Tone Analysis in Earnings Conference Calls and Role of Corporate Governance, Evidence from FTSE100 Firms

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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Abstract

Existing literature has provided evidence that managers use voluntary disclosure as an impression management vehicle to manage stakeholders' perceptions. From the agency theory perspective, managers' engagement in impression management strategies is an opportunistic managerial behaviour that undermines the quality of disclosure and may cause capital misallocations. What is more, impression management techniques may increase when the media of disclosure is voluntary, less formal, and external auditors do not provide opinions of credibility. Thus, the present study focuses on tone analysis, where the tone is used as impression management techniques, in the context earnings conference calls. In the earnings conference calls context, the disclosure is voluntary, the audiences are sophisticated financial analysts who can detect potential deception inherent in such a context, and behaviours are influenced by a combination of regulatory and ritual codes. The study has a focus on tone management, a measure of managers' use of negative and positive keywords, as an impression management technique.

The objectives of this study are: (i) to measure the tone (thematic manipulation) of earnings conference calls as an impression management techniques used by managers, (ii) to examine whether managers engage in tone management when a firm's financial performance varies, (iii) to examine the role of corporate governance, an architecture of accountability, in limiting tone management in earnings conference calls context.

The study sample comprises FTSE100 firms listed in the London Stock Exchange (LSE) during 2005-2016. This study reveals three empirical findings. First, managers manage their disclosure tone in earnings conference calls to various extent both across the years and cross-sectionally. Second, there is a significant difference between the manager's disclosure tone

in the presentation session and discussion session of earnings conference calls. Also, we find that managers' tone is more positive in the presentation session when a firm's financial performance is favourable compared to a firm with unfavourable financial performance. However, we do not find tone differential in the discussion session between firms with favourable and unfavourable financial performance. Overall, the results of managers' tone analysis are mixed depending on which session of earnings conference calls they speak. Third, strong corporate governance mechanisms, such as active audit committee, active board, and independent directors, are negatively associated with tone management, and that indicates that strong corporate governance limits impression management.

This study contributes to impression management literature by focusing on earnings conference calls context where the incentives for opportunistic managerial behaviour are severe. Also, the study contributes to the role of corporate governance in impression management techniques in less formal disclosure media.

Keywords: Tone Analysis, Voluntary Disclosure, Impression Management, Tone Management, Earnings Conference calls, Corporate Governance.

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Any errors that remain in the project are mine

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AIMR	**Association for Investment Management and Research**
CSR	**Corporate Social Responsibility**
EBITD	**Earnings Before Interest Tax and Deprecation**
ED	**IASB/ FASB Exposure Draft**
FASB	**The US Financial Accounting Standard Board**
FLS	**Forward-Looking-Statement**
GI	**General Inquirer**
IASB	**The International Accounting Standard Board**
IPO	**Initial Public Offering**
LM	**Loughran and McDonald (2011) word list**
LSE	**London Stock Exchange**
MD&A	**Management Discussion and Analysis**
NLP	**Natural Language Processing**
NLTK	**Natural Language ToolKit**
NYSE	**New York Stock Exchange**
UK/U.K.	**United Kingdom**
USA/U.S.	**The United States of America**

Chapter One: Introduction

1.1 Overview and Motivations:

The evolving nature of business environment exposes firms to various risks and uncertainties, and economic events have become more complex. This complexity creates a challenging task for the firms' managers to report the effect of these events in their financial reports (Beattie, 2014). Therefore, voluntary corporate disclosure mediums provide rich platforms for managers to disclose and disseminate value-relevance information that cannot be expressed in monetary term. Indeed, this view is confirmed in the accounting and finance literature (Core, 2001; Healy and Palepu, 2001; Beyer *et al.*, 2010; Berger, 2011). Moreover, the contents of many of these voluntary corporate disclosures are in the form of qualitative information, that is, narratives.

The use of narratives in voluntary corporate disclosure can be viewed from two perspectives. The first view is that these narratives provide useful information to information users and decision-makers (value relevance). The value relevance branch of research examines basically the effect of information on the stock market, economic view. The other view is that the narratives are devices that can be used by managers to shape the perceptions of information users (impression management). The present study focuses on the second view. However, there is an overlap between these two views. For example, a manager's compensation and reputation are linked to a firm's financial performance and market value (share price). In order to enhance the firm market value, the manager needs to provide value relevance information to the stock market participants. However, in case of adverse performance, a manager is more likely to engage in shaping the perceptions of stock market participants, that is, impression management. Indeed, some studies suggest that managerial

impression management behaviours are attributed to managers' economic incentives, that is, conflicts of interests in the agency relationship (Merkl-Davies and Brennan, 2011; Brennan and Merkl-Davies, 2013; Merkl-Davies and Brennan, 2017).

For the present study, impression management is viewed as an opportunistic managerial behaviour that distorts the quality of corporate disclosure (Clatworthy and Jones, 2003; García Osma and Guillamón-Saorín, 2011).

As prior studies suggest that impression management techniques are more apparent in voluntary corporate disclosure mediums than in mandated disclosure (Brennan, Daly, and Harrington, 2010; Cho, Roberts, and Patten, 2010; Gaia, 2015; Guillamon-Saorin, Isidro, and Marques, 2017; Yang and Liu, 2017), the present study focuses on a unique voluntary disclosure context that, to best of researcher knowledge, has received a little attention to be examined for impression management techniques in the UK context, that is earnings conference calls.[1] Earnings conference calls are voluntary corporate disclosure where the communication is two-way, and the primary audiences are sophisticated financial analysts. The sophistication of information users affects managers' disclosures strategies as well as their impression management strategies. Literature provides evidence that sophisticated information users process information differently than the naïve information user (Blau, DeLisle, and Price, 2015). Furthermore, in earnings conference calls context, the participants (i.e. management and analysts) behaviours are influenced by a combination of regulatory and ritual codes (Abraham and Bamber, 2017). The discussion session (Q&A) of earnings conference calls comprises aspects of both public and private meetings, where the analysts

[1] The only study that we are aware of that examine earnings conference calls in the UK context is Abraham and Bamber (2017). However, they follow a qualitative approach to examine analysts' incentives to participate in earnings conference calls' discussion sessions.

are privately invited to attend earnings conference calls. Still, the real-time online broadcast is available to the public. Indeed, while private meetings with management offer to build a favourable relationship with management and vice versa, public meetings increase the visibility of calls' participants. These two forces, i.e. favourable relationship and visibility, may affect calls participants' behaviours differently.

The motivation of the present study is to analyse the tone, as a managerial impression management technique, in the unique context of earnings conference calls. We focus on one technique of impression management that attract interests in the recent voluntary corporate disclosure literature; that is, the tone of the disclosure. Although the tone of disclosure has been studied in the prior research from the value-relevance perspective, very few studies examine the tone of disclosure from the impression management perspective on a large sample, few USA based studies are exceptions (Li, 2010b; Loughran and McDonald, 2016). Also, the advancement of computational textual analysis technology (Natural Language Processing) has provided opportunities for disclosure scholars to examine patterns that were not possible before on a large scale (Core, 2001). Therefore, the use of Natural Language Process in voluntary corporate disclosure has also motivated the present study to examine the tone of managerial disclosure on a large scale.

1.2 Objectives of the Study:

This thesis is comprised of three main projects. The first project provides a method of using Natural Language Processing technology to measure managerial tone, as an impression management technique, in the context of earnings conference calls. Many of prior studies that examine the tone of disclosure used manual content analysis method (Clatworthy and Jones, 2003; Schleicher and Walker, 2010) and few studies used automated methods (Athanasakou and Hussainey, 2014; Elshandidy, Fraser, and Hussainey, 2015) because of

unstructured natural of the UK firms' annual reports (El-Haj *et al.*, 2019a; Lewis and Young, 2019). This study differs than prior studies in that it offers the use of Natural Language Processing technology in the earnings conference calls transcripts which measure the tone of spoken narratives.

The second project examines whether a firm's financial performance affects managers' tone in the context of earnings conference calls. Beyer *et al.* (2010) argue that many of existing studies that examine voluntary corporate disclosure in corporate annual reports make a little distinction between voluntary disclosure and mandatory disclosure, as what constitutes voluntary disclosure is of considerable debate. The study focuses on a purely voluntary disclosure medium to avoid the effect of mandated disclosure on managerial disclosure tone.

The third project is a complement to the second project, that is if managers engage in impression management technique (using abnormal linguistic tone) in their disclosure in the earnings conference calls context, do corporate governance mechanisms limit impression management in such a context? In this project, we view corporate governance as a holistic mechanism for monitoring, as well as, whether an individual corporate governance's variable limits impression management because the monitoring duty for the content of earnings conference calls is not assigned to a specific body within the corporate governance structure. Therefore, the third project examines the association between corporate governance mechanisms and the abnormal managerial linguistic tone in the context of earnings conference calls.

1.3 Expected Contributions:

Overall this study contributes to the literature on corporate disclosure in several important ways. First, impression management studies in the context of earnings conference calls have not been examined for FTSE100 firms, except Abraham and Bamber (2017) study which

explores analysts' incentives to participate in earnings conference calls' discussion sessions. This study provides new evidence on impression management linguistic technique that managers can use in the context of two-way communication, where the monitoring is intense from sophisticated financial analysts.

Second, the study contributes to the monitoring role of corporate governance mechanisms in the voluntary corporate regime with a particular focus on impression management mitigation. Prior literature provides evidence that corporate governance enhances the quality of corporate disclosure, but a little is investigated on corporate governance role in limiting opportunistic impression management.

Third, the results of this study could be of particular interests for financial disclosure regulatory bodies in the UK. The content of earnings calls is not directly monitored and audited by third parties. Therefore, the regulatory authorities who are responsible for monitoring the quality of corporate disclosure may use the Natural Language Processing technology that has been used in this study with further developments to monitor the quality of corporate disclosure to promote more transparent disclosure.

Fourth, researchers could benefit from this study since there is limited research in the area of corporate disclosure in the context of earnings conference calls in the UK. The results of this study could be a starting point for researchers to provide further investigations in this line of research.

1.4 **The Structure of the Thesis:**

The thesis is organised as follows:

Chapter 2 provides a theoretical framework for voluntary corporate disclosure with a specific focus on the agency theory as it is the motivation for management engagement in impression

management. Chapter 2 also provides a brief discussion on the difference between the quality of financial reporting and quality of disclosure and how various studies measure these two constructs in the corporate disclosure literature; followed by a review of corpus linguistics with a specific focus on the collocation concept. Then, it provides a review of literature in the area of accounting narratives and the importance of narrative in corporate disclosure. Chapter 2 ends with a review of the emergence of earnings conference call research.

Chapter 3 starts with a review of the textual analysis methods in accounting and finance literature. Then, it provides a description of the parsing method we apply to parse the earnings call transcripts and measure the tone of the calls. Appendix to the thesis provides the Python codes for parsing and measuring the tone.

Chapter 4 examines the effect of firms' financial performance on managerial linguistic tone in the context of the earnings conference calls. Chapter 5 examines the role of corporate governance mechanisms in limiting impression management in the context of earnings conference calls.

Chapter 6 concludes the thesis with overall findings, limitations of study and suggestions for future work.

Chapter Two: Theoretical Framework & Literature Review

2.1 Introduction:

In the agency relationship, the principals (owners of a firm) engage the agents (managers) to perform some services on their behalf which involves delegating some decision-making authority to the managers, where the separation of decision-making and risk-bearing functions, causes the agency problems (Jensen and Meckling, 1976, p. 308). A particular problem in the agency relationship, in the financial market context, is information asymmetry, where the shareholders believe that the managers have more information and tend to behave to their own benefits and take actions that may not maximise shareholders' welfare (Jensen and Meckling, 1976). Therefore, the mechanisms that intend to narrow the information asymmetry between managers of a firm and outsiders are important to the success of financial markets (Ronen and Yaari, 2002). Among others, disclosure is one of the most effective mechanisms that narrows the information asymmetry between a firm's management and outsiders.

The forces that give an increase to the demand for disclosure and dissemination of information include external forces (e.g. corporate control contexts and proprietary costs) and internal forces (e.g. management stock compensation, career concerns, and talent signalling). In practice, less than the full disclosure is likely to occur because of the violation of one or more of these conditions: (1) disclosures are costless; (2) investors know that firms have, in fact, private information; (3) all investors interpret the firms' disclosure in the same way and firms know how investors will interpret that disclosure; (4) managers want to maximize their firms' share prices; (5) firms can credibly disclose their private information;

and (6) firms cannot commit ex-ante to a specific disclosure policy (Beyer *et al.*, 2010, p. 300-301). Therefore, a firm's disclosure strategy is determined externally and internally.

Corporate disclosures come in various forms (numbers, visuals, narratives) and disseminate through various disclosure media[2] (periodic reports, press releases, websites, social media, conference calls, management presentation). Accounting narratives have a central role in explaining firms' quantitative performance and communicating hard-to-quantify information. However, disclosures have to have specific criteria to be of high quality and useful in economic decision-making and, accordingly, to the success of financial markets. Thus, this study has a focus to examine one of the qualitative attributes of disclosure quality; in particular, the tone of narratives disclosure. Although quality of disclosure a complex concept, multi-dimensional, and measuring its' is problematic (Beattie, McInnes, and Fearnley, 2004b), this study aims to focus on one attribute of quality of disclosure, i.e., the tone of the disclosure.

The chapter starts with the section (2.2) that reviews the theoretical framework of voluntary disclosure with a particular focus on the agency theory as an explanation of management engagement in impression management strategies. In section (2.3), we explain the difference between financial reporting quality and disclosure quality. Section (2.4) We provide a review of disclosure quality and proxies for disclosure quality in section (2.5). Section (2.6) briefly reviews corpus linguistics literature with a focus on collocation concept. Section (2.7) introduces accounting narratives and discusses the importance of accounting narratives in corporate disclosures, followed by a review of empirical studies of narratives disclosure in section. Section (2.7) reviews the earnings conference calls literature and discusses the

[2] In this study, the terms media, medium, mean, vehicle, and device of the disclosure are used interchangeably.

emergence of the earnings conference calls research. We provide a summary of the chapter in section (2.9).

2.2 Theoretical Framework of Voluntary Corporate Disclosure:

The primary aim of accounting is to communicate information about a firm's performance and other relevant information to interested information users. The communication of such information is critical for the well-functioning of efficient capital markets as well as essential for interested users to make economic decisions (Healy and Palepu, 2001). Regulations mandate firms to provide disclosure through financial statements, footnotes, and other regulatory filings. Besides, many firms engage in disclosing information voluntarily, such as conference calls, press releases, twitter postings, and websites. Therefore, various theories attempt to explain corporate disclosure phenomenon from different perspectives. These theories include (to name some) agency, information asymmetry, signalling, stakeholders, political cost, and stewardship.

Two reasons raise the demand for corporate disclosure of accounting information from the market-based economies perspective (Healy and Palepu, 2001; Beyer *et al.*, 2010). First, information asymmetry that arises from information differences between firms' insiders (i.e. managers) and outsiders (i.e. investors and other capital providers) (Akerlof, 1970). Typically, managers have better information about a firm's value and performance than investors and other capital providers who are not engaged in a firm's daily operations. Thus, disclosure is one mechanism that is intended to reduce information differences between the firm's insiders and outsiders.

The second reason that raises the demand for disclosures is the agency problem that arises because of the agency relationship between principals and agents, that is the separation of

ownership and control (Jensen and Meckling, 1976). In the agency relationship, the principals give the decision making authority to the agents to make decisions on their behalf. Consequently, the agent may not take decisions in the best interests of the principal and may engage in activities for their self-interests. Therefore, disclosure is one of the monitoring mechanisms to reduce agency cost that arises from the agency relationship. Beyer *et al.* (2010) refer to the former reason as the valuation role of disclosure and the latter as the stewardship role of the disclosures.

Beyer *et al.* (2010) survey six theoretical models that address situations where managers engage in full disclosure of their private information in the capital market setting; that is voluntary disclosure of corporate information. The violation of one or more of these conditions will lead to less than full disclosure, or less than truthful disclosure. However, it is worthy to note that these models are based on two justifications: (A) investors rationally infer that managers do not disclose information that would cause firms' value downward; (B) ignore that there is agency problem between the firm's management and investors. Table (2.1) summarises these theoretical models and rationale behind each model.[3]

However, corporate disclosure is a complex phenomenon, and many factors affect a firm to disclose information and for various purposes. Verrecchia (2001, p. 98) argues that the challenge in surveying corporate disclosure literature is that 'there is no comprehensive, or unifying, theory of disclosure'. He also claims that each theory may 'examine some small piece of the overall disclosure puzzle' (p.98).

[3] See Beyer et al (2010, p. 301-305), (Verrecchia, 2001) and (Dye, 2001) for a comprehensive discussion of these models.

Nevertheless, Beattie (2014) argues that accounting narrative can be explained through blended theoretical perspectives 'theoretical pluralism' and that will provide more vibrant and deep understandings of disclosure phenomenon. Likewise, Carpenter and Feroz (1992) argue that disclosure theories should be considered as complementary rather than competing. Indeed, the existing literature suggests that many theories can be used to explain voluntary corporate disclosure, and managers' incentives to provide information beyond the mandatory requirements.

The following section discusses the agency theory that has been used extensively to interpret voluntary corporate disclosure and managers' incentive to provide information voluntarily.

Table 2.1 Theoretical models of Corporate Voluntary Disclosure

Models	**Rationale**	**What Prevent Full Disclosure**	**Example**
Disclosure Costs	Managers disclose all their private information if the disclosure is costless and if the disclosure is costly, then managers only disclose favourable information that maximises firm value. These costs can be classified as the actual cost of disclosure (e.g., holding conference calls or preparing annual reports and distribution cost) and consequential cost (e.g., costs associated with the disclosure of proprietary information)	Proprietary costs of disclosure	Jovanovic (1982); Verrecchia (1983), (1990a); Dye (1986); Lanen and Verrecchia (1987)
Probabilistic information endowment	Managers make full disclosure of their private information because the investors know in fact that managers have private information.	Managers may withhold unfavourable information. Also, managers may strategically time disclosure of their private information when investors have uncertainties of managers information endowment.	Dye (1985); Jung and Kwon (1988); Penno (1997); Pae (2002)
Uncertain investor response	All the investors uniformly interpret and react to managers' disclosure in the same way, and investors' interpretation and reaction are known to managers.	Investors' interpretation and reaction are not always known to managers, and investors do not uniformly interpret information in the same way. Also, there are varying levels of sophistication among investors.	Dutta and Trueman (2002); Suijs (2007); Dye(1998); Fishman and Hagerty (2003)
Uncertain disclosure incentives	Managers' primary objective of full disclosure of their private information is to maximise firms' value through stock prices and investors know managers' objective.	Sometimes, managers' may have objectives to minimise stock prices (e.g., stock options)	Einhorn (2007)
Non-verifiable disclosure	Managers can only disclose truthful information.	Sometimes, misreporting is costless (cheap-talk).	Stocken (2000)
Ex-ante commitment to disclosure strategies	Managers cannot credibly commit ex-ante to a specific disclosure policy	Optimal disclosure is likely to be different ex-post and managers cannot commit to disclosure before receiving private information.	Verrecchia (2001); Dye (2001)

2.2.1 **Agency Theory:**

Agency relationship, as defined by Jensen and Meckling (1976, p. 308), is 'a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent'.[4] In the principals (owners)- agent (managers) relationship, it is expected from the agents that they make decisions in the best interest of the principals that maximise their (principals) wealth and fulfil their expectations. However, because of the separation of ownership and control in the agency relationship, two problems arise; (A) conflict of interests; and (B) information asymmetry, primarily information about a firm's risk-taking. Thus, agency theory is concerned with resolving these problems: (A) the conflict of interests between the principal and agent as it is difficult or expensive for the principal to verify the agents' actions; and (2) the problem of risk sharing that arises when the principal and agent have different attitudes towards risk (Eisenhardt, 1989, p.58).

Agency theory assumes that people are self-interested, and their goals are conflicting. Consequently, agents may behave opportunistically and take actions that are beneficial to themselves but detrimental to the principals. Probably, the conflict of interest between principals and agents is due to their different attitudes toward risk (Shankman, 1999). In managers-shareholders context, managers may make decisions and engage in activities that may not necessarily enhance shareholders' wealth. Also, Managers may prefer to pursue their personal objectives, such as flawed remuneration and excessive risk-taking activities.

Furthermore, as firms' insiders, managers have better information about a firm's current and future performance, that is an information gap between managers and shareholders (Subramaniam, 2006). Information asymmetry, where the agents possess information

[4] In this context, the agent refers to the managers and the principals are the owners (shareholders).

advantages over the principals (Scott, 1997), may lead to specific types of agency problems, i.e. moral hazard[5], and adverse selection[6].

In the agency relationships from a corporate governance perspective, owners bear bonding costs and monitoring costs in order to ensure that managers act in the best interests of the owners. Bonding costs include contractual obligations (e.g., compensation package) that limit or restrict managers' activities for personal purposes. Monitoring costs include activities (e.g. the board of directors and governance structure) that monitor managers and ensure managers take activities that maximise owners' wealth. However, the primary challenge in agency relationship between principals and agents is how to ensure that the agent acts exclusively in the interest of principals (Tricker, 2015) and how the principal verifies what the agent is doing (Eisenhardt, 1989).

Agency theory applies to a variety of settings, such as voluntary disclosure, corporate ownership structure, regulatory policy, and other expressions of self-interest. Table (2.2) presents an overview of the agency theory, and table (2.3) summarises the analytical models of agency theory.

[5] Moral hazard arises when there is a lack of effort on the part of agent. This is because an agent may not put forth agreed-upon effort (Eisenhardt, 1989, p.61).

[6] Adverse selection is misrepresentation of the ability by the agent. This is because principal cannot completely verify these skills or abilities either at the time of hiring or while the agent is working (Eisenhardt, 1989, p.61).

Table 2.2 Agency Theory Overview

Key Idea	**Principal-agent relationship should reflect efficient organisation of information and risk-bearing costs**
Unit of Analysis	Contract between principal and agent
Human assumption	Self-interest, bounded rationality, risk aversion
Organisational assumption	Partial goal conflict among participants, efficiency as the effectiveness criteria, information asymmetry between principal and agent
Information Assumption	Information as a purchasable commodity
Contracting Problems	Agency (moral hazard and adverse selection), risk-sharing
Problems Domain	Relationships in which the principal and agent have partly differing goals and risk preferences (e.g. compensation, regulation, leadership, impression management, whistle-blowing, vertical integration, transfer pricing).

Source: Verbatim from Eisenhardt (1989, p. 59)

Table 2.3 Summary of Analytical Models of Agency Theory

Study	**Findings**
Wilson (1968)	Theory predicts the modes of delegating the decision process to professional managers through payoff contracts. The risk-sharing problem arises when the principal and agent have different attitudes towards risk.
Ross (1973)	An agency problem arises because the principal cannot monitor the agent's act. The solution, therefore, involves the choice of optimal fee schedule to motive the agent to choose the act that the principal most desires.
Jensen and Meckling (1976)	Agency theory focuses on the conflicts of interest between principals and agents, and examines the effect of the agency relationship as well as the monitoring and bonding mechanisms aimed at mitigating agents' actions. The firm is viewed as a legal fiction which serves as a nexus for contracting relationships.
Holmstrom (1979)	Contracts can be improved by creating additional information or by using other sources of information about the agent's action.
Watts and Zimmerman (1986)	Managers use private information to increase the firm 's market value. When disclosing information, managers do not consider potential investors which results in them under producing information.
Bushman and Indjejikian (1995)	Insiders use private information advantage to earn excess trading profits and may influence voluntary corporate disclosure. Voluntary disclosure reduces both the insider's share of total profits and the total size of trading profits.
Shleifer and Vishny (1997)	Legal protection of investors and concentration of ownership are corporate governance mechanisms that help investors to get their money back.
Stocken and Verrecchia (2004)	Financial reports are produced to induce investment level and maximise managers' payoff. Thus, managers manipulate the reports to convey both financial and nonfinancial information to investors to help them make investment decisions.

Source: Verbatim from Al Kalbani (2008, p. 36)

Healy and Palepu (2001) outline several solutions to the agency problem. First, optimal contracts between managers and shareholders (owners) of a firm (e.g. compensation contracts and debt contracts) that align the diverging interests of managers with those of shareholders. Second, the board of directors, representative of the firm's shareholders, can play an active role in monitoring managers on behalf of owners. Third, information intermediaries (i.e. financial analysts and rating agencies) play also an active role in monitoring managers indirectly. Financial analysts and rating agencies provide information that helps to uncover any misuse of firm resources. Fourth, the market for corporate control may reduce the agency problem. When managers face the threat of hostile takeovers, proxy contests, and losing their jobs, they are more likely to make decisions and engage in activities that maximise owners' wealth and fulfil their expectations. However, Healy and Palepu (2001) argue that the effectiveness of these mechanisms in eliminating agency problem depends on a variety of economic and institutional factors, including optimal contracts forms, incentives problems of information intermediaries and corporate boards, and nature of the corporate control market.

Disclosure, whether it is from corporate or information intermediaries, is central in reducing agency problem. Disclosures play a primary role in informing shareholders whether managers are utilising company resources in the best possible way and making decisions that in the best interests of shareholders.

The following subsection focuses on the role of corporate disclosure in the agency relationship.

2.2.2 **Disclosure and Agency Theory:**

Within the agency theory context, disclosure is one of the valuation and monitoring mechanisms that shareholders use to evaluate a firm's current and future performance

(valuation role) and monitor management performance (stewardship role) (Beyer *et al.*, 2010). As mentioned in the previous section that managers have self-interested objectives, and informational advantages over the outsiders, thus, disclosures provide effective monitoring mechanism that shareholders use to monitor management for transparency and that leads to a high level of transparency in the capital markets (Beattie and Smith, 2012). Furthermore, Verrecchia (2001) argues that the primary objective of the disclosure is information asymmetry reduction. Therefore, from an agency theory perspective, disclosures attempt to solve the two main problems that arise from agency relationship, (A) conflict of interest between shareholders and managers; and (B) information asymmetry. However, disclosure by itself will not solve the agency problem, but the solution depends on a variety of other factors (such as, the quality of disclosed information, intermediaries information disclosure quality, timing of disclosure, information users' sophistication, and legal system) that could be named under 'the disclosure environment'.

In their analytical paper of credit rationing in a market with imperfect information, Stiglitz and Weiss (1981) point out that greater disclosure of information can mitigate agency problem and contribute to better resource allocations in financial markets. Similary, Kanodia and Lee (1998) argue that corporate disclosure has a disciplinary role that prevents managers from expropriating shareholders' wealth. In a review paper by Healy and Palepu (2001), they suggest that disclosures enable shareholders to monitor firms' operations closely and evaluate managers' performance and utilisation of firms' resources in the best interests of shareholders. These studies provide evidence that disclosure is effective in mitigating agency problem. Therefore, disclosures have to be of high quality and extensive in order to be effective in lowering agency problem, both in term of monitoring the alignment of managers'

objectives with those of owners; and reducing the information asymmetry between firms' insiders and outsiders.

In the empirical literature, numerous studies use agency theory to explain financial analysts role as external monitors to management; variations of voluntary disclosure extent among firms; determinants of voluntary corporate disclosures; and consequences of voluntary corporate disclosures. Useful reviews of corporate disclosure studies can be found in Healy and Palepu (2001), Lundholm and Van Winkle (2006), Beyer *et al.* (2010), Beattie (2014), and Leuz and Wysocki (2016).

The following empirical studies are provided for brevity purpose. As suggested by prior literature (e.g. Jensen and Meckling, 1976) that information intermediaries such as financial analysts have a significant role in monitoring the managers (managerial performance) and making capital markets more informationally efficient. Moyer, Chatfield, and Sisneros (1989) examine the financial analysts' monitoring role of managerial performance as a mean of reducing agency costs. Their results suggest that the financial analysts' monitoring activity can be explained as a monitoring device in the presence of potential agency costs. Furthermore, financial analysts' monitoring activities are influenced by the informational demand of investors. In a similar vein, Yu (2008) examines the role of equity analysts in corporate governance, as corporate governance is a device to reduce agency costs. Specifically, Yu (2008) examines whether a firm followed by more analysts engages less in earnings management decision; thus, analysts' serve as external monitors to managers. His results suggest that firms' followed by more analysts engage less in earnings management; therefore, analysts serve as external monitors to managers and contribute to disclosure and dissemination of high-quality information.

Also, agency theory is used to explain corporate disclosure decisions and managers behaviour. For example, Abrahamson and Park (1994) use agency theory to explore managers' concealment of a firm's negative outcomes in the letters from firms' presidents contained in the firms' annual reports. They argue that managers have informational advantages and conflicting objectives than shareholders, two common problems in the agency relationship; and in the cases of negative firm performance, managers have more incentives to conceal negative news. Their results suggest that managers engage in concealment of negative information, and these concealments are intentional. Huang and Zhang (2012) examine whether enhanced disclosure mitigates managers from misusing a firm's resources, that is disclosure as a device to reduce agency costs. Their results provide empirical evidence that enhanced disclosures can assist to constraint managers from misusing of a firm's resources and expropriating shareholders' wealth.

Also, agency theory is used to explain corporate governance as a mechanism to reduce agency costs in the agency relationship. Armstrong, Guay, and Weber (2010) provide a useful review in this area.

In sum, within agency theory, disclosure is considered as one of the possible solutions to the agency problem (Eng and Mak, 2003). Thus, disclosure aims to reduce information asymmetry between firms' management and outsiders as well as may provide the shareholders with verifications of alignment of their objectives with management objectives. Also, the role of financial analysts as information intermediaries is important in corporate disclosure and dissemination of information to shareholders to ensure that lower information asymmetry is achieved. Whereas financial analyst role is considered as an external force to corporate disclosure, corporate governance is an internal force that plays a significant role to ensure that disclosure is of high-quality and limit managers opportunism. Eisenhardt

(1989, p. 60) highlights this role of disclosure from an agency theory perspective; she claims that '…since information systems inform the principal about what the agent is actually doing, they are likely to curb agent opportunism because the agent will realize that he or she cannot deceive the principal'.

The present study has a primary focus on voluntary corporate disclosure, in particular, narratives. In the voluntary disclosure regime, managers have fewer restrictions in term what to disclose and how to disclose information. Sometimes, managers have incentives to deceive, for example (Larcker and Zakolyukina, 2012; Burgoon *et al.*, 2016; Hope and Wang, 2018), and conceal information (Abrahamson and Park, 1994) when they face the risk of dismissal, the existence of crises, hostile takeovers, and negative corporate performance. Furthermore, managers engage in opportunistic disclosure and use impression management techniques to affect and manipulate the perceptions of stakeholders strategically.

The following section reviews impression management from the agency theory perspective.

2.2.3 **Agency Theory and Impression management:**

In his seminal book, The Presentation of Self in Everyday Life, Goffman (1959) discusses the importance of self-presentation[7] as individuals engage in social interactions for defining their social order and constructing social reality through managing other people impressions of them. Leary and Kowalski (1990, p. 34) define impression management as 'the process by which individuals attempt to control the impressions others form of them'. Once an individual has the motivation to gain social and material outcomes, maintain self-esteem,

[7] In this study, we use impression management and self- presentation interchangeably. See Leary and Kowalski (1990) discussion.

and develop an identity; he will construct impression management tactics to achieve the desired outcomes, i.e. impression construction (Leary and Kowalski, 1990). Similar to individuals, organisations can engage in impression management to present themselves to stakeholders to be perceived favourably, and use disclosure mediums as vehicles to managing stakeholders' perceptions.

Growing numbers of accounting research have focused on impression management in corporate disclosure context (Neu, Warsame, and Pedwell, 1998; Godfrey, Mather, and Ramsay, 2003; Clatworthy and Jones, 2006; Brennan, Daly, and Harrington, 2010; Cho, Roberts, and Patten, 2010; García Osma and Guillamón-Saorín, 2011; Leung, Parker, and Courtis, 2015; Guillamon-Saorin, Isidro, and Marques, 2017). In the context of corporate narrative disclosure, impression management is the tendency for corporate to use narratives selectively and strategically to present themselves favourably (Clatworthy and Jones, 2006). In addition, Clatworthy and Jones (2001, p. 311) argue that the aim of impression management is 'to control and manipulate the impression conveyed to users of accounting information'. Impression management thus constitutes an activity aimed at influencing others' impressions of (i) persons such as managers, the CEO, and the chairman, (ii) the organization as a whole, (iii) outcomes such as financial performance, environmental performance, ethical performance, (iv) events such as privatization, demutualization, mergers or acquisitions, and (v) concepts, such as that of profit as the only legitimate measure of corporate success (Merkl-Davies, 2007, p. 13-14) .

The use of impression management in corporate disclosure can be attributed to the agency theory assumptions. Disclosure from the agency theory perspective has an informational role and an opportunistic managerial behaviour role, and it is the latter role that underlines impression management. In the context of voluntary disclosure, managers provide

disclosures voluntarily for two purposes: (A) incremental useful information that narrows the information gap between insiders and outsiders; (B) impression management purpose to manage the perceptions of a firm's audience about firm's performance (generally the stakeholders, but from the agency theory perspective the focus is on the shareholders).

However, Impression management is also explained from other perspectives (psychological, sociological, and critical). Table (2.4) summarises the differences between the four perspectives (Brennan and Merkl-Davies, 2013).

Table 2.4 Differences between the four perspectives across five dimensions

Perspectives	*Underlying theories*	*Motivation to engage in impression management*	*Concept of impression management*	*Focus of Analysis*	*Consequences of impression management*
(1) Economic	• Agency theory	• Maximize compensation	• Reporting bias	• Obfuscation of negative organizational outcomes • Emphasis of positive organizational outcomes	• Capital misallocations
(2) Psychological	• Attribution theory	• Win social and material rewards and avoid sanctions	• Self-serving bias	• Performance attributions	• Capital misallocations
(3) Sociological	• Stakeholder theory • Legitimacy theory • Institutional theory	• Attract social and material resources and support	• Symbolic management • Decoupling	• Normalising accounts • Strategic restructuring	• Unwarranted support from stakeholders & society
(4) Critical	• Political economy • Critical theories	• Gain and maintain power	• Ideological bias	• Strategic use of rhetorical, semantic and grammatical features	• Hegemony

Source: Verbatim from Brennan and Merkl-Davies (2013, p. 10).

From the agency theory perspective, where managers have conflicting objectives with stakeholders and superior information than outsiders, managers are more likely to alter financial information to mislead some stakeholders about the underlying economic performance of the firm (Healy and Wahlen, 1999); and make biased disclosures that are closed and influenced by their personal motives, that is engaging in impression management. Thus, managers are more likely to distort information and make disclosures that lead shareholders to value their firm closest to managers' objectives (Beyer *et al.*, 2010). As a result, corporate disclosure, in particular, narratives disclosure, are assumed to be biased toward management objectives and narcissistic. If impression management strategies[8] are successful, they undermine the quality of disclosure and capital misallocations may result (Brennan and Merkl-Davies, 2013).

Also, from the attribution theory perspective, managers can engage in impression management strategies through attributing positive performance to internal factors and managers' capabilities and negative performance to external factors. In particular, firms' unfavourable financial performance causes a conflict of interests between managers and shareholders. Thus, managers are more likely to engage in impression management and manipulate shareholders' perceptions of a firm's financial performance to divert attention from financial distress (Tennyson, Ingram, and Dugan, 1990).

The prior empirical literature provides evidence of various use of impression management strategies and techniques in corporate disclosure. These techniques include (A) manipulation of readability, (B) style of presentation and choice of content, (C) visual effects, (D)

[8] The assumption is that impression management is used opportunistically by managers in order to provide biased information. However, impression management can play a significant role in restoring firms' reputation and image and legitimacy of firms' activities.

rhetorical manipulation, and (E) attribution of organisational outcomes. Merkl-Davies and Brennan (2007) provide a summary of managerial impression management strategies that have used in corporate narrative disclosure (Figure 2.1). Understanding these impression management strategies is important for the users of information because that helps the users in identifying and detecting any potential deceptions in corporate disclosed information.

Impression management strategies and techniques have used in a wide variety of disclosure media; examples include corporate annual reports (Smith and Taffler, 2000; Yekini, Wisniewski, and Millo, 2016); corporate environmental disclosure (Cho, Roberts, and Patten, 2010; Cho *et al.*, 2012; Cooper and Slack, 2015); takeover documents (Brennan, Daly, and Harrington, 2010); Operating and Financial Review (Sydserff and Weetman, 1999, 2002; Rutherford, 2003); corporate press releases (Henry, 2006; Guillamon-Saorin, Isidro, and Marques, 2017); and earning conference calls (Davis *et al.*, 2015; Abraham and Bamber, 2017; Bushee, Gow, and Taylor, 2018). These studies provide evidence that disclosure is not only intended for providing useful information, but also as a device that managers use to manage and shape stakeholders' perceptions of a firm's performance, image, reputation, and legitimacy.

In this study, the agency theory is used to explain management engagement in impression management strategies. From the agency theory lens, disclosure is a device to mitigate agency costs that arise from (A) the separation of ownership and control; and (B) information asymmetry between the insiders and outsiders. Furthermore, managers' have self-interested incentives that may lead to distort the disclosed information and manage the perceptions of information users' through impression management techniques. As a result, the quality of disclosure and the transparency are undermined as well as misallocation of capital may results because shareholders' perceptions are managed toward managers' self-serving

objectives. Also, corporate governance aims to reduce the conflict of interests in the agent-principal relationship; and enhance the quality of disclosure and improve firms' transparency. Thus, agency theory is found to be the most relevant theory to explain impression management in voluntary corporate disclosure as well as the role of corporate governance in mitigating potential opportunistic impression management techniques.

This study examines the quality of voluntary disclosure through the focus on voluntary disclosure media (earnings conference calls) and managers' impression strategy. Also, the study examines the association of corporate governance and tone of earnings conference calls as an impression management technique that is used by managers during the calls, whether corporate governance plays an active role in mitigating impression management under voluntary corporate disclosure regime.

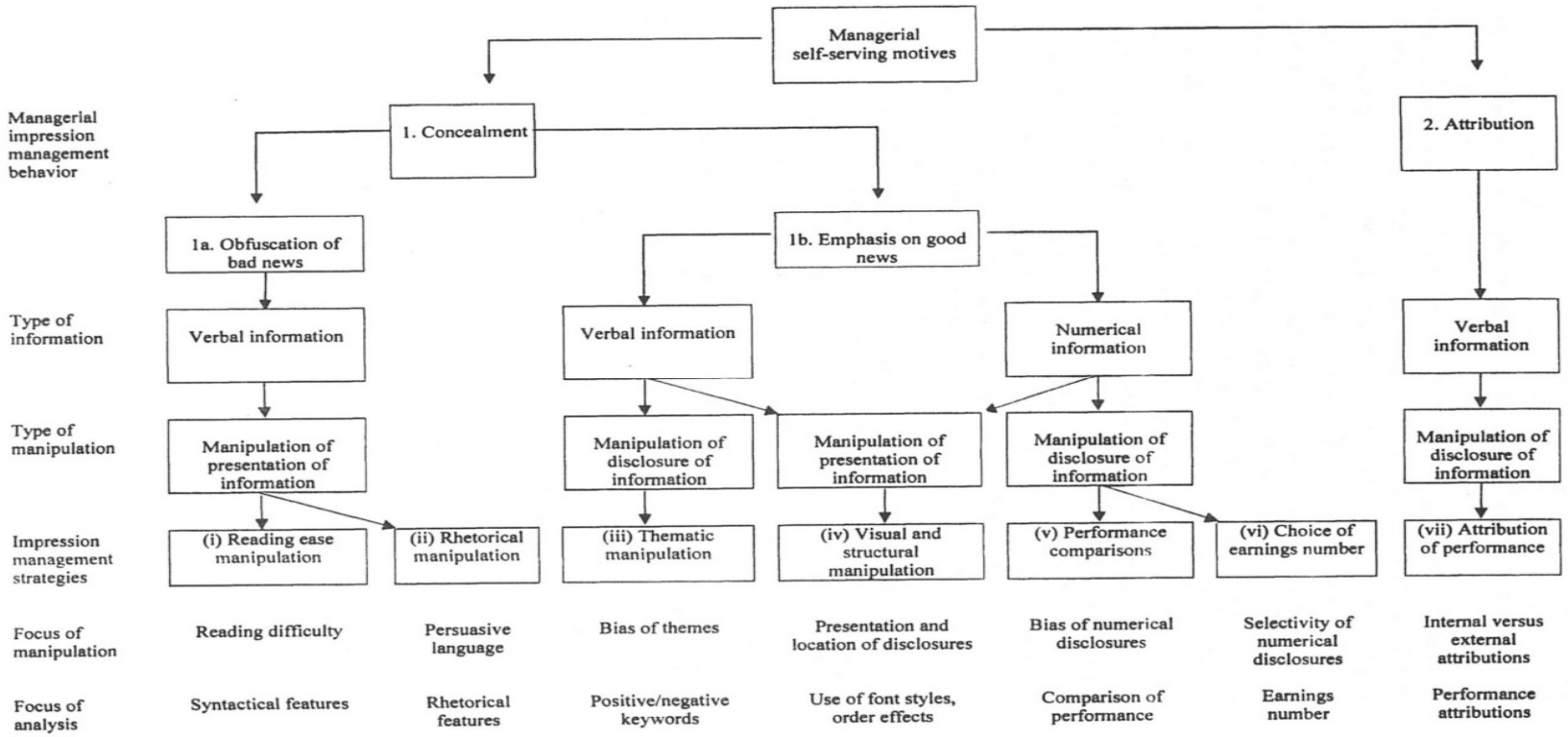

Figure 2-1 Managerial Impression Management Strategies

Source: Verbatim from Merkl-Davies and Brennan (2007, p. 128

2.3 Difference between Financial Reporting Quality and Disclosure Quality

In the accounting literature, research on corporate disclosure, its determinants, and its consequences to capital markets have been extensively investigated (Beretta and Bozzolan, 2008). Studies on disclosure quality have received attention and debate because of the difficulty to define the concept of quality and what the attributes of quality are. Thus, among accounting scholars, there have been calls to develop a more valid measure of disclosure quality (Core, 2001; Beattie, McInnes, and Fearnley, 2004b; Beyer *et al.*, 2010).

As a starting point to review the literature on the concept of quality, it is noteworthy to identify the differences between the financial reporting and financial disclosure and how different attributes of quality are associated with each of them. Tucker (2015) differentiates between financial reporting and financial disclosure. She refers to financial reporting as 'the reporting of accounting numbers in a company's financial statements and ''disclosure'' means the firm's presentation of information outside of the financial statements, such as in the notes, the Management Discussion & Analysis, and press releases' (p. 39). Tucker (2015) further distinguishes between financial reporting and disclosure in two main aspects. First, financial reporting (primarily, annual financial statements and quarterly financial statements) are audited by an independent third party, i.e., auditors. Whereas, disclosures (narratives) are not audited but only reviewed.[9] Second, financial reporting primarily has quantitative information, while most of the disclosure includes qualitative information.

[9] Exception is notes to financial statements.

Given these differences, three points worth mentioning. First, it is more likely that financial reporting could be limited to quantitative information in periodic financial statements and press release. While, disclosure may convey information users need, which presumably is broader than financial statements. Second, managers have more discretion in qualitative representation than in quantitative representation because of the nature of qualitative information, that is, managers have more discretion on the qualitative aspects of disclosed information such as tone, length, complexity, modifications, etc. (Tucker, 2015). Third, the attributes of quality in financial reporting are different from the attributes of quality in disclosure. Beretta and Bozzolan (2008) contend that, in case of financial statements (reporting), there are generally accepted concepts of quality exist, which are incorporated in accounting principles. However, the same cannot be said in case of disclosure. Accordingly, studies on the financial reporting use more consistent empirical measures of quality (such as earnings persistence, predictability of future performance, earnings variability, etc.), whereas, in disclosure studies, measures of quality vary, ranging from a self-constructed index to rating of external parties. The focus of the present study is on the disclosure quality, and the following section reviews the literature in this area.

2.4 **Definition of Disclosure Quality**

Corporate financial disclosure is any deliberate release of financial information, whether numerical or qualitative, required or voluntary, or via formal or informal channels (Gibbins, Richardson, and Waterhouse, 1990, p.122). Gibbins *et al.* (1990) broadly define corporate financial disclosure, and this definition contains all aspects of the disclosure; that are, disclosed information could be quantitative or qualitative; mandated disclosure or voluntary disclosure; and communicated via formal disclosure channels or informal channels. Thus, disclosure goes beyond firms' periodic financial reporting. It includes all the information a firm releases to the interested parties. However, it is inconclusive to have a specific definition

of disclosure quality. As a result, prior studies define disclosure quality from various perspectives, reviewed by (Healy and Palepu, 2001; Beyer *et al.*, 2010).

There could be possibly two broad classifications of disclosure quality based on firm/management perspective and value-relevance perspective. From firm/management perspective, firms will have high-quality disclosures when they provide extra information 'voluntary disclosure' beyond the mandated requirements by regulations and accounting standards 'mandatory disclosure'. The underpinning idea is that the voluntary disclosures reduce information asymmetries between firms' insiders and outsiders or informed and uninformed investors. From value- relevance perspective, firms will have high-quality disclosures when the disclosed information affect investors' belief about share prices and trading volumes (Diamond and Verrecchia, 1991; Verrecchia, 2001).

However, the quality of disclosure is a complex concept, multi-dimensional (Beattie, McInnes, and Fearnley, 2004b), and lacks a clear definition (Beyer *et al.*, 2010); thus, measuring disclosure quality is problematic. Furthermore, Botosan (2004) identifies three key reasons for the difficulty of measuring disclosure quality. The first reason is the difficulty in defining disclosure quality and what constitutes the disclosure quality. As there is no comprehensive theory for disclosure (Verrecchia, 2001), it is possible that there is no universal definition of disclosure quality. Verrecchia (2001) urges that each theory strives to explain a part of disclosure puzzle. Similarly, each of the disclosure quality attributes attempts to explain the overall disclosure quality puzzle. For this study, the focus is on one attribute of disclosure quality, that is the tone of the disclosure.

The second reason is to recognise that the effective framework for assessing disclosure quality is a context-specific. For example, the measures of disclosure quality for annual reports might not be appropriate for conference calls or press releases. Disclosure quality

measures should be further developed to measure quality attributes for specific disclosure means. For the present study to avoid the context-specific challenge, the study focuses on the narratives of earnings conference calls.

The third reason for the difficulty of measuring disclosure quality that addressed by Botosan (2004) is the difficulty of quantifying the attributes of disclosure quality. The quantifying process involves the need for excessive judgments, prohibitive cost, and lack of information. Furthermore, because of labour-intensive nature of the quantifying process in measuring attributes of disclosure quality, the sample size could be limited, and the procedure could not be used for wide-scale of disclosures (Beattie, McInnes, and Fearnley, 2004b). However, Core (2001) suggests that natural language process technology is a potential approach to investigate attributes of disclosure quality further. Hence, this study will use automated textual analysis approach to minimise the use of personal judgements as much as possible.

The following section reviews the approaches (proxies) in measuring disclosure quality that have been used in accounting literature.

2.5 **Proxies for Disclosure Quality:**

Despite the disclosures' quality is a complex concept, multi-dimensional, and measuring quality construct is problematic (Beattie, McInnes, and Fearnley, 2004b), prior studies have attempted to measure disclosure quality by the use of various proxies that possibly measure firms' disclosure quality.[10] The proxies that researchers used include disclosure indices, disclosure subjective ranking/rating, management forecasts, Natural Language Processing

[10] See (Healy and Palepu, 2001; Beyer *et al.*, 2010; Hassan and Marston, 2019) for comprehensive discussions of disclosure quality proxies.

(NLP), and properties of reported earnings.[11] Each of these proxies has its advantages and disadvantages, and the literature does not provide conclusive evidence of the superiority of one proxy over the other.

2.5.1 **Disclosure Indices:**[12]

A disclosure index is 'a research instrument used to assess the extent of information reported in a disclosure vehicle(s) by a specific entity according to a list of selected items of information' (Hassan and Marston, 2019, p. 10). The list of selected items 'checklist' is pre-defined either from reviewing the literature, or questionnaire/ survey, or regulatory frameworks and accounting principles. The selection process of checklist items is an important issue in constructing a disclosure index (Marston and Shrives, 1991), in particular, self-constructed indices. Then, automated or manual content analysis is used to assess the disclosed information against the checklist items to reach a disclosure score. Sometimes, a weight is given to a checklist item based on the perceptions of information users, that is weighted disclosure index. Alternatively, no weight is given to checklist items, and every item is treated equally important to users of information, that is unweighted disclosure index. The notion behind the weighting process is that not every disclosed information/ items are equally important to the information users. Disclosure indices can be applied to various types of disclosure (MD&A, corporate governance report, corporate social responsibility report) or various type of disclosure vehicles (annual report, interim report, press release, conference calls, corporate website).

[11] Properties of firm's reported earnings is more appropriate measure of financial reporting quality rather than disclosure quality. See Dechow et al. (2010) for review and discussion of properties of reported earnings. It is excluded from review in this section.

[12] These indices could be self-constructed or developed externally by professional bodies. The focus in the section on self-constructed indices.

The scoring process is subjective by itself. Some studies have focused on one dimension of disclosure quality (the occurrence of disclosed information), while other studies have focused on more than one dimension (e.g. occurrence and relevance). A notion behind disclosure indices is to access whether a disclosure has been made about a specific item from the checklist or to assess the depth of the disclosure rather than the count of disclosed information; although some studies count the number of times a specific item has been disclosed. Often, the coding scheme is either binary, whereby a presence or absence of an item is recorded; or ordinal measures (Beattie, McInnes, and Fearnley, 2004b).

Disclosure index to measure the quality of disclosure has been widely used in accounting and finance literature. Probably, Cerf's (1961) work on corporate reporting and investment decisions was the first attempt to use disclosure index to measure corporate disclosure (Marston and Shrives, 1991); and since then disclosure indices have been extensively used as measurement technique of disclosure. The primary advantages of disclosure index are that they could be used for various types of disclosed information (e.g. MD&A, CSR, etc) that disseminate through various disclosure vehicles. Furthermore, disclosure indices can be constructed and designed to fit a specific topic or context.

Botosan (1997) uses a disclosure index to measure voluntary disclosure level of a sample of 122 firms' annual reports. She finds that there is a negative association between the cost of equity capital and voluntary disclosure level for firms with low analyst following. Linsley and Shrives (2005) and Abraham and Cox (2007) use disclosure indices to measure corporate risk disclosure in annual reports. Cho and Roberts (2010) use the disclosure index to examine corporate environmental disclosures in corporate websites and find that firms make more environmental disclosure when they have the worst environmental performance. Athanasakou and Hussainey (2014) use disclosure index to investigate the credibility of

forward-looking performance disclosures in narratives sections of annual reports and find that managers are more likely to issue forward-looking performance disclosure when raising debt or reporting bad news in the financial statements.

The primary assumption on using disclosure indices is that the quantity of disclosure on a specific topic is a proxy for the quality of disclosure on that topic, quantity and quality are positively related (Beattie, McInnes, and Fearnley, 2004b).

However, measuring disclosure quality through the use of disclosure indices comes with some limitations. First, the construction of indices involves subjective judgments and, therefore, the findings may be difficult to generalise and replicate (Beyer *et al.*, 2010). Second, the use of disclosure indices to measure disclosure may be limited to small samples of firms owing to the labour-intensive nature of collecting/coding disclosed information. Third, weighted disclosure indices are biased in term of weight is given to a specific item from the perception of information users. Different information users perceive the same piece of information differently, thus having a consensus weight for a specific item is delicate. Nevertheless of these limitations, disclosure index is a valuable research tool and will continue to be used to measure firms' disclosures of information (Beattie, McInnes, and Fearnley, 2004b).

2.5.2 **Disclosure Subjective Ranking/Rating:**

Disclosure subjective ranking is an aggregate measure of the perceptions of financial analysts and other user groups about firms' disclosure quality (Daske and Gebhardt, 2006; Brown and Hillegeist, 2007). Perhaps the most well-known example of disclosures subjective ranking is the US ranking provided by the annual survey of the Association of

Investment Management Research (AIMR).[13] One advantage of AIRM report is that it provides an overall measure for firms' communication with investors, and there are separate ratings for published annual reports; published periodic information; and investor relations (Beattie, McInnes, and Fearnley, 2004b). However, AIMR discontinued its disclosure rating in 1997, and researchers cannot any longer use AIMR ratings as an empirical measure of disclosure quality.

AIMR ratings are applicable only to US studies because AIMR report covered only large US firms. Numerous studies have used AIMR ratings as the quality of disclosure measure, in particular, voluntary disclosures. Lang and Lundholm (1993) use AIMR ratings to examine cross-sectional variations in analysts' ratings of firms' disclosure practices. Their findings suggest that AIMR rating is higher for larger firms; firms that perform well; and firms that issue securities. Botosan and Plumlee (2002) investigate whether different types of disclosure matter for the decision-making through examining the association between cost of equity capital and AIMR ratings, three types of disclosure (annual report, quarterly and other published reports, and investor relations). Botosan and Plumlee document a negative association between cost of equity capital and annual report disclosure level, the magnitude of the difference in the cost of equity capital between the firms providing the most annual report disclosure relative to those providing the least is approximately 0.7 percentage points (p. 22). In contrast to their expectations, they find a positive association between firm's cost of equity capital and the level of more timely disclosures (quarterly reports); however, no association is found between the cost of equity capital and level of investor relations activities. Similarly, Brown and Hillegeist (2007) examine how the AIMR rating of firms'

[13] AIMR rankings are based on the annual survey of financial analysts' rankings of U.S. firms' disclosure activities. The rankings are based on annual and quarterly financial statements and other voluntary disclosures provided through firms' analyst meetings and conference calls (Beyer *et al.*, 2010, p. 307)

disclosure quality is related to the average level of information asymmetry among equity investors. Their results suggest that disclosure quality of annual report and investor relations activities are negatively associated with information asymmetry. Whereas for quarterly reports, they find a positive association between information asymmetry and quarterly report disclosure quality.[14]

Hussainey (2004, p. 46) provides a number of other subjective ratings that have been used in other countries, examples of such ratings include Financial Post ratings (Sutley, 1994), Australian Stock Exchange ratings (Brown et al., 1999), SEC ratings (Barron et al., 1999), Society of Management Accountants of Canada (SMAC) ratings (Richardson and Welker, 2001), Actualidad Economica ratings (Blasco and Trombetta, 2002) and Center for International Financial Analysis and Research (CIFAR) ratings (Hope, 2003a, b and c).

The primary advantages of disclosures' subjective rating are, (A) it provides a more general rating for a broad range of disclosures over various disclosure channels, that is firm's overall communication with investors; (B) disclosure ratings are provided by third parties, and therefore, information processing/coding is time-efficient and less labour-intensive.

However, disclosures' subjective ratings come with some limitations. First, disclosures' subjective ratings, particularly in case of AIMR, are based on analysts' perceptions of disclosure rather than direct measures of actual disclosures (Lang and Lundholm, 1993, p. 247). Similarly, Hussainey (2004) argues that there is no clarity whether the disclosures' subjective ratings are based an actual investigation of firms' published disclosure or whether they are just reflection of analysts' perceptions regarding firms' disclosure policies. Second,

[14] Other studies that use AIMR rankings/ratings include Bushee and Noe (2000), Byard and Shaw (2003), Gelb and Zarowin (2002), Healy, Hutton, and Palepu (1999), Imhoff (1992), Lang and Lundholm (1996), Lundholm and Myers (2002), Sengupta (1998) and Welker (1995).

Healy and Palepu (2001) criticise AIMR subjective ratings on three grounds: lack of clarity whether the analysts on the panels of rating committee take the ratings of firms' disclosure seriously, how the analysts select firms for inclusion in the survey for disclosure ratings, and what biases analysts may bring to disclosures' ratings. Third, a common problem to both disclosures' subjective ratings and indices is that they measure both mandatory and voluntary disclosures (Healy and Palepu, 2001; Beyer *et al.*, 2010) and, consequently, capturing and interpreting the effect of voluntary disclosures (if the quality of disclosure is defined as voluntary disclosure) is problematic.

2.5.3 **Management Forecasts:**[15]

Management forecast is a voluntary managerial disclosure that predicts a firm's performance before the expected reporting date (King, Pownall, and Waymire, 1990).[16] Management forecasts are an essential form of firms' voluntary disclosure that guide financial analysts to make their forecasts. Besides, management forecasts are forward-looking information. Therefore, management forecasts are considered a valuable attribute of firms' disclosure quality. Indeed, Healy and Palepu (2001, p. 425) argue that 'management forecasts have comparable credibility to audited financial information'.

Given the decision to provide a forecast, managers choose the characteristics of the information disclosed such as its form, horizon, and the timing of the forecast (Beyer *et al.*, 2010, p. 312). Managers issue earnings forecasts in qualitative or quantitative forms, provide these forecasts quarterly or annually, and time the forecast announcement. Managements can provide forecasts of earnings, cash flow, revenue, and capital expenditure. However, for

[15] See Hirst, Koonce, and Venkataraman (2008) for a comprehensive review of management forecasts.

[16] Although King et al. (1990) define management earning forecast.

managers, the incentives to provide forecasts could be different from only facilitating communication with capital providers; for example, managers can provide forecasts for inside trading purposes (Noe, 1999) and managers' equity-based compensation purposes (Nagar, Nanda, and Wysocki, 2003), to mitigate the risk of litigation (Miller and Piotroski, 2000; Brown, Hillegeist, and Lo, 2005; Cao and Narayanamoorthy, 2011), to affect analysts' forecasts (Baginski and Hassell, 1990), and to create a reputation for accuracy and transparency (Williams, 1996; Hutton and Stocken, 2007).

Given the data availability, most of the empirical studies that use management forecasts as a proxy for the disclosure quality are US studies. The First Call database provides management forecasts for US firms, and the availability of forecasts data starts from the year 1994. Prior studies examine various outcomes that are associated with the issuance of management forecasts. These outcomes are the stock market reactions to management forecasts, cost of capital reduction, earnings management, litigation risk, analyst and investor behaviour, and managerial reputation (Hirst, Koonce, and Venkataraman, 2008).

Hutton, Miller, and Skinner (2003) investigate managers' decisions to provide supplementary information with their earnings forecasts and market response to these forecasts. They find that bad news earnings forecasts are always informative, but market reacts to good news forecasts only when managers provide verifiable forward-looking statements along with their forecasts. In a similar vein, Baginski, Hassell, and Kimbrough (2004) investigate whether managers use attributions (external causes or internal causes) to explain their earnings forecasts and how a market responses to these forecasts information. Their findings suggest that managers' earnings forecasts that are explained with external attributions are viewed informative by the market, whereas, earnings forecasts that are explained with internal attributions are not informative. Coller and Yohn (1997) examine

the association between management earnings forecasts and information asymmetry (proxied by bid-ask spread). Their findings document that firms that provide more management earnings forecasts have lower bid-ask spread (a reduction in information asymmetry). Baginski *et al.* (2016) examine whether contemporaneous information in management earnings forecasts serves as crediable ex post verification of accompanying linguistic tone. They document that when the signs of linguistic tone and management earnings forecasts agree, the markets value the linguistic tone more because earnings forecasts are verifiable information, and these quantitative forecasts verify the linguistic tone's credibility.

The primary advantages of using management forecasts in empirical studies are: (A) they can be accurately measured, (B) the timing of disclosure is typically known; thus, researchers can have more robust tests of determinants and consequences of management forecasts as an attribute of disclosure quality (Healy and Palepu, 2001).

However, there are some limitations in using management forecasts to measure disclosure quality. First, management forecasts' data are only available for large US firms and accordingly, the findings of US studies may not be generalised to other contexts due to the institutional and regulatory differences. Second, management forecast is only one component of firm's disclosure package (Hussainey, 2004), and it is a less general measure of disclosure compared to subjective ratings (Healy and Palepu, 2001). Therefore, it is often not sensible to use this type of information only to proxy for the overall level of corporate disclosure quality (Hussainey, 2004, p. 45). Third, it is possible that managers provide forecasts for reasons/incentives other than enhancing disclosure quality, such as mitigating litigation risk or signalling managerial reputation. Accordingly, using the management

forecast as a proxy for disclosure quality and not controlling for other incentives may limit the interpretations and conclusions a researcher can draw (Beyer *et al.*, 2010).

2.5.4 **Natural Language Processing (NLP):**

Natural language processing (NLP) is a part of the artificial intelligence domain focused on communication between humans and computers (Fisher, Garnsey, and Hughes, 2016, p. 157). With the massive growth of unstructured data[17] available in capital markets, information users need more sophisticated techniques to process and analyse these unstructured data and convert them into useful information at relatively low cost. Furthermore, academics and practitioners are united in the belief that structured quantitative data are insufficient for economic decision-making ((KPMG 2014, p. 4, Lev and Gu 2016 cited in Lewis and Young, 2019, p. 593) and the quantitative information needs further explanations with narratives. Therefore, with the increase of narrative volume that firms' disclose along with the financial statements, firms' disclosure quality goes beyond the financial statements exclusively. Also, narratives provide essential information that cannot be easily communicated through numbers per se. Core (2001) recommends the use of natural language processing techniques as a promising approach to obtain disclosure quality measures for such unstructured data and obtain disclosure quality measures for large samples as well.

The proliferation of information represents a major challenge for users in the form of information overload (Lewis and Young, 2019, p. 595); therefore, NLP provides techniques that alleviate problems of information overload. Lewis and Young (2019) suggest that there are two main generic benefits of using NLP in corporate disclosure research. First, NLP

[17] These data are classified as unstructured because the elements are not amenable to rapid automated retrieval in a consistent manner across entities and over time (Lewis and Young, 2019, p. 590).

allows processing a much larger volume of data than is possible via manual processing and at a relatively lower cost. Second, NLP helps in identifying latent features and detection of patterns in large amounts of unstructured data that are not evident to human readers. Some of the latent features that NLP help to identify, including Readability (Li, 2008; Bonsall Iv *et al.*, 2017; Bhardwaj and Imam, 2019), financial reporting irregularities (Larcker and Zakolyukina, 2012), CEO disclosure styles (Bochkay, Chychyla, and Nanda, 2019), management deception (Hope and Wang, 2018), the complexity of disclosure (Bushee, Gow, and Taylor, 2018), tone management (Huang, Teoh, and Zhang, 2014).

Prior studies that relied on NLP techniques to measure disclosure quality or identify latent features use approaches that can be classified as simple approaches (e.g. word count, keyword search, financial dictionaries that count specific words, readability score, and document size) to more sophisticated approaches (e.g. cosine similarity, topic modelling, and machine learning). However, no one approach is superior over another approach, but the reliance on an approach depends on the nature of the problem being examined.

This study relies on NLP techniques, in particular, textual analysis, to examine the tone of earnings conference calls through the counting of financially positive and negative words that managers use to communicate a firm's news.

Chapter 3 covers in more detail the textual analysis technique that has been used to measure the tone of disclosure in earnings conference calls.

2.6 Corpus Linguistics and Corporate Disclosure:

Information is the fundamental commodity in the financial markets, and the amount of data available to data users is increasing massively. The vast majority of these data are unstructured and required further processing. Furthermore, financial markets have their shares of such unstructured data. Over recent years, there has been dramatic growth in

spoken and written data in financial markets that disseminated employing corporate disclosures and other intermediaries information providers (such as financial analysts and news media). For example, Lewis and Young (2019, p.588) document a significant growth in the size and complexity of the U.K. annual report narratives. They find that median annual report length increased from 14,954 to 33,193 words (122%) over the 14-year period from 2003 to 2016 for a sample of firms listed in the London Stock Exchange. Dyer, Lang, and Stice-Lawrence (2017) report similar results for U.S. annual reports. However, the capacity of the human mind to process such a massive amount of unstructured data is limited, and manual processing of such data is time-consuming, labour-intensive, costly, and impractical. Therefore, at least in accounting and finance literature, researchers are turning gradually to linguistics tools to assist with the task of processing large volumes of unstructured data (El-Haj et al., 2019a). There are also calls to bridge the gap between corporate disclosure literature and linguistics through the support of linguistics methods to study spoken and written language (Beyer et al., 2010; Loughran and McDonald, 2016).

Linguistics, the scientific study of language (Halliday and Webster, 2006), is a broad area of study and typically the research on language focuses on sub-fields of linguistics such as (to name some): applied linguistics, computational linguistics, sociolinguistics, syntax, semantics, etc. Some of the studies that review various linguistics techniques which had been applied in prior accounting and finance studies and critically evaluate the benefits and limitations of these techniques (Li, 2010b; Kearney and Liu, 2014; Fisher, Garnsey, and Hughes, 2016; Loughran and McDonald, 2016; El-Haj et al., 2019b). No one technique is superior to others, and each technique might be used to study a specific set of research questions.

In the following sub-sections, the aim is to provide a brief review of the corpus-based approach to linguistics as the present study analyse the tone of disclosure based on earning conference calls corpus. However, a full review of other linguistics approaches and how all these approaches might fit together would go far beyond the scope of this project.

2.6.1 **Corpus Linguistics:**

Corpus linguistics, which is considered a sub-field of linguistics, is a collection of naturally occurring language text,[18] chosen to characterise a state or variety of a language (Sinclair, 1991). In a simple term, it is the study of language data on a large scale. Corpus linguistics is not directly related to the study of any particular aspects of language; instead, it is a set of procedures or methods for studying the language via computer-assisted analysis of large bodies of naturally occurring text (McEnery and Hardie, 2012). It is the view of methodologist school in which corpus linguistics is primarily a method that can be used in various areas of linguistics (methodologist school). However, John Sinclair's, a leading figure in corpus linguistics, perspective considers corpus linguistics to have some theoretical status which elevates it above being solely a methodology (neo-Firthian school[19]) (Allan, McEnery, and Hardie, 2013). One of the key concepts in the neo-Firthian school of corpus linguistics is collocation, and it will be discussed in section (2.6.2).

The developments in computer technology offered new possibilities to manage and manipulate a large amount of machine-readable texts in late1950 had contributed to the emergence of corpus linguistics (Allan, McEnery, and Hardie, 2013). Thus, it is possible that the history of modern corpus linguistics, with a particular focus on English Corpus

[18] Text includes both written and spoken language.

[19] This perspective is sometimes referred to as the Firthian or Neo-Firthian school of corpus linguistics, due to its links to the ideas of the linguist John Rupert Firth.

Linguistics, began in the 1950s and onwards. In the pre-computer era, some researchers analysed small sets of text[20] (corpora) by hand and eye alone (manually analysed) within any reasonable timeframe (e.g. Boas 1940 and Stern 1924). Beside the labour-intensive and time-consuming nature of this technique, it was prone to errors and biases.

McEnery and Hardie (2012, p.1) contend that procedures and methods of corpus linguistics are still developing with technological advances and remain an 'unclearly delineated set'. Thus, these methods are not consensually agreed for the study of language, that is corpus linguistics is a heterogeneous field.[21] Despite the differences in procedures and methods in corpus linguistics, McEnery and Hardie (2012, p.1-2) claim that four generalisations can be made about corpus linguistics. First, corpus linguistics deal with large sets of machine-readable texts which are deemed an appropriate basis on which to explore a specific set of research questions. Second, there are tools which allow users to search through corpora rapidly and reliably. Some of these tools are concordancer and word frequency list. Third, the importance of corpus-based study's findings depends on whether the corpus data is well-matched with the research question. Finally, texts within a corpus exhibit differences where the assumption is that these texts are homogeneous; and this creates internal variation that researchers need to understand. However, given these procedures or methods are increasingly developing with advances in technology, it is possible to apply corpus-based approaches to many fields of study within linguistics.

[20] These datasets were small by the standards of modern electronic corpora.

[21] Professors Tim Loughran and Bill McDonald created Software Repository for Accounting and Finance to overcome the problem of replicability of study results where the researchers can post their programme codes for others to replicate. The fundamental idea of their project is to unify the coding practices and make the field of textual analysis in accounting and finance a homogeneous field.

The use of corpus linguistics in accounting and finance studies has a long tradition, although not in the form of modern corpus linguistics, Jones and Shoemaker (1994) provide an early review of works in this area. Many of accounting studies of that period have two primary characteristics: (A) relied on manual coding, and (B) samples comprising hundreds (rather than thousands) of observations, i.e. small corpora. Also, the primary focus of accounting studies that used a corpus-based approach at that period was understanding the characteristics of financial narratives and testing how information preparers' incentives shape disclosure outcomes (Jones and Shoemaker, 1994; El-Haj et al., 2019b). However, advances in computing capacity, development of linguistics software, and machine-readable texts availability have led many accounting and finance researchers to apply the computer-assisted analysis of large bodies of text (i.e., corpora). Some of these studies include (to name some); annual report readability (Li, 2008), 10-K report (Loughran and McDonald, 2011), and media news (Tetlock, 2007). It is evident that over recent years several researchers in the accounting and finance field started adopting corpus-based methodologies in their works.

The primary advantages of large corpora are: (A) results could be generalised; (B) high statistical power; and (C) less subjectivity. However, these advantages could be diminished if the corpus data selected to explore a research question is not well matched to that research question (McEnery and Hardie, 2012).

One of the tools in corpus linguistics is word frequency count which lists all the words that appearing in a specific corpus and count for each word how many times it occurs in that corpus. Although word frequency count which is based on a specific predefined dictionary,

a bag of word approach[22], is commonly used in accounting and finance research to explore the tone of disclosure or complexity of annual reports, the issue of using word frequency count is that it takes the word out of its context. Perhaps this is the fundamental difference between neo-Firthian school and methodologist school of corpus linguistics. The neo-Firthian school views corpus linguistics not only as a methodology that could be applied to other theoretical approaches but as a particular view of language (McEnery and Hardie, 2012). One of the main concepts in corpus linguistics from the neo-Firthian perspective is collocation as Firth wrote: 'you shall judge a word by a company it keeps' (Firth, 1957). What this means is that the meaning of a word is governed by its context. The following section discusses the concept of collocation in corpus linguistics.

2.6.2 **Collocation:**

The concept of collocation is an old idea and has been multifariously defined (McEnery and Hardie, 2012). Perhaps credit goes to J.R. Firth who brought collocation idea into its modern form. However, the most famous proponent of Firth ideas has been John Sinclair, who was the first to bring Firth's ideas together with a corpus linguistic methodology (Tognini-Bonelli, 2001) and his works over last three decades have contributed to the establishment of the concept of collocation as an essential feature of texts. The notion of collocation goes back to the phraseological theory of meaning. The notion behind collocation concept focuses on the meaning of a word, not in isolation, but rather the meaning of a specific word alongside other words with which it frequently co-occurs (McEnery and Hardie, 2012). Thus, meanings arise from a word combination with other words in a specific context of use (Stubbs, 2001). For example, in financial narratives, it is possible to find words' good', 'bad'

[22] From linguistic perspective, bag of words approach assigns one specific meaning to the word independent of its context of usage.

are noun collocates of ‘year’; these noun collocates may be associated with firm’s financial performance.

In general term, there two definitions of collocation; methodological definition (concerns with how collocation is operationalised in corpus linguistics) and conceptual or ontological definition (concerns with the ontological status of collocations) (Allan, McEnery, and Hardie, 2013). Surprisingly, within the methodological definition, there are disagreements on how to identify the collocates of a specific word or phrase reliably. For instance, some linguists use panels of native speakers to assess collocations by intuition. In contrast, others study patterns of co-occurrence in corpora to identify collocates of a given word or phrase. The focus of this project is on the methodological aspects of collocation in terms of co-occurrence patterns observed in corpus data as it provides fruitful insights for future research of earning conference calls corpus.

McEnery and Hardie (2012) discuss in detail the various methodological approaches to collocation. The central notion of these approaches to collocation is how different co-occurrence patterns are extracted from a corpus. However, Sinclair’s basic methodological approach to collocation was based in a looser pattern of co-occurrence, that is ‘a collocation is a co-occurrence pattern that exists between two items that frequently occur in proximity to one another – but not necessarily adjacently or, indeed, in any fixed order.’ McEnery and Hardie (2012, p.123).

Sinclair *et al.* (2004, p.10) definition of collocation is ‘[a] node is an item whose total pattern of co-occurrence with other words is under examination; a collocate is any one of the items which appears with the node within a specified span. Essentially there is no difference in status between node and collocate; if word A is a node and word B one of its collocates, when word B is studied as a node, word A will become one of its collocates.’ Furthermore,

Sinclair *et al.* (2004) constrain collocation definition that collocates are determined within a certain span and whether a collocation is significant (statistically significance) or not. That is, there should be statistical evidence that co-occurrence pattern is not likely to be due to chance within a specific span. Because of Sinclair's view of 'significant' in defining collocation, further divergences exist in collocation definition. Therefore, two approaches were adopted to determine collocation: (A) non-statistical technique (collocation-via-concordance); and (B) statistical technique (collocation-via-significance). Each technique has its advantages and disadvantages.

Collocation-via-concordance technique depends on an analyst's intuitive manual scanning of concordance lines to identify any particular pattern is observed and manually compile frequency counts but with no statistical significance testing (McEnery and Hardie, 2012). In contrast, this process is done automatically through computer algorithms in collocation-via-significance technique. Stubbs (1995, 2001) is one of the proponents of non-statistical technique 'collocation-via-concordance' to determine collocation. He argues that some words are semantically related[23], which are obvious to an analyst, so no further statistical analysis is required. He further argues that statistical significance tests make assumptions of randomness where these assumptions are not held in language data.

Perhaps the primary advantage of the statistical technique to identify collocations is that analysts can apply it larger corpus and it is less prone to biases. However, McEnery and Hardie (2012, p. 126) claim that it is 'the intuition of the researcher is still regarded as the final arbiter of determining whether or not a specific candidate collocate is indeed a collocate.'

[23] Accident, fire, damage, death are noun collocates of "cause".

In accounting literature, there have been increasing interests in examining linguistic characteristics of corporate disclosures using various methodological approaches (Jones and Shoemaker, 1994; Beattie, 2014; Loughran and McDonald, 2016). These methodological approaches range from pure qualitative approaches (Young, 2003; Beattie and Smith, 2013; Abraham and Bamber, 2017) to purely quantitative approaches (Tetlock, 2007; Li, 2008; Tetlock, Saar-Tsechansky, and Macskassy, 2008; Loughran and McDonald, 2014; Bonsall Iv et al., 2017; Bhardwaj and Imam, 2019; Kim, Wang, and Zhang, 2019), and some studies in between using mixed approaches (Solomon et al., 2000; Beattie, McInnes, and Fearnley, 2004b; Stenka and Jaworska, 2019).

The present study has adopted the quantitative approach to measure the tone of disclosure in earnings conference calls, that is, the bag of words approach. Presumably, as with many of prior quantitative studies that used the 'bag-of-words' approach exploring linguistics characteristics of corporate disclosure, the critical assumption of this approach is that a word meaning is independent than its context. Thus, the bag-of-words approach does not 'take into account the actual working of language in context' (Stenka and Jaworska, 2019, p.7). Also, this is probably the primary criticism of the bag of words approach from the phraseological theory perspective, where a word meaning is based on its neighbouring words.

Allee and DeAngelis (2016) provide a good example in accounting literature of a step beyond the bag-of-words approach by measuring tone dispersion, the extent to which tone is concentrated or spread across earnings conference call document. Similarly, a recent study by Stenka and Jaworska (2019) examine comment letters submitted in response to selected IASB's regulatory proposals and conduct a comparative analysis of the recurrent linguistic choices around the term (user), collocates of 'user'. These two studies use approaches

beyond the bag-of-words approach and present useful extensions to the simple bag-of-words approach. Future study can further develop the bag-of-word approach.

Although the bag-of-words approach to explore linguistic characteristics of corporate disclosure received its share of criticisms, it has been used extensively in accounting and finance studies (e.g. Tetlock, 2007; Li, 2008; Tetlock, Saar-Tsechansky, and Macskassy, 2008; Loughran and McDonald, 2011 & 2014; Baginski et al., 2018). Furthermore, we need to acknowledge that linguistic applications in accounting and finance are predominately in the initial phase. In this matter, Loughran and McDonald (2014, p. 26) argue that the '[p]rogress toward the ideal of deeply parsing for meaning is faced with a tradeoff. The benefit is the value added as a result of meaning derived from word context and grammatical structure. This benefit is offset by the cost of imprecision associated with attempts to computationally derive meaning'.

2.7 **Introduction to Accounting Narratives:**

In December 2015, the Financial Reporting Council (FRC) issued Clear & Concise: Developments in Narrative Reporting report[24] to help public companies enhance their accounting narrative through clear and concise reporting. The role of accounting narrative[25] has become significant and vital due to rise of non-financial information (Beattie, 2014) and the limitation of regulatory accounting standards in reporting of non-financial information (Henry and Leone, 2016). In addition, many firms complement some of their quantitative information with qualitative information. Sometimes, firms prefer to disclose some

[24] This report is based on FRC's Guidance on the Strategic Report.

[25] Narrative refers to words (e.g. chronicles, emplotted stories and interview transcripts) and can include pictures and other visuals (Beattie, 2014, p. 112)

quantitative financial information in the form of narratives, as noted by Schleicher and Walker (2010, p. 371) '…information on current and future trading is typically made through qualitative narratives, not through quantitative management earnings forecasts'. For instance, intellectual capital, business models, and principles-risks information are of significant importance to stakeholders; however, it is a challenge for a firm to report them in a numerical or quantitative term.

2.7.1 **The Importance of Accounting Narrative:**

The Oxford dictionary defines narrative as 'a spoken or written account of connected events; a story'[26]. In a similar vein, accounting narrative can be defined as 'words (e.g. chronicles, emplotted stories and interview transcripts) and can include pictures and other visuals' (Beattie, 2014, p. 112). A firm communicates its financial and non-financial information to various stakeholders through annual report primarily, as it is deemed the most formal and frequent source and channel of communication for routine disclosure. The accounting narratives in corporate annual reports are mainly in qualitative nature. Considering a firm's overall communication or disclosure environment, accounting narratives are communicated by other means, other than the annual report, such as management presentation, earnings press releases, conference calls, private meetings with the key investors or analysts, corporate website, and social media (Healy and Palepu, 2001; Beyer et al., 2010; Beattie, 2014).

A number of factors have contributed to the growth of accounting narratives, and extent of narratives have grown substantially over the years (Beattie, 2014).

[26] http://www.oxforddictionaries.com/definition/english/narrative, accessed: March 2016

Accounting narratives have an essential role in communicating a firm's performance story to the external parties. Financial statements do not provide a comprehensive picture of firms' performance, business models, and activities; thus, accounting narratives contribute to explaining financial numbers and information that cannot be quantified. Furthermore, the increasing complexity of economic events has contributed to the growth of accounting narrative importance.

The rapid changes in technology and a large amount of unstructured data (Jones and Shoemaker, 1994) and the challenges to proxy some of the constructs in accounting studies, especially positive accounting studies, (Beattie, 2014) have significantly contributed to the growth of accounting narratives. In addition, Li (2010) discusses three reasons why understanding textual information[27] in corporate annual reports is noteworthy. First, he claims that the textual information explains the data generating's function of numeric financial data that accounting researchers have been examining for decades (p. 143). Second, from the psychological perspective, specific managerial characteristics may possibly be revealed through the communication of textual information. Third, Li (2010) claims that examining managements' textual information provides researchers with a great environment to understand management disclosure incentives and private information and accordingly understand corporate behaviour.

Furthermore, Beattie (2014) identifies three external influences that raise the importance of accounting narrative in corporate communication. First, the information asymmetry or information gap increases because businesses tend to become more knowledge-intensive, and as a result, the knowledge-intensive businesses have a substantial amount of intangible

[27] Textual analysis, a form of content analysis, is extensively used in analysing accounting narrative (for extensive review see, Jones and Shoemaker, 1994; Li, 2010; Kearney, C. & Liu, S., 2014; Beattie, 2014)

assets compared to tangible assets. Consequently, the market demands more information about company value creation and the role of intangibles, which were not captured and reflected in the financial statements (Beattie, 2014, p.121). Second, she claims that corporate sustainability and CSR reporting, which are primarily in narratives form, raise the use of narratives in corporate communication. Third, the sophistication nature and inherent limitations of financial statements, which were realised as progressively impervious, increase the dependence on accounting narratives in corporate disclosures.

From information value-relevance perspective, Beaver et al. (2012) find that the managerial intervention through using of accounting discretion and limitation of financial numbers in capturing firm fundamentals contribute to the declining quality of financial numbers to some extent. For instance, in an empirical study by Mayew, Sethuraman and Venkatachalam (2015), they find that both management opinion of firms' going-concern ability and the linguistic tone in MD&A section of 10-K filing 'provide significant explanatory power in predicting whether a firm will cease as a going concern' (p. 1621). That indicates that quantitative information has limitations in capturing some events, while narrative disclosures can help in identifying such events.

In summary, some internal and external influences enhance the growth of accounting narratives in corporate disclosures. However, such growth in accounting narratives usage in corporate reporting, either in written or spoken forms, comes at the cost of information credibility and managerial discretion. First, narrative disclosures,[28] unlike financial and numeric disclosures, are voluntary information and most likely are not audited by an independent party; hence, it is problematic to verify such information. Therefore, the

[28] Except notes to the financial statements.

credibility of narratives could be a questionable matter. Nevertheless, the market punishes the firms that disclose deceptive narratives. Thus, the fear of such punishments and potential litigation may prevent firms from disclosing deceptive narratives or not disclosing such information at all. A point of concern when the potential litigation costs arise is that the legal system cannot effectively distinguish between good-faith disclosures and deliberate management biases (Healy and Palepu, 2001).

Second, in addition to information credibility issue in narratives disclosure, some levels of managerial discretions exist in narratives disclosures. Specifically, in case of less formal communication such as conference calls, the level of managerial discretion may be higher. However, such managerial discretion is twofold. First, managerial discretion may provide an opportunity for managers to communicate new information and information that is hard-to-quantify such as R&D, risk management capabilities, and business strategy models. Second, managerial discretion could be used opportunistically, and thus managers engage in impression management.

2.7.2 Empirical Studies of Corporate Narrative Disclosures:

This section provides a review of existing empirical studies of corporate narrative disclosures using textual analysis based on outcomes investigated.

From the capital market perspective, information is the fundamental driver of stock market reaction, and accounting is primarily about information. Accounting is defined as an information system that summarises, processes, analyses, and reports economic transactions that affect an entity. However, the reporting of an entity's economic transactions is typically in term of numeric information. Numeric information does not provide the complete picture of an entity's economic condition and performance. As a result, capital market participants regard qualitative information as a complementary source of information that, in conjunction

with numeric information, may provide a better explanation of an entity's economic condition and performance.

The existing studies have shown that the relationship between firms' announcement of periodic accounting information and the window-event market return is small, though it is significant (Lev, 1989; Henry, 2006). Some researchers claim that the small magnitude of this relationship is due to that accounting information is irrelevant (Lev, 1989), while another group of researchers relate the small magnitude of that relationship is due to the historical nature of accounting information (Kothari, 2001). However, Abrahamson and Amir (1996) propose that the accounting researchers have ignored relatively the textual components (narratives) of corporate annual reports, and that may explain the low relationship of accounting earnings and share returns. Based on these claims, many accounting scholars have strived for developing measures that capture qualitative information of firms' disclosures.[29]

As mentioned above, accounting narratives could be used opportunistically by the managers by engaging in impression management strategies to shape the perceptions of stakeholders. Various impression management techniques could be used for such purpose. Because this study has a focus on spoken narratives in earnings conference calls context, we examine the tone of disclosure (tone of narrative) as the central impression management technique.

Also, the tone of disclosures is considered as one of the attributes of quality of accounting narratives. Indeed, a balanced tone of disclosure should give shareholders more confidence in the credibility of corporate disclosures.

[29] Review is covered in the section 2.5.

The following subsection reviews the empirical studies on disclosures' tone.

2.7.3 **Tone:**[30]

In the context of corporate disclosure, the tone is the degree of positivity and negativity in corporate disclosure (Kearney and Liu, 2014). While Henry (2008, p. 376) defines the tone as the 'feeling of communication'. It is well-recognised that disclosing information in positive terms will result in more favourable outcomes than disclosing information in negative terms (Levin, Schneider and Gaeth, 1998, cited in (Davis, Piger, and Sedor, 2012)). Therefore, as an impression management technique, the tone could be used to signal positive news in cases of unfavourable events, through communicating unfavourable events with positive words.

The existing studies provide empirical evidence that managers systematically and strategically vary their language tone to influence investors and analysts' decisions and, therefore, affect stock market reactions through corporate disclosures. For example, Henry (2008) finds that managers vary both written language tone and readability of firms' disclosures to obfuscate firms' poor performance.

Henry (2008) examines the tone of earnings press releases of telecommunication and computer industry companies to gain an increased understanding of firm-investors communication process. Using a sample of 1366 firm-year observations from the period of 1998 to 2002, she argues that the text portion of earning press release has a dual role, informational and promotional. The informational role provides facts about a firm's performance, while the promotional role is to influence readers' views about a firm's

[30] Loughran and McDonald (2016, p.38) observe that 'Many textual analysis studies have focused on the simple positive/negative dichotomy of sentiment analysis. [They] argue that tests for positive sentiment have low power. LM also created word lists for "uncertainty," "litigious," "strong modal," and "weak modal" words.'.

performance favourably (that is, impression management). Her findings suggest that more profitable firms use a more positive tone in their earnings announcement press releases. In addition, the positive relationship between abnormal return and tone of earning press release indicates that a positive tone has an upward impact on the market reactions.

To explore the explanatory power of tone to predict firm's future fundamentals, Li (2010a) examines the information content of forward-looking statements (FLS) in the MD&A section of US firms' annual reports (both 10-K & 10-Q filings) from the period of 1994-2007 using a Naïve Bayesian Machine Learning approach. His results suggest that 'firms with better current performance, lower accruals, smaller size, lower market-to-book (MTB) ratio, less return volatility, lower MD&A Fog index and long history tend to have more positive FLS in their MD&As' (p. 1051). Moreover, he finds that the positive tone of FLS in the MD&A section in 10-K and 10-Q filing is predictive of a firm's future earnings and liquidity. However, his findings do not support the claim that the systematic variations in MD&A over time are informative.

Similarly, Davis, Piger and Sedor (2012) examine whether managers' language tone in firms' earnings press releases affects market reactions. Using a sample of earning press releases of US firms from the period of 1998-2003, they argue that earning press release provides a disclosure framework for managers to disclose value-relevance information to the market participants and thus reduce information asymmetry. Davis *et al*. (2012) find that the market response (i.e. three days' window) is associated positively with the managers' positive language tone. Such a result suggests that the investors consider managers' language tone to be a credible signal.

Some other studies have examined disclosure tone in less formal mediums of disclosures. Price *et al.* (2012) examine the tone of corporate conference calls and markets' concurrent

reaction and post-announcement drift in context of uncertainty, a context that investors have uncertainties about the firms' future cash-flow. Using a sample of 2880 of earnings conference call scripts of US firms from the period of 2004-2007, Price *et al*. (2012) argue that the investors have a higher level of uncertainty about firms' future cash-flow for none dividend payer firms. They employ both Henry word-list and Harvard GI dictionary to measure the wording tone of earnings conference calls. Their findings suggest that the tone of earnings conference calls is significantly related to concurrent market reaction and post-earning drift after controlling of numerical earnings surprises. Moreover, the tone of conference call discussion session has significant explanatory power for abnormal return and trading volume over 60 days' period when the investors are uncertain about firm's future cash-flow (none- dividend payer firms).

Tetlock (2007) examines the effect of news media (Wall Street Journal) content on the stock market activity. He finds that the high level of pessimism tone in media reports predicts downward pressure on market prices. To expand the work of Tetlock (2007), Tetlock *et al.* (2008) quantify the language of financial news media (i.e. Wall Street Journal and Dow Jones News Service) to explain stock return. Their study was motivated by Shiller (1981)[31] and Roll (1988)[32] claims that stock price movement is only partially explained by firms' verifiable quantitative measures, and thus the qualitative information may explain stock price movement. Their findings suggest that that stock market underreacts to the negative words in Wall Street Journal and Dow Jones News Service financial news about individual

[31] Shiller, R. J. (1981). Do stock prices move too much to be justified by subsequent changes in dividends? American Economic Review 71, 421-436

[32] Roll, R., (1988). R^2. Journal of Finance 43, 541-566

S&P 500 firms and the market under-reaction on day1 is somewhat smaller than day 0. Their overall finding suggests that the investors value the qualitative financial media information.

To understand the role of the media when the economic environment is uncertain, Bhardwaj and Imam (2019) examine the tone[33] of media for IPO firms during the global financial crisis 2007-2009. Shareholders have little knowledge and information for IPO firms, and the uncertainty becomes more severe during the uncertain economic conditions. In such an event, the media plays an essential role in the process of impression formation. Their sample consists of 76 news articles published between the years 2006 and 2009 for IPO firms listed in NYSE. Their findings suggest that the tone of the media articles is more favourable for IPO firms during the good times where the economic conditions are positive. Whereas, during the crisis period, the tone of media turns to more unfavourable. These results support the notion that the media play a vital role in shaping the investors' perceptions of firms' performance and prospective and inhibiting the process of impression formation.

Allee and DeAngelis (2015) extend the line of the tone of disclosure research by examining managers' distribution of tone words (tone dispersion[34]) in conference calls. Allee and DeAngelis study differs than earlier studies that utilise 'bag of words' approach which disregard the underlying narrative structure. They argue that managers may spread positive tone words throughout the conference call, whereas negative tone words are placed close together. Their argument indicates that managers apply tone dispersion strategically to affect markets reactions, an 'evidence of strategic communication by management' (Miller and Skinner, 2015, p. 226). Examining US firms conference calls transcripts from the period of

[33] Bhardwaj and Imam (2019) use Janis-Fadner equation to measure the tone of news articles.

[34] '[T]one dispersion as the degree to which tone is spread evenly throughout a disclosure narrative.' Allee and DeAngelis (2015, p. 242).

2004-2014, their findings suggest that the market responds intensely to managers' tone dispersion. However, such market response is, to some extent, mediated by analysts' reactions to managers' tone dispersion in conference calls.

In the UK context, the studies of the tone of the disclosure are relatively limited compared to the US context, and this is primarily due to the unstructured format[35] of UK firms annual report. The unstructured format of disclosures' media issue (such as annual reports, conference calls transcripts) leads the researcher to apply manual content analysis approaches to measure the tone, and therefore the samples size were limited. Nevertheless, some studies examine the tone of disclosure in the UK context, but the approach to measuring the tone was primarily based on manual or semi-automated content-analysis.

Yekini, Wisniewski and Millo (2016) examine the positive tone of 209 UK firms' annuals reports narrative for the period of 2006-2013. Yekini, Wisniewski and Millo (2016) focus on the entire annual reports narratives, except the financial statements and accompanying notes, and they use Henry positive wordlist. Their results indicate that the positive tone of annual reports narrative is associated with an abnormal return around disclosure dates after controlling for firms' financial numbers and characteristics. Although the focus on the positiveness of annual reports' narratives via depending on positive wordlist may be biased, Yekini, Wisniewski and Millo provide some preliminary evidence in the UK context that narrative is not a tool for impression management only, but value-relevance and informational dissemination tool as well.

[35] Steven Young and Mahmoud El-Haj (2014) Computer-based Analysis of UK Annual Report Narratives. Financial Reporting & Business Communication Conference, 3-4 July, Bristol, UK

The aforementioned studies suggest that the tone of disclosure is a value-relevance piece of information for the capital market participants, and it has incremental information content beyond the financial measures. However, the tone of disclosure could be used for opportunistic managerial behaviour as an impression management technique.

Schleicher and Walker (2010) examine the tone of forward-looking statement of a sample of UK firms' annual report for the period of 1996-2002. They limit their study to forward-looking statements in the outlook section of the annual reports rather than examining annual reports entirely. They employ manual content analysis, and that causes subjectivity in the process of content analysis. However, the manual content analysis has the advantage over automated content analysis in that it considers the structure of narrative disclosure. In addition, their approach of classifying disclosure tone is distinct than textual analysis's 'bag of word' approach. Schleicher and Walker classify forward-looking statements based on decision rules, whether it is positive/neutral/ negative rather than counting the frequency of positive or negative words. Their findings suggest that firms with a substantial decline in sales and operating profit margin bias their tone of forward-looking statement positively.

Cho, Roberts, and Patten (2010) examine the tone of corporate environmental disclosures contained on 10-K annual reports of the US firms. Using a sample of firms that have environmentally sensitive industries, they find that firms have the worst environmental performance, use a more optimistic tone in their environmental disclosure contained in their annual reports. Similarly, Arena, Bozzolan, and Michelon (2015) examine whether managers disclosure tone in corporate environmental disclosures represent impression management or serve as an incremental information tool. Using a sample of 288 US firms that are operating in Oil and Gas industry, their results suggest that managers bias their

disclosure tone towards optimistic language in corporate environmental disclosure, but also that tone predicts corporate future environmental performance.

Taking the notion of earning management into consideration, Huang, Teoh, and Zhang (2014) estimate disclosures' positive abnormal tone as a measure of tone management from the residual of tone model that controls for a firm's fundamentals. They conclude that managers use tone management as a tool to mislead shareholders about firm fundamentals.

2.7.4 **Discussion:**

These findings suggest that the tone of disclosure has an informational and value-relevance role to the capital market participants. Besides, managers may use the tone of disclosure strategically to disseminate information, either favourably or unfavourably, to shape or manipulate stakeholders' perceptions of firms' fundamentals. Thus, from the informational perspective, the tone of disclosures is complementary to firms' other quantitative fundamentals information. While from the promotional perspective, tone of disclosures is an impression management technique used in forming an impression. The present study focuses on the tone of disclosure from the promotional perspective, that is the tone is used opportunistically by the managers through their spoken narratives communication in earning conference calls context. The following points are noteworthy to mention based on the existing tone empirical studies.

First, with the focus on the disclosures' media, the existing studies examine either the tone of the contents of the whole document of analysis (annual reports, press release, firms' website disclosure) or a section of annual reports (i.e. MD&A, Chairman Statement, outlook section). In case of the examination the whole document, existing studies examine various types of disclosure simultaneously (i.e. risk disclosure, forward-looking statements, R&D disclosure, CSR disclosure) and that may lead to mixed results of the determinants and

consequences of the tone of the disclosure. Also, different types of disclosure are perceived differently by the stakeholders. Therefore, for the present study, we focus on the managers' spoken narrative in earnings conference calls. In the earnings conference call, the nature of topics discussed are specific, typically a review of past firm's performance, future outlook, and discussion session where managers probably disclose new information if questions are raised from the analysts. The next section provides the rationale in our choice of earnings conference calls to examine the tone.

Second, Beattie, McInnes and Fearnley (2004b) argue that the mixed results on the determinants of corporate disclosure may be attributed to the utilisation of imprecise disclosure quality measure. Similarly, Clatworthy and Jones (2003), in their study to compare the extent of good news and bad news disclosure in firms that perform well financially and those that perform poorly. They find that using total words or keywords of good/bad news have different results for poorly performing firms. When the total words of good/bad news used, they find no significant different in the amount of good news and bad news in the poorly performing firms, while there is a significant difference in the extent of good news and bad news when the keywords are used for poor performers. Therefore, Clatworthy and Jones conclude that the result of the analysis is contingent on the methodological approach adopted. To avoid such a methodological issue of measuring the tone of disclosures, we will use automated textual analysis based on positive and negative financial keyword developed by Loughran and McDonald (2011). The automated textual analysis helps to avoid subjectivity and can analyse a large sample at relatively low costs. The detail of automated textual analysis is covered in chapter three.

Third, since the focus of this study is on the UK context, little is known about the tone of the disclosure in the UK context. Most of the existing tone studies are based on the USA context,

where there is a rich environment of corporate disclosures and structured format of corporate disclosure reports. Typically, the institutional factors affect corporate disclosure strategy; thus, the findings of USA studies cannot be generalised to the UK context. For example, in the UK the regulations are lenient compared to the USA regarding corporate disclosure; as a result, the litigation risk could be lower in the UK context and managers probably engage more in impression management strategies.

The following section reviews the literature on Earnings conference calls.

2.8 Earnings Conference Calls:[36]

Broadly, corporate disclosure's literature addresses three broad questions that researchers attempt to seek understanding, i.e., why firms disclose information voluntarily; how firms disseminate information; and what disclosure's strategies managers follow to disseminate information (Miller and Skinner, 2015).

The first question addresses managers' incentives to disclose information voluntarily beyond the mandated disclosures, e.g. Healy and Palepu (2001) provide a review for managers' disclosure incentives). Managers' disclosure incentives focus on what type of information to disclose and when to disclose as a large number of studies provide evidence that managers have various incentives for the types of information to disclose and the timing of such disclosures. Also, the various types of disclosed information and the timing of disclosure may have different effects on the capital markets (Miller and Skinner, 2015).

While the second question addresses the choices of information dissemination, i.e., the mediums of disclosure and the channels of communication, for instance, social media

[36] Management conference calls, earning conference calls, or conference calls are used interchangeable in this study, but it is different than management conference presentation.

platforms, such as Facebook and Twitter, are increasingly utilised by firms not just for promotional purposes but also for informational purposes. The primary advantage of social media platforms is that it provides an interactive channel of communication rather than a conventional one-way channel of communication.

The third question addresses the disclosure strategies that managers have to disseminate firms' information. This line of questioning focuses on the understanding of managers' cognitive, behavioural, and linguistic aspects of corporate disclosures. For example, what strategies managers use to disclose adverse information in a favourable way to have the least adverse impacts on a firm's value.

These three broad questions provide an extensive structure for voluntary corporate disclosure literature framework and guidelines where this study is fitting in the broad literature of corporate disclosure. As mentioned in the above section that the present study examines the tone of disclosure in earnings conference calls context, the following section reviews the earnings conference calls literature.

2.8.1 **The Emergence of Conference Calls Research:**

The line of research in the area of corporate earnings conference calls has emerged gradually. Managers' disclosure of information in earnings conference calls is considered a voluntary disclosure because not all firms hold conference calls to disseminate information. However, earnings conference calls differ than other forms of voluntary disclosures in a number of aspects. First, conference call disclosure is considered an interactive disclosure media where the audiences are co-located[37] with managers and that allows the audience to seek further information. Second, the audiences in the earnings conference call are highly sophisticated

[37] Co-location is not meant in one physical place, but over tele-conferning services.

analysts and institutional investors, and that differentiates conference call's audience from social media's audience.[38] Prior studies suggest that the audience has influences on managers' disclosure strategy and content of disclosures because of audience's private information, belief, and ability to interpret the disclosed information (Holthausen and Verrecchia (1990), Indjejikian (1991), Kim and Verrecchia (1994), cited in (Bushee, Jung, and Miller, 2011)). Third, the disclosure environment in conference calls setting is less regulated and formal compared to other forms of voluntary disclosure mediums, i.e., press release and written narrative of the firm's annual reports. That provides managers with an opportunity to communicate hard-to-quantified information and affect the audience perceptions about firms' future. Nevertheless, this opportunity is twofold.

On the one hand, it is a favourable option in that managers can communicate soft information such as R&D (Merkley, 2014). On the other hand, managers may use such settings opportunistically and strategically. For example, Larcker and Zakolyukina (2012) find that deceptive language used during the conference call is associated with firm's accounting irregularities; and Allee and DeAngelis (2015) finds that managers use positive or negative tone dispersion strategically during conference calls and tone dispersion is associated with firm's performance.

Miller and Skinner (2015) present a discussion of how the research in the area of earnings conference call disclosure evolved during recent years in the US. The development of the research of conference call can be into four stages.

[38] One might argue that social media is form of interactive disclosure but the characteristics of audience is different between conference call and social media.

The first stage line of studies focuses on the rationale behind firms holding earnings conference calls and what are the attributes of firms that hold such conference calls. Tasker (1998) main claim was that firms with less informative financial statement host conference call as voluntary disclosure medium to provide additional information voluntarily. Her findings provide strong empirical evidence for her claim, and she finds that firms that are highly engaged in innovation and speculation activities were more likely to host conference calls. On the following study by Frankel, Johnson and Skinner (1999) to analyse market reaction during conference calls and whether such calls are informative to market participants. Authors find that the majority of firms that host conference calls are larger in size, highly followed by analysts, and profitable compared to non-hosting firms. Miller and Skinner (2015, p.224) claim that such 'characteristics that are often associated with a higher level of disclosure'. In addition, Frankel, Johnson and Skinner (1999) find that the conference calls hosting's firms are in high-tech industries and have above the average market-to-book ratios. This finding supports the claim that conference calls provide disclosure for 'soft' information that is hard to quantify as high-tech firms substantially engaged in R&D activities and have larger amount of intangible assets. Overall, both Frankel, Johnson and Skinner (1999) and Tasker (1998) studies provide empirical evidence that conference calls are informative to the market participants, as evidenced by abnormally large trading volume and return volatility. However, in earlier days, conference calls participation was limited to analysts and institutional investors or by invitation only, and thus conference call hosting firms were accused of 'selective disclosure' in favour of conference calls participants where the larger number of individual investors were in informational disadvantage.

The debate on whether firms should hold open or closed conference calls led to the second stage line of research. The decision for the choice to host open or closed conference calls is linked to managers' information dissemination strategy (Miller and Skinner, 2015). That is, how widely managers want to disseminate firms' information. To understand the managers choice for open or closed conference calls, Bushee, Matsumoto and Miller (2003) find that firms that hold open conference call have a more extensive base of individual shareholders and fewer institutional investors. This finding is in support of managers' information dissemination strategy where the shareholders base determinates disclosure extent. However, the release of Fair Disclosure Regulation (FD Regulation) by SEC in the year 2000 has limited the practice of selective disclosure by firms in conference calls and therefore the FD regulation provides researchers with an opportunity to focus more on conference calls' content informativeness.

The third stage line of research focuses on conference calls' content informativeness to markets participants. The conference calls are divided into two sessions, i.e., the presentation session and the discussion (Q&A) session. Some of earlier accounting scholars claimed that conference calls do not provide additional information more than the already existed information in firms' press release (Feldman (1996) and Thompson (1997), cited in (Frankel, Johnson, and Skinner, 1999)). This claim may partially be valid as Matsumoto, Pronk and Roelofsen (2011) provide empirical evidence that discussion sessions of conference calls are more informative to the market participants than the presentation sessions, as evidenced by intra-share prices movements during the conference calls. The finding of Matsumoto, Pronk and Roelofsen (2011) can be explained in various angles. First, since the managers have the choice to invite analysts to the conference calls, it is most likely the invited analysts' have a favourable view of firms' and probably they make positive forecasts subsequently. In

addition, analysts questions during the conference call signal to the public new private information[39] and thus, managers selectively choose to answer analysts questions (Mayew, 2008). Second, the primary audience of the conference call, i.e. analysts and institutional investors, are sophisticated participants and they collect and gather a sufficient amount of firm-specific information before the conference calls. Therefore, their primary purpose of attending conference calls is to seek further information about firms' critical issues/operations which may not be publically available. The discussion session is an opportunity for the audience to seek further information and therefore it is valued by market as informational. Third, the emergence of linguistic theory and methods, such as tone and readability, into accounting research offers accounting researchers with techniques (e.g. textual analysis) to examine the effect of managers' linguistic tone on market participants. To this end, many studies provide evidence that managers may use the tone of disclosure strategically and opportunistically (Xuan, Siew Hong, and Yinglei, 2014; Allee and Deangelis, 2015). Therefore, from this standpoint, the presentation session may not only be informational to the market but instead serves promotional and impression management roles.

The understanding of how managers utilise disclosure decision strategically and opportunistically has led to the fourth stage line of research in conference calls disclosure. Mayew (2008) finds that managers strategically choose to call analysts to ask questions in the discussion session, and the choice of the analyst who can raise a question is highly

[39] During the discussion session of earnings conference calls, managers may provide some new information that was not disclosed before because managers probably think this piece of information is not interested or useful to, e.g. analysts. However, regulations prevent management from releasing any sensitive information that affects stock prices.

dependent on whether the analyst has a favourable recommendation and less critical to managers. Moreover, Allee and DeAngelis (2015) find that the analysts ask more positive (negative) questions when the managers strategically disperse positive (negative) tone during the presentation session of conference calls and accordingly the stock market reacts positively (negatively).

The majority of earnings conference calls studies are based on the US context, to the best of researcher's knowledge, the only study that examines earnings conference calls for the UK context is Abraham and Bamber (2017) study. Abrahama and Bamber (2017) explore the incentives (disincentives) to analysts' participation in earnings conference calls' discussion session, where the behaviours of call participants are influenced by a combination of regulatory and ritual codes. Drawing on theories of surveillance and interaction ritual, they find that discussion session of earnings conference calls is a dramaturgical encounter and analysts' behaviours and strategies are modified as they manage others' perceptions of their self (p.16). Also, their findings suggest that analysts have various incentives to ask good questions during the discussion session of conference calls to gain increased visibility and at the same time they avoid to ask poor questions because there are deleterious consequences to poor questioning.

Our study differs than Abraham and Bamber (2017) study in many ways. First, Abraham and Bamber (2017) follow a qualitative approach to explore analysts incentives to participate in earnings conference calls discussion sessions. The present study follows a purely quantitative approach. However, Abraham and Bambers (2017) findings may complement our study results and possibly provide an in-depth understanding of our results. Second, Abraham and Bamber (2017) study did not examine the tone of disclosure in earnings conference calls rather than they explore the analysts' incentives to engage in the discussion

session of calls. Third, the present study has a focus on both the presentation session and discussion session of earnings conference calls, whereas, Abraham and Bamber (2017) study only focused on the discussion session of the calls. Nevertheless, Abraham and Bamber's study has contributed to our understanding of the earnings conference call as a social encounter that influenced by some regulatory and ritual codes that modify call participants' behaviours.

2.8.2 **Discussion:**

Although conference calls' research has received a great deal of attention in the USA, a little is known about such area of research in the UK context. The prior studies show that conference call is a value-relevance and informational medium of voluntary disclosure and provide a valuable setting to examine and understand managers' disclosure decision and strategies. In addition, the empirical evidence of conference calls are well documented in the USA context, and the generalizability of the results may be possible to the US context. However, such evidence may not be generalised to the UK context because the laws and regulations are different between these two contexts. First, the UK disclosure practices are principle-based, in contrast to the US rule-based practices, which provides managers with some discretionary disclosure opportunities; and disclosure strategies and practices may differ across the firms in the UK context. For example, in risk disclosure literature, Elshandidy, Fraser and Hussainey (2015) find that the extent of corporate risk disclosure is associated with the country-specific attributes.

Second, because of lenient regulations in the UK, managers may face less litigation and reputational-damage risks in the UK context, and that may affect their disclosure strategies. As earlier studies note that disclosure strategies are linked with managers' incentives (Healy and Palepu, 2001; Beyer et al., 2010), and the variations in the tone of the disclosure are

manager-specific. So, the earnings conference calls setting provides a lesser formal disclosure environment to examine managers' disclosure strategy. Therefore, the UK context may provide some new empirical evidence which may differ than the US studies evidence. These context-specific attributes, i.e. country attributes and litigation risk, may affect the determinants of disclosure in conference calls setting and as well the tone of the disclosure.

Third, existing studies that examine the effect of voluntary corporate disclosure assume that corporate disclosures are consumed by market participants once the information is publicly disclosed. However, little is known about who are the actual consumers of corporate disclosures and for what purposes they seek the information (Heinrichs, Park, and Soltes, 2019). Focusing on earnings conference calls as a form of voluntary firms public disclosures gives us access to identify the actual consumers of disclosures because the capital market participants who consume the news is known. The Existing impression management studies that examine impression management techniques in firms' annual reports disregard the fact about who are the actual consumers of information disclosed in these reports. Therefore, for the present study, identifying the direct consumers of corporate disclosures seeks to provide new evidence on managers engagement in impression management strategy where the managers know who are they talking to.

Fourth, Beattie (2014) argues that the identity of the author(s) of corporate annual reports[40] is unknown, except for some sections of the annual report, such as chairman statement and MD&A. Therefore, it is believed that corporate annual reports are written by a group of professionals and experts. From the audience standpoint, it is difficult to judge whether the disclosed information in annual reports or even corporate press releases represent managers'

[40] Accounting Narrative

actual view of firms' performance and prospects. However, in earnings conference calls settings the issue of the identity of the author(s) or speakers is less ambiguous to the audience. Furthermore, the audience has the opportunity to explore managers actual view/private information by asking questions in the discussion session of earnings conference calls.

For the reasons mentioned above, the present study focuses on earnings conference calls' transcripts as the primary document of analysis (corpus) to examine managers' tone of disclosure as an impression management tool that is used as opportunistic managerial behavioural.

2.9 **Summary:**

This chapter presented the literature review of voluntary corporate disclosure. It began with a discussion of the theoretical framework of voluntary corporate disclosure with a specific focus on the agency theory as the basis for explaining managers' engaging in impression management strategies in the voluntary disclosure. Then, a discussion on the difference between corporate financial reporting quality and disclosure quality was provided; and the qualitative characteristics of disclosure were discussed accordingly. Because the study has a specific focus on the quality of disclosure, the proxies for quality of disclosure were reviewed and with discussions of each proxy advantages and disadvantages as an empirical measure of the quality of voluntary disclosure. The importance of accounting narrative was discussed, and empirical studies, in particular, the tone of disclosure in accounting narrative, were reviewed. The final section covered the literature on the emergence of earnings conference calls studies and provided a rationale on the use of earnings conference calls as the primary document of analysis for this study.

Chapter Three: Textual Analysis in Accounting Narrative

3.1 Introduction:

Corporate disclosures involve an extensive amount of quantitative information as well as qualitative information. Comparing the amount of qualitative information with quantitative information, the quantity of text vastly outnumbers the quantity of numbers (Das, 2014, p. 3). For example, on average, the amount of narratives in FTSE firms' annual reports has substantially grown from 164 pages in 2018 to 172 pages in 2019; and 61% of these reports are narratives.[41]

The massive growth in the accounting narrative provides several benefits that enhance the quality of corporate disclosure. Das (2014) reports some of these benefits; including (A) narratives contain emotive contents that are useful in assessing sentiment in the stock market; (B) narratives contain opinions and connections that can be used to corroborate other news; and (C) some information is better expressed in the form of narratives rather than numbers.

This chapter discusses the textual analysis use in accounting and finance research. Section (3.2) starts with a concise discussion on textual analysis use in mining corporate disclosure narratives with a focus on the disclosure mediums and approaches (methods) to measure qualitative information. Section (3.3) describes the parsing process that we follow in order to parse the earning conference calls transcripts and measure the tone of the disclosure.

[41] Annual Report Insight 2019 Surveying FTSE Reporting, https://www2.deloitte.com/uk/en/pages/audit/articles/annual-report-insights.html

Section (3.4) concludes chapter 3 with the limitations of textual analysis and, in particular, the 'bags of words' approach.

3.2 Textual Analysis[42] of Corporate Narratives:

'Although we often think of financial reporting in terms of numbers, language is, in fact, the medium through which companies communicate much of the information on their past and projected future performance' (Hales, Kuang and Venkataraman, 2011, p.224). Qualitative information, unlike quantitative information, has some level of inherent discretionary and, therefore, managers have some levels of discretion in communicating accounting narratives. Moreover, quantitative information by itself does not provide the complete picture of firms' economic value and fundamentals to the investors (Xuan, Siew Hong, and Yinglei, 2014). Thus, understanding and examining corporate narratives through textual analysis have become of significant importance to market participants. Jones and Shoemaker (1994); Li (2010); Kearney and Liu (2014); and Loughran and McDonald (2016) provided an extensive review of textual analysis used in accounting and finance literature.

A point of distinct, Jones and Shoemaker (1994) discuss two approaches of textual analysis using content analysis: thematic and syntactic. The focus of the thematic analysis is on the themes within a text, whereas, the syntactic analysis focuses on the cognitive difficulty of reading a textual message. Although thematic analysis and syntactic analysis are subsets of content analysis, they have different objectives. The former aims to extract and analyse

[42] 'Textual analysis, in some form, resides across many disciplines under various aliases including computational linguistics, natural (or statistical) language processing, information retrieval, content analysis, or stylometrics' (p.1). Loughran, Tim and McDonald, Bill, Textual Analysis in Accounting and Finance: A Survey (May 9, 2016) Available at
SSRN: http://ssrn.com/abstract=2504147 or http://dx.doi.org/10.2139/ssrn.2504147

themes inherent within a text and the latter aims to analyse and quantify the readability of a text or message (Jones and Shoemaker, 1994).

The following sub-sections will discuss textual analysis in accounting literature from three aspects: disclosure mediums, measurement approaches, and application of textual analysis in corporate narratives disclosure.

3.2.1 **Disclosure Medium (Source Text):**

The existing studies in the area of accounting and finance using textual analysis vary by the disclosure mediums or sources. Although corporate annual reports deem to be the most formal form of corporate communication, the existing studies examine other forms of lesser formal corporate disclosure mediums such as earning press releases (Davis, Piger, and Sedor, 2012; Kimbrough and Wang, 2014; Xuan, Siew Hong, and Yinglei, 2014), conference calls (Hollander, Pronk, and Roelofsen, 2010; Matsumoto, Pronk, and Roelofsen, 2011; Allee and Deangelis, 2015; Blau, DeLisle, and Price, 2015), analyst reports (Lehavy, Li, and Merkley, 2011; Huang, Zang, and Rong, 2014), media news (Tetlock, 2007), and social media (Lee, Hutton, and Shu, 2015). Some of these disclosure mediums are firm-initiated disclosure, and others are information intermediaries-initiated disclosure.

Such varieties of disclosure mediums have provided firms with an opportunity to enhance their transparency by increasing the extent of disclosures in less formal forms. For instance, social media such as Facebook and Twitter are informal platforms for firms to disseminate information to stakeholders in a timelier manner. In addition, such platforms are costless, in monetary term, channels of communication for a firm to disseminate information. Nevertheless, there may be some probabilities of biased sentiment and news from some types of disclosure mediums, i.e. media news, that may not represent overall economic conditions or specific firm's performance (Kearney and Liu, 2014).

Furthermore, depending on the sources of disclosure, firm-initiated disclosure or information intermediaries-initiated disclosure, the extent of firm-level qualitative information and details vary from these sources. The disclosures that are initiated from a firm itself may have more firm-inside information and management views if compared to media news or analyst reports.

Generally, corporate annual reports provide a review of corporate past performance and economic events; thus, there is a claim that disclosure in annual reports may not be as informative as expected for economic decision making, primarily, for sophisticated investors and analysts who need more timely information because these reports: (A) focus on past events and provide little information about firms' future outlook, and (B) preparing these reports based on the accounting standards limits their capability in providing information that are very useful for stakeholders but cannot be reported precisely with accounting standards.[43] Therefore, others complementary disclosure mediums, i.e. conference calls, may offer corporate management an opportunity to communicate more timely information and as well as an opportunity for investors and analysts to seek further or new information from management through conference calls' discussion sessions. To that end, Matsumoto, Pronk and Roelofsen (2011) find that conference call's discussion sessions are comparatively more informative than presentation session for the analysts. That possibly indicates that managers reveal new information or value relevance information in the discussion session of earnings conference calls.

[43] The role of narratives is to provide further explanations of a firm's quantitative information.

3.2.2 Approaches to Measure Qualitative Information:

Data reduction is the primary problem of understanding textual disclosure (Li, 2010b). Because of the large amount of information and unstructured qualitative data in the financial disclosure context, data reduction is used to aggregate such data in structured, meaningful numeric variables for analysis purpose. There are various methods used to extract (reduce big-data) and make useful and meaningful information for an explanation. The method or approach that is relevant for this study is the textual analysis.

There are two primary approaches to conduct textual analysis using content analysis method; dictionary based approach and machine learning. Each approach has its advantages and disadvantages for textual analysis.

3.2.2.1 Dictionary Based Approach:

The dictionary based approach uses 'bag of words' model in which computer programmes read the text and classify the word, phrases, and sentences into groups based on predefined dictionary categories (Li, 2010a). The choice of dictionary word lists and term weighting (that is., how each word in the word lists be weighed), are two critical issues in the dictionary-based approach in textual analysis.

3.2.2.1.1 The Choice of Word-Lists:

The majority of prior textual studies in accounting and finance use General Inquirer (GI) word list (Stone, Dunphy, and Smith, 1966); DICTION word list (Hart, 2000); Henry (2006, 2008) word list; and Loughran and McDonald (LM 2011) word list (Loughran and McDonald, 2011). The former two, GI and Diction, are based on general English linguistic dictionaries and the latter two, Henry and LM, are domain-based (the domain of financial disclosure). There are relatively some variations in the word classifications among these four word-lists. For instance, some words such as 'tax' and 'liability' are classified as negative

in GI and Diction word lists but, in financial disclosure context, these words have no negative meanings and commonly used words in financial disclosure. In fact, 'a large sample of 10-Ks during 1994 to 2008, almost three-fourths of the words identified as negative by the widely used Harvard Dictionary are words typically not considered negative in financial contexts' (Loughran and McDonald, 2011, p. 35). In addition, Henry and Leone (2016) evaluate the alternatives measures of tone in financial narrative using, GI; Diction; LM; and Henry, word lists. They find that the domain-specific word lists have relatively stronger predictability power of market reactions to earnings announcements compared to general word lists. Therefore, using a general-purpose dictionary to measure the tone of the disclosure may provide inappropriate results because of misclassification of the tone words (e.g. positive words and negative words) (Loughran and McDonald, 2011; Henry and Leone, 2016; Loughran and McDonald, 2016).

As mentioned in the prior section that it is very important to select a proper word-list (dictionary) in order to appropriately measure the variable of interest (for this study, the tone of disclosure). In accounting and finance literature, four word-lists (dictionaries) are commonly used by researchers, two of them are general English linguistic dictionaries, and the other two are based on financial-domain: Diction, Harvard's General Inquirer (GI), Henry (2008), and Loughran and McDonald (2011). The following sections provide a review of each dictionary.

3.2.2.1.1.1 Diction:

Diction was developed by Roderick P. Hart, a communication researcher. Diction is computer-aided text analysis program that determines the tone of a verbal message, and it has around thirty-five different dictionary subcategories. For example, net optimism is defined as (praise + satisfaction + inspiration) – (blame + hardship + denial).

Diction has some advantages over other software. First, Diction counts word based on linguistic theory (Bligh, Kohles, and Meindl, 2004) and uses elements of Artificial Intelligence (Cho, Roberts, and Patten, 2010). Second, the automatic nature of word counting and coding gives Diction more objectivity in both face validity and reliability (Sydserff and Weetman, 2002). Third, Diction has a feature to customise user-defined dictionary.

Some of the existing studies have used Diction to measure tone for various corporate disclosure mediums, including annual reports (Davis and Tama-Sweet, 2012); earnings announcements (Davis, Piger, and Sedor, 2012; Demers and Vega, 2014); and corporate environmental disclosure (Cho, Roberts, and Patten, 2010). These studies findings provide evidence that Diction's optimism or pessimistic tone is related to the capital markets activity or firm performance. For instance, Davis, Piger, and Sedor (2012) find that the optimism tone of earnings announcement is positively associated with firms' return of assets. Cho, Roberts, and Patten (2010) find that firms with poor environmental performance manipulate their tone in corporate environmental disclosures through using more optimistic tone.

3.2.2.1.1.2 Harvard's General Inquirer (GI):

Harvard's General Inquirer dictionaries were developed from sociology and psychology literature. It combines categories from four sources: (1) the Harvard IV-4 dictionary, (2) the Lasswell value dictionary, (3) several categories recently constructed, and (4) marker categories primarily developed as a resource for disambiguation.[44] The primary disadvantage of General Inquirer is that its dictionaries are not appropriate for tone measurement in the financial disclosure context, a common problem in Diction as well.

[44] http://www.wjh.harvard.edu/~inquirer/homecat.htm

Empirically, Tetlock (2007) examines the interaction between the stock market and the tone of the Wall Street Journal's 'Abreast of the Market' daily column using GI dictionaries. He finds the pessimism in the daily column of the journal is associated with lower subsequent stock returns. Using the positive and negative dictionaries of GI, Kothari, Li, and Short (2009) examine the content of disclosures by firms, analysts, and news outlets. They find the tone of disclosures is associated with stock return volatility, and analyst forecast error dispersion, more positive tone of disclosure is linked to lower stock return volatility and analyst forecast error dispersion.

3.2.2.1.1.3 The Henry (2008) Word-List:

Henry's word list was developed by Henry (2008). It has been developed specifically for financial disclosure context. She created the word lists by examining the earnings press release of the telecommunication and computer industries. Her word list includes two dictionaries: positive and negative dictionaries. The primary weakness of Henry (2008) word list is the limited number of negative words, only 85 negative words. Also, some of the common negative words in business communication are missing from her lists, such as 'loss' and 'impairment'.

Price *et al.* (2012) examine the tone of earnings conference calls' discussion session. They report the firms' with a positive tone during the discussion session of earnings conference calls experience a higher stock return during both three-day and two-month windows. Further, Price *et al.* (2012) claim the Henry wordlist is a better predictor of stock return compared to GI word list.

3.2.2.1.1.4 Loughran and McDonald (2011) Word-Lists:

Loughran and McDonald (2011) Word Lists (LM) were developed by Loughran and McDonald (2011), similar to Henry (2008), their word lists were developed specifically for the financial disclosure contexts. They created their word lists by examing a large sample of 10-Ks reports for the period of 1994-2008 of words that commonly used in business communication.[45] Loughran and McDonald (2011) created six-word lists (dictionaries): negative, positive, uncertainty, litigious, strong modal, and weak modal. The key advantages of Loughran and McDonald word list are: (A) their lists are relatively comprehensive, and (B) their lists were developed for financial disclosure specifically.

Because of its' comprehensiveness and financial-domain focus word lists, 'the [LM] lists have become predominant in more recent studies' Kearney and Liu (2014, p. 175). Indeed, many recent studies use LM word list to measure the tone of disclosure, for example (Huang, Teoh, and Zhang, 2014; Arslan-Ayaydin, Boudt, and Thewissen, 2016; Baginski *et al.*, 2018; Caserio, Panaro, and Trucco, 2019).

3.2.2.1.2 Terms Weighting[46] in the word list:

The existing studies give equal weight to each word in the word list; that is, each word in the word list is equally important (Kearney and Liu, 2014). However, in the financial context, some words may have significant effects on investors' decisions compared to other words. For instance, a word such as 'catastrophic' may have stronger negative meaning than word 'bad' or 'poor'. Therefore, it is a challenging task to examine how words with various

[45] Loughran and McDonald (2011) word lists are updated on periodic basis. Thus, the number of words in each list might changed from time to time.

[46] Term weighting may be less relevant when the purpose of textual analysis is not measuring the tone or sentiment of disclosure. For instance, when study focusing on examining the extent of corporate risk disclosure or environment [and] social disclosure, term weighting may be irrelevant.

weightings affect stakeholders' perceptions and market reactions. Loughran and McDonald (2011) created a term weighting scheme[47] that lowers the impact of high-frequency words and enhances the impact of low-frequency words in a document. In other words, the term that appears more in a document has less power than a term that appears less in a document. Although Loughran and McDonald (2011) suggest that term weighting scheme reduces the noise of misclassification, Jegadeesh and Wu (2013) argue that in the context of understanding the tone of disclosure, there is no reason to expect that least appearing words have more impact than most appearing words (cited in Kearney and Liu, 2014). Using a sample of earnings press release, Henry and Leone (2016) find that there no improvement in computing tone measure using inverse document frequency (IDF) weighting relative to equal term weighting.

For the present study, following Loughran and McDonald (2011), Jegadeesh and Wu (2013), and Henry and Leone (2016), we will use the equal weighting scheme because in the conference call context it is unlikely that managers' use of a specific word during the whole conference has a significant impact.

3.2.2.2 Machine Learning Approach:

The machine learning approach is relied on statistical techniques to infer the contents of documents for the purpose of statistical inferences (Li, 2010a). The basic logic in the machine learning approach is to train the machine to do things that humans do, through training sets of input. Although machine learning may be more time consuming compared to a dictionary based approach, the classification accuracy rate of machine learning is higher relative to the dictionary based approach. The higher accuracy rate in machine learning is

[47] inverse document frequency (idf) weighting

achieved through less human analysts' subjective assessment (Loughran and McDonald, 2016).

Li (2010b) identifies a number of advantages of machine learning (statistical learning approach) compared to a dictionary based approach. First, there are very few dictionaries that are solely built for financial or business context purposes; Henry (2006, 2008) and Loughran and McDonald (2011) word lists are exceptions. Thus, the general dictionaries may not work well in the financial or business context (Li, 2010b; Henry and Leone, 2016; Loughran and McDonald, 2016). Therefore, machine learning may overcome this issue by developing an algorithm that works like human-mind and classify the word of interest appropriately. Second, the dictionary based approach may not consider the context of a sentence in the financial disclosure. For instance, the word 'decrease' has a positive (negative) meaning if a sentence is about cost (revenue). In machine learning feeding the programme with an algorithm that possibly could consider the context of the word before classifying it as, for example, a positive or a negative word solve the issue of the context. Therefore, the machine learning approach may overcome the above two deficiencies of the dictionary based approach.

Third, 'the statistical approach provides a natural way to validate classification efficiency. The training data collected during the statistical content analysis are human coded and thus could be used to test the effectiveness of the algorithm' (Li, 2010b, p. 146). Li (2010a) paper is one of the earliest studies that used a Naïve Bayesian machine learning approach in accounting and finance context. He used a Naïve Bayesian machine learning algorithm to classify forward-looking statements in the MD&A section of annual reports into 'positive'; 'negative'; 'neutral'; and 'uncertain' categories. He suggests that general-purpose dictionary

(General Inquirer, Diction, and Linguistic Inquiry and Word Count) may not work well for analysing corporate disclosure.

3.2.3 **Applications of Textual Analysis in Corporate Narrative Disclosure:**

The existing textual, thematic and syntactic, studies in accounting and finance contexts have examined various qualitative dimensions of narrative disclosures. Such dimensions include, positive and negative tone/sentiment (Xuan, Siew Hong, and Yinglei, 2014; Blau, DeLisle, and Price, 2015; Boudt, Thewissen, and Torsin, 2018; Buchholz *et al.*, 2018; Johnman, Vanstone, and Gepp, 2018; Loughran, 2018; Bhardwaj and Imam, 2019; Caserio, Panaro, and Trucco, 2019; Jiang *et al.*, 2019); readability (Linsley and Lawrence, 2007; Li, 2008; Lehavy, Feng, and Merkley, 2011; Loughran and McDonald, 2014; Hun-Tong, Ying Wang, and Bo, 2015; Bonsall Iv *et al.*, 2017; Lo, Ramos, and Rogo, 2017; Bhardwaj and Imam, 2019; de Souza *et al.*, 2019); and self-reference bias/ deception language (Larcker and Zakolyukina, 2012; Burgoon *et al.*, 2016; Hobson *et al.*, 2017; Hope and Wang, 2018); managers' disclosure style (Grant, Hodge, and Sinha, 2018; Bochkay, Chychyla, and Nanda, 2019); and text similarity (Peterson, Schmardebeck, and Wilks, 2015).

For the present study, the focus is on the tone of the disclosure, an attribute of financial disclosure quality that is relevant to researchers who are examining the integration of qualitative information characteristics into economic decision-making as well as how the information users understand these qualitative information characteristics.

However, the corresponding taxonomies of the textual analysis are still imprecise, and thus it is sometimes considered a subset of qualitative analysis, qualitative content analysis (Loughran and McDonald, 2016). On this basis, textual analysis can be categorized into targeted phrases; sentiment/tone analysis; topic modelling; measures of document similarity; and readability.

3.3 The Parsing Process of Earnings Conference Calls Transcripts:

The notion of the textual analysis is to translate qualitative data, i.e., text, into quantitative measures that can be used as a variable of interest (Loughran and McDonald, 2016). Loughran and McDonald (2016) claim that much of the imprecision of textual analysis is introduced because the transformation process is not transparent, and that makes the replicability of the results a challenging task. Therefore, for the purpose of exposition and transparency of transformation process of the textual analysis, Loughran and McDonald created the Notre Dame Software Repository for Accounting and Finance (SRAF)[48] to provide a central repository for programs and data researchers used in accounting and finance research. Probably the primary advantage of the repository is to replicate the textual analysis transformation process and to unify the transformation process.

The Notre Dame Software Repository for Accounting and Finance (SRAF) provides the data codes that can be used for parsing process. However, these data codes cannot be used directly for parsing of earnings conference calls corpus of this study without modifications because these codes are written for parsing 10-Ks files. The 10-K file format is significantly different from earnings conference calls transcripts. Appendix A provides an example of earnings conference calls transcripts and illustrates the counts of both positive and negative word and measure of tone.

Following sections describe the parsing process of earnings conference calls transcripts.

3.3.1 The Format of Earning Conference Calls Transcript:

Each earnings conference calls transcript has the following sections, (A) call details, (B) details of participating managers, (C) details of participating analysts, (D) the presentation

[48]Website: https://sraf.nd.edu/

session, (E) the discussion session (Question & Answer), and (F) some cautionary statements at the end of the transcript which are for relevant to the analysis.

For this study, presentation session and discussion session are only relevant to measure the tone of the disclosure.

3.3.2 **Programming Language for Textual Analysis:**

After having the corpus ready for textual analysis, the first step is to decide on the programming language that is used to parse the document. Most of the modern software packages provide tools for the textual analysis, such as Perl, R, SAS, STATA, MATLAB, and Python. The choice of these languages is a matter of religion.

For the present study, we used Python to parse earnings calls transcripts for many reasons. First, Python is an open-source general programming language provided by Ananconda, and it is freely available to researchers and other interested users.[49] Second, the primary advantage of Python is that it comes with many pre-coded modules and packages, such as NumPy, NLTK, Pandas, SciPy, and many more. Also, Python has the regex (Regular Expression) tool kit that is very important in textual analysis.[50] The power of regex comes in identifying the patterns in a text efficiently. Third, Python is recommended by Loughran and McDonald (2011, 2016), and they provide useful source coding data for textual analysis. In this study, we used the codes of Loughran and McDonald with modifications to measure the tone of earnings conference calls.

[49] https://www.anaconda.com/distribution/

[50] Example of regulary expressions provided in Loughran and McDonald (2016, p. 34)

3.3.3 Extraction of Presentation and Discussion Sessions of Earnings Conference Calls:

As mentioned in section (3.3.1) that each transcript has many sections, and only the presentation and discussion sections are relevant to measure the tone of the disclosure. Existing studies provide evidence that the tone the presentation sessions of earnings conference calls are different from the tone of the discussion sessions; also discussion sessions are more informative than the presentation sessions (Matsumoto, Pronk, and Roelofsen, 2011; Brockman, Li, and Price, 2015). Therefore, we wrote a Python code to extract the presentation session and the discussion session from the transcripts. The notion of this process is to split each transcript into two parts (presentation part and discussion part) and remove all other unnecessary information. The objective of this procedure is to measure the tone of the presentation session and the discussion session accurately and separately. Appendix B provides the python code for the extraction procedure of the presentation session and the discussion session.

3.3.4 Extraction of Managers' Answers and Analysts' Questions in the Discussion Session:

The discussion session of earnings conference calls is primarily for the call participants to raise questions and seek additional information. Also, the discussion session can provide analysts access to managers' private information, and that provides participating analysts with an informational advantage over non-participating analysts. Therefore, the discussion session of conference calls is considered the potential of public information disclosures to complement the existing private information of financial analysts (Mayew, 2008, p. 627) .

For this study, we separated the managers' answers from the analysts' questions in the discussion session. That assists us to measure managers' tone of disclosure independently than analysts questions tone because measuring the overall tone of disclosure of the

discussion session provides inaccurate tone measure. Appendix C provides the python code for the splitting managers' answers from analysts' question in the discussion session of earnings conference calls.

3.3.5 **Measuring the Tone Using Loughran and McDonald (2011) Word-Lists:**

After the extraction of the relevant sections of earnings conference calls transcripts, splitting the discussion session of the calls into managers' answers and analysts' questions, and cleanse transcripts of all irrelevant information, the next step is to measure the tone of each section. However, it is noteworthy to describe how the textual analysis works to measure the tone. A detail description with an example is provided in Loughran and McDonald (2016) review paper. The following steps are the concise description of the parsing process:

1- Parse the text file into a vector of the token (token are a collection of characters occurring between word boundaries Loughran and McDonald (2016)).
2- Map token into LM word list. However, at this step, researchers have to decide on what collection of characters is considered a word, for example, 'May' as a month and 'may'.
3- Tabulate the count of word frequencies that match against the LM word list.

Appendix D provides the python code for parsing the text file of earnings conference calls transcript and Loughran and McDonald's master dictionary python code. These codes are written by Loughran and McDonald, and we modified them for the context for earnings conference calls.

Table (3.1) illustrates some extracts on how managers and analysts tone their language in earnings conference calls (the following extracts are for representative purposes). On average, managers use more positive words during the earnings conference calls' presentation session; whereas, analysts use more negatives words.

Table 3.1Extracts of Earnings conference Calls

Earnings Conference Calls Participants (Managers & Analysts)	Extracts Positive: Green Bold / Negative: Red Bold	Count of Positive and Negative Word Based on LM (2011) Dictionary
Finance Director	*I think it's therefore important to recognize in that context the **achievements** of grocery, agriculture and ingredients in delivering the higher margins that we see here. Grocery margins **benefited** by 50 basis points from the reclassification, but I must admit I'm **pleased** to say that they're now over 8%, and that's from big **improvements** in George Weston Foods in Australia and ACH in the US*	Positive: 4 Negative: 0
Group Finance Director	*You've heard us say before that Barclays financial **strength** remains a source of competitive **advantage** and maintaining this **strength** is central to how we run the business and you should not expect this focus to change*	Positive: 3 Negative: 0
CEO	*Yes, we are still seeing rental growth across in retail, the **strongest** rental growth is remaining in Out of Town, Open A1 both our superstores and our retail warehouse parks. Our Hercules portfolio, which as you know is the biggest such in the market, actually **outperformed** the retail warehouse sector, [our] IPD measure by the biggest margin in its history in the calendar year just finished, albeit that was lower absolute returns than the previous year because of less yield shift. And so I think we feel **positive** about rental growth albeit as you know particularly in town and bulky goods have seen and are seeing a **slowdown** as they're still in **positive** territory but significant **slowdowns**.*	Positive: 4 Negative: 2
CFO	*Third, we booked an **impairment** charge, primarily relating to goodwill recognized on acquisition of our business in Romania, reflecting the **loss**-making performance of the business. The performance to date has been **disappointing**, but we've got a new management team in place in Romania and we're **confident** that **losses** will be significantly reduced this year.*	Positive: 4 Negative:1
Analyst	*Just in terms of the process of changing the business, maybe one for Emily, is what's the attitude been within the business to those people in the OpCos who realize that their buying role is **disappearing** or they're in **danger** of being GFNR'ed or whatever?*	Positive: 0 Negative: 2
Analyst	*Just a couple of areas, please, if I may. The first one is just to explore the **weakness** in the revenues and get a sense of how much of that is a step down versus just a **weak** quarter. Would you expect any recovery in the wealth management business in the fourth quarter?* *Related to that, clearly, last year in Q4, GBM had a really **weak** quarter. Given that we are in November, I was wondering if you might be **able** to tell us whether you've seen a repeat of that **weakness** this year, as well*	Positive:1 Negative: 4

3.4 Limitations of Textual Analysis (Bag of Words Method):

The textual analysis provides many advantages in identifying qualitative characteristics and patterns in corporate disclosure that were not possible with the manual content analysis. However, it has some limitations. The main limitation of the bag of words method of the textual analysis is that when parsing a text file into token, the context of the word is ignored. That is, each word in the word list dictionary is counted independently regardless of the word context.

Another limitation is the negation of positive word. In business communication context, it is not always obvious that a positive word is preceded with a negation. Loughran and McDonald (2016, p. 31-32) provide the following example, '[i]n the press release, the SEC states "A 'check the box' compliance approach of form over substance is not enough to comply with the FCPA," said Antonia Chion, Associate Director of the SEC's Division of Enforcement. The negation word, "not," appears seven words after the word "compliance." ' However, the negation of negative word is not common in business communication; for example, 'this is not unprofitable year'.

3.5 Summary:

This chapter started with a discussion on the importance of textual analysis method in measuring qualitative characteristics of corporate disclosure in section (3.2). Then, a description of the parsing process of earnings conference calls transcript was provided in section (3.3) and followed by the limitations of 'bag of words' approach of textual analysis in section (3.4).

Chapter Four: Impression Management in Earnings Conference Calls, Evidence from FTSE100 Firms

"is that words themselves are not the ultimate point of communication. Words are a window into a world." *Steven Pinker*

4.1 **Introduction:**

This study investigates whether a firm's financial performance affects managers' linguistic tone in earnings conference calls context, a setting in which the primary audiences are sophisticated financial analysts. Although a growing body of literature establishes that linguistic tone, an expression of managers' sentiment, is incrementally informative (Davis, Piger, and Sedor, 2012; Baginski et al., 2016), linguistic tone, nonetheless, could be manipulated for opportunistic purposes (Huang, Teoh, and Zhang, 2014) and sophisticated audience process linguistic tone differently than the unsophisticated audience (Blau, DeLisle, and Price, 2015; Baginski et al., 2018). As managers economic incentives are linked to firm financial performance, it is possible that, in case of firm unfavourable performance, managers may attempt to manage stakeholders' perceptions of firm performance and mask the unfavourable performance to avoid negative economic and reputational consequences, such as dismissal, changing compensation contract, and hostile takeovers. While, in the case of favourable performance, managers may highlight the positive aspects of firm performance and attribute[51] the success to internal causes to gain personal benefits and enhance firm value. Consequently, this can lead managers to engage in impression management strategies. In this study context, agency theory is a fundamental attribution of managers' engagement in impression management strategies (Merkl-Davies and Brennan, 2017). Thus, we explain

[51] Based on the attribution theory.

impression management behaviour as a result of the agency relationship between firms' insiders and outsiders.

This study examines impression management strategies in the context of earnings conference calls where the interaction with the sophisticated financial analysts is beneficial to the firm's management as well as financial analysts. On the one hand, the managers can get direct feedback about the disclosure impact and how the market participants interpret the firm's disclosures. On the other hand, analysts can have access to firms' management and use firm public disclosure to complement and update their private information. This two-way communication between managers and financial analysts is a unique context to examine management impression management strategies with sophisticated audiences, where the financial analysts have a choice of interaction, and the scrutiny from the financial analysts is intense. Furthermore, Abraham and Bamber (2017) describe earnings conference calls setting as a social encounter where calls participants behaviours are influenced by a set of regulatory and ritual codes.

Prior studies provide evidence on managers' engagement in impression management strategies in communication through 'one-way' disclosure mediums (e.g. annual reports, press release, earnings announcement, and social media) but the evidence on earnings conference calls context 'two-way disclosure medium' is limited, e.g. (Leung, Parker, and Courtis, 2015; Aerts and Yan, 2017; Guillamon-Saorin, Isidro, and Marques, 2017; Yang and Liu, 2017; Boudt and Thewissen, 2019).

There has been growing research in the area of voluntary corporate disclosure. Firms use various disclosure mediums[52] to communicate information with their stakeholders

[52] Disclosure mediums, means, medias, vehicles and outlets are used interchangeable.

voluntarily, for instance, annual reports, press releases, earnings conference calls, websites, brokerage-host-conference, investor day presentation and social media. The disclosed information can take various forms as well, quantitative, qualitative, graphs, and photography. This study focuses on corporate narrative disclosure and how these narratives could be used as an impression management vehicle. Merkl-Davies and Brennan (2007) provide a framework for analysing firms' impression management strategies and tactics. We focus on a specific impression management tactic, that is the tone, a measure of managers' use of negative and positive keywords.

Managers are expected to be biased when presenting their firm's performance because their economic incentives, such as compensation and tenure, are linked to firm financial performance (Rutherford, 2003). Indeed, management may use narrative disclosure opportunistically to provide a self-interested and biased view of firm performance, i.e. impression management. The existing studies provide evidence that impression management strategies are used in corporate annual reports (Beattie and Jones, 1992; Aerts, 1994; Clatworthy and Jones, 2001; Clatworthy and Jones, 2003; Clatworthy and Jones, 2006; Cho, Roberts, and Patten, 2010; Leung, Parker, and Courtis, 2015) , annual results press release (Brennan, Pierce, and Guillamon-Saorin, 2009; García Osma and Guillamón-Saorín, 2011), annual earning guidance (Hayward and Fitza, 2017), and social media (Yang and Liu, 2017). The voluntary nature of these disclosure mediums and the extensive use of narrative in these mediums provide managers with an opportunity to utilise impression management tactics to present their firms in the best possible picture.

Accounting narratives[53] have been an increasingly important component of corporate disclosure strategy (Jones and Shoemaker, 1994; Brennan and Merkl-Davies, 2013; Beattie, 2014; Merkl-Davies and Brennan, 2017). Over the years, the importance of accounting narrative has increased because of the complexity of economic environment/ phenomena (Beattie, 2014), growing needs of information users (Beyer et al., 2010), and shaping an organisational image and impression management (Merkl-Davies and Brennan, 2007; Brennan and Merkl-Davies, 2013; Merkl-Davies and Brennan, 2017).

From economic theories perspective, the increased disclosure of accounting narrative enhances the informativeness and relevance of disclosures and reduces the information asymmetry. However, on the other hand, from a social psychology perspective, accounting narratives may be used strategically and opportunistically to hide adverse information and manage stakeholders' perceptions of firm performance (Bloomfield, 2002) and to present firm or management in a favourable light (Clatworthy and Jones, 2006). Furthermore, the specific nature of accounting narrative as un-auditable and depending on the use of language and visuals provides management with an opportunity to manage public impressions deliberately. Thus, management can use accounting narrative as impression management strategy and self-serving tool through the decisions on rhetorical devices, language and verbal tone, to be included in the disclosures (Merkl-Davies and Brennan, 2007).

Numerous studies have examined impression management strategies in corporate disclosures, for instance, annual report[54] (Leung, Parker, and Courtis, 2015; Yekini,

[53] 'The literature on accounting narratives (European tradition) is related to the literature on voluntary disclosure (North American tradition). The different terminology (disclosure versus narrative) in part signals quite fundamental differences in researchers' philosophical beliefs, i.e. in the theories and methodologies that they use' (Beattie, 2014, P.112).

[54] the content of annual reports excluding financial statements and notes to accounts.

Wisniewski, and Millo, 2016); corporate environmental disclosure (Cho, Roberts, and Patten, 2010; Cho et al., 2012); chairman statements (Clatworthy and Jones, 2003; Clatworthy and Jones, 2006); graphs in annual reports (Beattie and Jones, 1992); annual results press releases (García Osma and Guillamón-Saorín, 2011); and narrative in social media (Yang and Liu, 2017). Our paper extends this line of research on accounting narrative literature. We focus on a specific medium of disclosure, i.e., earnings conference calls. Earnings conference calls are easily accessible by analysts[55] and the interested public and represent important communication medium that managers can utilise to communicate firm performance and other information. Also, analysts can seek further information on earnings conference calls through Question and Answer sessions (hereafter, discussion session). An aspect of earnings conference calls is that their content is not regulated, the language is less affected by regulation and accounting standards, and that gives managers in some way a full discretion regarding the contents of these calls, what and how to disclose information, and potentially an impression management tool. Furthermore, Bushee, Gow, and Taylor (2018, p.88) advocate that 'the language on conference calls is more likely to reflect an intentional disclosure choice by managers'. Thus, managers' disclosure strategy reflects their direct incentives either to obfuscate or to inform. So, examining managers' disclosure tone in the earnings conference calls context provides a piece of direct evidence on managers' incentives on disclosures.

The motivations to conduct this study is threefold. First, the research on earnings conference calls has primarily focused on the USA context. Although prior USA context studies provide

[55] Analysts are invited to participate in earnings conference calls in person. However, real-time online broadcast is available to everyone with access to the internet.

evidence that in earning conference calls managers use deception language (Larcker and Zakolyukina, 2012); use inflated talk (Blau, DeLisle, and Price, 2015); and spread tone words evenly (Allee and Deangelis, 2015), to the best of our knowledge, the only study that explore earnings conference calls in the UK context is Abraham and Bamber (2017). However, Abraham and Bamber (2017) study explore analysts' incentives to participate in calls' discussion session, whereas the focus of the present study is to investigate managers' tone in earning conference calls in the UK context. The institutional framework is likely to affect firms' disclosure strategies and policies; consequently, users' decision making. For instance, institutional framework moderates the effects of firm disclosure on analysts' forecast (Basu, LeeSeok, and Ching-Lih, 1998; Hope, 2003). Also, the UK's disclosure-environment is less litigious than the USA's one (Schleicher and Walker, 2010) and in the UK, unlike US Regulation for Fair Disclosure, there is still no requirement for a firm to host open conference calls for all interested stakeholders (Bassemir et al., 2013). Therefore, the results from US studies cannot be generalised to the UK context due to the institutional and regulatory differences, and these differences give us clear motivation to focus our study on the UK context.

Second, Miller and Skinner (2015) provide a concise review how earnings conference calls research has evolved in the US; from the decision to host earnings conference calls to the managers' strategic communication in earnings conference calls. Thus far, research in the area of earnings conference calls has primarily focused on economic theory and provide evidence that earning conference calls increase disclosure extent and reduce information asymmetry (Tasker, 1998; Frankel, Johnson, and Skinner, 1999), enhance analysts forecast (Bowen, Davis, and Matsumoto, 2002; Kimbrough, 2005), provide additional new information, specifically in discussion session (Matsumoto, Pronk, and Roelofsen, 2011),

predicting abnormal return (Price *et al*., 2012), and managers' use of strategic communication (Mayew, 2008; Larcker and Zakolyukina, 2012; Allee and Deangelis, 2015). As voluntary disclosure media, the stakeholders perceive conference calls to increase disclosure and reduce information asymmetry; however, communication is not a static process. The language used in communication has rhetorical functions. Furthermore, managers' use of language in communication constructs a picture of reality, i.e. impression management. This study extends the line of earnings conference calls research from the impression management perspective. That is, how firm's financial performance is linked to managers' disclosure decision and how managers utilise narrative disclosure strategically and opportunistically to present their firm in best possible light to shape stakeholders' perceptions of firm performance through the managing the tone of the disclosure narrative.

Third, one limitation of the prior UK setting studies is the subjectivity in constructing the tone as the authors manually classify each statement as positive/good or negative/bad (few studies are an exception, e.g. (Leung, Parker, and Courtis, 2015). However, the advancement in technology and the use of Natural Language Processing in accounting and finance research has opened opportunities to investigate accounting narrative in a large scale sample. Also, the availability of finance-domain dictionaries has assisted in measuring the managerial tone more appropriately (Henry and Leone, 2016; Loughran and McDonald, 2016).

Our primary argument in this study is that whether the managers engage in impression management techniques through managing the tone of the narrative disclosure to shape the perception of their stakeholders when the firm has unfavourable financial performance in the earnings conference calls context, where scrutiny from the financial analysts in intense. Our study is based on a sample of UK FTSE100 firms. Our choice for FTSE100 firms is

based on three factors. First, around 78% of the UK market capitalisation is captured by FTSE100.[56] Thus, FTSE100 Includes the largest 100 companies listed on the London Stock Exchange. Second, FTSE100 inclusion of the largest 100 firms provides high visibility, and therefore these firms are highly followed by financial analysts. Third, from our data collection process, we found that firm outside the FTSE100 index do not host earnings conference calls on a continuing basis.

We hand-collect earning conference calls transcripts, parse the transcripts with Python to remove any cautionary statements, and then measure the tone using Loughran and McDonald (2011) finance-domain wordlists (the parsing process is discussed in Chapter 3). The results show that, overall, managers are more optimistic in the presentation sessions of earnings conference calls than the discussion sessions. This finding is consistent with the findings of Brockman, Li, and Price (2015). Also, managers of the firm that has favourable financial performance use a more positive tone in the presentation of the call compared to a firm of unfavourable financial performance. However, in the presence of financial analysts who are sophisticated, we do not find any statistically significant difference in managers disclosure tone in the discussion session for firms that have favourable and unfavourable financial performance. Probably this indicates that managers tend to engage less in tone management with the sophisticated audience such as financial analysts in interactive disclosure medium. From the agency theory perspective, that confirms Jensen and Meckling (1976) suggestion that financial analysts are the external monitor of the firm's management.

Finally, managers of unfavourable financial performance tend to show a higher level of confidence by using strong model words. Loughran and McDonald (2011) find that the

[56] www.ftserussell.com, FTSE UK Index Series, October 2017

annual reports of a firm that had a material weakness in their internal accounting control show more strong model words; our findings can complement their results. Indeed, managers who face unfavourable circumstances, for example, poor financial performance, show a higher level of confidence and necessitate changes by using more strong language keywords.

Classify firms into profit-making firms and loss-making firms over the same year (cross-sectional); we find that managers' tone in the discussion session is more optimistic for profit-making firms compared to loss-making firms. However, we do not find any difference in managers' tone in the presentation session of calls, and also there is no tone differential in analysts' tone between profit-making firms and loss-making firms.

Our study contributes to impression management literature in general and tone literature specifically. Our focus in this study on the tone as one of the various impression management techniques that managers possibly use to shape the perceptions of firms' stakeholders. First, prior studies examine impression management techniques in one-way disclosure mediums. Our study provides new evidence on impression management techniques, that is, tone management, in an interactive two-ways disclosure medium with sophisticated information users. The two-way disclosure medium tends to provide direct feedback to managers on their disclosure strategy and impression management technique, in particular in the discussion session where the information users directly interpret managers' disclosed information.

Our second contribution is, to the best of the researcher knowledge, there is no prior study that examines managers' use of linguistic tone as an impression management device in earnings conference calls in the UK context.[57] Nearly all prior studies in the earnings

[57] Abraham and Bamber (2017) is an exception but their study has a different focus.

conference calls are based on the USA context. Therefore, by using UK data, we also contribute to the literature from a new institutional perspective.

Third, prior studies provide mixed evidence on firms' performance influences on corporate disclosure strategy and managers' impression management tactics (Cooper and Slack, 2015). We provide new evidence to impression management literature by examining whether management engagement in tone usage to shape the stakeholders' perceptions of the firms' financial performance is dependent on information users' sophistication.

The following section (4.2) provides a review of the prior literature and section (4.3) discusses the hypotheses, followed by the methodology, sample selection, and transcripts parsing procedure in section (4.4). The results are discussed in Section (4.5) and concludes the chapter with the discussion and conclusions in section (4.6).

4.2 **Background:**

4.2.1 **Management Motivations to Engage in Impression Management**

In his seminal book, The Presentation of Self in Everyday Life, Goffman (1959) discussed the importance of self-presentation[58] as individuals engage in social interactions for defining their social order and constructing social reality through managing other people impressions of them. Leary and Kowalski (1990, p. 34) define impression management as 'the process by which individuals attempt to control the impressions others form of them'. Once an individual has the motivation to gain social and material outcomes, maintain self-esteem, and develop an identity; he will construct impression management tactics to achieve the desired outcomes, i.e. impression construction (Leary and Kowalski, 1990). Similar to individuals, organisations can engage in impression management to present themselves to

[58] In this paper, we use impression management and self- presentation interchangeably. See Leary and Kowalski (1990) discussion.

the stakeholders to be perceived favourably, and use disclosure mediums as vehicles in shaping stakeholders' perceptions. Thus, organisations may bias the information favourably to create a positive image of themselves to the stakeholders.

In accounting narratives, impression management is the tendency for corporate to use narratives selectively and strategically to present themselves favourably (Clatworthy and Jones, 2006). The primary objective of impression management is to present a self-serving view and biased disclosure of the firm and management performance (Neu, Warsame, and Pedwell, 1998). Unlike a firm's performance which can be observed through accounting numbers, management performance and capabilities may not be observed directly. Thus, managers present their performance and capabilities through impression management techniques. Furthermore, management engages in impression management strategies for purposes/ incentives of compensation, career concerns, corporate publicity, legitimacy, shareholder wealth, and deception.[59]

In contrast to the firms' positive performance, management can engage in impression management strategies when firm performance is negative to hide adverse performance or attribute such performance to external factors (Abrahamson and Park, 1994; Clatworthy and Jones, 2003).

These motives may be common for all firms, but poorly performing firms may engage more in impression management strategies because of the adverse effects on managers' reputation and firms' market value. For instance, in poor-performing firms, management may have

[59] There are risks that managers may use impression management strategies deliberately to mispresent disclosures and that will distort shareholders and other stakeholders values. Alternatively, however, managers may use impression management to provide shareholders with useful information and signal future good news.

more incentives to mask corporate and managerial performance and distort the perception of stakeholders.

A part of management engagement in impression management could be explained by the agency theory's assumption of managerial behaviour (Abrahamson and Park, 1994; Merkl-Davies and Brennan, 2017). The core assumption in the agency theory is that 'individuals act in their own best self-interest, which may, at times, conflict with the enterprise's best interests.' (Wolk, Dodd, and Rozycki, 2013, P. 46) . So, from an agency perspective, management may act in their self-interest to maximise their own welfare. Also, due to asymmetrical access to information in agency situations, management may take advantage of inside information for their best interest. As the stakeholders may put in place some mechanisms to reduce the agency costs, limit managements opportunistic behaviours, and align the interest of management with the interest of stakeholders; these mechanisms are partly linked to accounting systems' outcomes- such as share options and earnings-based compensations (Dechow, Ge, and Schrand, 2010). Therefore, once firms' financial performance (accounting systems outcome) does not meet the stakeholders' expectations, it is more likely that management masks the performance and makes opportunistic disclosure to provide a favourable impression of a firm's performance and prospects and manipulates stakeholders' perceptions.

4.2.2 **Impression Management and Firm Performance:**

Whereas stakeholders base assessments of a firm's performance on its achievement of financial objectives and meeting their expectations, management can actively shape the perceptions of stakeholders the way in which they view the firm. Among others, financial performance is one of the key indicators of firm success and efficient utilisation of its resources. As well-established, stakeholders view a firm's positive earnings as the success

of the management team, while 'poor earnings as necessitating the proposed management change' (DeAngelo, 1988, P.4) . As noted by Rutherford (2003, P.189) that '[the] environment in which their remuneration and wealth is linked to the financial performance of the companies that employ them, managements have economic incentives to disclose messages conveying good performance more clearly than those conveying poor performance'. Thus, management's economic incentives are linked to a firm's financial performance; it is highly expected that, in case of poor performance, management distorts the stakeholders' perception of a firm's performance. That results in shaping the perception of firm earnings and bias narratives disclosure, i.e. impression management.

Abrahamson and Park (1994) discuss two main reasons why management might mask the firm's poor performance and conceal adverse outcomes. First, it is related to management career concern and reputations. Poor performance means that the board of directors, representative of investors, may alter the incentive contract of managers or dismissal. Second, it is related to the market reaction to the negative news. Adverse firm outcomes may be perceived undesirably by investors and accordingly decreases a firm's market value. Both of these reasons are not in the best interest of managers, and more likely, they behave opportunistically and engage in impression management strategies.

Although prior studies provide evidence that accounting narratives contain useful information about a firm's performance (Smith and Taffler, 2000; Li, 2008; Schleicher and Walker, 2010; Kearney and Liu, 2014), the unregulated and discretionary nature of narratives provides managers with an opportunity to be used as a vehicle of impression management tools.[60]

[60] Our study focus is on the use of tone (positive and negative words). Other studies examine various other impression management techniques, for example, Readability (Clatworthy and Jones, 2001; Li, 2008;

Numerous studies have examined impression management in corporate narratives disclosure and firm performance. Aerts (1994) examines the annual reports of 50 Belgian firms and finds that managers discuss negative performance in technical accounting terms while positive performance in more direct cause-effect language. Similarly, Clatworthy and Jones (2003) find that good performance firms present more good news compared to bad news. Comparing 50 top (bottom) profitable and (unprofitable) firms, Clatworthy and Jones (2006) find unprofitable firms disclose less key financial indicators, less quantitative results, few self-references and focus more on the future. Schleicher and Walker (2010) examine forward-looking narrative, and their results reveal that poorly performing, risky, and high analysts forecasts firms biased their narrative tone positively, while, firms with declining earnings provide a more negative tone.

Focusing on firms' environmental disclosure, Cho, Roberts, and Patten (2010), a sample of US firms, find that managers exhibit significantly more optimistic tone when their firms have worse environmental performance. Cooper and Slack (2015) use a holistic measure of impression management and find that UK water and sewerage firms utilise various impression management tactics when they fail to meet the regulator's performance standards.

In sum, the results of these studies provide some evidence to suggest that narrative disclosures vary with firm performance; and managers use impression management tactics to present firm and its management in the best possible light and shape stakeholders perceptions.

Bonsall Iv et al., 2017; Lo, Ramos, and Rogo, 2017); use of graphs (Beattie and Jones, 1992); minimum disclosure (Leung, Parker, and Courtis, 2015); and attribution (Kimbrough and Wang, 2014).

4.2.3 **Earnings Conference calls:**

The line of research in the area of disclosure in corporate conference call has emerged gradually. Managers' disclosure in conference calls is considered a voluntary disclosure because not all firms hold conference calls to disseminate information. However, it differs than other forms of voluntary disclosures in some aspects. First, conference call disclosure is considered an interactive communication where the audiences are co-located with managers, and that allows the audiences to seek further information directly. However, the audiences in the conference call are highly sophisticated analysts and institutional investors, and that differentiates conference call's audience from social media's audience.[61] Prior studies suggest that the audience has influences on managers' disclosure strategy and content of disclosures due to audience's private information, belief, and ability to interpret disclosed information (Holthausen and Verrecchia (1990), Indjejikian (1991), Kim and Verrecchia (1994), cited in (Bushee, Jung, and Miller, 2011)).

Second, the disclosure environment in conference calls setting is less regulated and less formal relative to other forms of voluntary disclosure mediums, i.e., press release and written narrative of a firm's annual reports. That provides managers with an opportunity to communicate hard-to-quantify information and affect the audience's perceptions about firms' future. Nevertheless, this opportunity is twofold. On the one hand, it is a desirable option in that the managers can communicate soft information such as R&D (Merkley, 2014). On the other hand, managers may use such opportunity opportunistically and strategically. For example, Larcker and Zakolyukina (2012) find that deceptive language used during the conference call is associated with firm's accounting irregularities; and Allee

[61] One might argue that social media is form of interactive disclosure but the characteristics of audience are different between conference call and social media.

and DeAngelis (2015) find that managers use positive or negative tone dispersion strategically during conference calls and tone dispersion is associated with firm's performance.

Miller and Skinner (2015) present a discussion of how the research in the area of conference call disclosure has evolved during recent years in the US. The development of the research of conference call can be into four stages.

The first stage line of studies focuses on the rationale behind firms holding conference calls and what are the attributes of firms that hold conference calls. Tasker's (1998) central claim was that firms with less informative financial statement host conference call as a voluntary disclosure medium to provide additional information voluntarily. Her findings provide substantial empirical evidence for her claim. Tasker (1998) finds that firms that are highly engaged in innovation and speculation activities were more likely to host conference calls. The following study by Frankel, Johnson and Skinner (1999) analyse market reaction during conference calls and whether such calls are informative to market participants. The authors find that the majority of firms that host conference calls are larger in size; highly followed by analysts, and profitable compared to non-hosting firms. Miller and Skinner (2015, p.224) claim that such 'characteristics that are often associated with higher level of disclosure'. Also, Frankel, Johnson and Skinner (1999) find that the conference calls hosting's firms are in high-tech industries and have above the average market-to-book ratios. This finding supports the claim that conference calls provide disclosure of 'soft' information that is hard to quantify as high-tech firms substantially engaged in R&D activities and have a larger amount of intangible assets. Overall, both Frankel, Johnson and Skinner (1999) and Tasker (1998) studies provide empirical evidence that conference calls are informative to the market participants, as evidenced by abnormally large trading volume and return volatility.

However, in earlier days, conference calls participation was limited to analysts and institutional investors or by invitation. Thus, conference call hosting firms were accused of 'selective disclosure' in favour of conference calls participants where a more substantial number of individual investors were in informational disadvantage.

The debate on whether firms should hold open or closed conference calls led to the second stage line of research. The decision for the choice to host open or closed conference calls is linked to managers' information dissemination strategy (Miller and Skinner, 2015). That is, how widely managers want to disseminate firms' information. To understand the managers choice for open or closed conference calls, Bushee, Matsumoto and Miller (2003) find that firms that hold open conference call have a larger base of individual shareholders and fewer institutional investors. This finding is in support of managers' information dissemination strategy where the shareholders base determinates information disclosure wideness. However, the release of Fair Disclosure Regulation (FD Regulation) by SEC in the year 2000 has limited the practice of selective disclosure by firms in conference calls, and therefore the FD regulation provides researchers with an opportunity to focus more on conference calls' content informativeness.

The third stage line of research focuses on conference calls' content informativeness to the markets participants. The conference calls are divided into two sessions, i.e., the presentation session and the discussion session. Some of earlier debaters claimed that conference calls do not provide additional information more than the already existed information in firms' press release (Feldman (1996) and Thompson (1997), cited in (Frankel, Johnson, and Skinner, 1999)). This claim may partially be true as Matsumoto, Pronk and Roelofsen (2011) provide empirical evidence that the discussion sessions of conference calls are more informative to the market participants than the presentation sessions, as evidenced by intra-share prices

movements during the conference calls. The finding of Matsumoto, Pronk and Roelofsen (2011) can be explained in various angles. First, the primary audience of the conference call, i.e. analysts and institutional investors, are sophisticated participants and they collect and gather a sufficient amount of firm-specific information before the conference calls. Therefore, their primary purpose to attend conference calls is to seek further information about firms' key issues/operations which may not be publically available. The discussion session is an opportunity for the audience to seek further information and therefore it is valued by the market as informational. Second, the emergence of linguistic theory and methods, such as tone and readability, in accounting research offers accounting researchers with techniques (e.g. textual analysis) to examine the effect of managers' linguistic tone on market participants. To this end, many studies provide evidence that managers may use the tone of disclosure strategically and opportunistically (Huang, Teoh, and Zhang, 2014; Allee and Deangelis, 2015). Therefore, from this standpoint, the presentation session may not only be informational to the market but instead serves promotional and impression management roles.

The understanding of how managers utilise disclosure decision strategically and opportunistically has led to the fourth stage line of research in conference calls disclosure. Allee and DeAngelis (2015) find that the analysts ask more positive (negative) questions when the managers strategically disperse positive (negative) tone during the presentation session of conference calls and accordingly, market react positively (negatively).

Our study is motivated by the fourth line of earnings conference calls research. The present focuses on the content of earnings conference calls as to whether it is used as an impression management device to manipulate stakeholders' perceptions of the firm.

Research into impression management strategy in the earnings conference calls is essential for a number of reasons. First, earning conference calls represent an important source of information. Firms that hold earnings conference calls are highly followed by analysts (Frankel, Johnson, and Skinner, 1999) and have less informative financial reports (Tasker, 1998). In addition, conference calls holding firms have a higher market to book ratio (Frankel, Johnson, and Skinner, 1999) indicating that these firms have high information asymmetry. Thus, managers provide incremental disclosure during conference calls, especially during the Q&A session, to reduce information asymmetry (Bowen, Davis, and Matsumoto, 2002).

Second, earnings conference calls are interactive communication with sophisticated analysts who are highly skilled with information processing. Managers prefer communicating information to sophisticated analysts who can filter information rather than unsophisticated information users (Bushee, Matsumoto, and Miller, 2003). However, managers sometimes involve in incomplete disclosure strategy and do not answer some of the analysts' questions during the discussion session, in particular, financial and firm-specific business questions (Hollander, Pronk, and Roelofsen, 2010). In addition, analysts may interpret 'no answer' negatively[62,] and thus managers may engage in impression management to signal positive news. Therefore, earning conference calls provide a rich and specific setting to examine whether managers engage in impression management techniques with sophisticated analysts.

Third, Beattie (2014) and Merkl-Davies and Brennan (2017) discuss the issue of the authorship of accounting narratives, in other words, who in fact, write corporate narratives. For instance, many individuals are involved in writing corporate's annual reports, including

[62] Analysts may seem to equate no news with bad news (Hollander, Pronk, and Roelofsen, 2010)

inputs from finance, secretarial, and investor relations. Although some sections of the annual report may have formal authorship attributed (e.g. chairman's statement; and Management Analysis and Discussion), the actual text may be initially drafted by someone else. In earnings conference calls transcripts, the authors or animators[63] are more obvious to identify. Although the presentation session of conference calls may be scripted by someone else and CEO and/or CFO communicates the text, discussion session may represent managers (CEO or CFO) intentional disclosure tone. Also, managers-specific optimism impact on earnings conference call language reveals the firm's current and future performance and strategic incentives (Davis et al., 2015).

Fourth, unlike written corporate disclosures (e.g. annual reports and press releases), conference calls are verbal communication in a less formal setting. In such a setting, managers have more discretion on what to disclose (content and quantity) and how to disclose. For instance, Mayew and Venkatachalam (2012) find that verbal cues in earnings conference calls are informative and contains useful information about firm fundamentals.

Fifth, the nature of language and words' usage in the firm-related news is not identical across various disclosure mediums (Loughran and McDonald, 2011). Therefore, whether managers bias the language and word in a specific disclosure media over another is an important question.

4.2.4 **Role of Financial Analysts:**

A Firm's disclosure environment is complex and includes many parties, managers who disclose and disseminate information, stakeholders who use the information for economic

[63] 'Three contributors to the process can be conceptually distinguished: the individual whose ideas are being represented (principal); the individual who undertakes the scripting (author); and the individual who communicates the text (animator) (Goffman, 1981).' (Beattie, 2014, P. 122)

decision making, auditors who add credibility to the information, and analysts who evaluate the information and make forecasts and recommendation.

The role of financial analysts is vital in the capital market as the evidence suggests that financial analysts add value to the capital market (Healy and Palepu, 2001). As the analysts' forecast and recommendation depend highly on timely information, they collect information from both private and public sources. It may be analysts access to private information, through private management meeting, conference call, brokerage host conference, which add accuracy and precision to their forecast and recommendations (Green et al., 2014; Soltes, 2014; Brown et al., 2015; Kirk and Markov, 2016).

Beside analysts' role as information intermediaries, Jensen and Meckling (1976) suggest that analysts have comparative advantages to monitor management and reduce agency cost. Analysts close coverage and following of firm and management's news give them advantages to monitor firm performance and reduce opportunistic management behaviour. Also, analysts have direct access to management on a regular basis to raise questions and concerns, especially in conference calls, and this interaction may be regarded as monitoring activity. Indeed, Bradley et al. (2017) find that analysts who have industry experience of their coverage firms are active monitors of firm and management. Their results suggest coverage by industry-expert analysts, is negatively associated with firms' earning management; has less probability of engaging in financial misreporting and earning restatement, and is associated with lower level of CEO excess compensation. Chen, Harford, and Lin (2015) examine analysts' governance role and find firms that receiving less scrutiny from analysts are more likely to misuse cash reserve, pay their management total and excess compensation, and their management engages in more value-destroying acquisitions.

Similarly, Yu (2008) finds that firms with high analysts following are less likely to manage their earnings.

These studies provide evidence that analyst plays a crucial role in monitoring a firm and management externally, as suggest by Jensen and Meckling (1976)[64]. However, little is known about analysts' role on managers' utilisation of impression management strategies. García Osma and Guillamón-Saorín (2011) study whether there is an association between strong corporate governance mechanisms and impression management in annual result press releases. Their result suggests that strong governance mechanisms limit impression management and managers self-serving disclosure. Whether analysts play a similar role in limiting impression management in earning conference calls context is still a question that needs to be investigated.

4.3 **Hypotheses:**

Based on the prior literature, we develop two sets of hypotheses. The first set of hypotheses (H1) deal with the overall earnings conference calls' tone regardless of firm performance. The second set of the hypotheses (H2) deals with earnings conference calls' tone for the firms' with the favourable and unfavourable financial performance.

The prior studies suggest that the presentation session of earnings conference calls can be less informative than the discussion sessions of the calls. Because the presentation session of the call is a repetition of the press release and it is scripted (Matsumoto, Pronk, and Roelofsen, 2011; Price et al., 2012). Also, Brockman, Li, and Price, (2015) find that

[64] It is possible that analyst could be less effective monitor of firm and management due to their professional tie with management and curry with management to get more access to management private information. These movitions could impair analysts' incentive to monitor firm management. The evidence are inconclusive regarding analyst effective monitor hyposhesis vs impaired monitor hypothesis. For instance, in survey study by Brown et al. (2015), that analyst, in general, pay less attention and focus on dtetecting fraud and intentional misreporting. While, Dyck, Morse, and Zingales (2010) find that analysts play a role to uncover firm fraud, especailly accounting fraud.

managers are more optimistic in the presentation session of earning conference calls than they are in the discussion session. Two reasons may explain managers less engagement in impression management in the discussion session of earnings conference calls compared to the presentation session. First, the spontaneous nature of the discussion session and analysts may challenge the managers on their view on the firms' current and future performance. Thus, managers are more likely to be neutral rather than optimistic or pessimistic. Second, the presentation session is prepared beforehand, and most probably it is written by experts so the managers can convey the best possible picture of firm performance. Therefore, we would expect the incentive for impression management will be higher in the presentation session than in the discussion session. Thus, managers may speak more positively (positive tone) in the presentation session compared to the discussion session.

H1a. Managers use more positive net tone in the presentation session of earning conference calls compared to the discussion sessions.

Prior research provides evidence that access to management is a vital source of informational advantages for analysts (Chen and Matsumoto, 2006; Ke and Yu, 2006; Green et al., 2014). While both presentation session and discussion session of earnings conference calls are informative, the discussion session provides analysts with a venue for seeking further information about a firm's performance and prospects and, thus, it more informative than the presentation session (Matsumoto, Pronk, and Roelofsen, 2011). However, on the one hand, it is possible that analysts have incentives to curry favour with management to get access to the managers' private information (Mayew, 2008) and use compliment language to praise management for their leadership and firm performance (Milian and Smith, 2017). Soltes (2014, P.248) suggests that private interaction with firm managers can occur for purposes other than just getting additional firms' news, e.g. citing private interaction in

research reports, facilitating access for buy-side clients, and depth of management access. Therefore, from this perspective, analysts reveal positive impression to managers to develop a closer relationship with firm management.

On the other hand, Bushee, Gow, and Taylor (2018) argue that analysts are unlikely to have obfuscation incentives during the earnings conference calls, i.e. using complex language. Two reasons make analysts less likely to engage in impression management in earnings conference calls. First, analysts are information intermediaries, and investors seek their advice for economic decision making and perceive analysts' advice as objective and professional. However, if analysts are involved in strategic communication, i.e. inflated talk or abnormally high tone management, then this communication is considered negative news by investors (Kartik, Ottaviani, and Squintani, 2007). The second reason, which is the effect of the former, is that the analysts' future reputational damage. Analysts' reputation is important for their career promotion as well as for their employers business and, therefore, analysts are less likely to compromise their objectivity and professionalism. Furthermore, analysts' reputation damages have spillover effects. For example, Lee and Lo (2016) find that for analysts who have favourable or optimism view of firms that later revealed as misstatement firms suffer reputation damage and the market reacts negatively to their opinion on other non-misstatement firms, i.e. negative spillover. These contrasting views on analysts dialogue with management, whether they challenge the management or praise the management, is unclear. Thus, we posit the following null hypothesis.

H1b: there will be no significant difference in analysts' question net tone and managers' answer net tone in the discussion session of the earnings conference call.

The second hypothesis deals with firms that have favourable and unfavourable financial performance. The financial performance data provide a negative (a positive) impression for

a firm that has an unfavourable (favourable) financial performance. For a firm with favourable financial performance, there are incentives for managers to engage in impression management tactics and manage the conference calls tone upward. In fact, firms with favourable performance have more incentives to highlight their positive performance by using more positive words. While for a firm with the unfavourable performance, there are also incentives for managers to manage the tone of earnings conference calls upward for career concerns, compensation, and managing stakeholders' perceptions. There is an extensive literature that finds an association between firms' narrative disclosure and financial performance (Abrahamson and Park, 1994; Smith and Taffler, 2000; Clatworthy and Jones, 2003; Beynon, Clatworthy, and Jones, 2004; Rutherford, 2005; Clatworthy and Jones, 2006; Henry, 2006, 2008; Li, 2008; Leung, Parker, and Courtis, 2015). These studies provide evidence that firms with poor performance are more likely to engage in impression management.

Also, Loughran and McDonald (2011) provide evidence that firm use stronger language (strong model words) are more likely to disclose material weaknesses in internal accounting control in their annual reports. In the earnings conference call setting, managers' of unfavourable performance firm may show a higher level of confidence by using a stronger language of confidence (Strong Model words). Strong Model words indicate some level of confidence, and thus managers of unfavourable performance firm are more likely to use strong and confident language to manage and gain the stakeholders' confidence.

These two views suggest that both favourable financial performance firms and unfavourable financial performance firms upward their disclosures' tone as a technique of impression management. However, if there is no significant difference in the tone of disclosure between firms that perform financially well and firms that perform financially poor, it is likely the

unfavourable financial performing firms' engage in impression management through upward their tone.

Therefore, we posit the following null hypothesis:

H2a: there is no difference in the net tone of firms that have favourable financial performance and firms that have unfavourable financial performance.

4.4 Method and Sample Selection Procedure:

To test the hypotheses, we constructed two groups of firms, (Favourable) and (unfavourable) financial performance, based on the change in profitability in the fiscal year of 2015 and 2014. The earnings conference call transcripts were collected from Thomson Reuters Eikon for the sample firms. Furthermore, all the financial data were collected from Osiris. We measured the tone of each transcript, Presentation session, discussion session, and managers and analysts tone in the discussion session using Loughran and McDonald (2011) word lists. The following subsections describe the procedures.

4.4.1 Sample Selection

We began our sample with FTSE100 firms that were listed on the London Stock Exchange as of December 2015. We excluded all firms that were not listed across the years 2015 and 2014 because firm's index status may affect its disclosure strategies. We focused on FTSE100, a share index of the 100 companies listed on the London Stock Exchange with the highest market capitalisation, for three main reasons. First, firms that listed in FTSE100 index has more visibility to investors and analysts community because firms must have some degree of visibility for the disclosures to be effective (Merton, 1987). Second, prior studies provide evidence that larger firms are more likely to hold earnings conference calls (Tasker, 1998; Frankel, Johnson, and Skinner, 1999). Thus, we limit our sample to FTSE100 firms.

Third, financial analysts have a primary focus on covering FTSE100 firms, and we do not want to add noise to our sample by adding firms which are less covered by analysts. Then, we gathered transcripts of a full-year earnings conference calls from Thomson Reuters Eikon manually for all our sample firms. We limited the collection of transcripts only to earnings calls, and those were hosted in London or for the U.K. stakeholders, all other transcripts for investors day, presentation to fixed income investors, and other calls were excluded. Also, our choice of annual result earnings conference call made the comparison of firm performance feasible with prior full-year financial performance. Our final sample, therefore, comprised 87 individual firm and 87 unique earnings call transcripts (see Table 4.1 for selection criteria).

Table 4.1 Sample Selection Criteria

Sample Selection Criteria	**Sample Firm**	**Excluded**
FTSE100 on 31 Dec 2015[65]	100	
Less: Joiners and Leavers (2015 & 2014)		*6*
Less: Missing data from Osiris		*2*
Less: Transcripts not available on Eikon		*5*
final Sample	**87**	

[65] There are 101 firms listed on FTSE100 index because Royal Dutch Shell Plc has two classes of share, i.e. Class A and Class B.

4.4.2 **Measures of Tone:**

To measure managers' and analysts' tone in the earnings conference call, we used the frequency count of positive and negative words based on Loughran and McDonald (2011) finance-domain word list and that provide us with an objective measure of tone. We follow these procedures. First, we manually checked each transcript whether (1) it is earning related calls; (2) it has both presentation and discussion (Q&A) session.[66] Second, we used Python to parse the transcripts by removing all cautionary statements at the beginning and ending of each transcript. Then, we divided each transcript into two parts, presentation part and discussion part. As prior studies provide evidence that discussion sessions are more informative than presentation sessions (Matsumoto, Pronk, and Roelofsen, 2011; Price et al., 2012), we expect the tone of presentation session will be different from the tone of the discussion session. In addition, within the discussion part, we used python to separate analysts' question (analyst) from managers' answers (managers).

Third, we used Loughran and McDonald (2011) wordlist to measure the net tone of each conference call (presentation session, discussion session, Analysts Question, and Managers Answers).[67] Following (Price et al., 2012; Davis et al., 2015), we used the following formula to measure managers tone in earnings conference calls:

$$Net\ Tone_{ij} = \frac{(Positive\ Words\ Score\ count_{ij} - Negativ\ \ Word\ Score\ count_{ij})}{(Total\ word\ count\ ij)} * 100$$

$i\ donates\ to\ firm, j\ donates\ to\ the\ section\ of\ earning\ confernce\ call\ (Presentation, Discussion, Analyst\ Questions, Managers\ Answers)$

[66] Only one firm is missing Question & Answer Session.

[67] Using out of sample documents, we checked the reliability and validity of Diction with customised LM wordlist on accurately counting the positive and negative words. The result was highly accurate.

For the tone measures, a purely positive earnings conference call would have a score of a higher positive number, a purely negative earnings conference call would have a score of a higher negative number, and a perfectly neutral call would have a score of 0.

For the strong model language, we use the following formula:

$$Strong\ Model_{ij} = \frac{score\ count\ of\ strong\ model\ words_{ij}}{total\ words\ of\ section_{ij}} * 100$$

$i\ donates\ to\ firm, j\ donates\ to\ the\ section\ of\ earning\ confernce\ call\ (Presentation, QA, Analyst\ Questions, Managers\ Answers)$

4.4.3 **Classification of Firms**

The focus of this study is on whether a firm's financial performance affects managers tone during the earnings conference call. Thus, we constructed two groups of firms, (Favourable) and (Unfavourable), based on the percentage change in profit/loss before taxation for the period between fiscal years 2015 and 2014. Favourable (unfavourable) firms are those that their profit improves (declines) between fiscal years 2015 and 2014. We adopted this method following prior studies (Clatworthy and Jones, 2003; Clatworthy and Jones, 2006; Yang and Liu, 2017). Since the interest of classifying firms into two groups is not to examine their financial performance but an indicator of performance, we did not exclude financial firms from our sample. The final classification of firm yields 47 (favourable) financial performance firms and 40 (unfavourable) financial performance firms.

4.5 **Results**

Tables (4.2) and (4.3) show the descriptive statistics of the tone variables and financial numbers relating to the sample. The average size (median) of favourable and unfavourable firms, measured by total assets, are £ 78.6 m (£11.2 m) and £120.9 m (£12.5 m) respectively. As expected, there is no significant difference in the size of favourable and unfavourable firms for both fiscal years 2015 (2014) in two-tailed t-tests at 0.05 level, p=0.43 (p=0.37) respectively. The average (median) profit before tax for the year 2015 for favourable and

unfavourable firms are £ 1.49 m (£ 0.71 m) and £ 0.33 m (£ 0.33 m) respectively. The difference between means of favourable and unfavourable firms is significant at 0.05 level in a two-tailed t-test (p=0.02). Thus, favourable and unfavourable firms have markedly different financial performance. Also, there is a substantial change in profitability over the previous year. Favourable firms moved from an average profit of £ 0.92 m to £ 1.49 m, while unfavourable firm moved from an average profit of £ 2.11 m to £ 0.33 m.

Table (4.4) shows that all the tone variables are normally distributed, except the analyst tone, discussion strong-model and managers' strong- model. Based on the Central Limit Theorem (CLT), the sample size is large enough; therefore, normality is not an issue, and t-test can be applied (De Winter and Dodou, 2010).

Table 4.2 Tone Descriptive Statistic

Variable	Obs	Mean	Std.Dev.	Min	Max
Presentation Tone	87	1.572	0.928	-0.951	4.264
Discussion Tone	86	0.103	0.541	-1.396	1.219
Analysts Tone	86	-0.832	0.762	-3.704	0.817
Managers Tone	86	0.455	0.593	-1.402	1.874
Presentation Total word	87	5547.000	1850.806	1869.000	11118.000
Discussion Total Word	86	5659.849	2029.570	208.000	11848.000
Manager_Total Word	86	4165.151	1646.271	166.000	8796.000
Analyst_Total Word	86	1382.058	555.286	27.000	3207.000
Presentation Strong Model	87	0.673	0.249	0.176	1.364
Discussion Strong Model	86	0.652	0.264	0.262	2.404
Analyst Strong Model	86	0.320	0.187	0.000	0.870
Manager Strong Model	86	0.779	0.341	0.288	3.012

Table 4.3 Financial Descriptive Statistics

	Unfavourable						Favourable						All Firm					
	N	Mean	Median	Standard Deviation	Maximum	Minimum	N	Mean	Median	Standard Deviation	Maximum	Minimum	N	Mean	Median	Standard Deviation	Maximum	Minimum
TotalAssets m £2015	40	120.94	12.54	252.15	1,120.01	0.07	47	78.62	11.19	252.18	1626.06	2.12	87	98.08	11.21	251.59	1626.06	0.07
TotalAssets m £2014	40	131.78	11.74	296.70	1,357.91	0.05	47	78.53	8.64	260.46	1687.68	1.12	87	103.01	10.47	277.34	1687.68	0.05
Operating Rev.m £2015	40	21.41	9.07	39.18	178.83	0.03	47	10.67	5.01	12.01	57.96	0.43	87	15.61	6.32	28.32	178.83	0.03
Operating Rev.m £2014	40	26.23	9.43	57.01	269.81	0.01	47	10.54	5.01	12.31	62.57	0.41	87	17.76	5.77	40.21	269.81	0.01
P/L beforeTax m £2015	40	0.33	0.33	2.18	5.89	- 6.46	47	1.49	0.71	2.44	12.73	-1.14	87	0.95	0.59	2.38	12.73	-6.46
P/L beforeTax m £2014	40	2.11	0.87	3.51	18.14	- 0.17	47	0.92	0.58	2.17	11.97	-6.13	87	1.46	0.61	2.91	18.14	-6.13

Table 4.4 Shapiro-Wilk W test for normality

Variable	Obs	W	V	z	Prob>z
Tone_Presentation	87	0.992	0.573	-1.226	0.890
Tone_Discussion	86	0.981	1.391	0.727	0.234
Tone_Analysts	86	0.936	4.666	3.389	0.000
Tone_Managers	86	0.990	0.760	-0.603	0.727
Presentation Strong Model	87	0.980	1.443	0.807	0.210
Discussion Strong Model	86	0.743	18.753	6.449	0.000
Manager Strong Model	86	0.740	18.976	6.475	0.000
Analyst Strong Model	86	0.980	1.422	0.774	0.219

4.5.1 **Hypotheses H1a and H1b.**

For hypothesis H1a, we posit that managers use more positive tone in presentation session than the discussion session of earnings conference calls. For all firms sample, the presentation session of earnings conference call has a mean of 1.572% positive tone. Compared to the presentation session, discussion session has a mean of 0.103%, almost purely neutral tone. An independent samples t-test was conducted to evaluate the hypothesis that the manager's tone in the presentation session is more positive than their tone in the discussion session of earnings conference calls. The results in the Appendix of this chapter shows that the average positive tone of the presentation session (mean=1.573%, sd=.099)

was statistically significantly different (t=12.70, df=171, one-tailed p=.000) from that of discussion session (mean=.0103%, df=.058). The significant difference in the managers' positive tone between presentation session and discussion session confirms the point that managers highlight their firms' positive performance to shape positive impression. Also, regardless of their firm's performance, managers present their firm in the best possible image and signal their best managerial capabilities. We also test the significant difference between managers' tone in the presentation session and their tone in discussion session (excluding analysts questions and comments). The result is similar that managers use more positive language, i.e. tone, in the presentation session than in their answers in the discussion session (t=9.43, df=171, p=.000). Managers are almost three and half times more positive in the presentation session than in the discussion session. One reason to explain managers' high optimistic language in the presentation session is that the presentation session is prepared in advance. Therefore, it may not reflect the real tone of managers.

For hypothesis H1b that posits that there is no significant difference between analysts' and managers' tone in the discussion session of earnings conference calls because of conflicting analysts' incentives. On average, the analysts tend to use a more negative tone during discussion session (mean = -.833%), while the managers speak more positively during the discussion session (mean=.456%). The two-tailed t-test result shows that there is a statistically significant difference between analysts' and managers' tone in the discussion session (t= 12.3, df=170, p=.000). This result indicates that, although managers tend to frame their answers in a positive language, analysts on average ask questions and make comments in less favourable language.

Overall, managers have a tendency to be linguistically biased when presenting their firms' performance and answering or commenting on analysts questions.

4.5.2 **Hypotheses H2:**

To further investigate managers' use of tone in managing the impression of others, we divided the sample firms into two groups of favourable and unfavourable firms based on the percentage change of profit before tax from the previous year.

The result to the appendix of this chapter shows that on average the presentation (discussion) session of favourable firms has more net positive tone than the unfavourable firms, mean of 1.74% (.142%) for favourable firms vs 1.38% (.059%) for unfavourable firms. The one-tailed t-test results at 0.05 level reveal that managers' tone in the presentation session (t=-1.803, df=85, p=.037) is statistically significant for firms that have favourable financial performance compared to firms with unfavourable financial performance. However, for the tone of the discussion session, two-tailed t-test (t=-0.709, df=84, p=.47), the result is not statistically significant between favourable and unfavourable firms.

Furthermore, we separated analysts' questions and comments from managers' answers in the discussion session. Although analysts use less net negative tone for favourable firms (mean= -.77%) than the unfavourable firms (mean=-.90%), the two-tailed t-test result is not statistically significant (t=-0.73, df=84, p=.417). For managers' answers, we find similar results. Managers speak more positively for favourable firms (mean=.48%) than the unfavourable firms (mean=.41%), but the result is not statistically significant (t=-0.73,df=84, p=.466).

Overall, we do not find evidence that managers bias their tone in the discussion session of the earnings conference call between favourable and unfavourable firms. However, for the favourable firms' manager use more positive tone in the presentation session compared to the unfavourable firm. Also, these results indicate that analysts do not differentiate between favourable and unfavourable firms while asking questions in the discussion session on

earnings conference calls. Our results are in contrary to prior impression management studies, e.g. (Clatworthy and Jones, 2003; Cho, Roberts, and Patten, 2010; Yang and Liu, 2017).[68] One explanation could be that the conference calls disclosure medium has a particular target audience, i.e. sophisticated financial analysts, who on average have better capabilities of information processing and analyses. Some anecdotal suggests that some brokerage firms hire ex-CIA professional to analyse managers language and non-verbal cues. Another reason could be the interactive nature of earnings conference calls which may restrict managers' abilities to bias their speech tone directly. Thus, managers may utilise other impression management tactics.

For further analysis, in the next section, we conduct strong model word test that investigates managers' confidence level.

The results in the appendix to the chapter show that managers of unfavourable firm (mean=0.72%) are more likely to use strong model language than of favourable firms (mean=0.62%) in the presentation session as well as discussion session (mean= .73% and .57%) for unfavourable and favourable firm respectively. One-tailed t-test at 0.05 level reveals a statistically significant difference in the use of strong model language between unfavourable and favourable firm for presentation (discussion) sessions, t=2.00, df=85, p=.025 (t=3.00, df=84, p=.002). In addition, managers' answers tone in discussion session for unfavourable firms (mean=0.89%), on average, have a higher number of strong model words than of favourable firms (0.67%) and the result of the one-tailed t-test is statistically significant (t=3.05, df=84, p=.0015).

[68] But the result for presentation session is in line with Clatworthy and Jones (2003) result that positive performing firm highlight their performance positive by using impression management strategy.

These results provide some preliminary evidence that managers of firms' that have unfavourable financial performance show more confidence in their language in the earnings conference call context. However, it could be possible that the manager of declining financial performance firms focus more on the future and, therefore, use more strong language in their presentation as well as their answers in discussion sessions.

4.5.3 **Additional Analysis:**

In the previous section, we investigated managers' use of tone in managing the impression of others; we divided the sample firms into two groups: firms with favourable financial performance and firms with unfavourable financial performance based on the percentage change of profit before tax from the previous year. This approach of classification was used in many prior accounting studies (e.g., Clatworthy and Jones, 2003; Clatworthy and Jones, 2006; Yang and Liu, 2017). This approach, however, considers only the change in financial performance with firms either increasing their results (favourable) or decreasing their results (unfavourable). In this section, we classify all profit-making firms (Profit Firms) separate to all loss-making firms (Loss Firm) over the same year and examine whether there is any tone differential between profit firms and loss firms. Following this classification of firms, 78 firms were identified as profit-making firms, and only 9 firms were identified as loss-making firms. Table (4.5) shows the descriptive statistics and table (4.6) reports the p-value results of a t- (Wilcoxon) test of equality of means (medians). We report both the parametric test (t-test) and the nonparametric test (Wilcoxon) results because of the small sample size of the loss-making firms. However, the results of both parametric test and nonparametric test are similar.

Table 4.5 Descriptive Statistics

Loss Firm						
Variable	***Obs***	***Mean***	***Median***	***Std.Dev.***	***Min***	***Max***
Presentation Tone	9	1.196	1.051	0.895	0.065	2.895
Discussion Tone	9	-0.153	-.089	0.435	-1.132	0.254
Manager Tone	9	0.102	.032	0.483	-0.713	0.691
Analyst Tone	9	-0.737	-.615	0.697	-2.164	0.149
Profit Firm						
Variable	***Obs***	***Mean***	***Median***	***Std.Dev.***	***Min***	***Max***
Presentation Tone	78	1.616	1.605	0.927	-0.951	4.264
Discussion Tone	77	0.133	.113	0.547	-1.396	1.219
Manager Tone	77	0.497	.460	0.593	-1.402	1.874
Analyst Tone	77	-0.844	-.646	0.773	-3.704	0.817

Table 4.6 P-value results of a t- (Wilcoxon) test of equality of means (medians)

					T-Test		**Wilcoxon rank-sum (Mann-Whitney)**	
	Mean (Loss Firm)	***Mean (Profit Firms)***	***Diff in mean***	***St.Error***	***T_Value***	***P_Value***	***Z_Value***	***P_Value***
Presentation Tone	1.196	1.616	-0.419	0.326	-1.3	0.201	-1.352	0.1764
Discussion Tone	-0.153	0.133	-0.285	0.19	-1.5	0.136	-1.573	0.1157
Manager Tone	0.102	0.497	-0.396	0.175	-2.26	0.044	-1.996	0.0459
Analyst Tone	-0.737	-0.844	0.107	0.27	.4	0.693	0.247	0.805

On average, the presentation session of profit-making firms has more net positive tone than the loss-making firms, mean of 1.616% for profit-making firms compared to 1.196% for loss-making firms. However, the results are not statistically significant (z=-1.352, p= 0.1764). This result indicates that regardless of a firm financial performance over the same year compared to other firms, managers strive to highlight the positive aspects of performance by using more positive words. However, this result is in contrary to our main result, where firms with increasing financial results have more positive tone in the presentation session compared to firms with decreasing financial results. A probable explanation of these results all together is that managers use prior year financial results as a benchmark for the current year performance rather than comparing the current year results with the other firms.

The following two extracts illustrate how management employs positive words in the presentation session of the earnings conference call: (highlighted bold green words are positive word based on LM financial dictionary. No negative words were used)

*'And we've driven some **incredible** productivity **improvements** led by John [Rutter] and our online team, our colleagues in store, delivering **fantastic** results. Pick rate up 10% year on year. The productivity of our vehicles up 15%. Both of those of course contributing to the big cost saving that John talked about earlier. But doing that at the same time as **improving** our customer metrics'* **J Sainsbury plc - Chief Executive**

*'... Barclays financial **strength** remains a source of competitive **advantage** and maintaining this **strength** is central to how we run the business and you should not expect this focus to change'*
Barclays Bank PLC - Group Finance Director

The tone of the discussion session of earnings conference calls is more favourable for the profit-making firm; surprisingly, the discussion session's tone is negative for loss-making firms. Nevertheless, the results are not statistically significant (z=-1.573, p=.1157). Separating analysts' questions from managers' answers in the discussion session provide more insights into the tone used by managers in the discussion session. On average, managers tend to use a more positive tone during the discussion session for profit-making firms (mean of 0.497%) compared to loss-making firms (mean of 0.102%). Furthermore, there is a statistically significant difference in managers' tone between profit-making and loss-making firms (z=-1.996, p= 0.0459). This result suggests that managers highlight the positive picture of their firms' performance when they are questioned or challenged by the analysts during the discussion session, and the incentives for profit-making firms are higher. Although analysts use less net negative tone for loss-making firms (mean= -.737%) than profit-making firms (mean=-.844%), the results are not statistically significant (z=0.247, p=.805). This result confirms our main finding that analysts, on average, use more negative tone during the discussion session and do not differentiate between profit-making and loss-making firms. Abraham and Bamber (2017) examine the incentives for analyst participation

during the discussion session of earnings conference calls. They claim that analysts' 'interrogation strategies and behaviours are influenced by a combination of regulatory and ritual codes' (p.15) and analysts are keen to be seen to ask good questions for purposes other than seeking information from managers, such as career development (Bradshaw, 2011; Brown *et al.*, 2015); curry favour with management (Mayew, 2008); to be seen to have superior information (Mayew, Sharp, and Venkatachalam, 2013). Yet, many of the questions asked during the discussions session with senior management are from the sell-side analysts, who do not have ownership interests in a firm and therefore have no or little incentive to hold management to account (Fogarty and Rogers, 2005; Brown *et al.*, 2015). But earnings conference calls discussion session is an opportunity for analysts to pose questions - good questions – and increased their visibility, especially for future employers and new clients. Therefore, being critical to and challenge the senior managers during the discussion session by using a negative tone, probably, signal to future employers and potential clients that those analysts are professional and custodian of clients monies.

4.6 **Discussion and Conclusion:**

In this study, we examined whether managers engage in impression management linguistic techniques, that is, using a positive or negative tone, in a particular unregulated setting, earnings conference calls, with sophisticated audiences, i.e. financial analysts, who may play monitoring role as suggested by Jensen and Meckling (1976). Most of the prior studies that examine disclosure in earnings conference calls were based on economic theories, e.g. (Kimbrough and Louis, 2011; Matsumoto, Pronk, and Roelofsen, 2011; Price et al., 2012; Bassemir et al., 2013; Vlittis and Charitou, 2013; Allee and Deangelis, 2015; Blau, DeLisle, and Price, 2015). Our study examines the linguistic aspect of disclosure in earnings conference calls from a social psychology perspective, that is, impression management.

Using a sample of FTSE100 firms, we found some evidence that management engages in impression management tactics in the earnings conference call context.

First, comparing the presentation session of earnings conference calls with the discussion sessions, we found that managers tend to speak more positively (more optimistic) in the presentation session of the calls than they are in the discussion session. These findings indicate that managers are linguistically biased when presenting their firm's performance in order to present their firms in the best possible image and shape stakeholders' perceptions upward. This finding is consistent with the findings of Brockman, Li, and Price (2015) that managers are more optimistic in the presentation session than the discussion session. Also, it is clear from managers' less positive tone in the discussion session that managers are being challenged by the analysts, who tone their questions and comments more pessimistically. Thus, managers are less likely to remain relatively optimistic during the discussion sessions.

Second, we expected that the managers of firms that performing poorly financially have more pressure to engage in impression management by using more net positive tone. However, by classifying firms into favourable performers and unfavourable performers based on their financial performance, we found some evidence that managers of favourable performance firms engage in impression management by using more positive tone. This possibly indicates that managers of well-performing firm highlight the good performance of the firm through their net positive tone; thus the tone is such a situation is an informative indicator. Also, the net positive in favourable firms could suggest that impression management has an informational component.

Furthermore, the less net positive tone in the language of managers of the unfavourable firms suggests that these managers are not engaging in impression management through their linguistic tone. This finding is inconsistent with prior studies' findings that suggest that poor-

performing firms engage more in impression management tactics than good performers, for example, (Aerts, 1994; Clatworthy and Jones, 2003; Clatworthy and Jones, 2006; Leung, Parker, and Courtis, 2015). There could be two reasons that possibly explain our findings. First, earnings conference calls are unique unregulated- interactive setting and unlike other disclosure media, such as annual reports, press release, website, and social media. In the context of the earnings conference calls, the primary audiences are financial analysts, and they are informed and highly skilled audiences because they gather a sufficient amount of information before participating in conference calls. Abrahamson and Park (1994) claim that when the firm has difficulties, management adopts concealment strategy to target uninformed stakeholders.

Furthermore, Blau, DeLisle, and Price (2015) find that sophisticated investors interpret conference calls tone differently than naive investors and sophisticated analysts consider abnormally high managers' tone as negative news. Taking (Abrahamson and Park, 1994; Blau, DeLisle, and Price, 2015) findings, in earnings conference call setting the audiences are informed, and highly skilled analysts and, therefore, managers of unfavourable performance firms are less likely to manage their presentation or discussion tone upward to mask firm's negative financial performance because analysts may consider that as negative news.[69]

The second reason that may explain our finding is the external monitoring role of financial analysts (Jensen and Meckling, 1976). Financial analysts can play a vital indirect monitoring role of firm performance and management leadership, e.g. uncovering accounting fraud (Dyck, Morse, and Zingales, 2010). It is, however, possible that managers' concern about

[69] Kartik, Ottaviani, and Squintani (2007) argue that inflated talk (abnormally high tone) should be considered as bad news.

analysts' scrutiny and the analysts' questioning, especially poor performing firms, may force managers to engage less in linguistic impression management technique. Our result supports analysts' scrutiny role, on average analyst's questions' tone is more pessimistic, which indicates that analysts play a monitoring role and less likely to curry favour with management.

The third finding, 'modal verbs are used to express possibility (weak-model words), and necessity (strong- model words)' (Loughran and McDonald, 2011, p. 37). Management use of the strong-model word could indicate their level of confidence and the necessity for changes. In our results, we found that managers of unfavourable performance firms are more likely to express more confidence and the necessity for change in both their presentation and discussion sessions of the earnings conference calls by using more strong-model words. These findings are consistent with Loughran and McDonald (2011) findings who find that management is more likely to use more strong-model words when their firms have a material weakness in accounting internal control. Thus, managers of poor performance firms possibly emphasise the need for change and express confidence that they have relatively full control of firms by using strong-model language. However, for the analysts, we do not find any significant results that they use strong or weak model language in discussion with managers. Therefore, analysts tend to be unbiased regardless of firm financial performance, possibly, because they are outsiders and have less or no incentives to manage their discussion tone.

In our additional analysis, we found that managers' tone in the discussion session is more optimistic for profit-making firms compared to loss-making firms. However, we did not find any difference in managers' tone in the presentation session of calls, and also there was no tone differential in analysts' tone between profit-making firms and loss-making firms.

This study contributes to impression management literature by focusing on management use of impression management in less formal and regulated disclosure medium where the disclosure process is from insiders (managers) and outsiders (analysts), that is the earnings conference calls context. Furthermore, managers in earnings conference calls have a discretionary disclosure strategy but at the same time high direct scrutiny from analysts which may challenge the managers immediately in the discussion sessions. To the best of our knowledge, this is the first paper that examines the tone of disclosure as an impression management tactic in earnings conference calls in the UK setting. The majority of previous earnings conference calls papers have focused on the US context and based on economic theories of wealth maximisation and reducing information asymmetry. Our study differs in that we focus on the content of these calls and how managers change these contents when firm face unfavourable circumstances, e.g. poor financial performance.

We encourage future research to focus on the following aspects. First, we classify the firms into favourable and unfavourable performer based on profitability. Future studies could use other classification of the firm, for example, analysts forecast, earnings surprise, and fraud and non-fraud. Second, we do not distinguish between who is speaking in the conference calls presentation or responding to the analysts' questions. Further study could isolate the CEO or CFO speech and measure their tone. It is possible that the CEO may have a different view on the firm than the CFO, and they may use different impression management strategy. Third, Cooper and Slack (2015) argue that impression management tactics are not mutually exclusive, but managers can use more than one tactics within a single disclosure event. Future study may examine other impression management tactics in the earnings conference calls, e.g. self-reference, readability, and outcome attributions. Fourth, the bag of words approach we used in this study fails to account for a word context. A fruitful approach to

consider the context of a word is the concept of collocation. Future research may measure the tone of disclosure based on collocation; that is, the meaning of a word by the company it keeps.

4.7 **Appendix: Results Tables:**

Table 4.7 Two-sample t-test with equal variances (Presentation Tone Vs Discussion Tone)

```
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Presen~e |      87    1.572414    .0994918    .9279973    1.374631    1.770197
Discus~e |      86    .1029903    .0583904    .5414905   -.0131055    .2190861
---------+--------------------------------------------------------------------
combined |     173    .8419488     .080404     1.05755    .6832431    1.000655
---------+--------------------------------------------------------------------
    diff |            1.469423     .115691                1.241057     1.69779
------------------------------------------------------------------------------
    diff = mean(Presentation_Tone) - mean(Discussion_Tone)         t =  12.7013
Ho: diff = 0                                     degrees of freedom =      171

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

Table 4.8 Two-sample t-test with equal variances (Presentation Tone Vs Manager Tone)

```
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Presen~e |      87    1.572414    .0994918    .9279973    1.374631    1.770197
Manage~e |      86    .4554794    .0639172     .592744    .3283948     .582564
---------+--------------------------------------------------------------------
combined |     173    1.017175    .0728411     .958075    .8733971    1.160952
---------+--------------------------------------------------------------------
    diff |            1.116934    .1185435                .8829371    1.350931
------------------------------------------------------------------------------
    diff = mean(Presentation_Tone) - mean(Managers_Tone)           t =   9.4221
Ho: diff = 0                                     degrees of freedom =      171

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000
```

Table 4.9 Two-sample t-test with equal variances (Analyst Tone Vs Manager Tone)

```
Variable |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Analys~e |      86   -.8324358    .0822116     .762399   -.9958944   -.6689771
Manage~e |      86    .4554794    .0639172     .592744    .3283948     .582564
---------+--------------------------------------------------------------------
combined |     172   -.1884782    .0715557    .9384446   -.3297245   -.0472319
---------+--------------------------------------------------------------------
    diff |           -1.287915    .1041353               -1.49348    -1.08235
------------------------------------------------------------------------------
    diff = mean(Analysts_Tone) - mean(Managers_Tone)              t = -12.3677
Ho: diff = 0                                     degrees of freedom =      170

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

Table 4.10 Two-sample t-test with equal variances (presentation Session: Favourable Vs Unfavourable Firms)

```
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Unfavour |      40    1.380376    .1293851    .8183034    1.118669    1.642082
Favourab |      47     1.73585     .144616    .9914373    1.444753    2.026947
---------+--------------------------------------------------------------------
combined |      87    1.572414    .0994918    .9279973    1.374631    1.770197
---------+--------------------------------------------------------------------
    diff |           -.3554745    .1970651               -.7472928    .0363437
------------------------------------------------------------------------------
    diff = mean(Unfavour) - mean(Favourab)                        t =  -1.8038
Ho: diff = 0                                     degrees of freedom =       85

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0374         Pr(|T| > |t|) = 0.0748          Pr(T > t) = 0.9626
```

Table 4.11 Two-sample t-test with equal variances (Discussion Session: Favourable Vs Unfavourable Firms)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Unfavour	40	.0584208	.0842037	.5325508	-.1118972	.2287387
Favourab	46	.1417465	.0813938	.5520399	-.0221891	.3056821
combined	86	.1029903	.0583904	.5414905	-.0131055	.2190861
diff		-.0833257	.1174094		-.3168072	.1501557

diff = mean(Unfavour) - mean(Favourab) t = -0.7097

Ho: diff = 0 degrees of freedom = 84

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.2399 Pr(|T| > |t|) = 0.4799 Pr(T > t) = 0.7601

Table 4.12 Two-sample t-test with equal variances (Manager tone in discussion session for favourable and unfavourable firms)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Unfavour	40	.4183191	.0811963	.5135307	.254084	.5825542
Favourab	46	.4877927	.0969991	.6578798	.2924265	.6831589
combined	86	.4554794	.0639172	.592744	.3283948	.582564
diff		-.0694736	.1286842		-.3253762	.186429

diff = mean(Unfavour) - mean(Favourab) t = -0.5399

Ho: diff = 0 degrees of freedom = 84

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.2954 Pr(|T| > |t|) = 0.5907 Pr(T > t) = 0.7046

Table 4.13Two-sample t-test with equal variances (Analyst tone for favourable and unfavourable firms)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Unfavour	40	-.8963322	.1458583	.9224889	-1.191358	-.6013059
Favourab	46	-.7768737	.0876771	.5946552	-.9534645	-.6002829
combined	86	-.8324358	.0822116	.762399	-.9958944	-.6689771
diff		-.1194585	.1652899		-.4481556	.2092386

diff = mean(Unfavour) - mean(Favourab) t = -0.7227

Ho: diff = 0 degrees of freedom = 84

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.2359 *Pr(|T| > |t|) = 0.4719* *Pr(T > t) = 0.7641*

Table 4.14 Two-sample t-test with equal variances (Strong Model Favourable Vs Unfavourable Presentation Session)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Unfavour	40	.729775	.0450332	.2848149	.6386867	.8208632
Favourab	47	.623936	.0299852	.2055679	.563579	.6842929
combined	87	.6725976	.0267394	.2494086	.6194414	.7257537
diff		.105839	.0527323		.000993	.210685

diff = mean(Unfavour) - mean(Favourab) t = 2.0071

Ho: diff = 0 degrees of freedom = 85

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

Pr(T < t) = 0.9760 Pr(|T| > |t|) = 0.0479 Pr(T > t) = 0.0240

Table 4.15 Two-sample t-test with equal variances Strong Model Favourable Vs Unfavourable Discussion Session)

```
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Unfavour |      40    .7395877    .0503386    .3183691    .6377683    .8414071
Favourab |      46    .5753838    .0261601    .1774265    .5226946    .6280729
---------+--------------------------------------------------------------------
combined |      86    .6517577    .0285214     .264497    .5950494     .708466
---------+--------------------------------------------------------------------
    diff |            .1642039    .0546603                .055506    .2729019
------------------------------------------------------------------------------
    diff = mean(Unfavour) - mean(Favourab)                        t =   3.0041
Ho: diff = 0                                     degrees of freedom =       84

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9982         Pr(|T| > |t|) = 0.0035          Pr(T > t) = 0.0018
```

Table 4.16 Two- sample t-test with equal variances (Strong Model Favourable Vs Unfavourable/ Manager tone in discussion Session)

```
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
Unfavour |      40    .8944633    .0650713    .4115471    .7628441    1.026082
Favourab |      46    .6791978    .0333084    .2259085    .6121113    .7462844
---------+--------------------------------------------------------------------
combined |      86    .7793213    .0367888    .3411653    .7061753    .8524673
---------+--------------------------------------------------------------------
    diff |            .2152655    .0703793                .0753084    .3552225
------------------------------------------------------------------------------
    diff = mean(Unfavour) - mean(Favourab)                        t =   3.0586
Ho: diff = 0                                     degrees of freedom =       84

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9985         Pr(|T| > |t|) = 0.0030          Pr(T > t) = 0.0015
```

Chapter Five: Corporate Governance and Impression Management in Earnings Conference Calls

5.1 Introduction:

In chapter (4), we examined managers' linguistic tone, as an impression management technique, and how a firm's financial performance affects managers' tone in the context of earnings conference calls. The earnings conference calls context is categorized as a setting where the monitoring from the financial analyst is intense, as it was evidenced in the chapter (4) that financial analysts in the discussion session of the earnings conference calls have a more net negative tone. However, financial analysts are external to the firms. In this chapter, we will examine whether the internal monitoring of corporate governance is associated with managers' tone of disclosure in the earnings conference calls context.

The importance of earnings conference calls as part of a voluntary corporate disclosure strategy is broadly accepted (Beyer *et al.*, 2010; Matsumoto, Pronk, and Roelofsen, 2011; Miller and Skinner, 2015). Information users, such as financial analyst and institutional investors, can have direct access to earnings conference calls and these calls provide useful information to the information users (Brown, Hillegeist, and Lo, 2004; Price *et al.*, 2012; Bassemir *et al.*, 2013; Vlittis and Charitou, 2013). However, because of the voluntary nature of earnings conference calls, managers can also use these calls as an impression management device to influence information users' perceptions of the firm performance as well as for their own benefit. For example, in the context of the corporate press release (voluntary disclosure vehicle), managers engage in impression management techniques to shape third party perceptions for their own benefit (Bowen, Davis, and Matsumoto, 2005; García Osma and Guillamón-Saorín, 2011; Guillamon-Saorin, Osma, and Jones, 2012).

Existing literature provides evidence that corporate governance plays a central role in monitoring and disciplining of firms' managers. Furthermore, corporate governance can actively monitor managerial disclosures for high-quality disclosure practices and improve transparency. This is confirmed by prior studies that effective corporate governance can limit impression management (Mather and Ramsay, 2007; García Osma and Guillamón-Saorín, 2011), limit earnings management (Dechow, Sloan, and Sweeney, 1996), and improve disclosure quality and transparency (Allegrini and Greco, 2013; Armstrong, Core, and Guay, 2014; Pucheta-Martínez and García-Meca, 2014; Elshandidy and Neri, 2015; Lee and Park, 2018). However, little is known whether effective corporate governance can influence managers' tone of disclosure as an impression management linguistic tool in the context of earnings conference calls.

For this study, we focus on managerial linguistic tone as an impression management device to shape stakeholders' perceptions. We define tone management as ' the choice of the tone level in qualitative text that is incommensurate with the concurrent quantitative information' (Huang, Teoh, and Zhang, 2014, p. 1083). The inflated managerial tone that is not commensurated with the firm quantitative information can diminish the quality of disclosure. In particular, in the context of earnings conference calls, managers can use their discretion to form a perception of the firm that closed to their objectives.

This study is based on FTSE100 firms that were listed in the London Stock Exchange from the period 2005 to 2016. The results show that corporate governance mechanisms, active audit committee, active board, and independent directors, play a vital role in limiting impression management techniques, abnormal managerial tone, in the context of earnings conference calls. We provide contributions to corporate governance literature by examining

the role of corporate governance on limiting impression management in new voluntary disclosure medium, earnings conference calls.

The following section (5.2) reviews the literature on monitoring the role of corporate governance of corporate disclosure. Followed by a sample selection procedure and description of the data collection procedure in sections (5.3). Section (5.4) discusses the result and section (5.5) concludes the chapter with the discussion and summary.

5.2 Background:

5.2.1 Definition of Corporate Governance:

Prior literature defines corporate governance based on the notion that corporate governance aim is to protect the interests of stakeholders, primarily the shareholders as they are the capital providers. Therefore, corporate governance can be defined from various perspectives, such as stakeholders' perspective, capital provider (finance) perspective, and legal perspective. These definitions of corporate governance basically developed from the underlying theoretical frameworks. Various theoretical frameworks have advanced to explain and analyse corporate governance, such as agency theory, stakeholder theory, transaction cost theory, organisation theory, stewardship theory, and so forth.

Armstrong, Guay, and Weber (2010), Brown, Beekes, and Verhoeven (2011), and Carcello, Hermanson, and Ye (2011) provide useful reviews in the area of corporate governance. In addition, the reform and development of corporate governance in the UK could be found in Demirag, Sudarsanam, and Wright (2000) and Solomon (2013).

In general term, '[c]orporate governance is about the governance of corporations' Brown, Beekes, and Verhoeven (2011, p. 98). From the stakeholders' perspective, Solomon (2007, p. 14) defines corporate governance 'as the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all

their stakeholders and act in a socially responsible way in all areas of their business activity'. Similarly, Donnelly and Mulcahy (2008, p. 416) define corporate governance as 'a set of control mechanisms that is specially designed to monitor and ratify managerial decisions, and to ensure the efficient operation of a corporation on behalf of its stakeholders.' Therefore, from the stakeholders' perspective, corporate governance is intended to align and protect the interest of stakeholders (mainly, shareholders) with those of the firm's managers. The underlying view of stakeholders' perspective of corporate governance is that 'shareholders' interests can only be satisfied by taking account of stakeholder interests, as companies that are accountable to all of their stakeholders are, over the long term, more successful and more prosperous.' Solomon (2013, p. 7).

From the capital provider (finance) perspective, the focus of corporate governance is to protect the interest of capital providers. Shleifer and Vishny (1997, p. 737) describe the aim of corporate governance as to '[deal] with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment'. In the same vein, Armstrong *et al.* (2010, p. 181) define corporate governance as 'the subset of a firm's contracts that help align the actions and choices of managers with the interest of shareholders'. Shleifer and Vishny, and Armstrong *et al*. definitions of corporate governance are primarily based on the agency theory framework, that is, corporate governance mechanisms are in place to protect capital providers interests, to mitigate the agency problems, and to reduce agency costs.

Brown, Beekes, and Verhoeven (2011) argue that the lack of a unifying definition of corporate governance and lack of clarity of the corporate governance boundaries make measuring corporate governance a challenging task for the researchers. That also contributes to the mixed findings of the effect of corporate governance.

For this study, we adopt the finance perspective of corporate governance, that is, to align and protect the interests of shareholders and provide monitoring mechanisms of opportunistic managerial behaviour. Our adoption of this view is based on the assumption that strong corporate governance enhances the transparency of corporate disclosure and thus improve the quality of disclosure (unbiased disclosure).

Also, we view corporate governance as an architecture of accountability that includes ' a number of internal and external provisions that, jointly, lesson managerial ability to extract firm rents ao bias information' García Osma and Guillamón-Saorín (2011, p. 189). Thus, our view of corporate governance is holistic, and we measure effective corporate governance as an aggregate score that includes several proxies for the functioning and structure of the board of directors and its delegated committees. Furthermore, we examine the role of specific corporate governance mechanisms.

5.2.2 **Corporate Governance and Corporate Disclosure as Monitoring Mechanism:**

The agency theory perspective, the board of directors and its committee, as the elements of corporate governance, are put in place to monitor the firm's management to ensure (A) the alignment of owners' objectives with those of managers, and (B) monitoring the managers for the efficient use of the firm's resources. Further, the monitoring role of corporate governance is achieved through corporate disclosure (Elshandidy and Neri, 2015) where the board of directors, representative of the firm owners, can ensure the owners that an appropriate governance structure is in place. Accordingly, the appropriate governance structure (strong governance) ensure credible corporate disclosures. Thus, corporate governance and corporate disclosure are complements to each other as two monitoring mechanisms (Beyer *et al.*, 2010). In fact, Bushman and Smith (2001) propose the governance role of financial accounting information.

Various prior studies have examined the role of corporate governance mechanisms and corporate disclosures.[70] For example, Eng and Mak (2003) examine the impact of corporate ownership structure and board composition on voluntary corporate disclosure. Their findings suggest that that lower managerial ownership and significant government ownership are associated with increased disclosure, whereas, board with more outside directors reduce disclosure. García Lara, García Osma, and Penalva (2009) examine the association of strong corporate governance and accounting conservatism, an attribute of financial reporting quality. They find that strong corporate governance firms have a significantly higher extent of accounting conservatism. Furthermore, Mather and Ramsay (2007) and García Osma and Guillamón-Saorín (2011) examine the strength of corporate governance and impression management strategies in corporate disclosure. Their results suggest that strong corporate governance limits impression management tactics.

The results of these studies provide evidence that corporate governance has a significant role in enhancing the transparency of corporate disclosure and improving disclosure quality.

5.2.3 **Corporate Governance and Impression Management:**

Voluntary corporate disclosure has inherent flexibility that it can be used as an impression management device. Indeed, managers can use this flexibility in the voluntary disclosure regime to shape information users' perceptions of the firm closed to their objectives. In this sense, earnings conference calls context provides a useful two-way communication platform for impression management strategy. Also, in earnings conference call context, managers'

[70] Reviewing the literature of the role corporate governance mechanisms and corporate disclosure is beyond the scope of this chapter. Comprehensive reviews in this area are (Bushman and Smith, 2001; Cohen, Krishnamoorthy, and Wright, 2004)

disclosures are in the form of spoken narratives that easily can be toned upward or inflated for the shaping of perceptions purposes.

Prior studies provide evidence that management behave opportunistically and strategically in voluntary disclosure regime, for instance, managers, choose the prior period earnings benchmark to present current period earning in best possible light (Schrand and Walther, 2000); make opportunistic voluntary disclosure that maximise their stock option compensation (Aboody and Kasznik, 2000); increase opacity of annual report narratives disclosure when firm performance is poor (Li, 2008); bundle non-earnings voluntary and mandatory disclosures with conflicting signs (Segal and Segal, 2016); and distort shareholders' perceptions of lower quality non-GAAP adjustment in earning announcement (Guillamon-Saorin, Isidro, and Marques, 2017).

However, empirical studies on the role of corporate governance and managers' engagement in impression management in corporate disclosures are limited. Mather and Ramsay (2007) examine whether strong corporate governance constrains impression management in the financial reports of firms that change their CEO. They focus their measure of impression management on the selective use of graphs. Using a sample of Australian firms' financial reports, they find that more independent board, a higher proportion of independent directors, limits any potential opportunistic impression management by new CEOs in the period of their appointment. Similarily, García Osma and Guillamón-Saorín (2011) examine whether strong corporate governance curbs opportunistic impression management in annual result press releases. They develop a composite score to measure bias applies to both qualitative and quantitative information: (A) disclosure tone; (B) emphasis; (C) performance comparisons; and (D) selectivity. Using a sample of Spanish firms that released annual result press releases in the year 2005 and 2006, their result suggests that strong corporate

governance limits impression management in the annual result press releases context. In a recent study, Lee and Park (2018)[71] examine whether financial expertise of audit committee, an attribute of effective corporate governance, affect the tone of Management Discussion & Analysis (MD&A) section of corporate annual reports. Using a sample of 10-K filings available between 2001 and 2012, they find that audit committee financial expertise curtails managerial opportunism in the form of inflated tone of MD&A.

The present study extends this line of inquiry by examing the effect of corporate governance on earnings conference calls tone. In earnings conference calls, as voluntary disclosure media, management is more likely to engage in impression management techniques because of unregulated nature of the calls and the disclosure is on verbal narratives form. Following the notion of Mather and Ramsay (2007) and García Osma and Guillamón-Saorín (2011), the present study views impression management as a practice intended to mislead information users. Thus, the role of corporate governance is vital to limit opportunistic managerial impression management in corporate disclosure practices. If managers succeed to utilise opportunistic impression management techniques (i.e., linguistic tone management), the economic consequences may be negative (García Osma and Guillamón-Saorín, 2011).

For the present study, we consider the tone of disclosure as impression management technique used by managers to shape perception. Merkl-Davies and Brennan (2011), Brennan and Merkl-Davies (2013), and Merkl-Davies and Brennan (2017) provide a comprehensive review of various impression management techniques.

[71] Lee and park (2018) do not examine impression management explicitly. But the the linguistic tone is implicit measure of impression management tactics.

Based on the above literature and discussion, we posit the following hypothesis.

H1: Strong corporate governance limits managerial tone management in the earnings conference call disclosure media.

5.3 Method and Sample Selection Procedure:

5.3.1 Sample Selection:

We began our sample with FTSE100 firms that were listed on the London Stock Exchange between the period 2005 and 2016. We excluded all firms that were not listed across this period because the firm's index status may affect its disclosure strategies. We focused on FTSE100, a share index of the 100 companies listed on the London Stock Exchange with the highest market capitalisation, around 80%, for four main reasons. First, firms that listed in FTSE100 index has more visibility to investors and analysts community because firms must have some degree of visibility for the disclosures to be effective (Merton, 1987). Second, prior studies provide evidence that larger firms are more likely to hold earnings conference calls (Tasker, 1998; Frankel, Johnson, and Skinner, 1999). Thus, we limit our sample to FTSE100 firms. Third, financial analysts have a primary focus on covering FTSE100 firms, and we do not want to add noise to our sample by adding firms which are less covered by analysts. Fourth, Danbolt, Hirst, and Jones (2018) argue that firm that enters and exits the FTSE100 list across the years in the UK game the system through making abnormal share issue and that may affect the firm's disclosure practices as well. Thus, we focus only on firms that were continuously listed in the FTSE100 index across our study period.

Then, we gathered transcripts of full-year result earnings conference calls from Thomson Reuters Eikon manually for all our sample firms. We limited the collection of transcripts

only to earnings calls, and those were hosted in London or for the U.K. stakeholders, all other transcripts for investors day, presentation to fixed income investors, and other calls were excluded. All corporate governance and financial data were collected from DataStream and Bloomberg databases. The table (5.1) describes the criteria for our sample selection.

Table 5.1Sample selection Criteria

Sample Selection Criteria	**Sample**	**Excluded**
Earnings Conference calls held by FTSE100 firm from period 2005-2016 with *Transcripts available on Eikon*	935	
Less: Joiners and Leavers (2005-2016)		*376*
Less: firm with Missing data in Datastream & Bloomberg		*154*
Final Sample: Earnings call per Year	**405**	

5.3.2 **Measures of Tone:**

To measure managers' and analysts' tone in the earnings conference call, we used the frequency count of positive and negative words based on Loughran and McDonald (2011) finance-domain word list and that provide us with an objective measure of tone. We follow these procedures. First, we manually checked each transcript whether (1) it is earning related calls; (2) it has both presentation and discussion (Q&A) session. Second, we used Python to parse the transcripts by removing all cautionary statements at the beginning and ending of each transcript. Then, we divided each transcript into two parts, presentation part and discussion part. As prior studies provide evidence that discussion sessions are more informative than presentation session (Matsumoto, Pronk, and Roelofsen, 2011; Price et al., 2012), we expect the tone of presentation session will be different from the tone of the discussion session. In addition, within the discussion part, we used python to separate analysts' question (analyst) from managers' answers (managers).

Third, we used Loughran and McDonald (2011) wordlist to measure the net tone of each conference call (presentation session, discussion session, Analysts Question, and Managers Answers). Following (Price et al., 2012; Davis et al., 2015), we used the following formula to measure managers tone in earnings conference calls:

$$Net\ Tone_{ijt} = \frac{(Positive\ Words\ Score\ count_{ij} - Negativ\ \ Word\ Score\ count_{ij})}{(Total\ word\ count\ ij)} * 100$$

i donates to a firm, j donates to the section of earning conference call (Presentation, QA, Analyst Questions, Managers Answers), t donates a year

In addition, to measure the abnormal tone, the tone that incommensurate with the firm concurrent quantitative information, we follow Huang, Teoh, and Zhang (2014). We regress the earning conference calls tone on various tone determinants and use the estimated residual value as our measure for abnormal tone, that is a high positive value of abnormal tone means that managers' linguistic tone in earnings conference calls is overly optimistic compared to a firm's fundamentals.

$$Tone_t = B_0 + B_1\ Ch\_Earning_t + B_2\ Loss_t + B_3\ MTB_t + B_4\ Size_t + \varepsilon_t \quad (1)$$

The abnormal tone is measured as the residual term ε_t from the normal earnings conference calls tone estimation model (equation 1). Table (5.3) provides the definitions of the variables

5.3.3 **The measure of Corporate Governance:**

To measure the strength or the quality of corporate governance, we follow the works of (Bertrand and Mullainathan, 2001; Davila and Penalva, 2006; García Lara, García Osma, and Penalva, 2009; García Osma and Guillamón-Saorín, 2011); and develop an aggregate score that includes some proxies for the functioning and structure of the board of directors and its committees that have been identified by prior literature as proxies of strong governance. The aggregate corporate governance score (CG_Score) is the mean of these variables (proxies of strong corporate governance). The CG_Score has a value of 1 for the

firms with strong corporate governance (CG_Score=1), and 0 for the firms with weak governance (CG_Score=0). The following are variables we consider for strong corporate governance based on the prior literature.

5.3.3.1 Board Size:

Corporate board size is an important element in corporate board composition (Denis and Sarin, 1999) and corporate governance mechanisms (García Osma and Guillamón-Saorín, 2011). Board of directors has two essential functions to serve, advising top management and monitoring top management (Armstrong, Guay, and Weber, 2010). Both of these functions require skills, firm-specific knowledge, and independence from top management. Therefore, it is argued that a large board has a mixture of skills and knowledge and may enhance monitoring role of the board and information disclosure. However, large boards may be less effective in coordination, communication, and decision-making and that may hinder their effective monitoring role (Jensen, 1993). Empirical studies provide inconclusive results about the association of board size and quality of disclosure. For example, Elshandidy, Fraser and Hussainey (2013) and Elshandidy and Neri (2015) find a positive association between corporate board size and corporate disclosure of risk-related information. In contrast, Elzahar and Hussainey (2012) find no association between board size and risk-related disclosures. However, Yermack (1996) suggest that the corporate board affect corporate value negatively. The Board size is measured as the number of members on the board.

5.3.3.2 Board Independence:

From the agency theory perspective, independent directors play a key role in the monitoring of top management and reducing agency problems (Fama, 1980; Fama and Jensen, 1983; Armstrong, Guay, and Weber, 2010). In addition, independent directors may signal their

skill and abilities in monitoring management by disclosing additional information voluntarily to get multi-directorship (Fama, 1980; Yermack, 2004). However, independent directors are outsiders and may not have specific inside knowledge of a firm, and that may hinder their monitoring and advising duties. Prior studies provide mixed evidence on the association between board independence and corporate disclosure quality. While Beasley (1996) and Klein (2002) find a positive association between board independence and financial disclosure quality, Eng and Mak (2003) report a negative association between board independence and voluntary disclosure. Board independence is measured as the proportion of independent directors on the corporate board.

5.3.3.3 The Number of Board Meeting:

It is argued that active board are the one who meets regularly to evaluate firm performance. Thus, the frequent meeting is viewed as one of the effective corporate governance mechanism (Conger, Finegold, and Lawler, 1998). Vafeas (1999) suggests that board meeting frequency is related to corporate governance. The more meeting frequency, the more monitoring from the board. The board meeting is measured as the number of board meetings per year.

5.3.3.4 The Number of Audit Committee Meeting:

The audit committee is considered one of the important corporate governance mechanisms to mitigate agency problems (Cohen *et al.*, 2010a; Carcello, Hermanson, and Ye, 2011; Cohen *et al.*, 2014). Like independent directors, audit committees need more information transparency to carry their duties (Armstrong, Guay, and Weber, 2010; Armstrong, Core, and Guay, 2014). Numerous studies argue that an effective audit committee can reduce monitoring costs and information asymmetry. DeFond & Jiambalvo (1991) suggest that the audit committee is essential to ensure quality financial reporting. Moreover, Xie, Davidson

III, and DaDalt (2003) find a negative association between audit committee meeting frequency and extent of discretionary accruals. Thus, the more the audit committee meets, the more intense monitoring. The audit committee meeting is measured as the number of audit committee meetings per year. Table (5.3) provides definitions of these variables.

The corporate governance aggregate measure is the average of the above four variables. Then we use the median of the total of these variables (CG_Score) to classify firm corporate governance as strong (CG_Score =1) or weak (CG_Score=0). Table (5.2) tabulates the CG score.

Table 5.2 Tabulation of CG_Score

	Freq.	Percent	Cum.
Weak	200	49.38	49.38
Strong	205	50.62	100.00

5.3.4 **Control Variables:**

We use several control variables that prior studies indicate that affect managerial disclosure tone. We control for the observable firm fundamentals that may affect managerial disclosure tone. Three variables of particular interest, firm size, as measured by the natural logarithm of total assets (Size_log), leverage, measured by total debt over total assets (Leverage), and earnings (Earning), measured by EBITD scaled by the total asset. Also, we control for the adverse news that affects managerial disclosure tone. We include a proxy for the sign of current news (Loss). It is an indicator variable equal to 1 if reported earnings for a firm is negative in the current year and 0 otherwise. Also, we include (Miss_Analyst) variable to control for news if the firm missed analyst forecast. The firm extent of the disclosure can be affected by its disclosure environment; we control for the firm's disclosure environment by including (AF) number of the analysts who are actually covering the firm. Book to Market

(BTM) variable is included in the regression model to control for the firm's growth potential. Table (5.3) provides definitions of these variables.

Table 5.3 Variables Definition

Variable	Description	Definition
Dependent variable		
Tone	Tone	The normal tone of disclosure in the earnings conference call, Presentation Tone, Discussion Tone, Manager Tone in discussion, Analyst Tone of the discussion.
Ab_Tone		Abnormal tone of disclosure in the earnings conference call, Presentation Tone, Discussion Tone, Manager Tone in the discussion, Analyst Tone of the discussion.
Independent and Control Variables		
CG_Score	CG Score	1 if Corporate Governance is strong, 0 if corporate governance is weak. It is an aggregate score of characteristics of corporate governance (Board Size, Audit committee meeting numbers, Board meeting numbers, and proportion of independents directors in the board)
Board_Size	Board Size	The number of directors on the board.
AC_Meeting	Audit Committee Meeting	The Number of Audit Committee meeting per year
B_Meet	Number of Board Meeting	The Number of Board meeting per year
P_I_D	The proportion of Independent Directors in Board	The percentage of independent directors on the corporate board.
Earning	Earning	EBITD/ Total Asset
Loss	Loss	1 if the firm makes loss, 0 otherwise
Size_log	Firm Size	Natural Log of Total Asset
MTB	Market to Book	Market to Book value
Leverage	Leverage	The ratio of total debt divided by total assets
AF	Analyst Following	The number of the analyst who actually makes recommendation for firm.
Miss_Analyst	Miss Analyst Forecast	1 if firm missed analyst EPS estimation, 0 otherwise

5.4 Results:

5.4.1 Descriptive Statistics:

Table (5.7) in the appendix to this chapter summarises the descriptive statistics for the sample. Table (5.7) shows that managerial tone in the presentation session of the earnings conference calls is more favourable compared to discussion session (mean of 1.431% vs -0.086%) respectively. Furthermore, comparing managers tone in the presentation session with their tone in the discussion session excluding analyst questions, it is evident that managers tend to be more positive in the presentation session (mean of 1.432% vs 0.255%) respectively. That indicates that managers use linguistic impression management technique in the context of earnings conference calls. Also, these findings are also evident in abnormal tone as well. Also, looking into between and within various on tone variables, there are variations of tone variables between the firms across the years and within the same firm across the years.

In our sample, the average board size is 12 directors of whom 65.7% (about 7) are independent directors. Also, the board, on average, meets around 8 times per year while the audit committee meets around 5 times, on average, per year. Our sample firms have mean earnings of 0.11%, leverage of 26.19%, and size of £17.17 billion. There average Book to Market for the sample is 3.5. On average, 24 analysts followed the firms in our sample.

Table (5.4) reports the Pearson correlations of all variables used in the panel regression analysis. We observe that the net presentation tone and abnormal presentation tone are significantly and negatively correlated with our measures of corporate governance. Also, governance variables are highly correlated, and this supports the decision to use an aggregate score of measure the strength of corporate governance, this is consistent with prior studies,

for example, (García Lara, García Osma, and Penalva, 2009; García Osma and Guillamón-Saorín, 2011).

Table 5.4 Pearson Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) Net_Tone_Presentation	1.000																		
(2) Net_Tone_Discussion	0.125*	1.000																	
(3) Net_Tone_Analyst	0.146*	0.083	1.000																
(4) Net_Tone_Manager	0.428*	0.190*	0.340*	1.000															
(5) Ab_Tone_P	0.978*	0.096	0.104*	0.398*	1.000														
(6) Abl_Tone_D	0.082	0.963*	0.015	0.143*	0.091	1.000													
(7) Abl_Tone_M	0.375*	0.143*	0.280*	0.964*	0.396*	0.161*	1.000												
(8) CG_Score	-0.188*	-0.135*	-0.036	-0.066	-0.135*	-0.028	0.026	1.000											
(9) Board_Size	-0.218*	-0.142*	-0.039	-0.057	-0.119*	0.026	0.103*	0.320*	1.000										
(10) AC_Meeting	-0.258*	-0.128*	-0.095	-0.090	-0.177*	0.021	0.050	0.490*	0.427*	1.000									
(11) B_Meet	-0.173*	-0.151*	-0.043	-0.153*	-0.117*	-0.055	-0.058	0.188*	0.161*	0.426*	1.000								
(12) P_I_D	-0.175*	-0.095	-0.075	-0.036	-0.142*	-0.025	0.024	0.756*	0.102*	0.284*	0.006	1.000							
(13) Earning	0.122*	0.053	0.143*	0.139*	0.002	-0.033	0.003	0.009	-0.164*	-0.151*	-0.214*	0.101*	1.000						
(14) Loss	-0.109*	0.069	-0.009	-0.044	0.003	0.007	0.010	-0.090	-0.048	-0.071	-0.026	-0.059	-0.442*	1.000					
(15) Size_log	-0.201*	-0.222*	-0.260*	-0.203*	-0.033	0.043	0.055	0.391*	0.624*	0.551*	0.374*	0.258*	-0.435*	-0.028	1.000				
(16) MTB	0.075	-0.104*	0.013	0.031	0.063	-0.114*	-0.040	0.006	-0.063	-0.091	-0.134*	0.013	0.183*	-0.064	-0.126*	1.000			
(17) Leverage	0.132*	0.120*	0.087	0.035	0.085	0.046	-0.049	-0.218*	-0.136*	-0.209*	-0.098*	-0.232*	0.149*	0.008	-0.294*	0.189*	1.000		
(18) AF	-0.203*	-0.003	-0.098*	0.032	-0.139*	0.126*	0.143*	0.381*	0.443*	0.275*	0.098*	0.336*	0.052	-0.092	0.451*	0.017	-0.281*	1.000	
(19) Miss_Analyst	0.036	-0.052	-0.121*	0.021	0.062	-0.015	0.053	0.145*	0.095	0.074	-0.006	0.141*	-0.095	0.011	0.144*	0.048	-0.008	0.130*	1.000

* shows significance at the .05 level

Table (5.5) provides t-test results that compare the tone variables between firms that have strong corporate governance and those with weak corporate governance. The net presentation tone, the net discussion tone, and the abnormal presentation tone are all statistically different between the weak corporate governance firms and strong corporate governance firms. The interesting result is that the net presentation tone is more positive in weak governance firm (mean of 1.58%) compared to strong governance firm (mean of 1.28%). However, the abnormal tone of the presentation session becomes less positive for strong governance firm. But for weak governance firm is still positive, close to the neutral tone. This could support our prediction that strong corporate governance limits impression management techniques.

Table 5.5 T-Test Between Strong CG vs. Weak CG

Variable	Weak	Strong	Weak_Mean	Strong-Mean	dif	St_Err	t_value	p_value
Net Tone Presentatation	200	205	1.581	1.285	.296	.077	3.85	0.00*
Net Tone Discussion	200	205	-.02	-.15	.131	.048	2.75	.006*
Net Tone Manager	200	205	.291	.221	.07	.053	1.35	.184
Ab Tone P	200	205	.09	-.117	.207	.076	2.75	.006*
Ab Tone D	200	205	-.006	-.033	.026	.047	.55	.576
Ab Tone M	200	205	-.043	-.016	-.028	.052	-.55	.599

* shows significance at the .05 level

5.4.2 **Does Strong corporate governance limit managers' tone management (Abnormal tone):**

In this section, we provide our test for the hypothesis (H1) that strong corporate governance limits managerial tone management. Our prediction is that strong corporate governance limits managers' abnormal tone in earnings conference call's presentation session. The presentation session of earning conference is prepared beforehand; therefore, it is more likely that managers engage in tone management in the presentation session of the call. Appendix B and C provides the results of our tests to choose between fixed-effect model and random-effect model. The results of tests support the use of the random-effect model.

However, using the aggregate score of corporate governance, none of the variables of interest is statistically significant. The regression result is provided in Appendix D. One possible reason that can be suggested to explain this result. In the context of earnings conference calls, there are no regulations that directly assigns the responsibility of monitoring the content of the call to a specific body within the firm corporate governance structure. This point is also argued in the context of the annual result press release (García Osma and Guillamón-Saorín, 2011). Therefore, the link between managerial impression management and corporate governance may not be straightforward. Also, the aggregate score may not give an appropriate result of the role of governance on limiting impression management.

Therefore, we decompose the aggregate measure into its specific proxies that are believed to contribute to strong corporate governance. Table (5.6) show the result of our random effect model.

Table 5.6 Regression Random Effect Model

Ab_Tone_P	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AC_Meeting	-0.063	0.023	-2.72	0.007	-0.109	-0.018	***
B_Meet	-0.036	0.021	-1.76	0.079	-0.076	0.004	*
P_I_D	-0.008	0.005	-1.77	0.076	-0.017	0.001	*
Board_Size	-0.031	0.027	-1.16	0.246	-0.083	0.021	
Earning	-0.373	0.738	-0.51	0.613	-1.818	1.073	
Loss	0.029	0.310	0.09	0.927	-0.579	0.636	
Size_log	0.083	0.070	1.18	0.237	-0.055	0.220	
MTB	0.001	0.002	0.43	0.665	-0.003	0.005	
Leverage	-0.002	0.004	-0.49	0.624	-0.011	0.006	
AF	0.005	0.010	0.54	0.591	-0.014	0.025	
Miss_Analyst	0.113	0.086	1.32	0.187	-0.055	0.281	
Constant	0.074	1.029	0.07	0.943	-1.944	2.092	
Mean dependent var		-0.015	SD dependent var			0.770	
Overall r-squared		0.145	Number of obs			405.000	
Chi-square		169.103	Prob > chi2			0.000	
R-squared within		0.196	R-squared between			0.046	
Year Dummies Included							

**** p<0.01, ** p<0.05, * p<0.1*

The results show that the frequency of audit committee meeting, frequency of board meeting, and independent directors are negatively associated with managers' abnormal tone in the presentation session of earnings conference calls. All p-values reported in the Table (5.6) are based on two-tailed tests. These results are statistically significant (audit committee meeting= -0.063, p-value= 0.007; board meeting = -0.036, p-value= 0.07; and independent directors= - 0.008, p-value= 0.07). These results suggest that an active audit committee, active board, and independent directors play a vital role in monitoring managers' linguistic tone, as impression management tactics. Furthermore, the results present that board size is not statistically significant, although the sign of board size is as predicted. These results suggest that not all governance variables (mechanisms) may be equally relevant in limiting impression management techniques, in the case of this study, abnormal managerial disclosure tone.

This result is in contrary to García Osma and Guillamón-Saorín (2011) who report that the aggregate measure of corporate governance 'capture something additional to any of the

individual variables' (p. 197). Our results suggest that individual corporate governance variables capture different aspects of the firm's disclosure practices, in particular, impression management techniques that are not regulated and depend on managerial discretion.

5.5 Discussion and Conclusion:

In this chapter, we examine the association between corporate governance mechanisms and managerial linguistic tone management, as an impression management technique, in the context of the earnings conference call for a sample of FTSE100 firms. The voluntary nature of earnings conference calls provides managers with an opportunity to shape the perception of information users. Thus, we study whether strong corporate governance mechanisms limit managers' impression management practices, a specific focus on managerial linguistic tone, in such a context.

We limit our study on managerial abnormal tone management in the earnings conference calls' presentation session. Prior studies provide evidence that managers are more positive in the presentation session that they are in the discussion session of the calls (Brockman, Li, and Price, 2015; Davis *et al.*, 2015; Bushee, Gow, and Taylor, 2018). One possible reason for managers' more positive tone in the presentation session of earnings call is that the presentation session is prepared beforehand. Therefore the incentives for tone management and other impression management techniques are higher in the presentation session compared to the discussion session where the disclosure is more spontaneous. We use an aggregate score of corporate governance strength, holistic view, and individuals variables of corporate governance.

The results show that the aggregate score of corporate governance is not statistically significant with managerial abnormal tone management. Hence, we examine the effect of individual corporate governance mechanisms on abnormal managerial tone. For individual

corporate governance mechanisms, the result shows that the frequency of audit committee meeting and board meeting, and proportion of independent directors are negatively associated with abnormal managerial tone in the presentation session of earnings conference calls. Our results correspond with prior studies evidence on the role of active board, active audit committee, and independent directors in monitoring managers' disclosure practices and promoting transparent disclosure (DeFond and Jiambalvo, 1991; Beasley, 1996; Xie, Davidson III, and DaDalt, 2003; DeFond, Hann, and Hu, 2005).

Our study contributes to the corporate governance literature and impression management literature as well. We add to prior work of the role of corporate governance mechanisms on the firm's voluntary disclosure regime. Specifically, we add to the role of corporate governance on opportunistic managers' practices regarding voluntary corporate disclosure. To the best of our knowledge, there is no prior work on the association of corporate governance and impression management techniques, specifically abnormal managerial linguistic tone, in the context of earning conference calls for the UK context. Therefore, our result provides new evidence on the role of corporate governance in limiting opportunistic impression management in new voluntary disclosure medium, that is earnings conference calls.

5.6 **Appendix A:**

Table 5.7 Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Net_P_To	overall	1.431366	.7899531	-1.250769	3.664024	N = 405
	between		.495542	.6319273	2.835238	n = 41
	within		.6367822	-1.808941	3.121435	T-bar = 9.87805
Net_D_To	overall	-.0859617	.4837751	-1.7229	1.719457	N = 405
	between		.2309144	-.5057509	.5170477	n = 41
	within		.4313713	-1.950734	1.491623	T-bar = 9.87805
Net_M_To	overall	.2554727	.531592	-1.70106	1.819363	N = 405
	between		.3343704	-.3778177	1.166693	n = 41
	within		.4288859	-1.25411	1.292106	T-bar = 9.87805
Ab_Ton_P	overall	-.0148122	.7698582	-2.416882	2.191288	N = 405
	between		.4670944	-.8167587	1.267736	n = 41
	within		.6310752	-3.218852	1.635946	T-bar = 9.87805
Ab_Ton_D	overall	-.0199484	.4697478	-1.755348	1.687181	N = 405
	between		.2034649	-.5109436	.5540614	n = 41
	within		.4290277	-1.869348	1.573182	T-bar = 9.87805
Ab_Ton_M	overall	-.0290243	.5209737	-2.0004	1.421368	N = 405
	between		.314896	-.6608431	.8257709	n = 41
	within		.4264247	-1.573603	1.03924	T-bar = 9.87805
CG_Score	overall	.5061728	.5005803	0	1	N = 405
	between		.3658787	0	1	n = 41
	within		.3517099	-.4029181	1.415264	T-bar = 9.87805
Board_S	overall	11.86667	2.537247	7	21	N = 405
	between		2.191601	8.555556	18	n = 41
	within		1.324192	6.266667	16.50303	T-bar = 9.87805
AC_Meet	overall	5.834568	2.480576	2	15	N = 405
	between		2.403113	3.181818	13.66667	n = 41
	within		1.168513	.0163861	13.00123	T-bar = 9.87805
B_Meet	overall	8.854321	2.936795	5	28	N = 405
	between		2.127266	5.454545	14	n = 41
	within		2.053548	3.554321	23.55432	T-bar = 9.87805
P_I_D	overall	65.68692	12.06309	30	92.857	N = 405
	between		9.251495	36.29611	88.31	n = 41
	within		8.202979	30.33301	87.31862	T-bar = 9.87805
Earning	overall	.1100029	.0902048	-.4862761	.3862996	N = 405
	between		.0713944	.0037135	.2878305	n = 41
	within		.0568342	-.4026102	.2799256	T-bar = 9.87805
Loss	overall	.0296296	.169773	0	1	N = 405
	between		.0646329	0	.25	n = 41
	within		.1570309	-.2203704	.9387205	T-bar = 9.87805
Size_log	overall	17.17627	1.632853	14.28228	21.44126	N = 405
	between		1.592461	14.9763	21.08587	n = 41

	within		.2689672	16.10653	17.91054	T-bar = 9.87805
MTB	overall	3.556691	6.6302	-69.45	73.72	N = 405
	between		2.857165	.845	15.16091	n = 41
	within		5.972388	-69.62706	73.54294	T-bar = 9.87805
Leverage	overall	26.36331	14.54534	.7483	60.2537	N = 405
	between		13.8555	1.013455	58.04475	n = 41
	within		5.457636	11.19036	49.72057	T-bar = 9.87805
AF	overall	24.19259	6.871338	6	50	N = 405
	between		5.939306	14.22222	38.81818	n = 41
	within		3.559809	13.37441	35.37441	T-bar = 9.87805
Miss_Ana	overall	.7209877	.4490684	0	1	N = 405
	between		.2516469	0	1	n = 41
	within		.3834494	-.195679	1.470988	T-bar = 9.87805

5.7 **Appendix B: Fixed Effect Vs Random Effect**

```
. asdoc reg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF Miss_Analyst
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      Source |       SS       df       MS              Number of obs =     405
-------------+------------------------------           F(  8,   396) =    2.37
       Model |    10.93816     8     1.36727           Prob > F      =  0.0168
    Residual |  228.505236   396  .577033425           R-squared     =  0.0457
-------------+------------------------------           Adj R-squared =  0.0264
       Total |  239.443396   404  .592681674           Root MSE      =  .75963

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.1981624    .086521    -2.29   0.023    -.3682603   -.0280645
     Earning |   .4691754   .5786722     0.81   0.418    -.6684783    1.606829
        Loss |   .0386026    .258954     0.15   0.882    -.4704938     .547699
    Size_log |    .052418   .0330699     1.59   0.114    -.0125965    .1174326
         MTB |   .0070646   .0059105     1.20   0.233    -.0045554    .0186845
    Leverage |   .0015775   .0028295     0.56   0.577    -.0039853    .0071403
          AF |  -.0163153   .0067649    -2.41   0.016     -.029615   -.0030157
Miss_Analyst |   .1473744   .0861449     1.71   0.088    -.0219841     .316733
       _cons |  -.6458688   .5620467    -1.15   0.251    -1.750837    .4590995
------------------------------------------------------------------------------
Click to Open File:  Myfile.doc

. asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst, fe
(File Myfile.doc already exists, option append was assumed)

Fixed-effects (within) regression               Number of obs      =       405
Group variable: ID                              Number of groups   =        41

R-sq:  within  = 0.0222                         Obs per group: min =         3
       between = 0.0001                                        avg =       9.9
       overall = 0.0026                                        max =        12

                                                F(8,356)           =      1.01
corr(u_i, Xb)  = -0.2909                        Prob > F           =    0.4262

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.0327884   .0986206    -0.33   0.740    -.2267405    .1611637
     Earning |   .6934195    .766209     0.91   0.366    -.8134454    2.200284
        Loss |   .2116984   .2619324     0.81   0.420     -.303431    .7268277
    Size_log |  -.0428324   .1450962    -0.30   0.768    -.3281858     .242521
         MTB |   .0054028   .0055676     0.97   0.333    -.0055467    .0163523
    Leverage |  -.0099315    .006318    -1.57   0.117    -.0223567    .0024938
          AF |  -.0112303   .0100934    -1.11   0.267    -.0310805    .0086198
Miss_Analyst |   .1260243   .0885047     1.42   0.155    -.0480334     .300082
       _cons |   1.078374   2.427981     0.44   0.657    -3.696616    5.853364
-------------+----------------------------------------------------------------
     sigma_u |  .48866729
     sigma_e |  .66475586
         rho |  .35081107   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 356) =     4.03             Prob > F = 0.0000
Click to Open File:  Myfile.doc

. asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst, re theta
(File Myfile.doc already exists, option append was assumed)
```

```
Random-effects GLS regression                   Number of obs      =       405
Group variable: ID                              Number of groups   =        41

R-sq:  within  = 0.0167                         Obs per group: min =         3
       between = 0.0581                                        avg =       9.9
       overall = 0.0300                                        max =        12

                                                Wald chi2(8)       =      8.20
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.4144

------------------- theta --------------------
  min      5%       median        95%      max
0.3271   0.4240     0.5709     0.5859   0.5859

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.0865609   .0902881    -0.96   0.338    -.2635223    .0904006
     Earning |   .5701753   .6536734     0.87   0.383    -.7110011    1.851352
        Loss |   .1379905   .2482294     0.56   0.578    -.3485301    .6245112
    Size_log |   .0166706   .0532473     0.31   0.754    -.0876922    .1210335
         MTB |    .005608   .0054439     1.03   0.303    -.0050618    .0162779
    Leverage |  -.0033575   .0042228    -0.80   0.427    -.0116341    .0049191
          AF |  -.0150398   .0082488    -1.82   0.068    -.0312071    .0011276
Miss_Analyst |    .118788   .0844986     1.41   0.160    -.0468262    .2844022
       _cons |   .0397564   .9206342     0.04   0.966    -1.764653    1.844166
-------------+----------------------------------------------------------------
     sigma_u |  .42186281
     sigma_e |  .66475586
         rho |  .28710638   (fraction of variance due to u_i)
------------------------------------------------------------------------------
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. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        Ab_Tone_P[ID,t] = Xb + u[ID] + e[ID,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 ---------+-----------------------------
                Ab_Tone_P |   .5926817       .7698582
                        e |   .4419004       .6647559
                        u |   .1779682       .4218628

        Test:   Var(u) = 0
                                chibar2(01) =    71.34
                              Prob > chibar2 =   0.0000

. quietly asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst, fe

. quietly estimate store Fixed_effect

. quietly xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst, re theta

. quietly estimate store Random_effect
```

```
. hausman Fixed_effect Random_effect

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |  Fixed_effect Random_eff~t    Difference          S.E.
-------------+------------------------------------------------------------------
    CG_Score |   -.0327884    -.0865609        .0537724        .0396746
     Earning |    .6934195     .5701753        .1232443         .399734
        Loss |    .2116984     .1379905        .0737078        .0836106
    Size_log |   -.0428324     .0166706        -.059503        .1349727
         MTB |    .0054028      .005608       -.0002052         .001167
    Leverage |   -.0099315    -.0033575       -.0065739        .0046994
          AF |   -.0112303    -.0150398        .0038094        .0058167
Miss_Analyst |    .1260243      .118788        .0072363        .0263261
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        6.09
                Prob>chi2 =      0.6367
```

5.8 Appendix C: Fixed Vs Random effect models (Year Fixed effect Included):

```
. asdoc reg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF Miss_Analyst
(File Myfile.doc already exists, option append was assumed)

      Source |       SS       df       MS              Number of obs =     405
-------------+------------------------------           F(  8,   396) =    2.37
       Model |    10.93816     8     1.36727           Prob > F      =  0.0168
    Residual |  228.505236   396  .577033425           R-squared     =  0.0457
-------------+------------------------------           Adj R-squared =  0.0264
       Total |  239.443396   404  .592681674           Root MSE      =  .75963

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.1981624    .086521    -2.29   0.023    -.3682603   -.0280645
     Earning |   .4691754   .5786722     0.81   0.418    -.6684783    1.606829
        Loss |   .0386026    .258954     0.15   0.882    -.4704938     .547699
    Size_log |    .052418   .0330699     1.59   0.114    -.0125965    .1174326
         MTB |   .0070646   .0059105     1.20   0.233    -.0045554    .0186845
    Leverage |   .0015775   .0028295     0.56   0.577    -.0039853    .0071403
          AF |  -.0163153   .0067649    -2.41   0.016     -.029615   -.0030157
Miss_Analyst |   .1473744   .0861449     1.71   0.088    -.0219841     .316733
       _cons |  -.6458688   .5620467    -1.15   0.251    -1.750837    .4590995
------------------------------------------------------------------------------
Click to Open File:  Myfile.doc

. asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst y1  y2  y3  y4  y5  y6  y7  y8  y9  y10  y11  y12 , fe
(File Myfile.doc already exists, option append was assumed)
note: y1 omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       405
Group variable: ID                              Number of groups   =        41

R-sq:  within  = 0.1655                         Obs per group: min =         3
       between = 0.0277                                        avg =       9.9
       overall = 0.0072                                        max =        12

                                                F(19,345)          =      3.60
corr(u_i, Xb)  = -0.6517                        Prob > F           =    0.0000

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.0001855   .0971489    -0.00   0.998    -.1912642    .1908931
     Earning |  -.5190338   .7467398    -0.70   0.487    -1.987769    .9497017
        Loss |   .0661915   .2533037     0.26   0.794    -.4320225    .5644055
    Size_log |   .1371921   .1665638     0.82   0.411    -.1904163    .4648005
         MTB |   .0000934   .0053436     0.02   0.986    -.0104169    .0106036
    Leverage |  -.0124237   .0062387    -1.99   0.047    -.0246944    -.000153
          AF |   .0205057    .011334     1.81   0.071    -.0017867    .0427981
Miss_Analyst |   .0940212   .0850712     1.11   0.270    -.0733022    .2613446
          y1 |           0  (omitted)
          y2 |  -.0127736   .2102056    -0.06   0.952    -.4262194    .4006721
          y3 |  -.2187965   .2097614    -1.04   0.298    -.6313686    .1937756
          y4 |  -.3644618    .221674    -1.64   0.101    -.8004644    .0715407
          y5 |  -1.107777   .2330494    -4.75   0.000    -1.566153   -.6494002
          y6 |   -.708854   .2436811    -2.91   0.004    -1.188141   -.2295664
          y7 |  -.5835337    .241168    -2.42   0.016    -1.057878   -.1091892
          y8 |  -.7820503   .2460809    -3.18   0.002    -1.266058   -.2980427
          y9 |  -.6756383   .2436908    -2.77   0.006    -1.154945   -.1963317
         y10 |  -.3694717   .2446296    -1.51   0.132    -.8506248    .1116815
```

```
         y11 |  -.4238742   .2440863    -1.74   0.083    -.9039586    .0562103
         y12 |  -.5675278   .2576694    -2.20   0.028    -1.074328   -.0607271
       _cons |  -2.035888   2.770823    -0.73   0.463     -7.48572    3.413945
-------------+----------------------------------------------------------------
     sigma_u |  .68556989
     sigma_e |  .62384434
         rho |   .5470353   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(40, 345) =     4.92             Prob > F = 0.0000
Click to Open File:  Myfile.doc

. asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst y1  y2  y3  y4  y5  y6  y7  y8  y9  y10  y11  y12 , re theta
(File Myfile.doc already exists, option append was assumed)
note: y12 omitted because of collinearity

Random-effects GLS regression                   Number of obs      =       405
Group variable: ID                              Number of groups   =        41

R-sq:  within  = 0.1488                         Obs per group: min =         3
       between = 0.0001                                        avg =       9.9
       overall = 0.0904                                        max =        12

                                                Wald chi2(19)      =     59.01
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------- theta --------------------
  min      5%       median        95%      max
0.3255   0.4223     0.5694     0.5845   0.5845

------------------------------------------------------------------------------
   Ab_Tone_P |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    CG_Score |  -.0788805    .090957    -0.87   0.386     -.257153    .0993919
     Earning |  -.4801468   .6594119    -0.73   0.467     -1.77257    .8122767
        Loss |   .0106341   .2456439     0.04   0.965    -.4708191    .4920873
    Size_log |  -.0304455   .0517137    -0.59   0.556    -.1318025    .0709114
         MTB |   .0012337   .0053119     0.23   0.816    -.0091774    .0116448
    Leverage |  -.0017729   .0041003    -0.43   0.665    -.0098092    .0062635
          AF |   .0045352   .0090871     0.50   0.618    -.0132752    .0223456
Miss_Analyst |   .0987548   .0827764     1.19   0.233     -.063484    .2609936
          y1 |   .2695797   .2191847     1.23   0.219    -.1600144    .6991737
          y2 |     .37406   .1751648     2.14   0.033     .0307433    .7173767
          y3 |   .1830389   .1621493     1.13   0.259    -.1347679    .5008457
          y4 |    .064676   .1591581     0.41   0.684    -.2472681    .3766201
          y5 |  -.5760428   .1570339    -3.67   0.000    -.8838235   -.2682621
          y6 |  -.1177158   .1616683    -0.73   0.467    -.4345798    .1991482
          y7 |  -.0113761   .1588884    -0.07   0.943    -.3227916    .3000395
          y8 |  -.2220616   .1662592    -1.34   0.182    -.5479237    .1038004
          y9 |  -.1186391   .1612255    -0.74   0.462    -.4346353    .1973572
         y10 |   .1927049   .1558431     1.24   0.216    -.1127419    .4981517
         y11 |   .1296111   .1561207     0.83   0.406    -.1763799    .4356021
         y12 |          0  (omitted)
       _cons |   .4878318   .8979421     0.54   0.587    -1.272102    2.247766
-------------+----------------------------------------------------------------
     sigma_u |  .39421329
     sigma_e |  .62384434
         rho |  .28536201   (fraction of variance due to u_i)
------------------------------------------------------------------------------
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. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        Ab_Tone_P[ID,t] = Xb + u[ID] + e[ID,t]
```

```
        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                Ab_Tone_P |   .5926817       .7698582
                       e |   .3891818       .6238443
                       u |   .1554041       .3942133

        Test:   Var(u) = 0
                                chibar2(01) =    98.09
                              Prob > chibar2 =   0.0000

. quietly asdoc xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst y1  y2  y3  y4  y5  y6  y7  y8  y9  y10  y11  y12 , fe

. quietly estimate store Fixed_effect

. quietly xtreg Ab_Tone_P CG_Score Earning Loss Size_log MTB Leverage AF
Miss_Analyst y1  y2  y3  y4  y5  y6  y7  y8  y9  y10  y11  y12 , re theta

. quietly estimate store Random_effect

. hausman Fixed_effect Random_effect

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |  Fixed_effect Random_eff~t    Difference          S.E.
-------------+------------------------------------------------------------------
    CG_Score |   -.0001855    -.0788805         .078695        .0341282
     Earning |   -.5190338    -.4801468        -.038887         .350423
        Loss |    .0661915     .0106341        .0555574        .0618212
    Size_log |    .1371921    -.0304455        .1676376        .1583326
         MTB |    .0000934     .0012337       -.0011403        .0005817
    Leverage |   -.0124237    -.0017729       -.0106508        .0047021
          AF |    .0205057     .0045352        .0159705        .0067738
Miss_Analyst |    .0940212     .0987548       -.0047336        .0196257
          y2 |   -.0127736       .37406       -.3868337        .1162053
          y3 |   -.2187965     .1830389       -.4018354        .1330693
          y4 |   -.3644618      .064676       -.4291378        .1542986
          y5 |   -1.107777    -.5760428       -.5317338        .1721987
          y6 |    -.708854    -.1177158       -.5911382        .1823289
          y7 |   -.5835337    -.0113761       -.5721577        .1814289
          y8 |   -.7820503    -.2220616       -.5599886        .1814213
          y9 |   -.6756383    -.1186391       -.5569992        .1827335
         y10 |   -.3694717     .1927049       -.5621766        .1885645
         y11 |   -.4238742     .1296111       -.5534852        .1876284
------------------------------------------------------------------------------
b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test:  Ho:  difference in coefficients not systematic

chi2(18) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=   -20.20    chi2<0 ==> model fitted on these
data fails to meet the asymptotic
assumptions of the Hausman test;
see suest for a generalized test
```

5.9 **Appendix D: Regression Result with CC_Score**

Ab_Tone_P	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
CG_Score	-0.079	0.091	-0.87	0.386	-0.257	0.099	
Earning	-0.480	0.659	-0.73	0.467	-1.773	0.812	
Loss	0.011	0.246	0.04	0.965	-0.471	0.492	
Size_log	-0.030	0.052	-0.59	0.556	-0.132	0.071	
MTB	0.001	0.005	0.23	0.816	-0.009	0.012	
Leverage	-0.002	0.004	-0.43	0.665	-0.010	0.006	
AF	0.005	0.009	0.50	0.618	-0.013	0.022	
Miss_Analyst	0.099	0.083	1.19	0.233	-0.063	0.261	
y1	0.270	0.219	1.23	0.219	-0.160	0.699	
y2	0.374	0.175	2.13	0.033	0.031	0.717	**
y3	0.183	0.162	1.13	0.259	-0.135	0.501	
y4	0.065	0.159	0.41	0.684	-0.247	0.377	
y5	-0.576	0.157	-3.67	0.000	-0.884	-0.268	***
y6	-0.118	0.162	-0.73	0.467	-0.435	0.199	
y7	-0.011	0.159	-0.07	0.943	-0.323	0.300	
y8	-0.222	0.166	-1.34	0.182	-0.548	0.104	
y9	-0.119	0.161	-0.74	0.462	-0.435	0.197	
y10	0.193	0.156	1.24	0.216	-0.113	0.498	
y11	0.130	0.156	0.83	0.406	-0.176	0.436	
o.y12	0.000	.	.	.	.	.	
Constant	0.488	0.898	0.54	0.587	-1.272	2.248	

Mean dependent var	-0.015	SD dependent var	0.770
Overall r-squared	0.090	Number of obs	405.000
Chi-square	59.012	Prob > chi2	0.000
R-squared within	0.149	R-squared between	0.000

**** p<0.01, ** p<0.05, * p<0.1*

Chapter Six: Summary

6.1 Overall Results:

This thesis comprises two main projects. The first project examined the effect of firms' financial performance on managerial linguistic tone. While the second project examined the role of corporate governance on limiting managerial linguistic tone in the context of earnings conference calls.

Managers' use of linguistic tone to shape the perceptions of information users is one attribute of an impression management strategy that managers use in corporate disclosure practices. Furthermore, in this study context, impression management was viewed as an opportunistic managerial behaviour that distorts the quality of corporate disclosure and impairs firms' transparency.

In chapter 3, the description of the parsing process and measuring tone variables were provided. The key finding that could be learnt from the parsing process is that general-purpose dictionaries provide an incorrect measure of the tone of the disclosure. At the earlier stage of this project, Diction software was used to measure the tone of disclosure in the context of earnings conference calls, and the results compared with LM financial-dictionary is significantly different. Also, Diction software work like a black-box. The process of analysis is not cleared and cannot be modified to fit a specific research context.

The first project (chapter 4) examined the effect of firms financial performance on managerial disclosure tone in the earnings conference call context. The findings are as follows.

First, comparing the presentation session of earnings conference calls with the discussion sessions, we found that managers tend to speak more positively (more optimistic) in the presentation session of the calls than they are in the discussion session. These findings indicate that managers are linguistically biased when presenting their firm's performance in order to present their firms in the best possible image and shape stakeholders' perceptions upward. This finding is consistent with the findings of Brockman, Li, and Price (2015) that managers are more optimistic in the presentation session than the discussion session. Also, it is clear from managers' less positive tone in the discussion session that managers are being challenged by the analysts, who tone their questions and comments more pessimistically. Thus, managers are less likely to remain relatively optimistic during the discussion sessions.

Second, we expected that the managers of firms that performing poorly financially have more pressure to engage in impression management by using more net positive tone. However, by classifying firms into favourable performers and unfavourable performers based on their financial performance, we found some evidence that managers of favourable performance firms engage in impression management by using more positive tone. This possibly indicates that managers of well-performing firm highlight the good performance of the firm through their net positive tone; thus the tone is such a situation is an informative indicator. Also, the net positive in favourable firms could suggest that impression management has an informational component.

Furthermore, the less net positive tone in the language of managers of the unfavourable firms suggests that these managers are not engaging in impression management through their linguistic tone. This finding is inconsistent with prior studies' findings that suggest that poor-performing firms engage more in impression management that good performers, for example, (Aerts, 1994; Clatworthy and Jones, 2003; Clatworthy and Jones, 2006; Leung,

Parker, and Courtis, 2015). There could be two reasons that possibly explain our findings. First, earnings conference calls are unique unregulated- interactive setting and unlike other disclosure media, such as annual reports, press release, website, and social media. In the context of the earnings conference calls, the primary audiences are financial analysts, and they are informed and highly skilled audiences because they gather a sufficient amount of information before participating in conference calls. Abrahamson and Park (1994) claim that when the firm has difficulties, management may adopt concealment strategies to target uninformed stakeholders.

Furthermore, Blau, DeLisle, and Price (2015) find that sophisticated investors interpret conference calls tone differently than naive investors, and sophisticated analysts consider abnormally high managers' tone as negative news. Taking (Abrahamson and Park, 1994; Blau, DeLisle, and Price, 2015) findings, in earnings conference call setting the audiences are informed, and highly skilled analysts and, therefore, managers of unfavourable performance firms are less likely to manage their presentation or discussion tone upward to mask firm's negative financial performance because analysts may consider that as negative news.

The second reason that may explain our finding is the external monitoring role of financial analysts (Jensen and Meckling, 1976). Financial analysts can play a vital indirect monitoring role of firm performance and management leadership, e.g. uncovering accounting fraud (Dyck, Morse, and Zingales, 2010). It is, however, possible that managers' concern about analysts' scrutiny and the analysts' questioning, especially poor performing firms, may force managers to engage less in linguistic impression management technique. Our result supports analysts' scrutiny role, on average analyst's questions' tone is more pessimistic, which

indicates that analysts play a monitoring role and less likely to curry favour with management.

Classify firms into profit-making firms and loss-making firms over the same year (cross-sectional); we found that managers' tone in the discussion session is more optimistic for profit-making firms compared to loss-making firms. However, we did not find any difference in managers' tone in the presentation session of calls, and also there is no tone differential in analysts' tone between profit-making firms and loss-making firms.

The third finding, 'modal verbs are used to express possibility (weak-model words), and necessity (strong- model words)' (Loughran and McDonald, 2011, p. 37) and management use of the strong-model word could indicate their level of confidence and the necessity for changes. In our results, we found that managers of unfavourable performance firms are more likely to express more confidence and the necessity for change in both their presentation and discussion sessions of the earnings conference calls by using more strong-model words. These findings are consistent with Loughran and McDonald (2011) findings who find that management is more likely to use more strong-model words when their firms have a material weakness in accounting internal control. Thus, managers of poor performance firms possibly emphasise the need for change and express confidence that they have relatively full control of firms by using strong-model language. However, for the analysts, we do not find any significant results that they use strong or weak model language in discussion with managers. Therefore, analysts tend to be unbiased regardless of firm financial performance, possibly, because they are outsiders and have less or no incentives to manage their discussion tone.

The second project (chapter 5) is a complement to chapter 4. It examined the role of corporate governance mechanisms as monitoring of managerial linguistic tone, as impression management techniques, in this study context. Our prediction was that strong

corporate governance mechanisms limit managerial impression management techniques. To test the hypothesis, we limited our study on managerial abnormal tone management in the earnings conference calls' presentation session. Prior studies provide evidence that managers are more positive in the presentation session than they are in the discussion session of the calls (Brockman, Li, and Price, 2015; Davis *et al.*, 2015; Bushee, Gow, and Taylor, 2018). One possible reason for managers' more positive tone in the presentation session of earning call is that the presentation session is prepared beforehand. Therefore the incentives for tone management and other impression management techniques are higher in the presentation compared to the discussion session where the disclosure is more spontaneous. We used an aggregate score of corporate governance strength, holistic view, and individuals variables of corporate governance.

The results showed that the aggregate score of corporate governance is not statistically significant with managerial abnormal tone management. Hence, we examined the effect of individuals corporate governance mechanisms on abnormal managerial tone. For individual corporate governance mechanisms, the result showed that the frequency of audit committee meeting and board meeting, and proportion of independent directors are negatively associated with abnormal managerial tone in the presentation session of earnings conference calls. Our results correspond with prior studies evidence on the role of active board, active audit committee, and independent directors in monitoring managers' disclosure practices and promoting transparent disclosure (DeFond and Jiambalvo, 1991; Beasley, 1996; Xie, Davidson III, and DaDalt, 2003; DeFond, Hann, and Hu, 2005).

Overall, the corporate governance mechanisms are important monitoring devices for monitoring managerial impression management strategies in voluntary corporate disclosure mediums.

6.2 Limitations of the Study and Suggestions for Future Study:

No study is without limitations. Several limitations are presented in this study that are opportunities for future studies.

- The textual analysis method that is used in this study is based on the 'bag of words' approach. The major weakness of this approach is that it does not consider the context of the word. It is based on counting the frequencies of words based on pre-defined dictionary. Therefore, a future study may develop a more robust approach that counts the frequency of word based on the context. The machine learning approach is a potential method; however, the coding process should be transparent that the result could be replicated by others. Another potential approach to overcome the limitations of the 'bag of words' approach is to employ the concept of collocation (Sinclair, 1991). Collocation tools help to understand the meaning of words by the company they keep. For example, how managers construct a discourse around a specific topic or issue (e.g. financial performance). Stenka and Jaworska (2019) provide a good example of how collocation is used around the term 'user' in comment letters submitted in response to selected IASB's regulatory proposals.
- Abraham and Bamber (2017) employed a qualitative approach to explore analysts' incentives to participate in earnings conference calls discussion session. Their findings provide in-depth understandings of earnings conference calls context 'as a social encounter'. They find that, sometimes, analysts keep asking management series of similar questions located around a common topic, that is 'repetitious interrogation' (p.23); that indicates there is teamwork or co-operation among the analysts. Future studies using corpus linguistics may further explore this

phenomenon. For example, corpus linguistic analysis can be used to discover the linguistic differences and similarities among analysts' questions.

- A selected group of analysts are invited to participate in person in earnings conference calls Abraham and Bamber (2017); it is a rare and timely opportunity for analysts to have a conversation with senior management. Future studies can examine whether invited analysts have an informational advantage over non-invited analysts; whether the informational advantage is reflected in invited analysts reports and future recommendations.
- In chapter (4), the classification of firms as favourable and unfavourable was based on the change of their financial performance (current year earning compared to prior year earning). This approach is a simple binary approach, although used by many prior studies (Clatworthy and Jones, 2003; Yang and Liu, 2017). Future studies may classify firms using other approaches and compare the tone of disclosure, such as firm high-analyst following firms vs. low-analyst firms; firms with restatement vs. no restatement firms, and firms accused of fraud vs no fraud firms.
- In our measurement of tone in the presentation session of the earnings conference call, we make no distinction between 'who is talking what'. Many senior managers participate in earnings conference calls, CEO, CFO, public relations, and chairmen in some cases. Future research could make a distinction among these managers. It is possible that the CEO's view of the firm performance could be different that CFO or chairman.
- We measured the tone of earning conference call only with no comparison with an annual report or annual result press release. Future studies could compare the tone of earnings calls with the press release of the MD&A section of annual reports.

- In this study, we ignore analyst status (star analyst, brokerage house reputation, career concern). Future studies could consider analyst status in their analysis. The LinkedIn platform provides a rich source of information to tract analysts' career path and other background information.
- We use managers linguistic tone as our primary measure of impression management technique. Future studies could consider using other impression management techniques that managers may use in the context of earnings conference calls. The recorded audio-visual may present a rich source to examine managers vocal cues or body language.
- We use only four corporate governance mechanisms (audit committee meeting, board meeting, board size, independent director) to examine whether they limit impression management techniques in earnings conference calls context. Future studies may consider more robust measures of corporate governance mechanisms.
- Our sample includes annual earnings conference calls only. Future research may consider a quarterly earnings conference calls tone.

It is hoped that the limitations of this study may present a starting point for future research in these areas, impression management, tone management, earnings conference calls, corporate governance role in impression management.

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Appendix A

Statistics

Section of Earnings Conference Calls		**Auto-count of Positive and Negative Word Using LM Dictionary (Python)**	**Manual-count of Positive and Negative Words based on LM Dictionary (AntCone)**	**Difference**
Presentation	Positive Words	117	117	0
	Negative Words	34	34	0
Discussion (Q&A)	Positive Words	34	34	0
	Negative Words	25	25	0
Total Positive Words	151			
Total Negative Word	59			

To measure the tone of presentation section of earning conference calls:

Tone= (Total Positive Words – Total Negative Words) / Total number of words in the section *100

= (117 – 34) / 6881^ * 100 = 1.206%

**number of total word count is based on LM python code where words such as (a, the..etc) are excluded. It is not a direct count of total words in the file*

Positive words: **Bold & Green**.

Negative words: Double underlines & red.

Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

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Preliminary 2012 J Sainsbury PLC Earnings Conference Call transcript - Redacted

Appendix B

Python code for the extraction procedure of the presentation session and the discussion session

```
1. import os
2. import codecs
3.
4. ##########################################################################
   ############
5. # Constants
6. ##########################################################################
   ############
7. # Section breaks
8. SECTION_BREAK_EQ =
   "==========================================================================
   ==============\n"
9. SECTION_BREAK_HYPHEN = "----------------------------------------
   ------------------------------------\n"
10.
11.  # Writing state
12.  IDLE = 0
13.  WRITING = 1
14.  DONE = 2
15.
16.  # File name related
17.  PRESENTATION_FILE_NAME_PREFIX = "Presentation_"
18.  QA_FILE_NAME_PREFIX = "QA_"
19.
20.  ##########################################################################
   #############
21.  # Split function
22.  ##########################################################################
   #############
23.  def split_file(folder_path, file_name):
24.      file = open(os.path.abspath(os.path.join(folder_path,
   file_name)), "r", errors='ignore')
25.      write_file = None
26.      state = IDLE
27.
28.      while True:
29.          # Finish splitting
30.          if state == DONE:
31.              break
32.
33.          # Read next line
34.          cur_line = file.readline()
35.          #print(cur_line)
36.
37.          # End of file
38.          if cur_line == "":
39.              break
40.
41.          if cur_line == SECTION_BREAK_HYPHEN:
42.              temp_line = file.readline()
43.              if temp_line == "Definitions\n":
```

```
                    if not write_file is None:
                        write_file.close()
                    state = DONE
                else:
                    if not write_file is None:
                        write_file.write(cur_line)
                        write_file.write(temp_line)
            elif cur_line == SECTION_BREAK_EQ:
                temp_line = file.readline()
                if temp_line == "Presentation\n":
                    if not write_file is None:
                        write_file.close()
                    write_file =
    open(os.path.abspath(os.path.join(folder_path,
    PRESENTATION_FILE_NAME_PREFIX + file_name)), "w")
                    write_file.write(temp_line)
                    state = WRITING
                elif temp_line == "Questions and Answers\n":
                    if not write_file is None:
                        write_file.close()
                    write_file =
    open(os.path.abspath(os.path.join(folder_path, QA_FILE_NAME_PREFIX
    + file_name)), "w")
                    write_file.write(temp_line)
                    state = WRITING
            elif not write_file is None:
                write_file.write(cur_line)

        file.close()

    ##########################################################################
    # Get folder list
    ##########################################################################
    folder_names = [d for d in os.listdir(os.path.dirname(__file__))
    if os.path.isdir(os.path.join(os.path.dirname(__file__), d))]

    ##########################################################################
    # Loop through each folder
    ##########################################################################
    for folder_name in folder_names:
        # Get path for current folder
        folder_path = os.path.join(os.path.dirname(__file__),
    folder_name)

        # Get file list in this folder
        file_names = [d for d in os.listdir(folder_path) if (not
    os.path.isdir(os.path.join(folder_path, d))) and d[-4:] == ".txt"
    and d[:len(PRESENTATION_FILE_NAME_PREFIX)] !=
    PRESENTATION_FILE_NAME_PREFIX and d[:len(QA_FILE_NAME_PREFIX)] !=
    QA_FILE_NAME_PREFIX]


    ##########################################################################
        # Loop through each file
```

```
87.
   ##########################################################################
   ############
88.      for file_name in file_names:
89.          print("Splitting: " +
   os.path.abspath(os.path.join(folder_path, file_name)))
90.  split_file(folder_path, file_name
```

Appendix C

Python Code for Splitting Managers' Answers from Analysts' Question in the Earnings Conference Calls' Discussion Session.

```
1.  import os
2.
3.  DIRECTORY = 'C:\\Users\\yb\\Desktop\\QA_Transcript'
4.
5.  FILES = os.listdir(DIRECTORY)
6.
7.  QNO = 0
8.  FILENO = len(FILES)
9.
10.  for trans in FILES:
11.      print ("%d files left"%(FILENO))
12.      FILENO = FILENO - 1
13.      path = DIRECTORY + trans
14.      company = trans[3:-4]
15.      f_Q = open('C:\\Users\\yb991\\Desktop\\QA_Transcript_Split\\'
    + company + '_analyst.txt','a')
16.      f_A = open('C:\\Users\\yb991\\Desktop\\QA_Transcript_Split\\'
    + company + '_manager.txt','a')
17.      fp = open(path,'r')
18.      content = fp.read()
19.      lines = content.split('----------------------------------------
    ----------------------------------------')
20.      if len(lines)%2 == 1:
21.          for k in range(1,len(lines),2):
22.              header = lines[k].replace('\n','')
23.              try:
24.                  con = header.split(',  ')
25.                  name = con[0]
26.                  c = con[1].split(' - ')
27.  #                company = c[0]
28.                  title = c[1].split('    ')[0]
29.                  cont = lines[k+1]
30.                  cont = cont.replace('\n',' ')
31.                  cont = cont.replace('\r',' ')
32.                  cont = cont.replace('          ','')
33.                  if title == 'Analyst' : # a question
34.                      QNO = QNO + 1
35.  #                    print('question')
36.
    f_Q.write("%d_::_%s_::_%s_::_%s_::_%s\n"%(QNO,name,company,title,co
    nt))
37.                  else: # an answer
38.  #
39.
    f_A.write("%d_::_%s_::_%s_::_%s_::_%s\n"%(QNO,name,company,title,co
    nt))
40.              except:
41.                  if 'Unidentified Audience Member' in header:
42.                      title = 'Unidentified Audience Member'
43.                      cont = lines[k+1]
44.                      cont = cont.replace('\n',' ')
45.                      cont = cont.replace('\r',' ')
```

```
46.                         cont = cont.replace('          ','')
47.                         company = 'none'
48.                         QNO = QNO + 1
49.                         name = 'none'
50.
   f_Q.write("%d_::_%s_::_%s_::_%s_::_%s\n"%(QNO,name,company,title,co
   nt))
51.                     operator = 'operator'
52.         else:
53.             print ("file %s not structured"%(trans))
54.             fp.close()
55.         f_Q.close()
56.         f_A.close()
```

Appendix D

Generic Parser

```
"""
Program to provide generic parsing for all files in user-specified directory.
The program assumes the input files have been scrubbed,
  i.e., HTML, ASCII-encoded binary, and any other embedded document structures that are not
  intended to be analyzed have been deleted from the file.

Dependencies:
    Python:  Load_MasterDictionary.py
    Data:    LoughranMcDonald_MasterDictionary_2014.csv

 The program outputs:
    1.  File name
    2.  File size (in bytes)
    3.  Number of words (based on LM_MasterDictionary
    4.  Proportion of positive words (use with care - see LM, JAR 2016)
    5.  Proportion of negative words
    6.  Proportion of uncertainty words
    7.  Proportion of litigious words
    8.  Proportion of modal-weak words
    9.  Proportion of modal-moderate words
   10.  Proportion of modal-strong words
   11.  Proportion of constraining words (see Bodnaruk, Loughran and McDonald, JFQA 2015)
   12.  Number of alphanumeric characters (a-z, A-Z, 0-9)
   13.  Number of alphabetic characters (a-z, A-Z)
   14.  Number of digits (0-9)
   15.  Number of numbers (collections of digits)
   16.  Average number of syllables
   17.  Averageg word length
   18.  Vocabulary (s
 ee Loughran-McDonald, JF, 2015)

   ND-SRAF
   McDonald 2016/06
 """
 import csv
 import glob
 import re
 import string
 import sys
 import time
 sys.path.append('C://Users//yb//Desktop//ML_test')  # Modify to identify path for custom modules
 import Load_MasterDictionary as LM

 # User defined directory for files to be parsed
 TARGET_FILES = r'C://Users//yb//Desktop//test_parse//*.*'
 # User defined file pointer to LM dictionary
```

```
47.  MASTER_DICTIONARY_FILE =
   r'C://Users//yb//Desktop//ML_test//LoughranMcDonald_MasterDictionar
   y_2014.csv'
48.  # User defined output file
49.  OUTPUT_FILE = r'C://Users//yb//Desktop//OUTPUT//P1MA_LM.csv'
50.  # Setup output
51.  OUTPUT_FIELDS = ['file name,', 'file size,', 'number of words,',
   '% positive,', '% negative,',
52.                   '% uncertainty,', '% litigious,', '% modal-
   weak,', '% modal moderate,',
53.                   '% modal strong,', '% constraining,', '# of
   alphanumeric,', '# of digits,',
54.                   '# of numbers,', 'avg # of syllables per word,',
   'average word length,', 'vocabulary']
55.
56.  lm_dictionary = LM.load_masterdictionary(MASTER_DICTIONARY_FILE,
   True)
57.
58.
59.  def main():
60.
61.      f_out = open(OUTPUT_FILE, 'w')
62.      wr = csv.writer(f_out, lineterminator='\n')
63.      wr.writerow(OUTPUT_FIELDS)
64.
65.      file_list = glob.glob(TARGET_FILES)
66.      for file in file_list:
67.          print(file)
68.          with open(file, 'r', encoding='UTF-8', errors='ignore')
   as f_in:
69.              doc = f_in.read()
70.          doc_len = len(doc)
71.          doc = re.sub('(May|MAY)', ' ', doc)  # drop all May month
   references
72.          doc = doc.upper()  # for this parse caps aren't
   informative so shift
73.
74.          output_data = get_data(doc)
75.          output_data[0] = file
76.          output_data[1] = doc_len
77.          wr.writerow(output_data)
78.
79.
80.  def get_data(doc):
81.
82.      vdictionary = {}
83.      _odata = [0] * 17
84.      total_syllables = 0
85.      word_length = 0
86.
87.      tokens = re.findall('\w+', doc)  # Note that \w+ splits
   hyphenated words
88.      for token in tokens:
89.          if not token.isdigit() and len(token) > 1 and token in
   lm_dictionary:
90.              _odata[2] += 1  # word count
91.              word_length += len(token)
92.              if token not in vdictionary:
93.                  vdictionary[token] = 1
94.              if lm_dictionary[token].positive: _odata[3] += 1
```

```
95.                 if lm_dictionary[token].negative: _odata[4] += 1
96.                 if lm_dictionary[token].uncertainty: _odata[5] += 1
97.                 if lm_dictionary[token].litigious: _odata[6] += 1
98.                 if lm_dictionary[token].weak_modal: _odata[7] += 1
99.                 if lm_dictionary[token].moderate_modal: _odata[8] +=
    1
100.                if lm_dictionary[token].strong_modal: _odata[9] += 1
101.                if lm_dictionary[token].constraining: _odata[10] += 1
102.                total_syllables += lm_dictionary[token].syllables
103.
104.    _odata[11] = len(re.findall('[A-Z]', doc))
105.    _odata[12] = len(re.findall('[0-9]', doc))
106.    # drop punctuation within numbers for number count
107.    doc = re.sub('(?!=[0-9])(\.|,)(?=[0-9])', '', doc)
108.    doc = doc.translate(str.maketrans(string.punctuation, " " *
    len(string.punctuation)))
109.    _odata[13] = len(re.findall(r'\b[-+\(]?[$€£]?[-+(]?\d+\)?\b',
    doc))
110.    _odata[14] = total_syllables / _odata[2]
111.    _odata[15] = word_length / _odata[2]
112.    _odata[16] = len(vdictionary)
113.
114.    # Convert counts to %
115.    for i in range(3, 10 + 1):
116.        _odata[i] = (_odata[i] / _odata[2]) * 100
117.    # Vocabulary
118.
119.    return _odata
120.
121.
122. if __name__ == '__main__':
123.    print('\n' + time.strftime('%c') + '\nGeneric_Parser.py\n')
124.    main()
125.    print('\n' + time.strftime('%c') + '\nNormal termination.')
```

LM Master Dictionary

```
1. #!/usr/bin/python3
2. """Routine to load MasterDictionary class"""
3. # BDM : 201510
4.
5. import time
6.
7. def load_masterdictionary(file_path, print_flag=False, f_log=None,
   get_other=False):
8.     _master_dictionary = {}
9.     _sentiment_categories = ['negative', 'positive', 'uncertainty',
   'litigious', 'constraining',
10.                              'strong_modal', 'weak_modal']
11.        # Load slightly modified nltk stopwords.  I do not use nltk
   import to avoid versioning errors.
12.        # Dropped from nltk: A, I, S, T, DON, WILL, AGAINST
13.        # Added: AMONG,
14.        _stopwords = ['ME', 'MY', 'MYSELF', 'WE', 'OUR', 'OURS',
   'OURSELVES', 'YOU', 'YOUR', 'YOURS',
15.                      'YOURSELF', 'YOURSELVES', 'HE', 'HIM',
   'HIS', 'HIMSELF', 'SHE', 'HER', 'HERS', 'HERSELF',
16.                      'IT', 'ITS', 'ITSELF', 'THEY', 'THEM',
   'THEIR', 'THEIRS', 'THEMSELVES', 'WHAT', 'WHICH',
17.                      'WHO', 'WHOM', 'THIS', 'THAT', 'THESE',
   'THOSE', 'AM', 'IS', 'ARE', 'WAS', 'WERE', 'BE',
18.                      'BEEN', 'BEING', 'HAVE', 'HAS', 'HAD',
   'HAVING', 'DO', 'DOES', 'DID', 'DOING', 'AN',
19.                      'THE', 'AND', 'BUT', 'IF', 'OR',
   'BECAUSE', 'AS', 'UNTIL', 'WHILE', 'OF', 'AT', 'BY',
20.                      'FOR', 'WITH', 'ABOUT', 'BETWEEN', 'INTO',
   'THROUGH', 'DURING', 'BEFORE',
21.                      'AFTER', 'ABOVE', 'BELOW', 'TO', 'FROM',
   'UP', 'DOWN', 'IN', 'OUT', 'ON', 'OFF', 'OVER',
22.                      'UNDER', 'AGAIN', 'FURTHER', 'THEN',
   'ONCE', 'HERE', 'THERE', 'WHEN', 'WHERE', 'WHY',
23.                      'HOW', 'ALL', 'ANY', 'BOTH', 'EACH',
   'FEW', 'MORE', 'MOST', 'OTHER', 'SOME', 'SUCH',
24.                      'NO', 'NOR', 'NOT', 'ONLY', 'OWN', 'SAME',
   'SO', 'THAN', 'TOO', 'VERY', 'CAN',
25.                      'JUST', 'SHOULD', 'NOW']
26.
27.        with open(file_path) as f:
28.            _total_documents = 0
29.            _md_header = f.readline()
30.            for line in f:
31.                cols = line.split(',')
32.                _master_dictionary[cols[0]] = MasterDictionary(cols,
   _stopwords)
33.                _total_documents +=
   _master_dictionary[cols[0]].doc_count
34.                if len(_master_dictionary) % 5000 == 0 and
   print_flag:
35.                    print('\r ...Loading Master Dictionary' + '
   {}'.format(len(_master_dictionary)), end='', flush=True)
36.
37.        if print_flag:
```

```
38.             print('\r', end='')  # clear line
39.             print('\nMaster Dictionary loaded from file: \n  ' +
   file_path)
40.             print('  {0:,} words loaded in
   master_dictionary.'.format(len(_master_dictionary)) + '\n')
41.
42.         if f_log:
43.             try:
44.                 f_log.write('\n\n  load_masterdictionary log:')
45.                 f_log.write('\n    Master Dictionary loaded from
   file: \n       ' + file_path)
46.                 f_log.write('\n    {0:,} words loaded in
   master_dictionary.\n'.format(len(_master_dictionary)))
47.             except Exception as e:
48.                 print('Log file in load_masterdictionary is not
   available for writing')
49.                 print('Error = {0}'.format(e))
50.
51.         if get_other:
52.             return _master_dictionary, _md_header,
   _sentiment_categories, _stopwords, _total_documents
53.         else:
54.             return _master_dictionary
55.
56.
57.     def create_sentimentdictionaries(_master_dictionary,
   _sentiment_categories):
58.
59.         _sentiment_dictionary = {}
60.         for category in _sentiment_categories:
61.             _sentiment_dictionary[category] = {}
62.         # Create dictionary of sentiment dictionaries with count set
   = 0
63.         for word in _master_dictionary.keys():
64.             for category in _sentiment_categories:
65.                 if _master_dictionary[word].sentiment[category]:
66.                     _sentiment_dictionary[category][word] = 0
67.
68.         return _sentiment_dictionary
69.
70.
71.     class MasterDictionary:
72.         def __init__(self, cols, _stopwords):
73.             self.word = cols[0].upper()
74.             self.sequence_number = int(cols[1])
75.             self.word_count = int(cols[2])
76.             self.word_proportion = float(cols[3])
77.             self.average_proportion = float(cols[4])
78.             self.std_dev_prop = float(cols[5])
79.             self.doc_count = int(cols[6])
80.             self.negative = int(cols[7])
81.             self.positive = int(cols[8])
82.             self.uncertainty = int(cols[9])
83.             self.litigious = int(cols[10])
84.             self.constraining = int(cols[11])
85.             self.superfluous = int(cols[12])
86.             self.interesting = int(cols[13])
87.             self.modal_number = int(cols[14])
88.             self.strong_modal = False
89.             if int(cols[14]) == 1:
```

```
90.                 self.strong_modal = True
91.             self.moderate_modal = False
92.             if int(cols[14]) == 2:
93.                 self.moderate_modal = True
94.             self.weak_modal = False
95.             if int(cols[14]) == 3:
96.                 self.weak_modal = True
97.             self.sentiment = {}
98.             self.sentiment['negative'] = bool(self.negative)
99.             self.sentiment['positive'] = bool(self.positive)
100.            self.sentiment['uncertainty'] = bool(self.uncertainty)
101.            self.sentiment['litigious'] = bool(self.litigious)
102.            self.sentiment['constraining'] = bool(self.constraining)
103.            self.sentiment['strong_modal'] = bool(self.strong_modal)
104.            self.sentiment['weak_modal'] = bool(self.weak_modal)
105.            self.irregular_verb = int(cols[15])
106.            self.harvard_iv = int(cols[16])
107.            self.syllables = int(cols[17])
108.            self.source = cols[18]
109.
110.            if self.word in _stopwords:
111.                self.stopword = True
112.            else:
113.                self.stopword = False
114.            return
115.
116.    if __name__ == '__main__':
117.        # Full test program in
    /TextualAnalysis/TestPrograms/Test_Load_MasterDictionary.py
118.        print(time.strftime('%c') + '/n')
119.        md =
    (r'D:\GD\Research\Natural_Language_Processing\Dictionaries\Master\\'
    +
120.                r'LoughranMcDonald_MasterDictionary_2014.csv')
121.        master_dictionary, md_header, sentiment_categories, stopwords
    = load_masterdictionary(md, True, False, True)
122.        print('\n' + 'Normal termination.')
123.        print(time.strftime('%c') + '/n')
124.
```