analysis suggests that board independence is positively linked with negative ($p < 0.01$), uncertain ($p < 0.10$), and superfluous ($p < 0.05$) disclosure tones and negatively linked with positive ($p < 0.01$) and constraining disclosure tones ($p < 0.10$). Board gender diversity is negatively linked with positive ($p < 0.01$) and superfluous tones ($p < 0.10$) but positively linked with litigious tone ($p < 0.01$). These results suggest that female members are more likely to provide neutral disclosures (García-Sánchez *et al*., 2019). Furthermore, family board members are negatively linked with negative disclosure tone ($p < 0.01$). In terms of ownership structure, consistent with the overall regression results, foreign ownership is negatively linked with negative ($p < 0.01$), litigious ($p < 0.01$), and superfluous tones ($p < 0.10$) and positively linked with positive disclosure tone ($p < 0.01$).

***Insert Table V around here***

Furthermore, previous literature shows that firms at different tax avoidance levels may depict different corporate behavior (Armstrong *et al*., 2015; Hasan *et al*., 2024). Therefore, we conduct an additional test to examine whether the impact of tax avoidance on disclosure tone is

nonlinear. As a result, we introduce dummy variables for low (bottom 25%) and high (top 25%) CTR, ETR and BTD. Such a test allows us to understand whether there is a difference between the narrative disclosure tone of firms with extremely high tax avoidance and that of firms with low levels of tax avoidance. The results are depicted in Table VI. Overall, the results highlight that firms tend to use a less positive disclosure tone when tax avoidance is low. In contrast, at high levels of tax avoidance, firms tend to have a more positive disclosure tone. In other words, when firms are aggressive in their tax strategies, they are more likely to use a more positive disclosure tone as an impression management strategy. When they are not too aggressive in their tax strategies, they are more likely to use a less positive disclosure tone, thus suggesting limited use of impression management.

***Insert Table VI around here***

*4.6.Robustness tests*

To ensure that the test results are robust to different model specifications, we re-run the regression analysis using the firm fixed effects (within regression) model and generalized method of moments (GMM). As shown in Table VII, the results of the fixed effects model are consistent with the main test results. For instance, tax avoidance, as proxied by BTD ($p < 0.05$), family board members ($p < 0.01$), and foreign ownership ($p < 0.01$) positively impact net positive tone, while board independence ($p < 0.01$) negatively impacts it. However, the impact of gender diversity on net positive tone becomes insignificant, which suggests that while controlling for unobserved firm effects, board gender diversity does not impact the tone of corporate disclosures. This insignificance can also be attributed to the low level of female members on the board in our sample, which is also lower than in other empirical studies (e.g., Martikainen *et al*., 2022; Nadeem, 2022). Extant research suggests that in Pakistan, gender diversity may not be genuine, and female members may only be included on corporate boards to cater to the calls for higher diversity (Hasan

*et al*., 2024). This lack of decision-making power may explain the insignificant impact of board gender diversity.

Furthermore, the GMM technique is commonly used to ensure the reliability of the study results. In line with the previous literature (e.g., Wintoki *et al*., 2012), we employ a two-step GMM model to mitigate potential endogeneity concerns and ensure the robustness of our results. This technique incorporates lagged values of the dependent variable, thus differentiating between dynamic and static panel data models. In this sense, the GMM estimator allows us to address the presence of simultaneous, dynamic and omitted variable endogeneities (Abdallah *et al*., 2015). Table VII shows that tax avoidance, as proxied by CTR ($p < 0.10$), and foreign ownership ($p < 0.05$) positively impact net positive tone. In contrast, board independence ($p < 0.05$) and gender diversity ($p < 0.10$) negatively impact net positive tone.

However, the impact of family board members is insignificant, which suggests that while controlling for the presence of endogeneity issues, family board members do not impact the tone of corporate disclosures. Our sample's family board membership values are lower than those reported by previous studies (e.g., Basco *et al*., 2019), and the relatively higher standard deviation value suggests that this variable is relatively more volatile and inconsistently distributed over the entire sample. Overall, the inference of the GMM results is consistent with the GLS results, with slight variations in the significance levels of the coefficients. Therefore, by employing these robustness tests, we ensure that our results are free from endogeneity issues and are robust to different model specifications.

***Insert Table VII around here***

*4.7.Test of Granger causality*

We operate on the assumption that tax avoidance impacts the tone of corporate disclosures and not vice versa. However, it could be argued that the causality may also run in the opposite direction,

i.e., managers' disclosure style could influence or coincide with a firm's engagement in tax avoidance. For instance, Akamah *et al*. (2018) highlight that managers use less transparent disclosures (by aggregating their disclosure of operations in non-tax and tax havens) to hide their engagement in tax avoidance activities. In addition, Liu *et al.* (2022) observe a positive impact of political sentiment in earnings conference calls on engagement in tax avoidance. Therefore, to mitigate this endogeneity issue, we perform the Granger causality test, which allows us to control for the lead-lag relationship between tax avoidance and disclosure tone (Granger, 1969). As such, we examine the impact of the two-year (equation 2) and five-year (equation 3) lagged values of net positive tone and tax avoidance (proxied through BTD and CTR). We estimate the following models:

$$NPT_{it} = Y_1 NPT_{it-1} + Y_2 NPT_{it-2} + X_1 Tax\ Avoidance_{it-1} + X_2 Tax\ Avoidance_{it-2} + \varepsilon_{it} \quad (2)$$

$$\begin{aligned} NPT_{it} = {} & Y_1 NPT_{it-1} + Y_2 NPT_{it-2} + Y_3 NPT_{it-3} + Y_4 NPT_{it-4} + Y_5 NPT_{it-5} + \\ & X_1 Tax\ Avoidance_{it-1} + X_2 Tax\ Avoidance_{it-2} + X_3 Tax\ Avoidance_{it-3} + \\ & X_4 Tax\ Avoidance_{it-4} + X_5 Tax\ Avoidance_{it-5} + \varepsilon_{it} \end{aligned} \quad (3)$$

As shown in Table VIII, the results of the Granger causality test for two-year lagged values (Wooldridge, 2010) show that net positive tone does not forecast BTD (p = 0.470) and CTR (p = 0.923). Furthermore, the results of the Granger causality test for five-year lagged values also suggest that net positive tone does not forecast BTD (p = 0.999) and CTR (p = 0.249). Overall, the results suggest that disclosure tone does not forecast tax avoidance and confirm that our results are free from endogeneity issues.

***Insert Table VIII around here***

## 5. Conclusions and discussion

This study aims to analyze the impact of corporate tax avoidance, board characteristics, and ownership structure on the tone of narrative disclosures in Pakistan. Utilizing the theoretical perspective of agency theory and impression management, we find that tax avoidance is associated with a more positive disclosure tone in annual reports. This suggests that tax-avoiding firms are more likely to manipulate the disclosure tone, which may help them distort how other stakeholders perceive the firm. Therefore, firms that aggressively avoid taxes tend to use a more positive tone in their corporate disclosures and are more likely to use an impression management strategy.

Our results also indicate that board characteristics such as higher independence and gender diversity are associated with a less positive disclosure tone. These results suggest that firms with higher board independence and gender diversity tend to use a less positive disclosure tone and are less likely to engage in impression management by providing overly positive or over-optimistic disclosures. Moreover, the results indicate that firms with a higher proportion of family board members tend to use a more positive disclosure tone and are more likely to engage in impression management. A more optimistic disclosure tone may help these firms enhance their reputation and social capital. Regarding ownership structure, our results suggest that managers in foreign-owned firms in Pakistan tend to use a more positive tone and are more likely to engage in impression management. Such results could also be because foreign-owned firms usually have higher financial performance and, thus, tend to use a more positive tone in their narrative disclosures.

Overall, our results have important implications for theoretical development and practice. Our results provide evidence that tax-avoiding firms are more likely to use thematic manipulation in corporate disclosures as an effective impression management strategy. Hence, we contribute to the impression management literature by highlighting that tax-avoiding firms may use disclosure tone as a strategic tool to manipulate stakeholders' perceptions (Bozzolan *et al*., 2015; Merkl-

Davies and Brennan, 2007). Furthermore, our results indicate that promoting good governance through higher board independence and gender diversity reduces the likelihood of firms engaging in impression management and may significantly improve the quality of corporate reporting (Iatridis, 2016).

The results of this study also have important implications for regulators and investors. For instance, investors can use this information to understand which firms tend to have lower impression management in their annual reports and thus make more informed investment decisions. In addition, regulatory authorities can use these findings to understand that Pakistani firms that avoid taxes tend to use a more positive tone in their disclosures. Therefore, regulators can use this information to formulate more relevant regulations that help create a healthier investment environment and protect investors from opportunistic behavior by managers. In this sense, guidelines can be developed to ensure that firms provide faithful disclosures that address both positive and negative news. Furthermore, regulatory authorities should strengthen the minimum requirements for board independence and gender diversity, as these factors are associated with lower impression management.

Albeit these compelling findings, there are some limitations. For instance, this research only utilizes a sample of Pakistani firms to test the association between tax avoidance, corporate governance, and disclosure tone. Future research can consider multiple countries and contexts to understand whether and how these results vary across different cultures and jurisdictions. Furthermore, this study exploits only three board characteristics and two ownership structures to examine the impact of corporate governance as a determinant of disclosure tone. Therefore, future studies can utilize other board characteristics and ownership structures and test their impact on the tone of corporate disclosures. Likewise, future studies may utilize audit committee characteristics as determinants of disclosure tone.

Moreover, this study only considers corporate disclosures in published annual reports. Thus, future research can expand this study and test corporate tax avoidance as a determinant of disclosure tone by considering other corporate reports and communications. In addition, while this study relies on a quantitative assessment of tax avoidance and disclosure tone, future studies can utilize qualitative methods to dig deeper into this relationship and provide a more nuanced understanding of this association. Lastly, future studies can isolate certain aspects of tax avoidance, such as presence in low tax jurisdictions, and study the impact on narrative disclosure tone individually. This may help gain a deeper understanding of the link between tax avoidance and narrative disclosure tone.

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**Table I: Measurement of Variables**

| Variable | Definition | Measure | Reference |
|---|---|---|---|
| Dependent Variables | | | |
| NPT | Net Positive Tone | (Positive words minus negative words) / (positive words plus negative words), whereby positive and negative words represent the frequency based on the Loughran-McDonald dictionary. | Henry and Leone (2016), Zhang *et al*. (2022) |
| NEG | Negative Tone | The ratio of negative words to total identified words. | Loughran and McDonald (2011) |
| POS | Positive Tone | The ratio of positive words to total identified words. | Loughran and McDonald (2011) |
| UNC | Uncertain Tone | The ratio of uncertain words to total identified words. | Loughran and McDonald (2013) |
| LIT | Litigious Tone | The ratio of litigious words to total identified words. | Loughran and McDonald (2011) |
| SUP | Superfluous Tone | The ratio of superfluous words to total identified words. | Andreou *et al.* (2022) |
| CON | Constraining Tone | The ratio of constraining words to total identified words. | Bodnaruk *et al.* (2015) |
| Independent Variables | | | |
| ETR | Effective Tax Rate | One minus total tax expense divided by book income pre-tax. | Kim *et al.* (2022) |
| CTR | Cash Tax Rate | One minus total tax expense divided by operating cash flows. | Pan *et al.* (2024) |
| BTD | Book-Tax Difference | Before-tax book income minus estimated taxable income, scaled by total assets. | Guenther *et al*. (2017) |
| BIND | Board Independence | The ratio of independent directors to the total number of directors. | Bassyouny *et al.* (2020) |
| BGEN | Board Gender Diversity | The ratio of female board members to the total number of directors. | Nadeem (2022) |
| BFAM | Family Board Members | The ratio of family members to the total number of directors. | Basco *et al.* (2019) |
| FOWN | Foreign Ownership | Percentage of shares owned by foreign investors. | Guo *et al.* (2015) |
| MOWN | Managerial Ownership | Percentage of shares owned by directors and key executives. | Shuto and Takada (2010) |
| Control Variables | | | |
| SIZE | Firm Size | The natural logarithm of total assets. | Lanis and Richardson (2012) |
| LEV | Financial Leverage | The ratio of total debt to total assets. | Brammer *et al.* (2009) |
| LIQ | Asset Liquidity | The ratio of current assets to current liabilities. | Fisher *et al.* (2020) |
| MTB | Growth Opportunities | The ratio of market value to book value of equities. | Lanis and Richardson (2012) |

Source: *Authors own work*

**Table II: Descriptive Statistics**

| | Obs. | Mean | P25 | Median | P75 | Std. Dev. |
|---|---|---|---|---|---|---|
| **Dependent Variables** | | | | | | |
| NPT | 1,250 | -0.197 | -0.333 | -0.225 | -0.083 | 0.189 |
| NEG | 1,250 | 0.297 | 0.269 | 0.298 | 0.325 | 0.042 |
| POS | 1,250 | 0.204 | 0.156 | 0.188 | 0.239 | 0.067 |
| UNC | 1,250 | 0.183 | 0.162 | 0.182 | 0.202 | 0.032 |
| LIT | 1,250 | 0.177 | 0.145 | 0.173 | 0.203 | 0.045 |
| SUP | 1,250 | 0.003 | 0.001 | 0.003 | 0.005 | 0.003 |
| CON | 1,250 | 0.132 | 0.119 | 0.132 | 0.146 | 0.021 |
| **Independent Variables** | | | | | | |
| ETR | 1,250 | 0.541 | 0.508 | 0.558 | 0.576 | 0.086 |
| CTR | 1,250 | 0.528 | 0.497 | 0.530 | 0.580 | 0.121 |
| BTD | 1,250 | 0.566 | 0.493 | 0.574 | 0.646 | 0.153 |
| BIND | 1,250 | 0.181 | 0.111 | 0.142 | 0.285 | 0.126 |
| BGEN | 1,250 | 0.088 | 0.000 | 0.000 | 0.142 | 0.124 |
| BFAM | 1,250 | 0.330 | 0.000 | 0.333 | 0.500 | 0.258 |
| FOWN | 1,250 | 0.165 | 0.000 | 0.015 | 0.216 | 0.265 |
| MOWN | 1,250 | 0.177 | 0.000 | 0.052 | 0.291 | 0.240 |
| **Control Variables** | | | | | | |
| SIZE | 1,250 | 2.694 | 1.619 | 2.705 | 3.697 | 1.559 |
| LEV | 1,250 | 0.672 | 0.040 | 0.454 | 1.025 | 0.711 |
| LIQ | 1,250 | 1.045 | 0.510 | 0.887 | 1.350 | 0.767 |
| MTB | 1,250 | 2.059 | 0.567 | 1.143 | 2.378 | 2.586 |

NPT: net positive tone, NEG: negative tone, POS: positive tone, UNC: uncertain tone, LIT: litigious tone, SUP: superfluous tone, CON: constraining tone, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

Source: *Authors own work*

## Table III: Correlation Analyses

| | NPT | ETR | CTR | BTD | BINDR | BGEN | BFAM | FOWN | MOWN | SIZE | LEV | LIQ | MTB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT | 1 | 0.267*** | 0.221*** | -0.113*** | -0.086*** | -0.172*** | -0.123*** | 0.337*** | -0.229*** | 0.084*** | -0.165*** | 0.047* | 0.351*** |
| ETR | 0.135*** | 1 | 0.302*** | -0.367*** | 0.032 | -0.080*** | -0.207*** | 0.202*** | -0.202*** | 0.091*** | -0.128*** | 0.135*** | 0.208*** |
| CTR | 0.143*** | 0.139*** | 1 | -0.275*** | 0.015 | -0.035 | -0.063** | 0.114*** | -0.038 | 0.046 | -0.221*** | 0.197*** | 0.246*** |
| BTD | -0.062** | -0.113*** | -0.123*** | 1 | -0.065** | -0.048* | 0.133*** | -0.197*** | 0.168*** | 0.108*** | 0.208*** | 0.004 | -0.193*** |
| BIND | -0.068** | 0.005 | 0.036 | -0.028 | 1 | 0.066** | -0.209*** | 0.007 | -0.122*** | 0.235*** | 0.013 | 0.108*** | 0.016 |
| BGEN | -0.152*** | -0.042 | -0.044 | -0.124*** | -0.024 | 1 | 0.224*** | -0.193*** | 0.222*** | -0.226*** | -0.014 | 0.040 | -0.050* |
| BFAM | -0.104*** | -0.102*** | -0.047* | 0.089*** | -0.255*** | 0.294*** | 1 | -0.301*** | 0.558*** | -0.343*** | 0.107*** | -0.138*** | -0.204*** |
| FOWN | 0.315*** | 0.067** | 0.062** | -0.201*** | -0.068** | -0.132*** | -0.296*** | 1 | -0.374*** | 0.233*** | -0.140*** | 0.047* | 0.289*** |
| MOWN | -0.212*** | -0.112*** | -0.031 | 0.090*** | -0.124*** | 0.224*** | 0.447*** | -0.337*** | 1 | -0.315*** | 0.179*** | -0.107*** | -0.252*** |
| SIZE | 0.086*** | 0.059** | 0.060** | 0.152*** | 0.289*** | -0.285*** | -0.350*** | 0.072** | -0.268*** | 1 | 0.128*** | 0.118*** | 0.073*** |
| LEV | -0.112*** | -0.140*** | -0.127*** | 0.124*** | 0.002 | -0.014 | 0.096*** | -0.168*** | 0.103*** | 0.105*** | 1 | -0.337*** | -0.122*** |
| LIQ | 0.031 | 0.102*** | 0.175*** | 0.021 | 0.144*** | -0.001 | -0.130*** | 0.023 | -0.138*** | 0.102*** | -0.345*** | 1 | 0.135*** |
| MTB | 0.318*** | 0.090*** | 0.157*** | -0.230*** | -0.027 | -0.005 | -0.136*** | 0.305*** | -0.202*** | -0.015 | -0.069** | 0.027 | 1 |

NPT: net positive tone, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

Lower-triangular cells report Pearson's correlation coefficients, and upper-triangular cells report Spearman's rank correlation.

*** p<0.01, ** p<0.05, * p<0.10

Source: *Authors own work*

**Table IV: Tax Avoidance and Net Positive Tone**

| | Coefficient | Standard Error | z-statistic | p-value | Significance |
|---|---|---|---|---|---|
| Independent Variables | | | | | |
| ETR | 0.080 | (0.046) | 1.730 | 0.084 | * |
| CTR | 0.055 | (0.032) | 1.690 | 0.092 | * |
| BTD | 0.072 | (0.032) | 2.260 | 0.024 | ** |
| BIND | -0.157 | (0.040) | -3.910 | 0.000 | *** |
| BGEN | -0.094 | (0.053) | -1.750 | 0.080 | * |
| BFAM | 0.069 | (0.032) | 2.120 | 0.034 | ** |
| FOWN | 0.127 | (0.026) | 4.850 | 0.000 | *** |
| MOWN | -0.017 | (0.035) | -0.500 | 0.619 | |
| Control Variables | | | | | |
| SIZE | -0.004 | (0.005) | -0.820 | 0.415 | |
| LEV | -0.017 | (0.008) | -2.180 | 0.029 | ** |
| LIQ | -0.008 | (0.007) | -1.090 | 0.274 | |
| MTB | 0.013 | (0.002) | 5.310 | 0.000 | *** |
| Constant | -0.310 | (0.044) | -6.890 | 0.000 | *** |
| Observations | | | | 1,250 | |
| Unique Firms | | | | 125 | |
| Years | | | | 10 | |
| $R^2$ | | | | 0.152 | |
| Wald $Chi^2$ | | | | 129.050 | |

NPT: net positive tone is the dependent variable, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

*** p<0.01, ** p<0.05, * p<0.10

Source: *Authors own work*

**Table V: Additional Analysis**

| D.V. = | NEG | POS | UNC | LIT | SUP | CON |
|---|---|---|---|---|---|---|
| Independent Variables | | | | | | |
| ETR | -0.023** | 0.026 | -0.001 | -0.005 | -0.000 | 0.004 |
| | (0.011) | (0.016) | (0.008) | (0.010) | (0.000) | (0.006) |
| CTR | -0.018** | 0.012 | -0.000 | 0.004 | 0.001** | 0.001 |
| | (0.008) | (0.011) | (0.006) | (0.007) | (0.000) | (0.004) |
| BTD | -0.012 | 0.021* | 0.001 | -0.012 | -0.000 | 0.002 |
| | (0.007) | (0.011) | (0.006) | (0.007) | (0.000) | (0.004) |
| BIND | 0.034*** | -0.041*** | 0.014* | 0.000 | 0.001** | -0.009* |
| | (0.009) | (0.014) | (0.007) | (0.009) | (0.000) | (0.005) |
| BGEN | -0.010 | -0.051*** | 0.015 | 0.049*** | -0.001* | 0.002 |
| | (0.013) | (0.019) | (0.009) | (0.013) | (0.000) | (0.006) |
| BFAM | -0.029*** | 0.012 | -0.000 | 0.010 | -0.000 | 0.005 |
| | (0.007) | (0.011) | (0.005) | (0.008) | (0.000) | (0.004) |
| FOWN | -0.021*** | 0.044*** | -0.007 | -0.020*** | -0.000* | 0.004 |
| | (0.006) | (0.009) | (0.004) | (0.006) | (0.000) | (0.003) |
| MOWN | 0.000 | -0.012 | 0.008 | 0.006 | -0.000 | 0.000 |
| | (0.008) | (0.012) | (0.006) | (0.008) | (0.000) | (0.004) |
| Control Variables | | | | | | |
| SIZE | 0.000 | -0.001 | -0.004*** | 0.006*** | 0.000 | -0.001* |
| | (0.001) | (0.002) | (0.000) | (0.001) | (0.000) | (0.000) |
| LEV | 0.002 | -0.006** | 0.002 | -0.001 | 0.000** | 0.002*** |
| | (0.001) | (0.002) | (0.001) | (0.001) | (0.000) | (0.001) |
| LIQ | 0.000 | -0.003 | 0.000 | 0.002 | 0.000 | 0.001 |
| | (0.001) | (0.002) | (0.001) | (0.001) | (0.000) | (0.000) |
| MTB | -0.002*** | 0.003*** | 0.000 | -0.000 | 0.000* | -0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Constant | 0.339*** | 0.177*** | 0.189*** | 0.162*** | 0.003*** | 0.129*** |
| | (0.010) | (0.015) | (0.008) | (0.010) | (0.000) | (0.005) |
| Observations | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| Unique Firms | 125 | 125 | 125 | 125 | 125 | 125 |
| Years | 10 | 10 | 10 | 10 | 10 | 10 |
| $R^2$ | 0.093 | 0.180 | 0.119 | 0.040 | 0.028 | 0.014 |
| Wald $Chi^2$ | 92.530 | 108.910 | 39.080 | 74.340 | 28.530 | 26.160 |

NEG: negative tone, POS: positive tone, UNC: uncertain tone, LIT: litigious tone, SUP: superfluous tone, CON: constraining tone, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

*** p<0.01, ** p<0.05, * p<0.10

Source: *Authors own work*

**Table VI: Levels of Tax Avoidance and Net Positive Tone**

| | Low Level (bottom 25%) | High Level (top 25%) |
|---|---|---|
| | (1) | (2) |
| | D.V. = NPT | |
| ETR | -0.031*** | 0.006 |
| | (0.010) | (0.009) |
| CTR | -0.014 | 0.017* |
| | (0.009) | (0.009) |
| BTD | -0.017* | -0.001 |
| | (0.010) | (0.010) |
| BIND | -0.156*** | -0.160*** |
| | (0.040) | (0.040) |
| BGEN | -0.105** | -0.109** |
| | (0.053) | (0.053) |
| BFAM | 0.067** | 0.076** |
| | (0.032) | (0.032) |
| FOWN | 0.125*** | 0.123*** |
| | (0.025) | (0.026) |
| MOWN | -0.021 | -0.011 |
| | (0.035) | (0.035) |
| SIZE | -0.004 | -0.003 |
| | (0.005) | (0.005) |
| LEV | -0.016** | -0.019** |
| | (0.008) | (0.008) |
| LIQ | -0.009 | -0.008 |
| | (0.007) | (0.007) |
| MTB | 0.013*** | 0.013*** |
| | (0.002) | (0.002) |
| Constant | -0.178*** | -0.203*** |
| | (0.026) | (0.027) |
| Observations | 1,250 | 1,250 |
| Unique Firms | 125 | 125 |
| Years | 10 | 10 |
| $R^2$ | 0.178 | 0.145 |
| Wald $Chi^2$ | 137.570 | 122.510 |

NPT: net positive tone, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

*** p<0.01, ** p<0.05, * p<0.10

Source: *Authors own work*

**Table VII: Robustness Tests**

| | Fixed Effects | Generalized Method of Moments (GMM) |
|---|---|---|
| Independent Variables | | |
| L.NPT | - | 0.576*** |
| | - | (0.098) |
| ETR | 0.054 | -0.053 |
| | (0.046) | (0.067) |
| CTR | 0.037 | 0.070* |
| | (0.032) | (0.039) |
| BTD | 0.070** | 0.051 |
| | (0.033) | (0.031) |
| BIND | -0.153*** | -0.118** |
| | (0.042) | (0.048) |
| BGEN | -0.006 | -0.072* |
| | (0.061) | (0.040) |
| BFAM | 0.112*** | 0.027 |
| | (0.039) | (0.026) |
| FOWN | 0.103*** | 0.052** |
| | (0.029) | (0.026) |
| MOWN | 0.074 | -0.033 |
| | (0.045) | (0.024) |
| Control Variables | | |
| SIZE | -0.025*** | 0.003 |
| | (0.007) | (0.004) |
| LEV | -0.014* | -0.008 |
| | (0.008) | (0.008) |
| LIQ | -0.006 | -0.004 |
| | (0.007) | (0.006) |
| MTB | 0.011*** | 0.009*** |
| | (0.002) | (0.002) |
| Constant | -0.262*** | -0.132** |
| | (0.046) | (0.051) |
| Observations | 1,250 | 1,125 |
| Unique Firms | 125 | 125 |
| Years | 10 | 10 |
| AR (1) | - | -4.580*** |
| AR (2) | - | 1.430 |
| Sargan Test | - | 34.300 |
| Hansen Test | - | 38.520 |
| $R^2$ | 0.096 | - |
| F-stat. | 9.870 | - |
| Wald $Chi^2$ | - | 446.350 |

NPT: net positive tone is the dependent variable, ETR: effective tax rate, CTR: cash tax rate, BTD: book-tax difference, BIND: board independence, BGEN: board gender diversity, BFAM: family board members, FOWN: foreign ownership, MOWN: managerial ownership, SIZE: firm size, LEV: financial leverage, LIQ: asset liquidity, MTB: growth opportunities.

*** p<0.01, ** p<0.05, * p<0.10

Source: *Authors own work*

**Table VIII: Granger Causality Tests**

| | $Chi^2(df)$ | p-value |
|---|---|---|
| *Two-Year Lagged Values* | | |
| Net positive tone does not forecast BTD | 1.511(2) | 0.470 |
| Net positive tone does not forecast CTR | 0.160(2) | 0.923 |
| *Five-Year Lagged Values* | | |
| Net positive tone does not forecast BTD | 0.170(5) | 0.999 |
| Net positive tone does not forecast CTR | 6.635(5) | 0.249 |

This table presents the results from the Granger causality Wald tests (Granger, 1969) by taking two-year and five-year lagged values of the variables. BTD refers to the book-tax difference, and CTR refers to the cash tax rate.

Source: *Authors own work*