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Executive Usage of Public Language and Its Effect on Different Groups in Different Contexts: A Review of the Literature

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Abstract

This study aims to conduct a comprehensive review of the literature on the topic of public language used by executives. An examination of the different methods and purposes of its usage is undertaken to fully grasp the scope of this topic. The first section will introduce the topic and highlight the search strategy as well as briefly explain why public language is used. Later, readers will discover a distinction is made between written and spoken public language, it is found that much of the studies focus on the former, even though some studies suggest that the latter can be more influential for investors to understand how managers feel about their company's prospects. The author divides the literature into these segments as to highlight the different tools used by researchers to analyze public language in this regard as well as to show the difference in maturity of both segments. Throughout this review readers will also understand how the topic area of measuring executive sentiment has evolved since inception. The final chapter provides guidance for further research to be conducted as well as a theoretical framework to base future studies on.

Keywords*:* tone, public language, managerial tone, disclosure, impression management

1. Introduction

Public language is defined as spoken words or written material that is strategically used to influence stakeholders and influence a firm's competition (Gao et al., 2016). Analyzing public language is very important for a diverse range of stakeholders-investors, regulators, suppliers and competitors. As such this information provides critical contextual information to the financial data, that would be otherwise hidden if one were to solely rely on analyzing the quantitative data (Li, 2010; Bochkay et al., 2020; Campbell et al., 2020). Moreover, the mediums that are used to convey public language can be either through formal documents such as: annual reports, form 10-Ks, and initial public offering prospectuses (Beattie, 2014), and non-formal tools such as social media (Cade, 2018). In addition, the strategic purposes of using public language are to gain financing from new investors, to legitimize the operations of the firm to current stakeholders, and to gain an advantage over competitors by using words to strategically frame the company's position in the business environment it operates in (Gao, et al., 2016).

1.1 Search Strategy

The search strategy consisted of locating all the ranked 4* and 4 Journals in the Academic Journal Guide 2021 produced by the Chartered Association of Business Schools. The search was focused on three topic areas: Accounting, Finance & Management. The search was limited to the year 2018 until 2024, as to get the latest developments in the area. Furthermore, the words *'tone'*, *'public language'* and *'narrative'* were used to search through the journals, however, the journals were also manually searched for relevant articles in case the search syntax was not sufficient in recovering studies. This literature review will aim to explore and comprehensively assess the different theories, school of thoughts and research methods used in the topic of public language to have a more robust understanding of the topic area and to understand the research gaps that future research could capitalize one.

The literature review was conducted from the months of January to September 2024. It should be noted that this review will only focus on public language used by executives, although in one example the politics of a news organization and how this effects its reporting on the tone of an executive released disclosure is used. This step was taken to give the reader a better appreciation of the complexities of public language. The rest of this paper is structured as follows: Chapter 2 will review the literature on *written public language*. Chapter 3 will encompass the *spoken segment of public language*. Chapter 4 will discuss the conclusions, theoretical framework as well as the directions for further research.

2. Written Public Language

2.1 Ordering of information

Managers have great discretion in the ordering of qualitative information in their disclosures. Cheng et al. find that the act of ordering information in a disclosure has profound impacts on investors (2021). However, this research takes a different stance from Elliott (2006) in that it states that the response to prioritized information in company disclosures is rational and not driven by investor cognitive biases. Elliot's research is focused on conducting an experiment that tasks M.B.A students and analysts to inspect an earnings release of a hypothetical firm in the technology sector. The M.B.A students had a collective average of 1.76 years of analyzing financial statements (2006).

Interestingly, one would wonder whether the results taken from these inexperienced students should be an accurate representation of amateur investors who perhaps could have more years of experience in analyzing financial statements. On the other hand, Cheng et al. use a different method in which they study a total of 62,545 earnings announcements that include prioritized information and cross reference that with post earnings announcement returns. It is interesting that this study concludes that investors are warranted in placing greater importance on prioritized information and in fact underweight its significance (2021). This is in direct contradiction to some other studies in the literature that highlight managers' tendencies to be opportunistic in their information placement, indeed they warn investors of this tactic (Schrand & Walther, 2000; Huang et al., 2014).

2.2 Different effects of disclosures

Li and Tan's study takes a slightly different route than the ones mentioned earlier, this study does focus on 8-K[1] disclosures, however, it focuses on non-earning 8-K announcements (2022).

[1] 8-K disclosures provide investors with 'material' information that must be disclosed by a company whenever a significant event occurs. Importantly, companies must promptly disclose of this vital information and not wait for their next periodic reports- forms 10-Q & 10-K; 8-K forms must be disclosed within four business days (SEC, 2021).

The researchers divide the 8-K disclosures into good and bad news, and an analysis is conducted comparing the stock price from a day before the disclosure and one day after. The sample contains 248,958 non-earning form 8-Ks, in which a disclosure is deemed either positive or negative based on the stock price reaction to it and not based on textual sentiment (Li & Tan, 2022). Interestingly, this is a different methodological approach to other studies which rely on predefined textual sentiments-either good or bad- and analyze its effect on the stock price (Campbell et al., 2020; Huang et al., 2023; Bochkay et al., 2020).

Further, (Cardinaels et al., 2019) conduct an archival study on 8-K earnings announcements. The earning releases with managerial summaries are filtered out of their suspected positive bias by using an automatic summary generator. This study differentiates itself from the earlier discussed Li and Tan research in that it analyses how management original summaries and summaries that have been reduced from their biases through the usage of algorithms, have differing effects on investor valuation. The research conducts an experiment by asking participants with investment experience to analyze the manager written summaries as well as the automatic algorithm-based summaries. The results show that the upward positive tone of the manager summaries does indeed have a deceptive effect on investor's judgement (2019).

Tan et al. study how jargon can have differing effects for differently sophisticated investors, an experiment is used on Professional M.B.A students and an initial public offering of an existing biotech firm is used (2019). The investors are divided into three groups: investors with high industry knowledge, investors with some industry knowledge, and investors with no industry knowledge. The findings show that for investors with no industry knowledge the presence of jargon decreases investment willingness, while for those that have some knowledge the unavailability of any type of jargon in an IPO induces an unwillingness to invest due to the belief that jargon usage decries a premium on a company's products. Lastly, for investors with the most knowledge, the presence of bad jargon decreases their willingness to invest in a company, the reason being the usage of jargon in such a context is not necessary.

2.3 Tone & Credit risk; Human vs Robot

Wang's research shows the tone found in disclosures pertaining to risk has a profound effect on the credit default swaps[2] market, which reflects a specific firm's credit risk (2021). Importantly, Wang's research finds that there does exist an association between the spreads and the net tone used in company disclosures, this relationship is said to be more pronounced when the referenced entity is shown to be struggling and closer to defaulting on its obligations. Donovan et al.'s research is relatable to this last point-finding out when an entity is in severe credit risk (2021), the authors inspect earnings conference calls and the management discussion and analysis section of the form 10-K. To assist with their analysis, they use a machine learning method, the research shows that machine learning methods offer more scope in realizing the meaning behind managerial language in disclosures than other methods.

Companies nowadays are adapting their disclosure methods to be more robot friendly. Essentially, this means focusing on avoiding using words that appear to have a negative tone both for artificial intelligence and human readers, this contrasts with the former method of solely focusing on human readership (Cao et al., 2023a). Interestingly, in the same study Cao et al. find that in the setting of conference calls, managers who are aware of higher usage of artificial intelligence to judge their speech, would use professional training to improve their

[2] Credit default swaps are akin to purchasing insurance, in which an individual that holds a fixed income product of a firm-called a reference entity- sells a credit default swap to a third investor-the buyer. The buyer then receives monthly payments from the seller in turn for protection in case the reference entity cannot pay its debts or becomes bankrupt, the payment is derived from the difference between the face value of the debt and the current value, which is called the spread (Wang, 2021; CFA institute, 2024).

vocal performance. Furthermore, in a study that is based on analyzing conference calls transcripts, the researchers compare the efficacy of a popularly used human created dictionary that categorizes words as negatively or positively toned-Loughran & McDonald- with a machine learning based dictionary that uses the price reaction as its supervisor (Garcia et al., 2023). It is found that the machine learning approach performs better than the human based dictionary.

2.4 Advances due to Artificial Intelligence

The Loughran and McDonald dictionary was introduced when the two same authors published a study comparing its effectiveness as a business context dictionary with the previously used Harvard Dictionary- a psychosociological dictionary. Loughran and McDonald proved that their dictionary has stronger correlation to data returns based on 10-K filings (2011, as cited in Frankel et al., 2022). Frankel et al.'s aim is to do the same, they compare the Loughran and McDonald dictionary with machine learning methods that improve on the formers failings, namely: change of language over time and industry terms variation, words weighting, and human subjectivity. The researchers replicate the samples of 10-K observations for the years 1996-2008 that were used in Loughran and McDonald's original research and show that the Loughran McDonald dictionary used to be effective in the past however, it is less so in the present. This is compared with results of the machine learning methods, which performed well in both periods.

Moreover, detection methods have long been used on quantitative disclosures (Beneish, 2012; Brazel et al., 2009, as cited in Brown et al., 2020), however, their effectiveness has been questioned due to manipulation of numbers. Scholars then responded by using detection methods on qualitative disclosures. (Loughran & McDonald, 2016, as cited in Brown et al., 2020) state that popularly used textual measures fail at properly deciphering the context and meaning of qualitative disclosures. As a result, Brown et al.'s research aims to improve the field of study on misreporting in disclosures by using a machine learning tool that measures the thematic content of disclosures (2020). The findings reinforce the conclusion reached by Frankel et al. cited in the earlier paragraph, in that machine learning tools are more dynamic and adaptive to changing times and words, plus they have the added functionality of not being easily identifiable by firms such as static dictionaries.

2.5 Extraneous factors that influence disclosures

Furthermore, tone itself has preconditions and is based on varying factors such as CEO power in an organization and board oversight as evidenced by Deboskey et al. (2019). This study measures CEO power by tenure and whether they also serve as board chair, showing that this duality results in weakening the board's role in monitoring the CEO. The study calls for further research to assess whether investors take into consideration these two factors that affect CEO power and whether market participants issue any credibility to highly optimistic disclosures in this context. However, the literature does not entirely agree with the assumption that CEO duality is negative, as the stewardship theory argues that this duality helps the CEO to act in a more advantageous manner towards investors because of the unified leadership (Goergen et al., 2020).

Chrysler CEO Leo Iacocca changed the CEO landscape by giving rise to the celebrity CEO figure (Pollock et al., 2024). The authors claim that celebrity executives are constantly built up by the media as being able to see over the horizon and anticipate upcoming changes before others. Executives that have achieved celebrity status, whether minor or major, do tend to use language that has been proven to effect markets, e.g., highly positive words. Kuang et al. show how the news of a death of a former colleague of a CEO can enhance their pessimism when issuing their management forecasts (2022). Investors are instructed to treat this grieving period as a period-based slump in forecasts and not let it reflect the company's actual prospects. Similarly, (Chen et al., 2021) show how managerial outlook becomes negative after terrorist attacks and mass shootings occur near the location of the firm's headquarters. They find this to have a negative effect on the tone that executives use in their disclosures. In addition, Bochkay et al. utilized a longitudinal research design to showcase the different factors that influence CEO's disclosure styles. The outcomes of this research show that in general, a young CEO would exhibit higher levels of optimism than an older one. However, the longitudinal trend shows that the once optimistic young CEO will exhibit less forward-looking content and positively toned words with the passage of years (2019). Further, D'Augusta & DeAngleis find that a policy of being conservative in reporting of financial statements, leads to CEO's being less likely to use highly optimistic toned qualitative disclosures (2020).

2.6 How investors react to disclosures

Investors seem to be affected by CEO usage of personal pronouns or lack of them for that matter, as well as seeing the CEO's photo in a disclosure (Asay et al., 2018). This effect is found to be conditional on whether the news is good or bad. For example: photos of a CEO with a positive disclosure induce a positive effect, however, the same picture with a negative disclosure produces a negative effect. Similarly, with the usage of pronouns, if the disclosure is positive, usage of personal pronouns such as 'our' or 'I' magnify the positivity of the message. Interestingly, the usage of such pronouns with negative disclosures produces a negative effect on investor valuation- all 4 experiments of this study led to this conclusion.

Chen & Loftus' research inspects similar themes, in that self-inclusive language (SIL) used in disclosures is investigated for its effect on how disclosures are received by investors. The research distinguished between two types of SIL: first person singular pronouns and first-person plural pronouns (2019). The research is designed to inspect how the two types of self-inclusive language as well as self-exclusionary language (using third person pronouns) influences investors' reading of disclosures. It should be noted that the authors measure this sentiment through archival and experimental research. The study showed when news is negative investors prefer executives to use first person singular pronouns. However, when news is positive the archival results agree with Asay et al.'s finding- usage of personal pronouns amplifies the message. Despite that, the results from the experiments suggest that this is not true, the authors state that this is due to omitted variables in their theory.

2.7 The different uses of a disclosure

Firms have been proven to utilize negatively toned voluntary disclosures to discourage a rival from engaging in a hostile takeover. And even though a takeover could benefit investors, it could also potentially hamper the career prospects of the current managers and thus they would seek to actively fight against the takeover (Chen et al., 2022). This was found especially true for firms with younger CEOs as well as ones who have higher compensation rewards. Ultimately, what this means is that investors will have a distorted version of the true value of some firms who might have managers that are feeling especially insecure with the prospect of a takeover. Cao et al. also look at the sentiment shown in disclosures with regards to takeovers, this study analyzes the press releases that are released by the acquirer, the target firm, or via a joint statement from both (2023b).

The author's found that the sentiment shown in the target's press release has a direct correlation with how quick the takeover will proceed, more importantly differences in sentiment between both parties gives insight into if completion of the deal will commence. Furthermore, (Li et al., 2022) study how the potential acquirer uses strategy when disclosing information regarding the target. The informed bidder is found to not disclose the information gathered about the target if it makes the target company more valuable than it currently is with regards to all publicly available information. The reasoning would be to a get a better deal as the final bid to be made by the winning party will not be higher than the price won at auction, of course the shareholders themselves will not accept any price that contradicts the value given by all available public information at the time.

In addition, Burks et al. engage in measuring how preexisting firms changed their disclosure strategy after regulatory changes were made to remove entry barriers (2018). The study found that preexisting banks produced seven times more disclosures after the entry barriers were removed. Interestingly, it is said that this act of deterrence takes precedence over issuing positively toned disclosures to investors. Similarly, Glaeser & Landsman's research inspects the divide in the literature about if firms use patent disclosure as a deterrence against competitors or is technological progress hidden for it to not be copied and improved upon (2021). The research states that when firms are in a highly competitive product market, they do tend to 'weaponize' their technological advancement disclosures to act as a deterrence against competitors. Alternatively, when technological competition is intense, firms act to hide their innovations for fear of information spillover. To deter confusion the study makes the case of using examples of Apple and Intel being intense technological competitors but less of product competitors, Tesla and Jeep have high product competition but compete less on innovation.

2.8 The inefficiency in pricing disclosures.

It is often assumed that the information released by firms is 'costless' on the investors, however, this idea is challenged by the fact that reading the documents takes time and effort to understand. Therefore, it is an active economic choice taken by some and possibly neglected by others, this would mean that pricing the effects of disclosures cannot be said to be perfectly efficient (Blankespoor et al., 2020). The arguments here challenge the assumption in other studies, in which the effect of disclosures on stock prices is taken at face value and no attention is given to the processing costs for investors. In contrast Cadman et al.'s research is made on the assumption that disclosures do lessen information asymmetry (2023). Importantly the authors find that the number of voluntary disclosures released do tend to increase when executives become short-sighted. This was found to occur particularly with firms near initial public offerings and with firms whose CEOs are nearing retirement. Additionally, Hinson & Utke (2023) agree that disclosures do lessen information asymmetry which tends to indirectly lower the cost of capital, as the gap of information between firm insiders and outsiders is lessened, liquidity is increased.

Of interest, (Crazier et al., 2021) show how risk factor disclosures specifically do not serve to lessen information asymmetry. The authors find that firms generally tend to produce generic or 'boilerplate' risk factors in their disclosures. It is found that firms tend to copy other firms who have received a judicial stamp of approval on their risk factor disclosures despite the Securities & Exchange Commission (SEC) requiring that firms produce unique and specific risk factor disclosures. The reason being that firms who produce a more generic version receive a more favorable judiciary outcome. In research on initial public offerings (IPOs), (Esmer et al., 2023) inspect the difference in threat of non-shareholder litigation risk that is faced by two groups of firms: those who use the traditional route of disclosing information and lessening information asymmetry, and those who make use of the Jumpstart Our Business Startups Act (JOBS[3]).

The study finds that plaintiffs use disclosures in registration filings to capitalize on the state of vulnerability that the IPO firm is in. Interestingly, it finds that companies using the JOBS act saw significant decrease in 'low merit' litigation, proving that the JOBS act serves as protection for these smaller firms. Aland's study concerns firms who pursue the JOBS act, the study concludes by stating that because this is a relatively new area, there is no one size fits all approach to disclosing information to investors. The study interviewed managers who have pursued this route and found that the managers claim that investors generally do not focus on the financial information that is published by these firms in this specific initial public offering registration phase (2023).

Furthermore, Gomez's research is concerned with highlighting how the creation of the Electronic Data Gathering, Analysis & Retrieval (EDGAR)[4] did not necessarily lessen the information asymmetry between less sophisticated investors and sophisticated investors. It is argued that less sophisticated investors are faced with integration costs-information overload. Also, it is argued that more sophisticated investors use advanced disclosure reading software making them suffer less from information overload and probably giving them a significant advantage in making informed investment decisions (Gomez, 2024).

2.9 New landscape

In our modern age, there has arrived a new medium in which firms can share their disclosures, or key information about it, and that is social media. Importantly, unlike most other disclosures, this is a more interactive method with two-way communication occurring. Social media has been proven to influence share prices through many archival studies (Curtis et al., 2016; Lee et al., 2015, as cited in Cade, 2018). The argument is made that previous research on corporate disclosures may not relate to social media, as managers have no control over what is stated about their firms (Miller & Skinner, 2015, as cited in Cade, 2018). Of course, this is different from traditional forms of disclosure in which managers convey a message, and the public simply analyzes. On social media there could be a back-and-forth engagement in real time between different interested parties, and how firms respond or do not respond could have crucial effects on their share price. In addition, social media disclosures differ from the more traditional mediums, in that it is aimed at both investors and consumers, this contrasts with the latter being more focused on investors (Madsen & Niessner, 2016, as cited in Blankespoor, 2018).

Furthermore, Rennekamp & Witz inquire about the specific degree of audience engagement with a formal and informal social media disclosure and how that translates to share price activity, this study is more focused on the investor segment of social media audience and not consumers (2021). The study highlights that in general formal communication is more concise and needs less contextual support to understand while informal communication gives the impression of more warmth and possibly gives the firm the image of a socially skilled individual. The authors through their experiment find that when firms share positive news,

[3] Companies with less than $1 Billion in revenues in their fiscal year before registering for an initial public offering (IPO) would qualify. Importantly, this deregulation allowed small companies to access more funds, allowed amatuer investors to invest in IPOs but also raised the risk for fraud (Esmer et al., 2023; Alpert, 2022).

[4] Electronic Data Gathering, Analysis and Retrieval, the SEC created EDGAR to make business and financial information easily accessible to all investors, company filings are available almost instantly on the website. Prior to its creation information was not easily or cheaply accessed, as such filings were exclusively available in three SEC libraries Washington, DC, New York & Chicago (SEC,1993, as cited in Gomez, 2024; Block 1991, as cited in Gomez, 2024).

using informal language increases engagement levels which in turn enhances the reception of the message and adds validity to it through appearing to have higher consensus. In contrast, it is not recommended to share negative news with an informal tone as the results of the experiment show.

Moreover, in a study that measures formal language, more precisely the effect earnings announcements have on social media users of the platform StockTwits, and how disagreement between users of this platform explains heightened trading volume (Booker et al., 2023). The researchers show that an increase in trading volume can be explained by disagreement because of two factors: 1: differences in firm valuation pre-earnings release, 2: difference in interpretation of the release. Interestingly, the study also finds that with lower processing costs, disagreements between investors increase. This is further reinforced by the levels of heterogeneity found in the investor population on the social media platform, heterogeneity here describes the different philosophical approach of the investor (e.g., either a more technical or fundamental based investor).

2.10 Public language affects different stakeholders

As already established CEO power and in extension confidence and tone have a profound impact on investor response. However, it also must be mentioned that it has a similar impact on analysts (Aghazadeh & Joe, 2022). Indeed, the study finds that managerial high confidence serves to mute auditors' response to risk analysis. This conclusion was reached using an experiment on 67 senior auditors from big 4 accounting firms- probably the most sophisticated population in relation to all previously reviewed studies. In addition, Pyzoha et al.'s research also concerns analysts, it inspects the effect of 'specialists' that managers hire to help prepare complex estimates in company disclosures and how their presence affect analysts' evaluation (2020). An experiment is also used here; however, the number of auditors is larger at 230, with 50% from big 4 accounting firms, but the level of seniority is more diverse. One of the findings of the study is that auditors do in fact agree more with management's estimates when a specialist is used by the firm to assist with preparing the estimates.

Another research dealing with analysts and management disclosures is Bochkay & Joos' paper in which they inquire if risk analysis conducted by analysts on firms is affected by the level of economic uncertainty in the period-high or low (2021). In addition, the results shown are supplemental to those earlier reviewed that are related to analysts, in that is said that analysts improve their risk forecasts when economic uncertainty is higher. Furthermore, it is shown that increased usage of qualitative information drives this improvement. As a result, relating this conclusion to Aghazadeh & Joe's even though false management optimism cannot be fully removed as a source of influence on an analyst, when economic uncertainty is higher analysts do improve their analysis and could probably be less affected by false optimism.

Public language not only influences investors and analysts, as Cho & Muslu's research show that it also has a profound effect on rival firms' capital investments and inventory levels for the year ahead (2021). The research finds that firms increase their capital investments and inventory levels if the disclosure by their peer is positively toned, and they decrease both if the peer in question has a more negatively toned disclosure. Other than peers, public language also affects supplier firms when customer firms issue management earning forecast reports- MEFRS- that are low in readability. (Chen et al., 2019) measure the readability of such disclosures by analyzing the complexity of words used in the disclosures, they use six readability indices, and they construct an aggregate readability score from all the indices. The aim of the study is to show how customer firm disclosure readability affects supplier firm investment quality. The study finds that there is a positive relationship between the readability of a management earning forecast report and investment quality in supplier firms.

2.11 Diversion Tactics

We have already discussed earlier that material events need to be disclosed to the public within a period of four days. However, Schloetzer et al. inspect firm's decisions of whether to report a 'material' event in which case a company can either be perceived as blameless or to blame (2021). Verrecchia states that firms weigh the costs of disclosures before taking the action to share the information (1983, as cited in Schloetzer et al., 2021). It is concluded that firm's do not disclose information about a 'blamed event' to protect themselves from possible future litigation. Also, another route a firm could take is upon sharing the material negative event they would issue a strategic concurrent disclosure, to increase information processing costs for the investors (Rawson et al., 2023). The scope of this study was impressive, the authors used 49,652 non-earning 8-Ks where the firm issued a press release the same day, and found that non-related press releases slow the negative reaction to the 8-K and interestingly it leads to lower download numbers of the negative 8-K.

Voluntary disclosures increasing information asymmetry is also the conclusion reached by Cheynel & Levine. Importantly this study finds that informed investors are within their rights to alter their trades given the 'mosaic effect' (2020). This mosaic term is often used in insider trading cases, where the accused claim that the private information they used to guide their trade was non-material and that their trading strategy was guided by combining different data with the already public information to reach a mosaic. Of course, misuse of this loophole is not hard to imagine, as already stated Rawson et al. find that firms will strategically make a press release alongside a negative 8-K to lessen or slow the effect of a negative disclosure. Utilizing the mosaic loophole, one could possibly sell some of their holdings before the price slumps, and then re-enter on the cheap, while the non-informed investor could have possibly faced a huge cut to the value of their holdings.

3. Spoken Public Language

Table 1: Key studies in the 'spoken' area of Public Language

Authors	Theory	Research Method	Sample	Type of Language studied	Findings
Rennekamp et al., (2019).	Genre theory.	Controlled laboratory experiment to test this assertion in an earnings call setting.	98 participants, 5.21 years average work experience, a sample of 2452 earnings calls used. Both audio recordings, and textual transcripts used.	The researchers focus on linguistic features of the conversation such as style matching between parties. This engagement metric is preferred over more personal characteristics such as tone used.	Investors involved in the experiment can detect differences in engagement levels. Manager and analyst conversations exhibiting high levels of engagement result in higher stock returns.
De Franco et al. (2023).	Signaling theory.	Regression analysis.	1612 fixed income calls from 424 firms. Sample is spread over 40 countries.	Tone used by managers is analyzed.	Fixed income calls, used more by firms with more debt, poor credit rating, are foreign in their respective market, and are experiencing losses. Credit markets have also been shown to react to FI calls, which suggests that material information is shared in these conference calls.

Authors	Theory	Research Method	Sample	Type of Language studied	Findings
Bochkay et al. (2020).	Narrative and Genre theory.	Univariate analysis.	35,155 earnings conference calls, in the years 2006-2015.	Tone used by managers is analyzed.	Strong language used in conference calls results in high price activity in the markets as well as heightened trading activity.
Mayew et al. (2020).	Signalling theory.	Ordinary least square regression.	2,455 earnings conference calls (with digital audio recording), during the years 2008-2010. A total of 19,605 dialogues between managers and analysts.	Tone used by managers in response to questions from analysts.	The findings show that analysts with more negative stock recommendations and difficult to achieve earnings forecast have longer dialogs with management, interestingly markets seem to price this interaction more than the one with bullish analysts.
Bushee et al. (2018).	Signalling theory.	Regression analysis.	60,172 conference call transcripts, from the years 2002-2011. The stock returns from the same period are also utilized.	Language complexity used in conference calls.	Language complexity is used to provide more detailed disclosures and not necessarily to create fog for investors, this is especially true for loss making firms. Also, complex language is not always less informative than simple language.
Hope & Wang (2018).	Signalling theory.	Difference-in-differences.	2005-2015 is the period used, 3180 big baths are found with the 'accruals approach', and 6174 are found with the 'special items approach'.	Linguistics patterns used by managers.	Information asymmetry greatly increases after a big bath is taken by a deceptive CEO, by applying textual analysis, this research shows that investors can better predict which managers may use big bath tactics to manage earnings.

3.1 Deception or prudence?

The rich literature on the topic of public language is said to have less focus on the important area of spoken language, this is even though spoken language is preferred by stakeholders when analyzing companies as it is claimed to be easier to understand and more intuitive (Papadopoulou et al., 2024). Furthermore, earnings conference calls are said to be the most popular setting for investors to extract language from executives, and of which largely dictates their investment decisions. The researchers find through their case study on newly public companies that when an analyst questions an executive on a new avenue taken-product, service, market- the results indicate that managers should respond with stating their commitments to this new project and display signs of evidence that this new avenue could be fruitful, to best attract investment.

In addition, (Gow et al., 2021) study a tactic used by managers during conference calls to not respond to negatively toned questions and give what is called a non-answer. Typical responses in this instance would be "I don't know" or "we do not disclose those numbers." The study shows that there is a negative association between firm performance and managers propensity to give a non-answer in conference calls. Another study also based on earnings conference calls finds that firms in highly competitive environments have less conference calls on average. Moreover, in such environments firms lean towards a more pessimistic and uncertain tone, this was found both within the manager prepared narrative of the call and managements' answers to questions (Allee et al., 2021).

Continuing with negatively toned presentations at conference calls, (Levy et al., 2018) discover if a Delaware supreme court ruling in 2009[5] influenced chief financial officers' (CFO) change of tone in conference calls. What the authors do find is that non-board serving members CFOs have indeed been shown to be more pessimistic after the ruling, this is compared with peers who are already serving members on the board who show less pessimism. Similarly, Blankespoor et al. analyze 345 roadshow presentations, comparing the sentiment and use of uncertain words to the prospectus, the goal of the study is to find which can better predict future returns based on these three variables analyzed (2023). It should be noted that in roadshows, despite managers being unable to talk about new information that does not exist in their prospectuses, managers can choose to focus on certain parts of their prospectuses and leave others out. While the prospectus is a highly regulated document that ultimately needs to be reviewed and accepted by the SEC. The study shows that roadshows contain language that is more certain and positive as compared to the prospectus, however, the positive sentiment shown in these presentations was shown to indicate positive future performance.

3.2 Malicious intent

Furthermore, (Bushee et al., 2023) use their research to uncover if managers use investor conferences to hype up the price of their stock holdings to sell at inflated prices. The researchers find that there is a significant amount of insider selling before the investor conference- there exists no mandated trading blackout window that prohibits managers from selling their shares prior to the event. The study focuses on three factors that could be said to prove that management use investor conferences to sell their holdings at elevated prices: 1: number of voluntary disclosures before the conference, 2: optimistically toned pre-conference disclosures, 3: the optimism in the disclosures after the event is less than those preceding it.

4. Conclusion and Directions

This literature review attempted to inspect the different theories, research methods and outcomes of research in the topic of public language for the studies published in the years 2018-2024. The review had the objective of conducting a comprehensive and not an overall review of the topic of public language. The review begun with giving an overview of the definitions of public language. The research has attempted to show the different schools of thought, theories and research methods used to study this topic area. It was found that that studies on written public language seem to outnumber studies on spoken public language. This occurred even though at least for investors it was found that there was a preference for spoken public language as it was easier to comprehend and is more intuitive. More so, the evolution of tools or dictionaries that were used to explain disclosure sentiment were discussed, as well as highlighting how the latest development in this specific domain with the emergence of machine learning methods that can explain textual sentiment much more profoundly than previous static dictionaries could. While the review also uncovered how investors would react to specific use of public language in different circumstances, for instance the difference in how they would react to the same message from managers on an earnings conference call and on social media.

[5] The Gantler ruling established in the case of *Gantler v. Stephens*. Stated that corporate officers have the same fiduciary duties towards investors as directors, thus non-board serving executives can also be litigated (Levy et al., 2018).

4.1 Theoretical Framework and research directions

Firstly, (Courtis, 2004, p. 292, as cited in Davis, & Brennan, 2007) defines readability as a "narrative writing technique that obscures the intended message, or confuses, distracts or perplexes readers, leaving them bewildered or muddled." The theory underpinning this phenomenon is the obfuscation theory, which aims to hide negative firm outcomes by using unclear language in disclosures (Merkl-Davies, 2007; Abu-Abbas & Hassan, 2024). In addition, (Davis, & Brennan, 2007) claim difficulty of disclosure readability is because of either managerial manipulation or simply poor writing. However, they claim that poor writing is not likely to be the case, executives and their firms typically take great care in preparing their disclosures as their perceived competence rests on their presented image. Obfuscation theory is the term given for studying unclear language used in disclosures when executives have the intent of manipulating readers (Beattie, 2014).

Another branch on public language readability is the usage of jargon, Sawyer et al. claim that psychological research shows that jargon is used as a tool to signal firm competence to attract investment (2008, as cited in Tan et al., 2019). However, both the SEC and professional investors argue against the usage of jargon as it makes it more difficult for amateur investors to comprehend the disclosures (SEC, 2009; FRC, 2009; KPMG, 2013, as cited in Tan et al., 2019). It is also mentioned that those investors with high industry knowledge appreciate good jargon because it gives more clarity to the document. Thus, if further research would pursue this route than it must be noted that it would be intertwined with the stakeholder theory, which states that executives pursue certain actions to manage the perceptions of target stakeholders, as well as to respond to an expectation or demand. In this case the demand is set by the SEC which states that jargon usage should be kept to a minimum, the reader should also be aware that stakeholder theory specifically focuses on the effect of disclosures on stakeholders other than investors, in this case the SEC (Merkl-Davies & Brennan, 2007). Also, (Emett, 2019) shows that amateur investors prefer certain sentiments in a disclosure depending on the context of the company currently being in a good or bad phase, future studies might build on this, by inspecting if there is alignment between professional and amatuer investors.

Secondly, Tone management is defined by Huang et al. as "the choice of tone level in qualitative text that is incommensurate with the concurrent quantitative information" (2014, p.1). Furthermore, there are two competing theories which can adequately be used for describing this tactic: the agency theory -which describes executives as rational actors who make use of tone in order to hide negative circumstances, and there is the social psychology theory which posits that executives are not entirely rational actors and the sentiment used in their disclosures reveals their bias or emotional state-either positive or negative (de Souza et al., 2019; Rutherford, 2003; Merkl-Davies et al., 2011; Li, 2010; Davis et al., 2015, as cited in Hassan et al., 2022). After conducting this review, it is apparent that it would be helpful for future research to be guided by the following assumptions: executives use tone management to deceive investors about the true state of the firm's operation, also that it is more likely used for strategic rather than informational purposes. Moreover, usage of both sets of theories-agency & social psychology should be taken, as it is the author's opinion that they are not exclusive to each other. Indeed, how a disclosure is prepared is both related to executive rationality- how to make the company's image better in case of poor performance- and possible emotional or mental states- feeling of inadequacy if the company is performing poorly or due to peer competition.

In addition, (Garcia et al., 2023) compares the results of the Loughran McDonald dictionary with artificial intelligence in analyzing conference call transcripts, future studies could assess how experienced investors, or analysts would react to a given conference call by answering questions related to their impressions and then showing them what the artificial intelligence system uncovered by analyzing the transcripts. The purpose would be to understand how competent experienced stakeholders are in deciphering social cues and tone presented by management during an earnings conference call. Moreover, it could also show if artificial intelligence systems perform better through reading of transcripts than humans do at forming opinions about a company from its management's social cues and tone displayed.

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