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Do CEO incentives and characteristics influence M&A? A systematic literature review

Aleksandra Katarzyna Węglarz
Leuphana University Lüneburg,
Universitätsallee 1, 21335 Lüneburg, Germany; aleksandra.k.weglarz@stud.leuphana.de

Abstract

The purpose of this paper is to analyze if chief executive officer (CEO) characteristics (political, gender, education, experience, values, overconfidence, narcissism) and incentives (compensation, power, duality, tenure) are influencing the process of merge and acquisition (M&A).
The study is built upon upper echelon theory. It reviews 42 empirical-quantitative studies on CEO and M&A variables. That being so, a systematic literature review is conducted.
This paper to my best knowledge is the first literature review that examines the relationship between CEO characteristics and incentives, and M&A. The results indicate the main variables that influence the CEO decision about the M&A. Also, the interactions between them were found. Moreover, the synthesis of the current empirical research in the narrowed perspective is presented.

Keywords: M&A, CEO, CEO characteristics, CEO incentives, Upper echelon theory

1 Introduction

The financial crisis in 2008-2009 has changed the world and led many companies' managers to adjust their valuation of the industry and the firm itself. Companies, even more, try to implement diversified strategies to gain access to new markets and expand their differentiation by investing on various geographical and market levels (Grave et al., 2012). One of the commonly used growth strategies is mergers and acquisitions (M&A), whereby managers try to enhance the company's growth, size and access the assets that under normal conditions are too expensive to imitate or to reduce the competition (Brueller et al., 2016). Thus, the M&A term refers to a series of activities that aim to create extra value through the implementation of processes that permanently change the organizational and corporate structure of the company (Gaughan, 2010). They are an important corporate strategy and have a significant implication for management, as well as shareholders (Zhou et al., 2019). During the whole process of M&A including target assessment, negotiation of the deal and its compilations, and post-merger integration (PMI), management plays a crucial role (Brueller et al., 2016).

The relevance of the M&A process is confirmed by a study on M&A transactions in the US market. Within the last 15 years, the fluctuations from M&A's synergies range from a loss of $60 billion up to a gain of $25 billion based on the period stock returns announcement (Gong & Guo, 2014). Thus, despite its popularity, it still produces a mixed result. M&A is a risky activity in nature because it requires a lot of time and effort from CEOs (Dutta et al., 2011). Given these conditions, the role of the CEO during the whole M&A process can have a negative (Aktas et al., 2016, Bazel-Shoham et al., 2017), as well as, positive (Teti et al., 2017; Croci & Petmezas, 2015) effect on the synergy.

M&A is also regarded as an important empirical topic in management, finance, and strategy literature. The research on the M&A process and CEO is a growing topic on the international level (Zhou et al., 2019). In line with this relevance, my literature review of 42 empirical-quantitative studies focuses on the relation between CEO-M&A. I assume that there is a relation between CEO characteristics and incentives and M&A. After analyzing the findings between these variables, I have divided the variables between 1) CEO compensation, 2) CEO tenure, 3) CEO duality, 4) CEO power, 5) CEO gender, 6) CEO narcissism and overconfidence, 7) CEO

education and experience, 8) Other characteristics. Based on the upper echelons I present a theoretical framework (Hambrick and Manson, 1984).

Previous literature reviews concern the M&A process (Caiazza & Volpe, 2015), only on the relation between CEO compensation and M&A (DeYoung et al., 2009), or the PMI process (Graebner et al., 2017). However, to my best knowledge, the review on the link between CEO characteristics and the M&A process has not been conducted. Therefore, the purpose of this paper is to analyze the link between these two variables and answer the question "*Do CEO characteristics and incentives influence M&A?".*

These analyses and considerations lead me to the two main findings. Firstly, I found the main variables that can highly influence the CEO's decision about the M&A and how they interact. Moreover, I synthesize the current empirical research in the narrowed perspective that allows me to more deeply understand the relation between CEO, M&A, and stakeholders.

My literature review is relevant for practitioners and researchers. Firstly, I present the main findings from studies ranging from 2001 in a narrowed perspective by stressing the commonly used variables in empirical research and the main gaps in the studies. I also contribute to the practitioners' side. Shareholders and the board of directors can direct the decision by tracking the CEO characteristics or by designing the incentive program for executives.

The review is structured as follows. Firstly, I present the theoretical framework based on the upper echelon perspective. In the next review chapter, the research methodology and sample selection are presented, followed by a detailed analysis of the quantitative studies that concern CEO incentives and characteristics and their link to M&A. In the next section, I summarize the main findings and conclude the results. Finally, I present the contribution and limitations.

2 Theoretical Framework

Neoclassical principal theories do not assume the homogeneity among executives and imply a rational-oriented approach among them (Jensen & Meckling, 1976; Ross, 1973). However, the workplaces have now become more diversified in terms of education, gender, age, personality traits, and cultural background. That being so, also CEOs' personality traits impact their perception of the business environment and influence the decision (Hambrick & Mason, 1984). The behavioral aspect of CEOs' characteristics and incentives in the neoclassical theories might help to explain the choices of companies' strategy, as well as financial and non-financial decisions (Velte, 2019).

According to the upper echelon theory the interpretations of the business situation, key economic decisions, performance outcomes, and perception of risk are greatly influenced by dominant and powerful actors within the organization, especially CEOs' and CFOs' experiences, personalities, and values. For instance, Hambrick and Mason (1984) showed that larger-scale strategic choices are mostly taken up by younger risk-seeking CEOs.

This diversity among top management is expected to increase the quality of decisions and the company's performance (Hambrick & Mason, 1984). As Hambrick et al. (1996) concluded, heterogeneity among top management facilitates the decision process, because they possess a deeper knowledge and cognitive resources. Upper echelons theory assumes that top management is more powerful in terms of strategic choices than other members of the company. Hambrick and Mason's theory (1984) assumes that the relationship between strategic choices, within which the acquisition process is concerned, and CEOs' characteristics are the base of theory.

Overall, since M&A is complex and uncertain, producing mixed results (Zollo, 2009), it is an excellent example to analyze its performance and CEOs' diversity. This complexity and uncertainty underline the role of CEOs in the success of M&A (Parola et al., 2015) because, in consequence, it shapes the future firm performance. The researchers proved that the profile of chief executives has a high influence on the company's strategy and performance outcomes (Hambrick, 2007).

According to Hambrick and Mason (1984), not only the personal traits and CEO characteristics might influence the strategy choice. The strategy can be also affected by the characteristics of the organization, that is specific firm characteristics, to which CEO incentives are counted. M&As are now commonly used corporate growth strategies (Mehra, 2011) and are employed to enhance the companies' growth, size, and access to additional resources, or even to eliminate the competitions. Thus, a focus on the CEOs who are an important aspect in strategic decisions enhances the validity of decisions about M&A (Brueller et al., 2016).

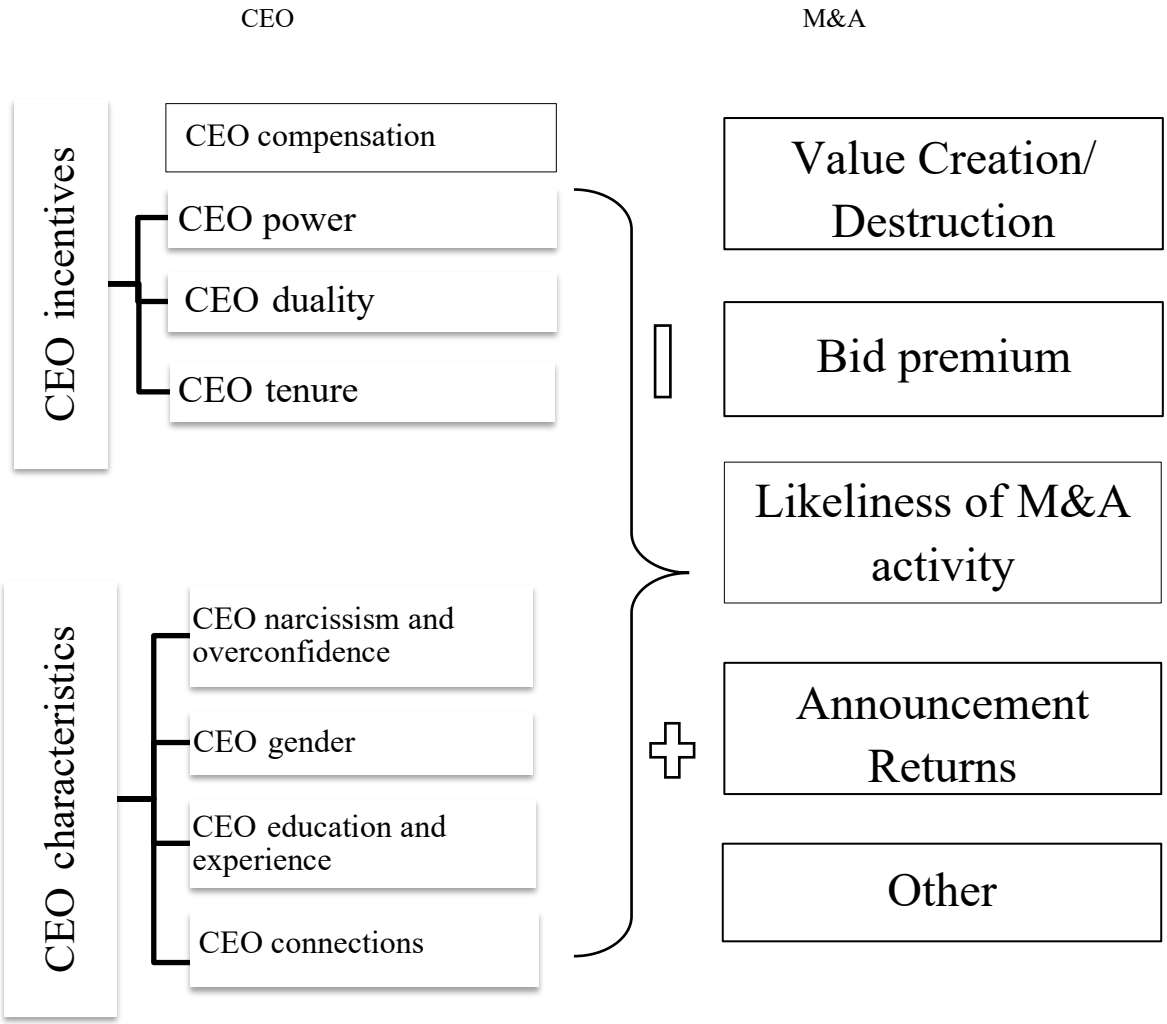
I presume that CEOs within a top management team can even more intensively influence the whole performance and the role of the CEO can be a crucial factor in implementing a successful M&A strategy and encourage after-merge performance. Due to this fact, I assume, in this literature review, that upper echelons theory serves as an explanation of the impact of CEO characteristics and CEO incentives on M&A.

3. Literature review

3.1 Research framework

Figure 1 presents the research framework that I use to conduct the literature review. The structure of categories was inspired by Velte (2019) (see Figure 1).

Figure 1: Research framework



Within the CEO characteristics and incentives, I put the focus on the following M&A variables: likeliness of M&A, value creation, bid premium, announcement returns, and other not specified ones. However, in regard to CEO compensation, the empirical research focuses mostly on the change in the compensation value and the change in the compensation structure (type) before and after the acquisition. Due to this reason, I present the CEO compensation separately. The following proxies are used to measure the CEO variable:

- CEO gender represents the proportion of female directors in the board of directors or presence as a separate person (CEO).
- In the empirical literature the personal traits of CEOs, like narcissism and overconfidence, have gained increased attention. CEO overconfidence is measured based on the option- exercise behavior (long-term holding vs short-term holding or decision of holding options till the end of exercise date), whereas CEO narcissism is measured as an analysis of CEOs' speech, size of the signature, size of photography in the annual report or media portraits.

- CEO education and experience. CEO education is measured by the obtained degree. I also included the research that concerns the probability of acquisition in the education state of CEO and home biases of CEO. CEO experience is measured based on the received awards, work experience in the industry or position.
- CEO incentives also influence the M&A decision process:
- CEO compensation is measured based on the changes in the compensation after and before the acquisition, as well as bonuses, premiums, and long-term incentives compensation received after the acquisition.
- CEO tenure presents the number of years of the CEO in the company.
- CEO duality represents the situation when the CEO holds also the position of the chairman.
- CEO power is measured based on board size and structure, ownership of shares, and experience, that is the number of years in the company.

3.2 Research methodology

To conduct this literature review, I have followed five steps established guidelines proposed by Rousseau et al. (2008) to identify relevant literature. Firstly, the international and scientific databases (Google Scholar, SSRN, Research Gate, AACC, Wiley Online Library) were selected to ensure a broad and relevant choice of studies for my literature review instead of narrowing the search to a set of journals. The databases ensured the quality due to the large high-ranking peer-reviewed journals. Secondly, I selected only English studies and distinguished the key searching words. I aimed to find all topic relevant studies without omitting any important study. The following keywords might be distinguished "merge and acquisition", "strategic decision", "investment" in combination with "CEO political connection", "CEO narcissism", "CEO overconfidence", "CEO personal traits", "CEO gender", "CEO incentives", "CEO values", "CEO connection", "CEO education", "CEO experience", "CEO compensation", "CEO characteristics", "CEO tenure", "CEO duality", "CEO power" and "CEO ability". I was also searching in general "CEO characteristics" and "CEO incentives", as well as narrowing the search to specific variables that were mentioned previously.

Then, I determined the screening criteria and scanned the abstract, titles, and findings of the first sample. I only chose empirical-quantitative studies. Fourth, I aimed to restrict the studies from journals ranging from C to A+ according to VHB-JOURQUAL3 ranking, however, 10 studies were not published in these journals.

I did not apply the specific restriction regarding country or period. I also checked the references of all studies to ensure that I did not omit any important study. Fifth, I have concentrated on the most relevant studies from the first sample to ensure that they deal with M&A and CEO characteristics. In the end, I have gathered 42 empirical articles that constitute the data for this literature review. Appendix A presents 42 gathered studies. I have organized the literature review into three categories.

1) The general context of studies.
2) CEO incentives that consist of CEO compensation, CEO power, CEO duality, CEO tenure
3) CEO characteristics consist of CEO narcissism and overconfidence, CEO gender, CEO power, and CEO education and experience.

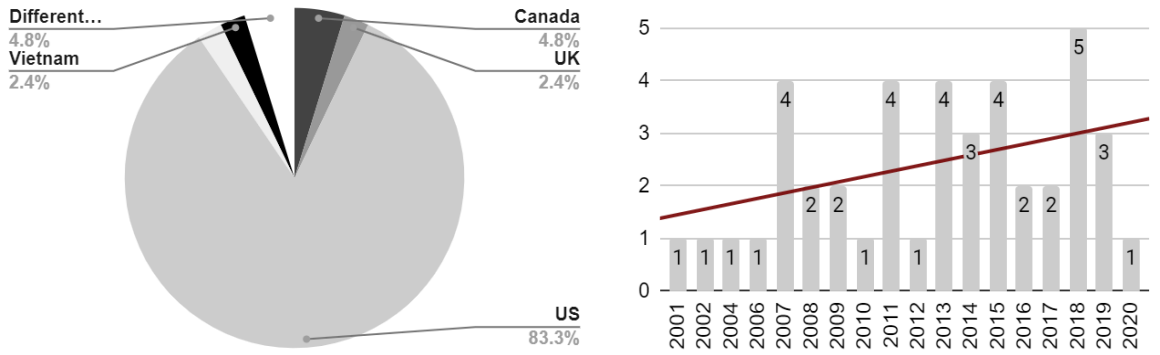
3.3 Findings on the general contexts of the studies

In my literature review, I document the geographical and location of my sample in Figure 2, as well as the distribution of studies per year. Then, I present the distribution of studies per category in Figure 3.

As the geographical location of studies in concern, the absolute majority of studies on M&A and CEO characteristics and incentives have been conducted in America (88.1 percent). Within this absolute majority was investigated in the US (83,3 percent) and 4,8 percent in Canada. In the European group there are only two studies, Chikh and Filbien (2011) conducted their research in France and Coakley and Iliopoulou (2006) in Europe. In Asia, I found only one study by Pham et al. (2015) that investigated the Vietnam market. Two studies were conducted internationally (Chan and Cheung, 2016; Bazel-Shoham et al., 2017) (see Figure 2).

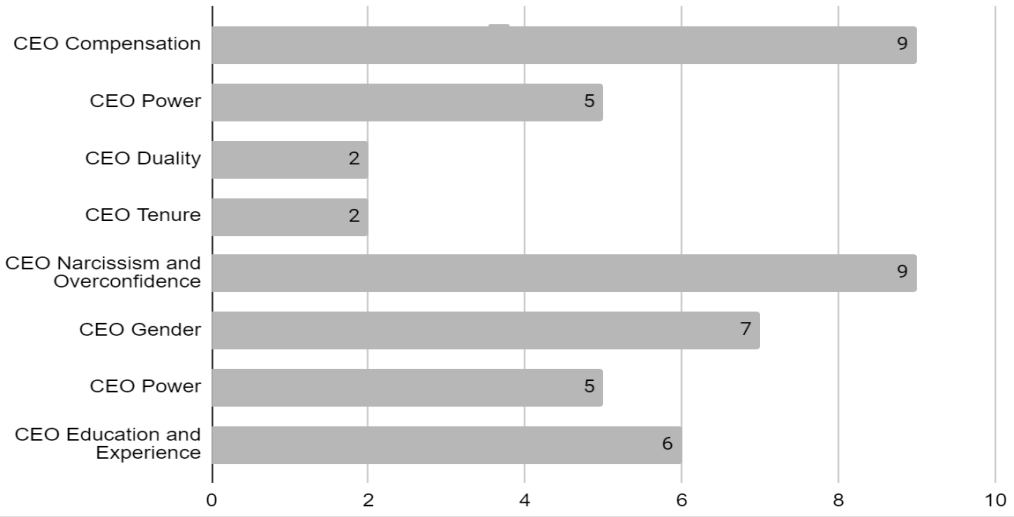
As to the year distribution of studies, the red trendline indicates the equal distribution of the studies over the years and accordingly the ongoing interest in the publication of studies regarding M&A (see Figure 2).

Figure 2: Distribution of studies per country and year.



As to the categories of the studied sample, the majority of the 42 studies investigated the CEO characteristics. In comparison 18 studies concerned CEO incentives, within them mostly focus on CEO compensation. I was surprised about such sample distribution, as I expect that more studies focus on the CEO incentives because I assumed personal benefits are more likely to reflect the CEO's decision rather than their attributes. That being so, I expected a higher number of studies regarding the CEO incentives. In Figure 3 the distribution of studies per category is presented (see Figure 3).

Figure 3: Distribution of studies per category.



3.4 CEO characteristics

3.4.1 CEO compensation

In my literature review, I have distinguished 9 studies that regard the relation between CEO compensation and M&A. Compensation plays an important role as a tool that steers the managers' behavior and is one of the better monitoring systems because it diminishes the agency costs (Sanders, 2001). Only within this proxy, I found that CEO compensation influences M&A and vice versa.

Bodolica and Spraggon (2009) presented how the implementation of special attributes in CEOs' compensation contracts can influence decisions about M&A in Canadian companies. The result showed that the board of directors are more reactive rather than proactive when agency problems occur. When M&A deals are connected with higher control premiums and the company's poor performance, the long-term incentive plan of the CEO can be changed by the board of directors. In this case, they tend to apply the stronger incentive alignment mechanism. In the bank industry after the acquisition announcement, the CEO compensation significantly increases, even if the stock price declines (Bliss & Rosen, 2001). They found also that the form of compensation influences the decision about the merge. Consistent with this result, Yim (2013) and Coakley and Iliopoulou (2006) stated that acquisition is connected with a significant and permanent increase in CEO compensation.

Grinstein and Hribar (2004) confirmed this view and showed that CEOs receive higher bonus compensation, but only when the deals are large and require effort in forming. Acquiring-firm CEOs are rewarded with option grants and new stocks (Harford & Li, 2007). Since it is really common that after merger announcements, the stock prices decline (Bliss & Rosen, 2001; Grinstein & Hribar, 2004), the CEOs with more stock-based compensation are less likely to conduct the acquisition. Comparing CEOs in acquiring companies to CEOs in target firms, Lynch and Perry (2002) concluded that CEOs in acquiring companies get higher salaries, bonuses, stocks, and other long-term incentive compensation and total compensation. The increase in the compensation and bonuses of CEOs comes from the common practice, whereas the acquisition process serves as an opportunity to ask for higher compensation (Yim, 2013).

The type of payment can also highly influence the acquisition decision. Croci and Petmezas (2015) found that risk-averse CEOs with higher risk pay incentives are more willing to undertake the risky investment. The risk-taking payment is positively related to investment in M&A. Banks that implemented higher Pay-for-Performance (PPS) incentives, have a lower amount of value-destroying acquisition undertaken by CEOs, because they prefer value-enhancing M&A (Minnick et al., 2011).

3.4.2 CEO power

The powerful CEOs might influence the decision about strategy, investment in research and development (R&D), as well as M&A (Fralich & Papadopoulos, 2018).

According to Grinstein and Hribar (2004), a larger deal size is associated with higher managerial power. Gong and Guo (2014) found a negative relation between CEOs' power and deals creating larger value. They stated that companies with more powerful CEOs try to avoid destruction and large value creation deals, whereby less powerful CEOs are more likely to form large value creation and destroying deals. Dutta et al. (2011) confirmed that powerful CEOs are not necessarily associated with a value-destroying acquisition.

Gong and Guo (2014) found also that CEOs with more power make fewer deals than companies with less powerful executives. On the other hand, Dutta et al. (2011) stated that powerful CEOs tend to make more acquisitions and complete them, even if the investors do not approve of this decision (Chikh & Filbien, 2011). Within this field, Dutta et al. (2011) found that the reactions about M&A announcements on the market do not relate to CEO power.

Powerful CEOs that conclude the deals can reduce the bid premiums due to their better control, expertise, and network- their experience reduces an information asymmetry (Fralich and Papadopoulos, 2018).

3.4.3 CEO duality

CEO duality occurs when the CEO of the firm also takes the role of chairman in the board of directions. CEO duality can be considered as incentive alignment, however, it is not automatically connected with incentive-based compensation systems (Velte, 2019).

Pham et al. (2015) found that CEO duality has a positive impact on M&A results in the Vietnam market. They showed that firms with CEO duality have significantly larger announcement abnormal returns than the firms that separated the role of CEOs. Opposite to this, Masulis et al. (2007) stated that separation of the position of CEO brings significantly higher abnormal announcement returns when acquisitions occur in more competitive industries.

3.4.4 CEO tenure

The current results in the literature show that long-tenured CEOs contribute to poor business decisions, whereas on the other hand, several studies presented contradictory results (Velte, 2019).

Walters et al. (2007) concluded that long-tenured CEOs destroy shareholder value because they make poorer M&A decisions in contrast to their colleagues. In contradiction, Zhoua et al. (2019) found that long-tenured CEOs contribute to the creation of larger shareholder value in M&A in comparison to short-tenured CEOs. They also stated that long-tenured CEOs are more willing to acquire in the same industry and the domestic market.

Moreover, if a long-tenured CEO makes a better acquisition, then they receive higher after- acquisition compensation (Zhoua et al., 2019).

3.5 CEO characteristics

3.5.1 CEO narcissism and overconfidence

Personal traits of CEOs, like overconfidence and narcissism, get more importance in the empirical literature among recent decades (Habib & Hossain, 2013).

Hwang et al. (2020) found that overconfident CEOs make more value-destroying acquisitions. Gul et al. (2020) added the CSR variable and showed that an overconfident CEO makes the value-destroying acquisition, whereas CSR increases the value of M&A. According to Malmendier and Tate (2008), overconfident CEOs make more unconditional acquisition, that is why they often overpay for target firms and consequently make value-destroying mergers. Liu and Taffler (2009) stated that narcissistic CEOs conclude more low-performing deals and negatively affect the short-term and long-term performance of acquiring companies. Ham et al. (2017) also found that narcissistic CEOs overinvest in R&D and M&A. Chatterjee and Hambrick (2007) found that narcissistic CEOs make acquisitions to gain attention, thus, M&A results in big wins or losses. However, the performance of a company is no better or worse than in companies with non-narcissistic CEOs. That being so, shareholders and the market reacts more negatively after the M&A announcement, when the CEO is more narcissistic (Aktas et al., 2016) or overconfident (Malmendier & Tate, 2008).

Regarding the number of acquisitions, the results in the studies are homogenous. Aktas et al. (2016) found that narcissistic CEOs conduct more M&As and are faster in initiating them, however, the probability of deal completion is lower. Liu and Taffler (2009), Chan and Cheung (2016) and Chatterjee and Hambrick (2007) also stated that high narcissism CEOs make more acquisitions. According to Chatterjee and Hambrick (2007), narcissistic CEOs prefer bigger acquisitions that might lead to fluctuations in the organizations. Consistent with this, Ferris et al. (2013) found that overconfident CEOs acquire more and influence a variety of M&A perspectives. Gul et al. (2020) added CSR engagement into research and stated that it leads to a higher number of M&A. Overconfident CEOs also complete more deals regardless of market circumstances (Hwang & Kim, 2018). On the other hand, Malmendier and Tate, (2008) found that overconfidence is not linked with more acquisition.

3.5.2 CEO gender

Levi et al. (2010) and Huang and Kisgen (2013) found that male CEOs are more likely to make and initiate an acquisition, but also to withdraw from the deal (Levi et al., 2010). Consistent with this result, Levi et al. (2014) and Levi et al. (2011) agreed that female directors are less acquisitive compared to men, but if they make an acquisition, they pay lower bid premiums. Bazel-Shoham et al. (2017) stated that females in the board of directors decline the number of M&A. Moreover, each additional female CEO (Levi et al., 2014), female director in the bidder board (Levi et al., 2011), and a higher proportion in the target and acquiring companies is larger (Levi et al., 2008), the lower is the bid premium. This confirms that women are independent appointees (Levi et al., 2008).

According to Huan and Kisgen (2013), there is a higher probability that male CEOs will make value-destroying acquisitions. The announcement returns from an acquisition conducted by male CEOs are about 2% lower than from deals formed by female CEOs. Female CEOs help by creating shareholder value due to their ability to influence decisions about the acquisition (Levi et al., 2014).

Only one study concerned the post and pre-integration performance. Parola et al. (2015) showed that gender diversity in the management team is crucial and beneficial for pre-integration performance, however, it disturbs post-integration performance.

3.5.3 CEO education and experience

CEO experience, ability, and education are a strategic resource to enhance the company's growth and can have a positive influence on the company's strategy.

CEOs show the home bias when making decisions about investment in M&A. They are more likely to conduct a target acquisition in the city located in a place where CEOs grew up (Jiang et al., 2018). Chung et al. (2018) found that CEOs are more likely to acquire target firms in the place near to their birth town. If an announcement of such a merger occurs, CEOs are more likely to purchase stock- that strengthens the home bias. However, Wang and Yin (2018) stated that CEOs are significantly more willing to conduct an acquisition of companies that headquarters are in cities where they received their bachelor's or master's degree. The prestige education influences permanently the number of acquisitions only immediately after receiving this status (Plaksina et al., 2019).

Custodio and Metzger (2013) found that the CEOs that have experience in the industry, where the acquisition would occur, ensures the larger abnormal announcement return. These CEOs also better negotiate

deals and pay lower premiums for acquisition. The experience of a CEO can also overcome the negative effects of gender diversity in post-integration performance (Parola et al., 2015).

Moreover, Huang et al. (2014) found that firms that have investment bankers on the board are more likely to acquire. Investment bankers' experience ensures higher announcement returns and reduces the cost of the deal because acquirer companies pay lower premiums and advisory fees.

3.5.4 CEO connections

Cai and Sevilir (2012) found, if there is a first-degree connection between CEOs, that is the acquirer and the target company has the same CEO, the higher announcement returns. The returns are also large, when there is a second-degree connection, that is the acquirer CEO and target CEO work on the same independent board. Also, CEOs with better connections in the network are more likely to acquire, however, the acquisitions bring value losses (El-Khatib et al., 2015). Chikh and Filbien (2011) found that CEOs with better connections tend to complete more deals, even by negative market reactions. The celebrity CEOs measured with media attention, carry value to the acquisition, but their decisions depend on their valuation (Fralich & Papadopoulos, 2019). CEOs that receive more awards are associated with lower amounts of M&A (Plaksina et al., 2019).

4 Synthesis

In the continuity of the study and to assess whether CEO characteristics and incentives influence the M&A process, I perform a synthesis of the findings. I structure findings differently to summarize them better and present the interdependencies, that is, how the CEO's characteristics and incentives before the acquisition can influence the performance of the M&A, as well as other aspects after the acquisition and how they interact with each other.

As to the studies that concern CEOs' incentives all of them found that CEO compensation increases after the acquisition (Bliss & Rosen, 2011; Coakley & Iliopoulou, 2006; Yim, 2013). However, the type of remuneration that a CEO receives before the acquisition can influence the acquisition decision. For instance, Bliss and Rosen (2011) found that CEOs with more stock-based compensation are less acquisitive or Lynch and Perry (2002) found that CEOs in acquiring firms receive higher long-term compensation than CEOs in target companies. Thus, executives in target companies would probably avoid acquisition.

Regarding other incentives, that is CEO power, duality, and tenure, most of the studies found that CEOs are more likely to increase the value of acquisition (Dutta et al., 2011; Gong & Guo, 2014; Zhoua et al., 2019), provide higher announcement returns (Masulis et al., 2007; Pham et al., 2015) and decrease the bid premium (Fralich & Papadopoulos, 2018), because they tend to avoid decisions about destructing acquisitions.

That being so, CEO incentives before acquisition influence the after-acquisition executives' incentives, the performance of the deal (value creation), cost of the deal (bid premium), and the shareholders' return. The results of studies on CEO incentives and their impact on the after-acquisition results showed a high level of homogeneity. Contradictory, the studies on CEO characteristics present a high level of heterogeneity.

CEO connections (Cai & Sevilir, 2012; Fralich & Papadopoulos 2019), CEO education and experience (Custodio & Metzger, 2013; Huang et al., 2014; Wang & Yin, 2018), CEO narcissism (Chatterjee and Hambrick, 2007) and CEO gender affects the M&A. Female CEOs are more likely to decrease the cost of deals (bid premium) (Levi et al., 2008; Levi et al., 2011; Levi et al., 2014). Overconfident and narcissistic CEOs decrease the value of acquisition (Ham et al., 2017; Hwang et al., 2020; Malmendier & Tate, 2008). Whereas CEO connections increase the value of acquisition (Fralich & Papadopoulos 2019). On the other hand, also CEO connections destroy the acquisition value (El-Khatib et al., 2015). Consequently, the CEO characteristics can have a bipolar effect.

The literature review has revealed a heavy influence of the CEO by assessing its influence on M&A.

5 Contribution and limitations

In my literature review, I answer the question "*Does CEO characteristics and incentives influence M&A?"*. I review the 42 articles that mostly were published in leading journals in the timeframe of 2001-2020. Firstly, I state the contribution to the research and practical field. Then I discuss the limitations and provide future recommendations.

5.1 Contribution to theory

This paper presents the CEO characteristics and incentives from a narrowed perspective, that is, how these internal aspects and the upper echelon theory that have been integrated with the external aspect influence M&A.
Firstly, I contribute to the current research state by presenting how the CEOs can influence the strategic decision in the company. I show how the literature has evolved since 2001 and provide the main findings. That being so,

scholars might refer to my literature review to cover the research blind points when conducting studies. Moreover, to my best knowledge, it is the first literature review that stresses the relation between CEO characteristics and incentives and M&A. Other reviews analyze the relation between CEO compensation and M&A (DeYoung et al., 2009), M&A process (Caiazza & Volpe, 2015) or the PMI process (Graebner et al., 2017). I provide the main research gaps that might guide future research areas. Especially the link between more variables can be analyzed, because CEOs' characteristics and incentives are linked to each other, and thus, should be seen as the whole. Most of the studies presented them separately and did not show the correlation between variables. For instance, it could be expected that more narcissistic CEOs will try to create more shareholder value during M&A to get desired attention and applause. In addition, narcissistic CEOs are expected to get bigger total compensation (O'Reilly et al., 2014). Thus, analyzing the relation between CEO compensation, CEO narcissism and M&A would be interesting.

5.2 Contribution to practice

As it was shown, CEO characteristics and incentives influence the M&A. That was done by listening and discussing the main findings in the literature. Thus, the practitioners might use this paper to distinguish the most relevant articles to consider different aspects of them to find the desired solution. Moreover, they should keep in mind that the CEOs can highly influence the strategic decisions that might be useful to avoid misunderstandings. Especially by the selection of CEO, the company (within this board of directors and shareholders) could consider the findings of my study, when they want to determine CEOs' effect on the M&A outcome. As personal traits and incentives of CEOs influence M&A, companies need to consider them as an important factor by designing M&A plans. For instance, the company can develop a more effective compensation scheme to enhance better M&A performance and obtain the desired M&A result. Also, many possibilities to improve M&A activity were found and emphasized.

5.3 Limitations

This literature review is subject to several limitations. Firstly, the studies are based on my subjective perspective, since the chosen articles are subject to my perceptions and interpretations. Consequently, some important CEO characteristics and incentives could be omitted. For instance, some keywords that could have been used or studies that were automatically excluded from my review. However, they could be included in the future research agenda. Moreover, the selection and scanning process are subject to some limitations, biases, and subjectivity, because it could not be controlled by an independent person or double-checked by another author. Another limitation of this review is a focus on high-quality academic journals. By that, some books and conference papers could have been omitted. Also, to better explain the introduced problem the other research framework might have been proposed.

5.4 Future research

Several opportunities for future research arise from this literature review. Firstly, future research might encourage more cross-country studies. Especially focus on non-US sample, that is the European Union, Asia, or South Africa. It might be interesting to see if the country-specific characteristics might influence M&A. Secondly, future studies might concern the impact of the whole board of directors or CFO on the M&A processes. It could be also interesting to observe, the interdependence between the board of directors, CEO, and M&A. Moreover, as Hiller and Hambrick (2005) argued that CEOs are "not only sure of the wisdom of their decisions per se but also sure of their abilities to successfully implement their decisions", thus it might be interesting to analyze how CEOs implement their decisions about M&A based on their characteristics. Lastly, I encourage researchers to examine interplays among the CEO characteristics and incentives i.e., the interaction between CEO narcissism/overconfidence and M&A, and compensation as a moderator variable.

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Appendix

Author **Year of Publication**	**State** **Sample** **Year**	**Independent variable**	**Dependent variable**	**Results**
Coakley and Iliopoulou, 2006	UK 971 1998-2002	Acquisition (dummy)	CEO Compensation	(+) bonuses and salary
Lynch and Perry, 2002	US 321 1994-1996	Total Assets, Market-to-Book ROA (acquirer vs target)	Compensation from Salary, Bonuses, Stock Options	(+) total compensation (bonuses, salaries, stocks and other LT incentives) in acquire companies than in target companies
Minnick, Unal and Yang, 2011	US 159 1991-2005	CAR	Pay-for-Performance	(+) CAR in bank industry
Bliss and Rosen, 2001	US 32 banks 298 bank-years	Acquisition (dummy)	New Compensation Cash Compensation	(+) CEO compensation
Grinstein and Hribar 2004	US 327 1993-1999	Deal Size (dollar value)	CEO Bonus CEO Power	(+) bonus compensation when the deal is larger (+) CEO power the more likely to enter larger deals
Harford and Li, 2007	US, 1508, 1993-2000	Acquisition (dummy)	CEO's Total Pay	Acquire CEOs receive grants of options and restricted stock
Croci and Petmezas, 2015	US 1997-2011	Vega (risk-taking incentive from stock option grants)	Deal Values of Acquisitions	Risk-averse CEOs with risk-taking pay make risky M&A
Yim, 2013	US, S&P 1500 1992-1007	Age Acquisition activity	Change in Total Compensation	(+) CEO compensation after the acquisition (+) acquisition, when younger male CEO
Bodolica and Spraggon, 2009	Canada 80 1995-2001	Control Premium	Long-term Incentive Plans Adoption of Compensation Protection Devices	(+) incentive alignment by risky deals
Chikh and Filbien, 2011	France 200 2000-2005	CEO power	Probability of Completing an Acquisition (ACQ- dummy)	(+) completing the deal by powerful CEOs

Author Year of Publication	State Sample Year	Independent variable	Dependent variable	Results
Chan and Cheung, 2016	Different countries 496 1990-2012	Extraversion	Intensity of M&A activities	(+) deal intensity
Chatterjee and Hambrick 2007	US 111 1992–2004	CEO Narcissism	Number of Acquisition Size of Acquisition	(+) number and size of the acquisition
Gul et al., 2020	US 16,635 1996-2015	CEO Overconfidence CSR	Number of Acquisition	(+) number of acquisition by high CSR engagement
Ham et al., 2017	US 741 1992–2015	CEO Narcissism	M&A Expenditure	(+) expenditure on M&A (overinvestment)
Hwang, Kim and Tayeon 2020	US, 13754 1996-2014	Deal Completion	CEO Overconfidence (dummy)	(+) number of deal completion
Malmendier and Tate, 2008	US 394 1980-1994	CEO Overconfidence	Intra-industry Bids Diversifying Merger Bids	(+) unconditional acquisition (+) overpaying in M&A
Levi et al., 2008	US 400 1997-2006	CEO Gender	CAR Bid Premium	(+) CAR (-) bid premium
Levi et al., 2010	US 357 1997-2007	CEO Gender CEO Age	Bid Premium Bid Initiation Withdrawal	(+) acquisition, initiation of and withdrawal from acquisition by male CEO
Levi et al., 2011	US 19619 1997-2009	CEO Gender	Number of Bids	(-) acquisition bid premium and number of bids by women CEO
Huang and Kisgen, 2013	US 1750/ 116 1993-2005	CEO Gender	Acquisition	(-) acquisition by female CEO (-) announcement returns by male CEO

Author **Year of Publication**	**State** **Sample** **Year**	**Independent variable**	**Dependent variable**	**Results**
Levi et al., 2014	US 458 1997-2009	CEO Gender	Number of Bids Bid Premium	(-) acquisition and bid premium by female CEO
Parola et al., 2015	US 310 2004-2009	CEO Gender	CSR	Diversity among boards is beneficial for pre-integration performance, but harmful for post-integration
Bazel-Shoham et al., 2017	Different Countries 4795 1998-2014	CEO Gender	Cross-Border M&A	(-) number of cross border M&A by female CEO
Cai and Sevilir, 2012	US 1664 1996-2008	CEO Connections	ACAR	(+) announcement return
El-Khatib et al., 2015	US 464 2000-2009	CEO Power	Merge Completion	(+) M&A deals initiated (+) value losses
Fralich and Papadopoulos, 2019	US 242 2005-2010	CEO Celebrity	Acquisition Premium	(+) value of the acquisition and lower premium
Plaksina et al., 2019	US 660 1992-2012	Social Status	Investment in M&A	(-) M&A activity
Wang and Yin, 2018	US 3574 2000-2015	Education State	M&A attempts	(+) acquisition in education state
Jiang et al., 2018	US 2291/4269 1992-2014	CEO Home State	Acquisition Activity	(+) acquisition in home cities

Huang et al., 2014	US 41393 1998-2008	Bank Director %	CAR	(+) of acquisition, announcement returns (-) bid premiums
Chung et al., 2018	US 15526 1990-2014	CEO Home State	Acquisition Activity	(+) acquisition in home cities
Custodio and Metzger, 2013	US 2500 1990-2008	Experience in Target Industry	Deal Completion	(+) announcement returns and better negotiate (-) lower premium