

QUALITY, READABILITY, AND NARRATIVE ASPECTS OF MD&A REPORTS: LITERATURE REVIEW AND FUTURE RESEARCH POTENTIAL

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ABSTRACT

This article provides significant insights on what has been done so far in the field of Management Discussion and Analysis (MD&A) and discuss the implications of MD&A disclosures for investors and financial analysts and future research potential in the respective area. Systematic Literature Review method is adopted for the MD&A studies as to categorize them into four different themes: An overview of MD&A structure; Quality of the MD&A disclosures & its forecast ability; Readability of MD&A reports and Narrative of MD&A disclosures. Also, future scope of the research is also discussed. It is found that the MD&A reports are really contributing in decision making of the shareholders and financial analysts in terms of predicting the future accounting results, earning per share, sales and explains going concern opinion according to existing researches, thus demanded to audit the MD&A reports as well to enhance the authenticity. Recent studies have included Artificial intelligence (AI) tool in their studies to provide more reliable results and more future researches can be done with the help of AI.

KEYWORDS: *Management Discussion and Analysis (MD&A), MD&A Disclosures, Investors, MD&A Disclosure Quality.*

INTRODUCTION

Investors in the stock market generally invest on the basis of information provided by the companies. The authenticity and quality of corporate information provided through interim and annual reports have been significant concerns as far as investors trust is concerned. During 1960s, many frauds and scams came into light, due to which investors had to lose their money that created mistrust, suspicion and uncertainty among investors. By considering those financial scandals & frauds, a specific disclosure tool is introduced to protect the interest of the investor as- Management Discussion and Analysis (MD&A) of Financial Condition and Results of Operation in terms of disclosing vital information of the company (Bernd Hufner, 2007). Moreover, it shows the capital structure and liquidity, results of operation, any other material changes in the financial transactions, forward-looking statements, which is required to be disclosed from the eyes of the managers of the company (SEC, 2019). Although the concept of MD&A originates in 1968 as part

of the Guides for Preparation and Filing of Registration Statements, but in 1974, the Securities and Exchange Commission (SEC) has introduced it in the corporate annual reports just to provide more insights about the company's operations and non-financial information. Later on, in 1980, many amendments have been done for formal requirement for the discussion of issues and trends relating to liquidity, capital resources and the results of operations (Schroeder & Gibson, 1990). Securities and Exchange Commission (SEC) believes that MD&A helps in supplementing the financial information to the "Investors and other users to assess the financial condition and results of operations of the registrant, with particular emphasis on the registrant's prospects for the future" (SEC 1989; Cole & Jones, 2004). As a part of corporate annual report, many improvements have been suggested to SEC for enhancing the credibility and reliability of the MD&A report so that investors can be protected from any kind of scams in terms of non-disclosure of information and Insider Trading. Adding of Risk related disclosure and a formal audit of MD&A report have also been advised by various professionals during 1990s. These kind of proposal help regulators in framing more policies in the stake of investors to save them from any misleading information (Schroeder & Gibson, 1990). Gradually, after 1995 many European and Asian countries have started to present and discuss MD&A in their corporate annual reports. SEC has worked tirelessly to address the shortcomings of the MD&A reporting to bring more transparency and information centrality to keep the interest of the investors and other stakeholders (SEC, 2002; SEC, 2003; SEC, 2019).

With the starting of this century, SEC has placed the MD&A as a disclosure tool provides the investors with an opportunity to get the insights into the company from the manager's perspectives and can understand the short and long term analysis of the business. This concept is raised as investors started to face difficulties in getting and understanding the accounting language and interpret them in a meaningful result. Thus, to overcome such problem, MD&A provides specific, material and analytical information about the company from the views of the top officials and becomes an important channel of communication between the companies and the investors (Brown & Tucker, 2011). SEC has also focused on discussing the future oriented information that can materially affect the company's liquidity, capital resources more in the MD&A reports rather than discussing the past trends, events and happening (Muslu et al., 2015).

MD&A is not confined just only a mean of communication between investors and the company, it disclose the high quality of the company's information to the public, so that the overvaluation of the company's stock price can be stopped and the risk of stock market crashes and high cost of the capital can also be avoided (Lee & Chae, 2018). Also, it has been evidently proved that MD&A disclosures not only helping the investors but an average analyst in doing a better job of forecasting earnings (Barron & Kile, 1999).

By considering so much importance of the MD&A, every aspect of the MD&A report is important in itself. Thus, this study systematically collects, analyzes, and discusses various studies published only in top journals covering the four aspects of the Management Discussion and Analysis disclosures. It has covered a wide range of literature for almost thirty years (1990-2020). For this research paper, more than fifty research papers related to MD&A are taken into consideration. This attempt covers the research studies published from 1990 (Cole, 1990, Journal of Corporate Accounting and Finance) to the recent studies (Qian, 2020, Discourse and Communication) that have been published in internationally recognized peer-reviewed journals. We have selected these studies considered as published in reputed journals globally as per the Australian Business Deans' Council (ABDC) list. So, we described twenty-nine papers as exhibited in Table 1, categorized as per their themes (*Structural overview and usefulness, quality of disclosures, readability, and narratives of the MD&A reports*). Therefore, it has been organized into four categories as described in **Table 1**

TABLE 1: THE STUDY SAMPLE WAS OBTAINED VIA A SEARCH OF RESEARCH ARTICLES ON MANAGEMENT DISCUSSION AND ANALYSIS PUBLISHED IN JOURNALS ON THE ABDC LIST AFTER 1989

Author(s)	Journal
Panel 1: Summary of empirical research papers, describing the structural overview and usefulness of MD&A in chronological order in Table II	
1 (Cole, 1990)	Journal of Corporate Accounting and Finance
2 (Bryan, 1997)	The Accounting Review
3 (Holder-Webb, 2007)	Advances in Accounting Behavioral Research
4 (Sun, 2010)	The Accounting Review
5 (Lindrianasari et al., 2017)	Corporate Ownership and Control
6 (Lee and Park, 2018)	European Accounting Review
7 (Durnev and Mangen, 2020)	Journal of Accounting and Economics
Panel 2: Summary of empirical research papers, describing the Quality of disclosures and Prophecy with regard to MD&A in chronological order in Table III	
8 (Clarkson et al., 1994)	Contemporary Accounting Research
9 (Clarkson et al., 1999)	Contemporary Accounting Research
10 (Barron and Kile, 1999)	Contemporary Accounting Research
11 (Cole and Jones, 2004)	Journals of Accounting, Auditing & Finance
12 (Hufner, 2007)	Society and Business Review
13 (Cohen et al., 2008)	Current Issues in Auditing
14 (Li, 2010)	Journal of Accounting Research
15 (Davis and Tama-Sweet, 2011)	Contemporary Accounting Research
16 (Cole and Jones, 2014)	Journals of Accounting, Auditing & Finance
17 (Muslu et al., 2015)	Management Science
18 (Mayew et al., 2015)	The Accounting Review
Panel 3: Summary of empirical research papers, describing the Readability of MD&A reports in chronological order in Table IV	
19 (Schroeder and Gibson, 1990)	Accounting Horizons
20 (Kinnersley and Fleischman, 2001)	Journal of Public Budgeting, Accounting & Financial Management
21 (Moreno and Casasola, 2016)	Journal of Business and Technical Communication
22 (Yusuf and Jordan, 2017)	Public Budgeting & Finance
23 (Li, 2008)	Journal of Accounting and Economics
24 (Lee, 2012)	Contemporary Accounting Research

24 (Kinnersley and Fleischman, 2001) Journal of Public Budgeting, Accounting & Financial Management

Panel 4: Summary of empirical research papers, describing the Narrative of MD&A disclosures in chronological order in **Table V**

25 (Brown and Tucker, 2011) Journal of Accounting Research
 26 (Caserio et al., 2016) Lecture Notes in Information Systems and Organization
 27 (Caserio et al., 2019) Management Decision
 28 (Qian, 2020) Discourse and Communication

a. Empirical studies on the Structural Overview and Usefulness of MD&A

Management discussion and analysis is a significant document which provides information from the viewpoint of the managers which discusses both financial and non-financial information at one place in the annual report. This section discussed the studies related to the constructive outline related to the MD&A

TABLE 2: SUMMARY OF EMPIRICAL RESEARCH PAPERS, DESCRIBING THE STRUCTURAL OVERVIEW AND USEFULNESS ON MD&A IN CHRONOLOGICAL ORDER

Author Name (Year)	Title of the Study	Sample and tools	Findings
Cole, 1990	MD&A Trends in Standard & Poor's Top100 Companies	S&P 100 companies. Content analysis is done on the selected companies' MD&A.	Almost 70% of the companies are providing various disclosures in the MD&A section of their annual reports like forward looking information, environment factors, inflation, financial conditions, change in sales etc.
Bryan, 1997	Incremental information content of required disclosures contained in management discussion and analysis	250 companies in 1990 for getting the association between MD&A variables with the firms' future financial variables.	The findings reveal that the MD&A discussion for future operations and anticipated capital spending is linked to the firm's financial performance and investment choice for the next year.
Holder-Webb, 2007	The question of disclosure: Providing a tool for evaluating Managements' Discussion and Analysis	50 firms for the period 1989-1994 from the compustat database. A standard is developed for developing the Index for measuring the quality of MD&A disclosures.	An index is formulated to measure the quality of the MD&A disclosures and further regression can be analyzed from those variables. Thus, it is a benchmark for the investors, analysts and others to directly understand the MD&A disclosures level and assess its quality.
Sun, 2010	Do MD&A Disclosures Help Users Interpret	568 manufacturing firms for the period 1998-2002 to check the association of MD&A disclosure on favorable disproportionate inventory increment and the firms' future financial performance.	There is positive association between the disclosure of the favorable disproportionate inventory increment and the firm's profitability and sales growth of the next three years

Lindrianasari et al., 2017	Management discussion and analysis, corporate governance perception index and market reaction	823 companies from the period 2011-2013 listed on Indonesia stock Exchange to know the extent of MD&A disclosure impact on the stock market.	The findings are showing the fantastic results that the capital market reacts strongly to the MD&A disclosures. When more disclosures are in MD&A, more increasing in the trading volume and stock return.
Lee and Park, 2018	The Impact of Audit Committee Financial Expertise on Management Discussion and Analysis (MD&A) Tone	24669, a firm year observation from 2001-2012 for getting the relationship between the MD&A tone and the auditors' expertise over the MD&A reports.	The expertise of the auditors and accountants helps to maintain the upward MD&A tone. Thus, good knowledge and skills of auditors improves the quality of MD&A reports.
Durnev and Mangen, 2020	The spillover effects of MD&A disclosures for real investment: The role of industry competition	142843 firm year observations from 1996-2016 for analyzing the spillover effect of MD&A tone over investment efficiency.	There is a positive relationship between the one firm's investments with its rival MD&A tone. Also, it is found here that investment is more when the firms and its rivals are operating in an industry where entry cost is low.

b. Quality of disclosure and their power of prophecy

For every investor, it is required to have accurate (symmetry) and transparent information about the company for making their decisions worthy and prosperous in rational manner. All such kind of required features are available in a good quality MD&A report. The studies in this section discussed that are based on measuring the quality of MD&A disclosures and how these disclosures have the power to make investors and analysts able to forecast the firms' future performance.

TABLE 3: SUMMARY OF EMPIRICAL RESEARCH PAPERS, DESCRIBING THE QUALITY OF DISCLOSURES AND PROPHECY HAVE BEEN DONE ON MD&A IN CHRONOLOGICAL ORDER

Author Name (Year)	Title of the Study	Sample and Tools	Findings
Clarkson et al., 1994	The Voluntary Inclusion of Forecasts in the MD&A section of Annual Reports	300 companies for period 1989-1991 with total 905 firm observations to check the relationship between the firm's performance and decision to forecasts.	If the companies are earning good and have positive news and information, then the possibility of forecasts increases but this possibility of forecasts reduces due to entry of new competitors.
Clarkson et al., 1999	Evidence That Management Discussion and Analysis (MD&A) is a Part of a Firm's Overall Disclosure Package	300 firms for the year 1991-1992 from the Toronto Stock Exchange to check the disclosure quality and its usefulness to the stakeholders.	MD&A disclosures is the firm's overall disclosure package as it is a source of both new and useful information for various stakeholders of the companies.

Barron and Kile, 1999	MD&A Quality as Measured by the SEC and Analysts' Earnings Forecasts	550 firm observations from the year 1987-1989 to check the association between the MD&A quality and analysts' forecasts about the firms' performance.	Good MD&A quality enhances the prediction accurately with less dispersion. Good earnings forecast can be supported by the previous work and not many changes occur in the subsequent period. Historical information is considered also as vital information for the prediction.
Cole and Jones, 2004	The Usefulness of MD & A Disclosures in the Retail Industry	Regression is run to check the historical and forward looking information related MD&A disclosures impact the retail Industry performance.	Changes in future sales and profitability are strongly linked to MD&A factors. We can demonstrate that multiple MD&A factors have significant explanatory power by concentrating on a particular sector.
Hufner, 2007	The SEC's MD&A: Does it meet the informational demands of investors?- A conceptual evaluation	A conceptual study is done on the SEC regulations (2003) item 306, 307.	The perspective of the managers and investors are conflicting regarding the disclosures and this makes the MD&A doubtful as whether here are really helpful for the investors. Thus, it is required to audit the MD&A reports from the auditors as they can play a vital role in improving the quality of the MD&A disclosure.
Cohen et al., 2008	Management's Discussion and Analysis: Implications for Audit Practice and Research	A review of fortune 500 companies in the year 2003.	MD&A quality is positively associated with the firms' size, financial performance, favorable earnings and vice-versa.
Li, 2010	The information content of forward-looking statements in corporate filings-A naïve bayesian machine learning approach	Around 13 billion Forward looking statements from 140000 10-Q & 10-K SEC filings for the period 1994-2007 to categorize the tone and content forward looking statement from MD&A.	This study implies that MD&A tone of the unhealthy financial firms in one year is exactly opposite to the performance of the same year, but this case is not with the healthy firms. Also, this study supports the management impression theory as managers of unhealthy firms during a period of financial difficulty and creates questions on the credibility of MD&A narratives.
Davis and Tama-Sweet, 2011	Managers' Use of Language Across Alternative Disclosure Outlets : Earnings Press Releases versus MD&A	23017 quarterly firm observations from the year 2011 to get the optimistic & pessimistic tone of the MD&A narrative in the press release and the annual reports.	If managers want less negative reaction on the stock market, then they use less pessimistic language in the press release than MD&A reports. But, pessimistic language more used in MD&A time is really helpful in more accurately predicting firms' future performance

Cole and Jones, 2014	The Quality of Management Forecasts of Capital Expenditures and Store Openings in MD&A	760 firms for the capital expenditure and 752 firms for store opening forecasts analysis on the five attributes of MD&A for the forecasting of firms performance	It is perceived that the management does not incorporate the historical information that can improve the capital expenditure and store opening forecasts. Thus, forecasts are not statistically significant for all the available information as historical information is missing.
Muslu et al., 2015	Environment Forward-Looking MD&A Disclosures and the Information Environment	44,708 10-K filings from 5,705 firms for the 1993 and 2009 period to assess the factors impacting the forward looking statements of the MD&A disclosures.	A more forward looking statement of MD&A disclosures improves the informational environment and supports the SEC calls. Also the firms having abnormal forward looking information regarding the stock returns, more strongly reflects the future earnings of the firms.
Mayew et al., 2015	MD&A Disclosure and the Firm's Ability to Continue as a Going Concern	Firms that filed for bankruptcy for the period 1995-2012, to check the relationship between the MD&A disclosures, auditor's opinion.	MD&A and management's opinion tone provide an incremental predictor of bankruptcy. Also, MD&A disclosures can help to predict the bankruptcy of any firms before three years of its bankruptcy.

c. Empirical studies on the readability of MD&A reports

MD&A is a medium of communication for the managers to investors & other stakeholders in textual form. As a result, having such reports in a simple and understandable style is uncommon in general. That is why; those studies which are analyzing the readability of the MD&A portion of annual reports are covered in this section.

TABLE 4: SUMMARY OF EMPIRICAL RESEARCH PAPERS, DESCRIBING THE READABILITY OF MD&A REPORTS IN CHRONOLOGICAL ORDER

Author Name (Year)	Title of the Study	Sample and Tools	Findings
Schroeder and Gibson, 1990	Readability of Management's Discussion and Analysis	40 firms' MD&A readability for the year 1986 is compared with the president's letter and financial statement footnotes by using the Flesch readability Score	There is no statistically difference between the readability score of MD&A reports and the president letter. However, it is noticed that the president's letter is more read by the users than the MD&A reports.
Kinnersley and Fleischman, 2001	The Readability of Government's Letter of Transmittal Relative to Public Company Management's Discussion and Analysis	The readability is evaluated by the state and local government's letter of transmittal relative to MD&A of public traded companies through Flesch index of reading ease	It is evidently found here that 4 out of 5 measures are indicating that both MD&A and letter to transmittal can be read only by the college graduates. And the reason behind poor readability is Complex words.

Li, 2008	Annual report readability, current earnings, and earnings persistence.	55,719 firm-years from the period 1993-2003 from CRSP-compustat database by using Fog index.	Firms with poor performance show their MD&A and annual reports are hard to read. It is evidently proved that the managers strategically change the information disclosed to maintain the image of the company
Lee, 2012	The Effect of Quarterly Report Readability on Information Efficiency of Stock Prices.	5372 firms report for the period 2001-2007 through Fog index, measuring the readability score of pre and post filling information reaction on the stocks	Longer and complex words of the 10Q of the companies (including MD&A) reports makes difficult to understand the earning related information timely. Thus, investors reacts less on the information that is hard to read and understand for processing it.
Moreno & Casasola, 2016	A Readability Evolution of Narratives in Annual Reports: A Longitudinal Study of Two Spanish Companies	A longitudinal study is done on the two Spanish companies by converting the Flesch readability formula according to the Spanish language instead of English.	The results are showing that the readability of the MD&A reports are difficult to read but is it improving over the years.
Yusuf & Jordan, 2017	Accessibility of the Management's Discussion and Analysis to Citizen Users of Government Financial Reports	MD&A reports of 50 U.S. government companies are extracted to assess the readability for the year 2009 and 2012 by using the Flesch reading index.	Accessibility of MD&A reports is questioning the usefulness of MD&A reports as most of these reports are published after 6 months or more of closing of the financial year. Second, the readability of the MD&A reports is not easy to read and understandable and not meeting informational demands of the citizen users.

d. Empirical study on the narrative of MD&A disclosures

Managers are the internal part of the organization as they are directly associated with the operations of the business. Hence, they have more information about the company than any other employee of the organization. Thus, through MD&A report, when they discuss their views about the company to the stakeholders, keep their narration simple and clear. It should not create any confusion and doubt about any point to the investors i.e. repetition of the same information should be avoided. This section has reviewed four studies that are focusing on the narrative part of the MD&A disclosures.

TABLE 5: SUMMARY OF EMPIRICAL RESEARCH PAPERS, DESCRIBING THE NARRATIVE OF MD&A REPORTS IN CHRONOLOGICAL ORDER

Author Name (Year)	Title of the Study	Sample	Findings
Brown and Tucker, 2011	Large-Sample Evidence on Firms' Year-over-Year MD&A Modifications	The sample is taken for the period 1997-2006 from the EDGAR database. It has been started from 1997 as from 1996 almost all companies in the U.S. have started to fill their annual reports electronically.	that firms with year on modification are not much except the firms having a large economic change. Investors incorporate more MD&A change information than the financial analysts. Also with the years only the length of the MD&A reports increased, not the quality of disclosures. Hence the usefulness of the MD&A report is not acceptable.

Caserio et al., 2016	Management Discussion and Analysis in the U.S. Financial Companies: A Data Mining Analysis	Extract 996 U.S.A. firms' annual reports from the year 1995-2011, from the EDGAR database which files for the bankruptcy.	Managers are not trying to hide the financial distress. Rather, managers of high bankruptcy risk firms bend the truth in order to assure the stakeholders towards a better future.
Caserio et al., 2019	Management discussion and analysis : a tone analysis on U.S. financial listed companies	Two subsamples are taken from the U.S. firms for the period 2002-2011 as healthy and unhealthy firms.	The healthy firm's disclosures are useful enough to explain current year performance as well as predict the next financial year performance. But in the case of unhealthy firms, the managers are using impression management strategies as using more positive words and future oriented language than healthy firms.
(Qian, 2020)	A critical genre analysis of MD&A discourse in corporate annual reports	118 MD&A reports and around 2 billion words are studies here for the year 2018 from global 500	It is found here that the lexicon features are unique to the MD&A reports. Also, the professional culture of MD&As is embodied through identity enculturation, human-oriented value, cooperation awareness and self-serving manner.

DISCUSSION

This research has identified four themes from the prior literature. In the following sections, we collate the themes and discuss the overall results of four aspects of the MD&A reports along with the gaps identified from the reviewed studies.

SEC has introduced MD&A disclosures as a role of communication between the company and its various stakeholders from the eyes of managers which has been developed and maintained by the companies very well.

- MD&A variables are positively associated with the future (short term) sale, earning per share and capital expenditure, but not with the future cash flows (Hufner, 2007; C. Cole, 1990). Even, the stock market also reacts with the MD&A disclosures provided by the companies in their annual reports i.e. better the MD&A disclosures better the responses come from the capital market.
- Auditing the MD&A reports by the audit committees becomes important and it has been evidently observed that financial experts have the ability and incentive to enhance the role of audit committees, which resulted in upward management tone in MD&A section (J. Lee & Park, 2018; Lindrianasari et al., 2017).
- Information disclosed in the MD&A is relevant for the investors in their decision making or not is questionable, as using of impression management theory by the managers. But certainly, such situation arises when the managers of the companies do not follow their duties ethically.
- When everything is going right, managers of the firms disclose information in a good format that fulfills the sole purpose of the MD&A reports and vice-versa (Bryan, 1997; Caserio et al., 2016; Qian, 2020).
- Understanding of the MD&A reports are directly associated with the readability and narration of the MD&A disclosures. The findings of the studies recommend to improve the presentation and language format of the earning reports to make it easy to understand and read by the investors.

- The complex narrative makes the quality of MD&A poor and it might be due to managers of the firms (having not so satisfactory performance), try to hide the poor results and thus make the MD&A reports so complicated that it is hard to read by the investors. (Lee, 2012; Moreno and Casasola, 2016; Schroeder and Gibson, 1990).
- MD&A can also help in predicting the bankruptcy of any firm at least three years before the filing of the bankruptcy (C. J. Cole & Jones, 2014; Mayew et al., 2015).
- MD&A disclosures are having more abnormal forward looking information filing the stock returns, reflects more future earning information (Muslu et al., 2015b). It means, to solve the problem of less information disclosed can be sorted with the forward looking information that improves the information environment (Clarkson et al., 1994, 1999; Muslu et al., 2015a). Hence, MD&A offers numerous benefits for the companies and its stakeholder subject to provide true and reliable information in MD&A report in understandable manner.

Agenda for Future Researches

The empirical results of these studies are based on the MD&A reports of the U.S. based companies thus, these results cannot be generalized to other countries having a different set of regulations, socio-economic environment and culture.

- The research work on the investigation of text mining of MD&A reports remains to be done in comprehensive manner and that will help in improving the level of MD&A reports. Also, the word similarity can be checked between the MD&As of healthy and unhealthy companies in order to find out possible mimetic isomorphism behaviors (Caserio et al., 2016, 2019).
- For assessing the quality of MD&A disclosures, an index was created by Holder-Webb, 2007) but, MD&A disclosures are adopted by various nations across globally as per their own reporting standards. Thus, different MD&A disclosure indexes can be framed according to the different region or nation for further research (C. Cole, 1990; Lindrianasari et al., 2017; Sun, 2010).
- MD&A's readability can be checked readability by applying various methods and then generalization may be made for more precise results (Moreno & Casasola, 2016; Schroeder & Gibson, 1990).
- Also this research paper has reviewed only the twenty nine paper and consider only the four aspects related to the MD&A reports. Thus, further research can be done by considering more papers by including more themes for getting a more accurate role of MD&A reports in the financial markets for various stakeholders.

CONCLUSION

The information disclose in the MD&A report of the company is value relevant as it can help in predicting the future accounting results, earning per share, sales and explains going concern opinion according to existing researches. Also, MD&A reports are good source and provide numerous information for stakeholders about the business's future prospects, allowing them to make informed judgments. Thus, the presentation and the linguistic format of MD&A reports needs to be improved with regard to investors to understand and read them easily and that should be basic and straightforward. Further, the analysis of MD&A reports is shifted towards using of Artificial Intelligence (AI) techniques to understand and making effective forecast of companies' earnings. By using AI techniques, information provided in the MD&A report on the real time basis can be analyzed which results into avoidance of misleading information and uncertainty for the smooth transmission of information about the company in capital market (Shin, 2019). Moreover, a sentiment analysis of the MD&A reports can be analyzed which directly makes a key role in

understanding the firm's performance at present and future plans. Positive sentiments & certain words are indicators of good firm's financial condition and a huge scope of research is created these latest growing technologies (Caserio et al., 2016, 2019).

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