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Does negativity matter under the principle-based approach? Evidence from narrative reporting in the UK

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Abstract

Purpose – This paper aims to investigate the association between negative tone in annual report narratives and future performance in the UK context. Under the principle-based approach in the UK, managers tend to bias the tone of narrative reports upward, as the reporting regime is more flexible than the rule-based approach in the USA. Consequently, any negative disclosure not mandated by regulators conveys credible information about a firm's prospects.

Design/methodology/approach – This paper uses a sample of UK FTSE all-share non-financial companies from 2010 to 2019. The authors use the textual-analysis approach based on Loughran and McDonald (2011)'s wordlist (LM) to measure the negative tone in UK annual reports.

Findings – The results show a significant negative association between negative tone and future performance. Moreover, our further analyses suggest that only the negativity in the executive section of the annual disclosures correlates significantly with future performance. In summary, this study suggests that negativity does matter under the principle-based approach and can be used as an indicator of future performance.

Originality/value – In contrast to the literature arguing that only positivity has the power to affect a firm's outcomes under the principle-based approach, the authors provide new empirical evidence suggesting that negativity also matters within the UK context and can be used as an indicator for future performance. Also, to the best of the authors' knowledge, this is the first study to identify which section of the annual report is more informative about a firm's future performance.

Keywords Negativity, Narrative disclosure, Firm performance, Textual-analysis, United Kingdom

Paper type Research paper

1. Introduction

Narrative disclosures provide essential information that cannot be presented in financial statements but might have real implications (Merkley, 2014; Henry and Leone, 2016). These implications have generated significant research interest, with extant studies exploring different aspects of the information content of narrative disclosures, such as forward-looking disclosures and risk reporting. However, recent studies argue that it is important to

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investigate not only the information content of such narratives but also how these narratives are presented (Bassyouny *et al.*, 2020; Henry and Leone, 2016). This importance of how such narratives are presented, narrative disclosure tone (NDT), emanates from a growing strand of the literature suggesting that NDT may have real implications on financial outcomes and stock market reactions (e.g. Loughran and McDonald, 2016; Henry and Leone, 2016; Davis and Tama-Sweet, 2012; Rahman, 2019). To shed further light on this critical but under-researched aspect of narrative disclosures, we focus on NDT and how such narrative disclosures affect future performance [1].

This study examines the impact of negative tone on firms' future performance in the UK context, following a principle-based approach. In this case, the reporting style is more flexible, and negative disclosures are not mandated, as is the case under the rule-based approach in the USA. Against this background, we contend that focusing on negatives is worthwhile, as regulators do not mandate them. Therefore, if and whenever made, they might convey more credible information about a firm's prospects [2]. This contrasts with Yekini *et al.* (2016), who argue that only positiveness affects the firm's outcomes within the UK context, as managers will not voluntarily disclose negative information when it is not required or mandated by regulators in the UK under the principle-based approach. In this regard, our study contrasts with the literature focusing on positive disclosures that managers tend to bias the tone upward, thus portraying a better picture of a company's future performance (e.g. Yekini *et al.*, 2016; Schleicher and Walker, 2010; Schleicher, 2012; Smith and Taffler, 2000). In addition, we build on and extend the literature by examining which type of narrative disclosures matter most – those from the executive vs governance sections of the annual reports. We conjecture that the NDT in the executive section is more informative as executives are more knowledgeable about the firm's operation and charged with informing stakeholders about the company's prospects (Bassyouny and Abdelfattah, 2022). Therefore, understanding the association between negativity and firm performance is as crucial as positivity, which is mainly emphasised in the extant literature. In other words, we are motivated to explore this relationship since previous studies argued that just positive tone drives firms' outcomes and managers will not disclose negative information voluntarily, especially in the UK with a principle-based approach with more flexibility (Yekini *et al.*, 2016). Therefore, we are aiming to extend prior work in this area and investigate the effect on firms' future performance when managers do disclose information in a negative tone?

To examine the impact of negativity in NDT, we use a sample of 223 firms in the UK from 2010 to 2019. We use the textual analysis approach based on Loughran and McDonald (2011)'s wordlist (LM) to measure the negative tone in UK annual reports. In line with our conjectures, we find a significant negative association between negative tone and firms' future performance. Moreover, this effect is economically important and robust to endogeneity concerns and the use of alternative measures of narrative tone after controlling for positivity and estimation techniques. The negative impact we find suggests that negative tone matters within the UK context, where regulators do not mandate disclosure of negative events under the principle-based approach. In this case, such disclosures are rare, and whenever made, they tend to contain valuable information about a company's prospects. To better understand which type of reporting tone matters, we split the annual reports into the executive and governance sections. Next, we compute two measures of negative tone for each of the two sections, namely, the executive and governance negativity. We find that only executive negativity has a significant negative effect on future performance, while governance negativity is insignificant. We attribute the findings to differences in reporting responsibilities, with executives more concerned about informing stakeholders about a firm's prospects (Cui *et al.*, 2021). Taken together, our study suggests

that negativity is an indicator of future performance in addition to positivity, which is emphasised in the literature.

This study contributes to the literature in several ways. First, in contrast to the literature arguing that only positivity has the power to affect a firm's outcomes under the principle-based approach (e.g. Yekini *et al.*, 2016), we provide new empirical evidence suggesting that negativity also matters within the UK context. Our results show that negative tone is negatively associated with firms' future performance. Moreover, we extend the work of Bassyouny and Abdelfattah (2022) as follows. While Bassyouny and Abdelfattah (2022) focused on the effect of positive tone on future performance, we extend this research by investigating if the negative tone does matter and can be used as an indicator for future performance. Previous studies argue that just positive tone drives firms' outcomes, and managers will not disclose negative information voluntarily, especially in the UK with principle-based approach with more flexibility (Yekini *et al.*, 2016). However, we provide evidence that negative tone does matter in the UK context with a principle-based approach, and it can be useful for decision-making as it is an indicator for future performance. Second, we identify which section with negative tone in the annual report can be used as an indicator of firm's future performance. Our analysis suggests that negative statements in the executives' section but not governance section affect a firm's future performance. Finally, this study provides empirical evidence indicating the importance of negative statements and their influence on financial outcomes within the UK, where most studies focus on the effect of positive tone. In sum, our study has several practical implications, as it suggests that negative statements include useful information that might predict a firm's future performance and, consequently, influence investors' decisions.

The remaining sections of this study are as follows. Section 2 summarises prior studies and develops testable hypotheses. Section 3 discusses the research design, methodology and construction variables. Section 4 describes the data and sample. Section 5 discusses the main findings. Finally, Section 6 concludes and discusses the implications and limitations.

2. Literature review and hypotheses development

2.1 General background of narrative reporting

Over the last decade, narrative reporting has received significant research attention as regulators, and external users are demanding more narrative disclosures that clarify and explain firms' position and future performance (Loughran and Mcdonald, 2016). This interest is evidenced by a growing number of studies exploring the strategies companies use to communicate with external users and how this might affect investors' reactions and the firm's outcomes. Moreover, narrative disclosure is one of the most commonly used communication channels between managers and stakeholders, in addition to financial statement information (Clarkson *et al.*, 1994; Beynon *et al.*, 2004; Schleicher and Walker, 2010; D'Augusta and DeAngelis, 2020).

Prior studies report evidence suggesting that narrative reporting styles can also influence a firm's financial outcomes and provide valuable information not presented elsewhere in financial statements (e.g. Bassyouny *et al.*, 2020; Merkley, 2014; Henry, 2008; Yekini *et al.*, 2016; Huang *et al.*, 2014). In addition, prior studies argue that narrative reporting can help investors without financial backgrounds better understand the information presented in financial statements and make the picture much clearer to stakeholders (Arslan-Ayaydin *et al.*, 2016; Boudt *et al.*, 2018). Moreover, over 70% of financial documents in the last decade have been in the form of narrative disclosures, which attest to the importance of textual disclosures (Li, 2010; Mousa *et al.*, 2022). Therefore,

studying NDT is critical to understanding how non-financial information and the way in which it is presented influence real decisions/activities.

2.2 Narrative disclosure tone and firms' outcomes

Extant studies have shown that it is crucial to investigate the real implications of the content of narrative reporting and how such information are presented to external users (Henry and Leone, 2016). Against this background, a growing strand of the literature has explored narrative tone within different channels, such as letters to shareholders (Abrahamson and Amir, 1996), conference calls (e.g. Davis *et al.*, 2015; Price *et al.*, 2012), press releases (e.g. Huang *et al.*, 2014; Henry, 2008; Davis *et al.*, 2012), annual reports (e.g. Loughran and McDonald, 2011; Aly *et al.*, 2018) and social media (e.g. Tetlock *et al.*, 2008; Bhardwaj and Imam, 2019). These studies find that external users and investors react positively to optimistic tones in narrative disclosures. However, most of these studies focus on the short-term effects of NDT while overlooking its potential long-term impact (Wisniewski and Yekini, 2015). Even though Bryan (1997) has shown that narratives contain valuable information about a firm's strategies that might affect future performance, this dearth of research remains. Therefore, providing more evidence about the impact of NDT on firm performance, especially in the long run within the more liberal principle-based reporting framework, is still needed.

In addition, most studies find that UK companies tend to disclose more positive than negative narrative information (Yekini *et al.*, 2016; Schleicher and Walker, 2010; Clatworthy and Jones, 2003; Said Ressas and Hussainey, 2014). For example, Yekini *et al.* (2016) find positive market reactions to positive tone in the UK but report an insignificant effect of negative tone. They concluded that positive tone has stronger explanatory power than negative tone. Moreover, they argue that managers will not voluntarily disclose negative information in the UK, as regulators do not mandate this under the more liberal principle-based reporting framework. These findings were corroborated by Schleicher and Walker (2010), who similarly find that UK firms tend to disclose more positive than negative ones.

Furthermore, Schleicher and Walker (2010) find that managers bias the NDT upward in the outlook section of annual reports and manipulate the negative statements to show narrative reporting much more positively as an impression management strategy. Similar findings were reported by Davis and Tama-Sweet (2012) in the USA. Specifically, they find that most companies focus on positives in annual reports while either downplaying negatives or only revealing them in other narrative communication channels, such as press releases. This is consistent with the impression management theory, which states that managers are biassed in the way they report and present the narrative sections of the annual report. One of the most widespread impression management techniques is to reveal the most advantageous theme and emphasise positive results by using optimistic language to create a more favourable image of the company's strategies and achievements (Merkl-Davies and Brennan, 2007, 2011; Brennan *et al.*, 2009). Taken together, these studies suggest that negativity does not significantly correlate with real outcomes, given that it is massaged or downplayed in annual reports.

However, other studies argue that negativity in narrative reporting may still contain valuable information for external users, and investors find it helpful for managers to make negative statements in narrative reports. According to Huang *et al.* (2014), negativity in narrative reporting provides users and investors with a complete picture of a company's performance. In line with this argument, several studies report evidence suggesting that a negative tone can be used as an indicator of firms' outcomes, which might help investors in their decision-making processes (Tetlock *et al.*, 2008; Sprenger *et al.*, 2014; Borochin *et al.*,

2018). Filzen (2015) also finds that firms that provide negative information are more likely to experience negative earnings shocks. Moreover, Iatridis (2016) finds that firms with a more pessimistic tone have less earnings management and stronger corporate governance attributes.

Similarly, Fu *et al.* (2019) report that a negative tone can predict future stock price crashes. In addition, Loughran and McDonald (2011) raise another critical point, suggesting that negativity is less noisy in measuring narrative tone than positivity. They further argue that positives might include other meanings that are not necessarily good news. However, negativity mainly represents bad news about a company. Del Gaudio *et al.* (2020) recently provided evidence suggesting that a negative tone can help external users identify bankruptcy risks. Moreover, Elamer *et al.* (2021) found that negative information is informative as it is associated with bank credit ratings. These studies suggest that negativity is a useful indicator of future performance, contrasting with the majority of the literature focusing on positivity. Motivated by arguments, we examine whether negativity in narrative disclosures affects firm future performance in the UK context, where the principle-based approach is applied with more flexibility in narrative reporting. The UK is an ideal setting to investigate negative disclosure tone in narrative reporting due to two reasons. Firstly, the reporting regulations in the UK differ from those in the USA, where most studies on negative disclosure tone are focused. The principle-based approach in the UK allows for greater flexibility in reporting style, enabling managers to frame the tone of their narratives without restrictions. In contrast, the rule-based approach in the USA is more prescriptive. Secondly, previous studies on UK companies suggest that managers disclose more positive than negative information because regulators do not require them to disclose negative information. That motivated us to investigate whether the negative tone has an effect on firms' outcomes in such as flexible financial reporting context like the UK:

H1. The negative tone in the UK annual report narratives is associated with lower future performance.

2.3 Executives and governance tone

This study examines the association between negative tone and firm performance and which part of the annual report represents this association (executives or governance). Executives are responsible for reporting about the company's operational and financial performance, including strategies and plans to improve future performance (Cui *et al.*, 2021; Davis *et al.*, 2015). Their main aim is to provide a fair review of the firm's current position and expected future performance to help investors and stakeholders make decisions (Schleicher and Walker, 2010). Therefore, we contend that executives' negative tone may be a valuable indicator of firms' future performance. On the other hand, governance directors are responsible for reporting potential risks, going concern issues and the effectiveness of internal control systems that improve firms' future performance (Siddiqui, 2015). Since governance directors may provide important information about future risks, we contend that the negative tone in the governance section of the annual report might indicate future performance. It is worth mentioning that executive reporting and governance reporting are the largest two sections in the UK annual report narratives. However, it is not expected that executives and governance directors with different financial reporting responsibilities would display a similar tone in the annual report (Bassyouny and Abdelfattah, 2022). Consequently, in this part of our study, we explore which section of annual reports has the narrative tone most associated with a firm's future performance within the UK context that follows a more liberal, principle-based approach:

H2a. The negative tone of executives' narratives is associated with lower future performance.

H2b. The negative tone of governance narratives is associated with lower future performance.

3. Research design and data

3.1 Variable definitions

We use a computerised textual analysis with the bag-of-words approach to capture the tone of narrative reporting. Specifically, we use the CFIE software developed specifically to analyse the UK PDF annual report structure. This software extracts the text and calculates each section's word frequency according to the chosen wordlist (El-Haj *et al.*, 2019; Bassyouny *et al.*, 2022). The bag-of-words approach is the most commonly used technique in textual analysis, especially in studies in accounting and finance (Bassyouny *et al.*, 2020; Henry and Leone, 2016).

Following prior studies (e.g. Lee and Park, 2019; Feldman *et al.*, 2010; Bassyouny *et al.*, 2020; Marquez-Illescas *et al.*, 2019; Davis and Tama-Sweet, 2012), we use LM (LM thereafter) master dictionary to measure the tone for two reasons. First, LM wordlist is created from 10-K filings. Therefore, this wordlist is more reliable and suitable than the general wordlists such as Diction and Harvard (Loughran and McDonald, 2011; Bassyouny *et al.*, 2020). Second, since our main focus is on negative tone in annual report narratives, the LM wordlist is the most comprehensive NDT tone wordlists containing over 3,400 negative words. Subsequently, we measure negative tone as the number of negative words divided by the total number of words to control for the length of the annual reports (Loughran and McDonald, 2011; Huang *et al.*, 2014; Fu *et al.*, 2019; Davis *et al.*, 2015). We further split narrative reporting tone into executives and governance components to examine which type of narrative reporting tone predicts a firm's future performance. We then compute the negative tone for each section separately. The *Executives negative tone* focuses on executives' financial reporting, which relates to the sections provided by CEOs, CFOs and directors (operational and financial review, chairman statements, CEO letters to shareholders). The *Governance negative tone* focuses on the governance section of the narrative disclosures, including the audit committee reports. Variables are defined in Table 1.

3.2 Empirical model

To examine the effect of negative tone on firm performance, we estimate the following baseline empirical model:

$$\begin{aligned} ROA_{ijt+1} = \; & \alpha + \beta_1 \; Negative_Tone_{ijt} + \beta_2 \; Size_{ijt} + \beta_3 \; Leverage_{ijt} + \beta_4 \; MTB_{ijt} \\ & + \; \beta_5 \; DPS_{ijt} + \; \beta_6 \; S_Growth_{ijt} + \beta_7 \; ROA_{ijt} + Industry_FE_j + Firm_FE_t \\ & + Year_FE_t + \varepsilon_{ijt} \end{aligned} \tag{1}$$

where *ROA* is used to measure a firm's future performance for the following financial year (see Davis *et al.*, 2015). α and β_1–β_6 are the parameter coefficients to be estimated. *Negative_Tone* equals the negative words divided by the total number of words in the annual report to control for the annual reports' length (e.g. Bassyouny *et al.*, 2020; Arslan-Ayaydin *et al.*, 2016; Yekini *et al.*, 2016). We include several firm-specific characteristics in

Variable	Definition
Negative tone	Number of negative words scaled by total number of words (Loughran and McDonald, 2011)
Executive negative tone	Number of negative words in the executives' reports scaled by total number of words of executives' reports (Loughran and McDonald, 2011)
Governance negative tone	Number of negative words in the governance report scaled by total number of words of governance report (Loughran and McDonald, 2011)
ROA	As a measurement of future performance, using future return on assets for the subsequent year
Firm size	Natural logarithm of total assets at the end of fiscal year
Leverage	Total liabilities over total assets
MTB	Market price to book value ratio
DPS	Dividend per share
Sales growth	Change in sales compared with the previous fiscal year
Board size	Number of board members at the end of the year
Board independence	Percentage of independent directors in the board
Board diversity	Percentage of females on board of directors per year
Audit committee	Percentage of independent members in the audit committee

Source: Authors' own creation/work

Table 1.
Variables definition

our models to control for several other factors that might influence firm performance. Specifically, include the following controls: *Firm_Size* as large companies might display more conservatism strategies to hedge future risks (Machokoto *et al.*, 2020; Rogers *et al.*, 2011). We use *Leverage ratio* to control for firms' capital structure. We use *Dividends* and *ROA* to control for investment activities and current performance, respectively (Yekini *et al.*, 2016; Bassyouny and Abdelfattah, 2022). In addition, we also control for industry ($Industry_FE_j$), firm (*Firm_FE*) and year ($Year_FE_T$) fixed effects in all our estimations. ε_{ijt} is the error term.

To investigate which type of NDT best predicts a firm's future performance, we run our baseline model using *Executives Negative Tone* and *Governance Negative Tone* instead of *Negative Tone*, respectively. To ensure consistency and facilitate comparability, we use the same set of control variables for the re-estimations of equation (1) based on alternative proxies of NDT – executive and governance negative tone. In line with the literature, we estimate equation (1) via OLS with fixed effects (Davis and Tama-Sweet, 2012; Henry and Leone, 2016). To ensure the robustness of our results, we also use other alternative estimation techniques, namely, the Fama McBeth (FM), two-stage least squares (2SLS) and instrumental variables-generalised method of moments (IV-GMM). For the 2SLS and IV-GMM estimations, we use the second and third lags to instrument for the potentially endogenous narrative reporting tone.

3.3 Data

The data set used in this study is drawn from Bloomberg for a large sample of firms from the FTSE All-Share Index in the UK. In line with the literature, we exclude 286 firms from the financial services as they have different financial reporting practices (Schleicher and Walker, 2010). Furthermore, 33 firms were excluded due to missing data or annual reports. Our final sample consists of 223 UK publicly listed firms from 2010 to 2019. We started our

analysis in 2010 to exclude high negativity during the financial crisis. We stopped our sample in 2019 to eliminate the potential impact of the Covid-19 pandemic on disclosure tone. The annual reports for our final sample were drawn from the Bloomberg database, and the missing reports were collected from the firms' websites. The final sample consists of 2,223 firm-year observations.

We focus on the UK, as it is a unique context to explore NDT in general and the negativity of narrative reporting disclosures for two reasons. First, the UK reporting regulations differ from those applied in the US context, where most of the studies on NDT are concentrated. While the principle-based approach is followed in the UK context, the rule-based approach is followed in the USA (Yekini *et al.*, 2016). The principle-based approach provides more flexibility in the financial reporting style, allowing managers to frame the tone of narrative reporting according to their preferences without any restrictions. This contrasts with the prescriptive reporting style under the US rule-based approach (Yekini *et al.*, 2016). Second, previous UK studies argue that companies provide more positive (good news) than negative information because managers will not voluntarily disclose negative information as long as regulators do not require it (Yekini *et al.*, 2016; Schleicher and Walker, 2010; Clatworthy and Jones, 2003). Therefore, these unique features of the UK context make it utilitarian for examining whether voluntary narrative reporting disclosure predicts firm performance.

4. Empirical results

4.1 Descriptive statistics and correlations

Table 2 presents the summary statistics for all variables used. The negative tone ranges from a low of 0.002 to a high of 0.120, with a mean value of 0.016, suggesting that the UK annual report narratives contain some negative tone reported by executives and directors. In addition, the mean of the executives' negative tone and governance's negative tone is 0.015 and 0.071, respectively, showing that these two sections of the annual report have a negative sentiment. The mean values of negative tone, executive and governance negative tone are in

Variables	*N*	Mean	SD	Min	p25	p50	p75	Max
ROA	2,223	0.063	0.149	−0.690	0.024	0.055	0.097	2.368
Negative tone	2,223	0.016	0.004	0.002	0.014	0.016	0.017	0.120
Net tone	2,223	−0.002	0.005	−0.055	−0.005	−0.002	0.000	0.098
Exec negative tone	2,223	0.015	0.004	0.001	0.014	0.015	0.017	0.119
Exec net tone	2,223	−0.143	0.005	−0.196	−0.145	−0.143	−0.140	−0.043
Gov negative tone	2,223	0.071	0.004	0.057	0.069	0.071	0.072	0.175
Gov net tone	2,223	−0.047	0.005	−0.086	−0.050	−0.047	−0.045	0.059
Size	2,223	7.209	1.701	2.323	6.014	7.032	8.225	12.927
Leverage	2,223	0.218	0.183	0.000	0.071	0.203	0.308	1.656
MTB	2,223	0.042	0.379	−9.642	0.014	0.024	0.042	9.182
DPS	2,223	0.002	0.003	0.000	0.000	0.001	0.003	0.031
Sales growth	2,223	0.085	0.277	−0.930	−0.006	0.054	0.135	8.171
Board diversity	2,223	15.583	11.032	0.000	10.000	14.286	22.222	57.143
Board size	2,223	8.467	2.085	3.000	7.000	8.000	10.000	19.000
Board independence	2,223	60.884	12.984	0.000	50.000	62.500	71.429	92.857
Audit committee	2,223	97.983	8.674	0.000	100.000	100.000	100.000	100.000

Table 2.
Descriptive statistics

Note: Variables are defined in Table 1
Source: Authors' own creation/work

line with prior studies that scaled the number of negative words by the total number of words in the annual report to control for the length of the document (Bassyouny *et al.*, 2020; Davis and Tama-Sweet, 2012; Davis *et al.*, 2015; Yekini *et al.*, 2016). The mean (median) ROA is 6.3% (5.5%). The mean of market price to book (MTB), dividends per share (DPS) and sales growth is 0.42, 0.02 and 0.085, respectively. These summary statistics are in line with the literature.

Table 3 presents the pairwise correlations for all variables used. ROA is negatively correlated with negative tone, size, leverage and board independence, while it is positively correlated with MTB, DPS, sales growth, board diversity, board size and audit committee. These preliminary pairwise correlations suggest that a negative narrative reporting tone negatively predicts future performance in line with our central hypothesis. Moreover, Table 3 shows that large companies and firms with robust corporate governance mechanisms have a more negative tone in their narrative reporting. The correlations for the control variables are as expected and in line with prior studies (Yekini *et al.*, 2016; Davis *et al.*, 2015; Wisniewski and Yekini, 2015). The correlations between all independent and control variables are relatively low, suggesting no multicollinearity problems.

4.2 Multivariate results and discussions

4.2.1 The relationship between negative tone and future performance. Table 4 presents the relationship between negative tone and future performance within the UK context. Columns (1)–(3) present the estimation results of equation (1), excluding control variables. Column (1) focuses on the relationship between negative tone and future performance, excluding year- and industry-fixed effects. Columns (2) and (3) include in equation (1) the industry and year fixed effect, respectively.

Columns (1)–(3) show a significant negative relationship between negative narrative reporting tone and future performance. Further, in Column (6), we find a similarly significant negative effect of negative tone on future performance. This effect is significant at the 5% level and is in line with *H1*. These results suggest that a negative tone indicates future performance within the UK context. This finding contrasts with prior studies arguing that only a positive narrative reporting tone (PNDT) affects a firm's outcomes and that managers will not voluntarily disclose negative information if regulators do not require it (e.g. Schleicher and Walker, 2010; Yekini *et al.*, 2016; Said Ressas and Hussainey, 2014). These studies argue that PNDT has more power to affect the market reaction, and companies will aim to increase the positive tone over negative tone to avoid any unfavourable consequences, but the effect of negative tone was not investigated clearly in prior studies.

However, our findings show that negativity in narrative disclosures also matters within the UK context, as it can be used as an indicator for a firm's future performance. These results corroborate Fu *et al.* (2019) and Iatridis (2016), who document a significant link between negativity in annual reports and future stock price crash and earnings manipulation, respectively, in the US context. Our study builds on and extends this line of inquiry by providing new empirical evidence suggesting that negativity does matter even in a flexible principle-based context such as the UK, where managers have more opportunities to bias the narrative tone upwards. Therefore, our findings suggest that negative tone can be used to indicate lower future performance. Moreover, these findings are in line with Loughran and McDonald (2011) and Henry *et al.* (2021) arguing that negative tone has power to affect firms' outcomes as it is considered as more reliable disclosure than positive tone that might contain impression management strategies to reflect a better picture about the firm.

4.2.2 The negative tone of executives and governance. We next split the annual report into executive and governance sections to better understand the relationship between firm

Table 3.
Correlation matrix

\#	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1)	ROA	1															
(2)	Negative tone	−0.107***	1														
(3)	Net tone	−0.111***	0.748***	1													
(4)	Executive negative tone	−0.107***	1	0.748***	1												
(5)	Executive net tone	−0.097***	0.725***	0.969***	0.725***	1											
(6)	Governance negative tone	−0.003	0.023	0.048**	0.023	0.048**	1										
(7)	Governance net tone	0.007	−0.010	0.027	−0.010	0.022	0.776***	1									
(8)	Size	−0.121***	0.104***	0.041*	0.104***	0.024	0.012	0.022	1								
(9)	Leverage	−0.101***	0.097***	0.050**	0.097***	0.080***	0.012	−0.044**	0.274***	1							
(10)	MTB	0.663***	−0.020	−0.019	−0.020	−0.018	−0.001	−0.007	−0.100***	−0.059***	1						
(11)	DPS	0.077***	0.025	−0.029	0.025	−0.078***	0.000	0.005	0.467***	0.038*	−0.003	1					
(12)	Sales growth	0.088***	−0.114***	−0.071***	−0.114***	−0.065***	0.000	0.018	−0.081***	−0.099***	0.020	−0.055**	1				
(13)	Board diversity	0.069***	0.060***	−0.049**	0.060***	−0.053**	0.008	0.002	0.292***	0.109***	0.065***	0.237***	−0.114***	1			
(14)	Board size	0.004	0.029	−0.004	0.029	−0.013	−0.021	−0.007	0.599***	0.128***	0.009	0.334***	−0.057**	0.266***	1		
(15)	Board independence	−0.050**	0.093***	0.031	0.093***	0.006	−0.049**	−0.047**	0.277***	0.050**	0.011	0.214***	−0.098***	0.289***	0.137***	1	
(16)	Audit committee	0.008	0.021	−0.038*	0.021	−0.039*	−0.047**	−0.031	0.113***	0.018	0.008	0.087***	−0.064***	0.132***	0.059***	0.437***	1

Notes: ***$p < 0.01$; ** $p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Neg tone (*H1*)(-)	−4.471** (−2.432)	−4.450** (−2.408)	−3.638** (−2.282)	−3.359** (−2.476)	−3.317** (−2.502)	−2.526** (−2.227)
Size				−0.011*** (−4.679)	−0.011*** (−4.716)	−0.010*** (−4.602)
Leverage				−0.012 (−0.674)	−0.011 (−0.625)	−0.024 (−1.262)
MTB				0.207*** (2.698)	0.208*** (2.702)	0.204*** (2.659)
DPS				6.826*** (8.404)	6.909*** (8.634)	7.321*** (9.592)
Sales growth				0.026** (2.535)	0.024** (2.311)	0.030*** (2.890)
ROA				(0.334)*** (1.86)	(0.347)*** (1.87)	(0.358)*** (1.86)
Constant	0.134*** (4.548)	0.133*** (4.503)	0.121*** (4.702)	0.170*** (6.829)	0.169*** (6.794)	0.157*** (6.515)
Industry FE	No	No	Yes	No	No	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
Firm FR	No	No	No	No	No	Yes
R-squared	0.014	0.017	0.040	0.616	0.684	0.772

Notes: Robust t-statistics in brackets; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Table 4.
The impact of negative tone on firm future performance

performance and narrative reporting tone. This decompositional approach enables us to identify and assess the sections of the narrative disclosures that best predict future performance. Finally, we compute the narrative reporting tone for each section as highlighted previously – executive vs governance negative tone. Table 5 presents the results estimating equation (1) based on executive and governance negative tone.

Columns (1)–(4) of Table 5 show that the relationship between firm performance and negative narrative reporting tone is only significant for executive reporting tone and not significant for governance tone. These new findings answer the unexplored question about which section of the annual report is more informative about the company's prospects. We rationalise these results by contrasting the responsibilities of executives and non-executive directors. As our results suggest, the executive section has more predictive power as executive directors are engaged in the company's day-to-day running and are charged with reporting about the firm's financial and operational performance. These findings are in line with prior studies suggesting that executives are responsible for reporting about the company's operational and financial performance, including strategies and plans to improve future performance (Bassyouny and Abdelfattah, 2022; Schleicher and Walker, 2010). Thus, we expected and found that the tone of executives can be used as an indicator for future performance. They are better positioned to discuss the firm's prospects relative to non-executive directors, who are more responsible for monitoring the financial reporting process (governance-oriented issues).

Overall, our study highlights the importance of negative tone in UK annual report narratives. The study suggests that, although there are more opportunities for managers to manage the narrative reporting tone upward under the more liberal principle-based approach in the UK context, the negative sentiments they provide are informative about firms' future performance. These findings highlight the vital role of negative narratives in the decision-making processes of investors and external users in annual reports.

5. Robustness

In this section, we implement several robustness tests. First, we assess the sensitivity of our results to using an alternative measure of narrative reporting tone, net tone, which considers

Variables	(1)	(2)	(3)	(4)
Exec neg tone (*H1a*) (-)	−2.526** (−2.227)			
Exec net tone		−1.896*** (−3.146)		
Gov neg tone (*H1b*) (-)			0.010 (0.029)	
Gov net tone				0.299 (0.870)
Size	−0.010*** (−4.602)	−0.011*** (−4.886)	−0.011*** (−4.872)	−0.011*** (−4.886)
Leverage	−0.024 (−1.262)	−0.024 (−1.253)	−0.028 (−1.487)	−0.028 (−1.456)
MTB	0.204*** (2.659)	0.203*** (2.652)	0.204*** (2.658)	0.204*** (2.656)
DPS	7.321*** (9.592)	7.151*** (9.128)	7.508*** (9.680)	7.510*** (9.674)
Sales growth	0.030*** (2.890)	0.031*** (3.017)	0.033*** (3.209)	0.033*** (3.198)
ROA	(0.323)*** (1.86)	(0.339)*** (1.87)	(0.358)*** (1.86)	(0.347)*** (1.86)
Constant	0.155*** (6.585)	−0.149* (−1.690)	0.121*** (3.732)	0.136*** (6.127)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
R-squared	0.773	0.771	0.768	0.769

Notes: Robust t-statistics in brackets; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Table 5.
The impact of executives and governance tone on firm future performance

the positive tone in narrative disclosures. This robustness test based on net tone alleviates concerns relating to how we measure narrative reporting tone, which might bias our inferences. To implement this robustness check, we measure net tone as the difference between negative and positive words divided by the total number of words.

Table 6 presents the estimation results of equation (1) based on net tone as an alternative measure of narrative tone. Columns (1)–(6) of Table 6 consistently show negative and significant coefficients for net tone. In all cases, the coefficients of net tone are significant at the 1% level. These findings are consistent with our central predictions and main results in Table 4. More importantly, these additional analyses show that narrative reporting tone robustly predicts future firm performance.

Second, we assess the sensitivity of our results to the inclusion of additional governance control variables. These other controls help to mitigate the omitted variable bias further. Specifically, in Table 7, we control for board diversity, the board size, board independence and audit committee in addition to our main control variables. The literature informs these additional control variables (Davis *et al.*, 2015; Lee and Park, 2019). Columns (1)–(6) of Table 7 show that our findings are similar, even after including additional corporate governance controls, attesting to the robustness of our results to omitted variable bias.

Third, we gauge the sensitivity of our results by using an alternative measure of a firm's performance. Specifically, we use the two-period ahead ROA as an alternative proxy of future performance. Using this forward measure of performance enables us to examine the future effect of negative narrative reporting tone. Columns (1)–(6) of Table 8 show that corporate and executives' negative tone is still negatively and significantly associated with future performance, not only for the subsequent year but also for the year after. These findings suggest that the impact of negative narrative reporting tone we document is robust to using alternative forward measures of a firm's performance. More importantly, these additional analyses suggest that the nexus between future performance and narrative reporting tone is not a short-run phenomenon but instead persists in the long run.

Finally, we are cognisant that our results might be sensitive to the choice of the estimation method. In addition, endogeneity problems relating to the nexus between firm performance and negative narrative reporting tone might bias our inferences. To address these concerns, we use three alternative estimation techniques. Specifically, in Table 9, we re-estimate equation (1) using the FM regressions, 2SLS and IV-GMM. For the 2SLS and IV-GMM, we use the second and third lags of reporting tone as instruments. In all our instrumental variable regressions, the first-stage F-statistic is greater than 10, the rule of thumb, suggesting that our instruments are not weak. In addition, the first-stage R-squared is high, indicating that our instruments have high predictive power for the potentially endogenous reporting tone. Finally, Columns (1)–(6) of Table 9 consistently show a significant negative coefficient of negative tone on future performance. Taken together, our additional tests suggest that our results are robust to endogeneity problems and to using alternative estimation techniques and proxies of narrative reporting tone.

6. Conclusion

This study examines the association between negative tone and a firms' future performance in the UK. In addition, the study explores which part of the annual report (executives vs governance section) contains NDT that is most associated with future performance. While prior studies claim that just positivity has the power to affect a firm's outcomes, we contend that negative statements also provide important information about the prospects of the firm. Using LM's textual-based dictionary to measure the NDT in the UK annual reports, we find that negative tone is significantly negatively associated with a firm's future performance.

Table 6.
Alternative measure of negativity (controlling for positive tone)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Net tone	−3.756*** (−3.897)	−3.820*** (−3.964)	−3.160*** (−3.519)	−2.948*** (−3.989)	−3.016*** (−4.128)	−2.427*** (−3.467)
Size				−0.011*** (−4.824)	−0.011*** (−4.841)	−0.011*** (−4.850)
Leverage				−0.014 (−0.788)	−0.013 (−0.720)	−0.025 (−1.300)
MTB				0.207*** (2.695)	0.207*** (2.696)	0.203*** (2.653)
DPS				6.680*** (8.258)	6.782*** (8.517)	7.232*** (9.525)
Sales growth				0.027*** (2.718)	0.025** (2.456)	0.030*** (2.946)
				(0.334)*** (1.86)	(0.347)*** (1.87)	(0.358)*** (1.86)
Constant	0.055*** (15.163)	0.055*** (15.204)	0.056*** (16.052)	0.113*** (6.401)	0.113*** (6.370)	0.116*** (6.437)
Industry FE	No	No	Yes	No	No	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
Firm FE	No	No	No	No	No	Yes
R-squared	0.016	0.020	0.042	0.615	0.682	0.771

Notes: Robust t-statistics in brackets; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Neg tone (*H1*) (-)	−2.429** (−2.189)					
Exec neg tone (*H1a*) (-)		−2.429** (−2.189)				
Gov neg tone (*H1b*) (-)			−0.063 (−0.171)			
Net tone				−2.218*** (−3.305)		
Executive net tone					−1.721*** (−2.958)	
Governance net tone						0.253 (0.730)
Size	−0.014*** (−4.115)	−0.014*** (−4.115)	−0.014*** (−4.289)	−0.014*** (−4.245)	−0.014*** (−4.281)	−0.014*** (−4.313)
Leverage	−0.025 (−1.300)	−0.025 (−1.300)	−0.028 (−1.519)	−0.025 (−1.343)	−0.025 (−1.300)	−0.028 (−1.490)
MTB	0.202*** (2.661)	0.202*** (2.661)	0.202*** (2.661)	0.201*** (2.655)	0.201*** (2.654)	0.202*** (2.659)
DPS	6.829*** (9.753)	6.829*** (9.753)	7.010*** (9.849)	6.775*** (9.702)	6.698*** (9.277)	7.010*** (9.840)
Sales growth	0.032*** (3.174)	0.032*** (3.174)	0.036*** (3.463)	0.032*** (3.229)	0.033*** (3.290)	0.035*** (3.453)
ROA	(0.323)*** (1.86)	(0.339)*** (1.87)	(0.358)*** (1.86)	(0.347)*** (1.86)	(0.347)*** (1.87)	(0.358)*** (1.86)
Board diversity	0.001*** (4.174)	0.001*** (4.174)	0.001*** (4.162)	0.001*** (4.027)	0.001*** (4.053)	0.001*** (4.146)
Board size	0.002 (1.414)	0.002 (1.414)	0.003 (1.490)	0.002 (1.421)	0.002 (1.466)	0.003 (1.508)
Board independence	−0.001** (−2.387)	−0.001** (−2.387)	−0.001** (−2.554)	−0.001** (−2.333)	−0.001** (−2.422)	−0.001** (−2.530)
Audit committee	0.000** (2.137)	0.000** (2.137)	0.001** (2.237)	0.000* (1.922)	0.000** (2.041)	0.001** (2.257)
Constant	0.124*** (4.557)	0.122*** (4.570)	0.093*** (2.640)	0.089*** (4.046)	−0.153* (−1.802)	0.100*** (3.663)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.773	0.772	0.768	0.773	0.771	0.769

Notes: Robust t-statistics in brackets; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Table 7.
Additional control variables

Table 8.
The impact of reporting tone on future performance

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Neg tone	−1.814** (−2.218)					
Exec neg tone		−1.814** (−2.218)				
Gov neg tone			0.299 (0.873)			
Net tone				−1.452*** (−2.822)		
Exec net tone					−0.928** (−2.044)	
Gov net tone						0.363 (1.049)
Size	−0.010*** (−4.224)	−0.010*** (−4.224)	−0.011*** (−4.384)	−0.011*** (−4.378)	−0.011*** (−4.394)	−0.011*** (−4.386)
Leverage	−0.006 (−0.324)	−0.006 (−0.324)	−0.009 (−0.503)	−0.007 (−0.372)	−0.007 (−0.372)	−0.009 (−0.467)
MTB	0.316*** (6.286)	0.316*** (6.286)	0.316*** (6.285)	0.316*** (6.287)	0.316*** (6.286)	0.316*** (6.283)
DPS	6.674*** (8.992)	6.674*** (8.992)	6.774*** (8.940)	6.624*** (8.897)	6.603*** (8.729)	6.777*** (8.925)
Sales growth	0.017** (2.052)	0.017** (2.052)	0.020** (2.354)	0.018** (2.121)	0.019** (2.208)	0.020** (2.344)
ROA	(0.323)*** (1.86)	(0.339)*** (1.87)	(0.358)*** (1.86)	(0.347)*** (1.86)	(0.347)*** (1.87)	(0.358)*** (1.86)
Constant	0.133*** (5.988)	0.132*** (6.019)	0.087*** (2.886)	0.105*** (5.681)	−0.024 (−0.357)	0.125*** (5.138)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.792	0.792	0.791	0.792	0.792	0.792

Notes: Robust t-statistics in brackets; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Estimation techniques	FM	2SLS	IV-GMM	FM	2SLS	IV-GMM
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Neg tone (*H1*) (-)	−7.582*** (−4.586)	−8.625*** (−3.346)	−8.582*** (−3.407)			
Net tone				−5.536** (−2.700)	−3.226*** (−2.808)	−3.191*** (−2.761)
Size	−0.007*** (−3.275)	−0.009*** (−3.107)	−0.009*** (−3.113)	−0.009*** (−4.320)	−0.010*** (−3.655)	−0.010*** (−3.512)
Leverage	−0.017 (−0.835)	−0.017 (−0.671)	−0.017 (−0.667)	−0.019 (−0.917)	−0.027 (−1.110)	−0.024 (−0.948)
MTB	0.282*** (3.315)	0.208*** (2.607)	0.209*** (2.672)	0.288*** (3.508)	0.207*** (2.598)	0.234*** (2.947)
DPS	6.587*** (6.488)	7.120*** (8.311)	7.119*** (8.303)	6.709*** (5.409)	7.486*** (8.481)	7.390*** (8.282)
Sales growth	0.019 (1.176)	0.009 (0.339)	0.009 (0.343)	0.011 (0.574)	0.021 (0.839)	0.021 (0.884)
Constant	0.207*** (7.791)	0.203*** (3.931)	0.203*** (3.967)	0.087*** (6.495)	0.072** (2.297)	0.069** (2.205)
First-stage F-statistic		102.10***	102.10***		384.80***	384.80***
First-stage R-squared		0.212	0.212		0.392	0.392
Industry FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
R-squared	0.29	0.353	0.353	0.294	0.369	0.364

Notes: Robust t-statistics in brackets; ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$; variables are defined in Table 1
Source: Authors' own creation/work

Table 9.
Alternative estimation techniques

The novel finding indicates that negative statements contain valuable information that stakeholders can use to predict the company's future performance. In addition, we provide new empirical evidence suggesting that executives' negative statements, but not governance, are the ones that are closely associated with future performance. These findings have several practical implications. First, they highlight the value of negativity in narrative disclosures as an indicator of the firm's prospects, especially under the more liberal principle-based reporting system that does not mandate such disclosures. Consequently, analysts and external users might use the negativity of annual reports as an indicator of future performance in the UK. Second, this study provides evidence to the regulators about the effect of negative narrative tone on real outcomes; consequently, regulators may demand more detailed narrative reporting that discusses firms' future performance.

Our current study has some caveats that might inform future research. First, while we used the bag-of-words approach to measure the negative tone, future research might consider using machine learning-based methods to confirm these findings. The machine learning approach provides more focus on the meaning of the text. Therefore, future research can provide more robust evidence using machine learning to compare the results with the bag-of-words approach. Second, while we focus on the annual report as the central unit of analysis, future research might consider negative statements in other communication channels such as social media disclosures, press releases and conference calls. Such channels are increasingly becoming central channels through which managers communicate with stakeholders. Finally, extending our study to an international context appears fruitful and might provide new insights into the importance of cross-country variations in narrative reporting tone.

Notes

1. NDT refers to the language (positive/negative) that managers use to provide material information to external users (Henry, 2008).
2. For the few studies focusing on negatives, see, Huang *et al.* (2014) and Druz *et al.* (2020).

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