

# Diversifying or Focused Acquisition? The Influence of CEOs Temporal Focus on Corporate Acquisition Target Choice and the Moderating Role of Corporate Governance

Nuru M. Ahmed & Jianfeng Wu

## Abstract:

Why an acquiring firm chooses a target over others is a question yet not investigated well. Using a multi-dimensional temporal focus framework and upper echelon theory, we proposed that a firm's choice for diversifying or focused acquisition is predicted by the CEO's temporal focus. Furthermore, this link is contingent on corporate governance (compensation). The result from the analysis of 302 M&A deals from semiconductor and pharmaceutical industries revealed that CEOs with high future/present focus are more likely to make a diversifying acquisition than focus acquisition, while present-focused CEOs are more likely to make a focused acquisition over diversifying takeover. With a high stock option, future-focused CEOs will be more eager to make diversifying acquisitions, while past-focused CEOs' likelihood of making a focused acquisition is reduced. Also, with high stock ownership, the interest of future and present-focused CEOs for diversifying takeover will reduce, while CEOs with high past focus will more tend to make a focused acquisition.



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## 1. Introduction

Corporate Acquisition is one of the extensively used and the fastest firm growth strategies (Moatti & Dussauge, 2015; Renneboog & Vansteenkiste, 2019). As of 2018, the worldwide corporate acquisition volume reached \$4.1trillion (JPMorgan, 2019). It enables firms to obtain resources and capabilities that could not be obtained otherwise (Haleblian, et al., 2009). It has been an important area of research in management and strategy. However, most researches focused to see the performance effects of acquisition (e.g. Bae, et al., 2013; Chang & Tsai, 2013; Fang, et al., 2015; Moatti & Dussauge, 2015; Zaheer, et al., 2010), the success of M&A events (see, Rennebooga & Vansteenkisteb, 2019), and drivers of corporate merger and acquisition (e.g. Haleblian, et al., 2009). In a corporate acquisition, why one firm is chosen as an acquisition target over the other is not studied well (Yu, et al., 2016).

Acquisition target selection decision has an impact on the odds of the acquisition's success and the firm's post-acquisition performance (Fray et al., 1984; Yu et al., 2016). According to Deloitte (2019), a professional service network that provides audit, tax, consulting, enterprise risk analysis, and financial advisory service, the most important factors which affect the overall acquisition outcome of a firm are related to target selection. Acquiring firms may select a target firm from their industry or some other industries outside of their own (Daher & Ismail, 2018; Fang et al., 2015). These acquisition types are referred to as focused and diversifying acquisition respectively (Daher & Ismail, 2018; Singh & Montgomery, 1987). Each type of acquisition involves a different level of opportunities and risks for the acquiring firm. For instance, a focused acquisition allows one to achieve economies of scale and strengthen or protect the base business by acquiring another firm in the same industry (Fang et al., 2015; Fray et al., 1984). As both firms are from the same industry, in this kind of acquisition, the information asymmetry and post-merger integration problems are less. However, it deters the long-term development opportunity of the firm and limits the future scope of the firm into the pre-existed operation domain (Fang et al., 2015). By contrast, choosing a target firm from distance industries helps the firm to get entry into new markets or businesses, spread its unsystematic risk, achieve economies of scope, and provide more opportunity for long-term development (Daher & Ismail, 2018; Fang et al., 2015; Fray et al., 1984). Though, it invites a lot of uncertainties, because of industry-level differences (Daher & Ismail, 2018; Fang et al., 2015). Thus far, the drivers of making either focused or diversifying acquisitions have been getting a little attention (Yu et al., 2016).

This study aims to contribute to the area of target selection in a corporate acquisition by exploring the role of CEOs' unobservable characteristics on strategic decisions. Specifically, the study uses the emerging concept of temporal focus and answer the call for more temporal researches in M&A setup by Shi et al. (2012). Adopting Shipp et al. (2009) conceptualization of temporal focus, this study defines CEOs' temporal focus as the extent to which CEOs normally allocate their attention to perceptions of the past, present, and future. It does not consider time as an opposite end of a continuum (i.e. past and future), rather it acknowledges the three distinct time dimensions (i.e. past, present, and future). These time perception of CEOs' can affect their risk perception (Shipp et al., 2009; Zimbardo & Boyd, 1999). In turn, the strategic decision and outcome of the firm will be influenced (e.g., Nadkarni and Chen, 2014; Shi et al., 2012; Yadav et al., 2007). Time is an important concept in strategic management (D'aveni, et al., 2010). Consideration of temporal perspectives can help to clarify the complex nature of corporate acquisition (Shi et al., 2012). A handful of literature studied M&A from different temporal perspectives, like acquisition speed (Meglio et al., 2017), rhythm (Shi and Prescott, 2012), pacing

style (Fuad and Gaur, 2019), and polychronicity (Shi and Prescott, 2012). However, the impact of temporal focus is not a well-studied subject in the M&A setup (Shi et al., 2012).

Even though acquisition target selection is an important factor that affects the success of an acquisition and the firms' post-acquisition performance (Deloitte, 2019), the subject is not stated well (Yu et al., 2016) and how the cognitive bias (temporal focus) of a CEO affect the firms M&A activity in general and target firm selection, in particular, is untouched yet (Shi, et al., 2012). Hence, In this regard, using upper echelon theory this study fills in the gap by linking individual-level CEOs' temporal focus and the firms' target selection decision viz. a choice for focused or diversifying acquisition. Specifically, the study addressed the following two questions: (1) how CEOs' temporal focus affects the choice for focused or diversifying acquisition? And (2) how this association is contingent on CEOs' compensation. Thus, the study of 302 acquisition deals from Pharmaceutical and Semiconductor industries reviled as both the future and present focuses of CEOs' positively associated with the likelihood of diversifying acquisition, while the past focus is positively associated with the odds of focused acquisition. The types of compensation as stock option and stock ownership moderate these associations differently. Doing so, made us contribute to the existing literature in three ways. First, by explicitly positioning the three temporal focus dimensions, the study uncovers the effect of CEOs' cognitive bias on the firms' choice for focused or diversifying acquisition. Second, for temporal literature, the study showed as the impact of temporal focus on individual and group behaviors (Shipp et al., 2009) is extended to M&As decisions. Finally, for Upper Echelon (UE) theory, it signposts as individual CEO level cognitive base and value has an impact on firms strategic outcome, and it is better to directly measure the cognitive bias, instead of using their observable characteristics as a proxy. Besides, it shows the importance of considering corporate governance issues in UE.

## **2. Literature review**

### **2.1. Target choice in a corporate acquisition**

A corporate acquisition is the fastest and widely employed firm growth strategy (Renneboog & Vansteenkiste, 2019), which allows them to penetrate new markets, expand their geographic and product scope, acquire new resources and capabilities, and bring synergy (Anand & Khanna, 2000; Fang et al., 2015; Rennebooga & Vansteenkisteb, 2019; Yadav et al., 2007). However, most acquisitions end up with failure because of their complexity (Chang & Tsai, 2013; Moatti & Dussauge, 2015; Zaheer et al., 2010). Its complexity can pose challenges for even the most skilled and experienced acquirers (Renneboog & Vansteenkiste, 2019). Acquisition target selection is one of the most important decisions which determine the fates of acquisition decisions. Which often causes market failure and post-acquisition integration problems (Chang and Tsai, 2013; Deloitte, 2019; Moatti and Dussauge, 2015; Renneboog and Vansteenkiste, 2019; Zaheer et al., 2010). In the pre-acquisition phase of corporate acquisition, CEOs need to select a target that enables them to attend their intended strategic benefit (Fray et al., 1984). Acquirers may face two types of risks with their target selection; the ex-ante market failure caused by information asymmetry and ex-post organization failure because of not able to effectively integrate the target firm (Zaheer et al., 2010). In the ex-ante, information asymmetry deters the M&A practice of a firm and limits the breadth of the acquiring firm search. It creates uncertainty about the quality and the value of the target firm's asset. Intern, it leads to an adverse selection problem (Anand & Khanna, 2000; Chang & Tsai, 2013; Kumar & Nathwani, 2012; Porrini, 2004; Zaheer et al., 2010). In the ex-post, firms may fail to effectively integrate the acquired firm (Chang & Tsai, 2013; Kumar & Nathwani, 2012; Porrini, 2004; Zaheer et al., 2010). In M&A, CEOs of an acquiring firm

have the option to make a focused acquisition by taking over a target from its industry or diversifying acquisition by taking over a target from distant industries (Daher & Ismail, 2018; Fang et al., 2015; Galavotti et al., 2017). An acquisition is labeled as a focused or diversifying acquisition, based on the similarity of the production technology, human capital overlap, the product market similarity, and the supply chain complementarity of the two firms (Singh & Montgomery, 1987). The acquisition is termed as focused or related acquisition when the two firms in the acquisition practice have similarities in either or a different combination of these dimensions. If no similarity exists, the takeover is called a diversifying or unrelated acquisition (Rennebooga & Vansteenkiste, 2019; Singh & Montgomery, 1987). These target selection decisions are not random. However, CEOs consider different factors to make their final choice (Capron & Shen, 2007; Yu et al., 2016). Each option invites a different level of ex-ante and ex-post risk and opportunity for the acquiring firm (Galavotti et al., 2017). In the ex-ante of focused acquisition, acquiring firms have more information about the operations of the target firm as they both are working in the same industry (Aintablian et al., 2017; Capron & Shen, 2007; Oak & Dalbor, 2015). It helps the acquiring firm to minimize the rate of market failure that could be due because of information asymmetry. Furthermore, it will speed up the acquisition process (Capron & Shen, 2007; Oak & Dalbor, 2015). Likewise, in the ex-post, the complementarity of the asset in the two firms can facilitate the post-acquisition integration process and leveraging the acquirer's pre-existing resources and capabilities in new markets (Rennebooga & Vansteenkiste, 2019). It also leads the acquiring firm to economies of scale, average costs reduction, and operational efficiency (Galavotti et al., 2017; Oak & Dalbor, 2015; Zaheer et al., 2013). It is the main driver for the success of an acquisition deal and laid down a good ground for the long-run performance of the acquiring firm (Rennebooga & Vansteenkiste, 2019; Lee et al., 2018). However, this acquisition strategy limits the firms' search for growth opportunities within an existed industry domain (Galavotti et al., 2017). Moreover, it leaves the acquiring firm to a higher degree of unsystematic risk (Daher & Ismail, 2018; Vasilescu & Millo, 2016). On the other hand, diversifying acquisitions have traditionally been considered as expressions of explorative behavior (Lavie et al., 2010). It provides more opportunities for long-term development and creates exposure to diverse learning opportunities (Galavotti et al., 2017; Vasilescu & Millo, 2016). It results in new markets with new opportunities and enables the firm to attain economies of scope (Alessandri et al., 2014). Such type of acquisitions enables the exploitation of scope economies in both tangible and intangible resources (Teece, 1982). A diversifying acquisition may result in gains from reduced financing costs (due to lowered bankruptcy risk), administrative efficiencies, increases in the absolute size and breadth of the acquirer (Singh & Montgomery, 1987). Furthermore, it helps the acquiring company to diversify the unsystematic risk (Daher & Ismail, 2018; Vasilescu & Millo, 2016).

As compared with its counterpart, a diversifying takeover is risky. The risks come either from the acquisition process itself or the expansion of the acquirers outside of its industry (Alessandri et al., 2014). In the ex-ante, because of information asymmetry, the acquirer may not be able to measure the value of the target firm correctly and would pay higher takeover premiums (Mateev & Andonov, 2018). In the ex-post, the integration of new resources poses challenges (Galavotti et al., 2017). Firms that function in many industries tend to have a more complex organizational structure and results in operational inefficiency (Vasilescu & Millo, 2016; Oak & Dalbor, 2015). Also, it may cause no synergistic gains and significant barriers of entry (Oak & Dalbor, 2015). The targets' contribution to the performance of the base company might be insignificant, even to the extent it may destroy the shareholders' value (Daher & Ismail, 2018).

## **2.2. Temporal focus in management decision**

Time infuses and defines human existence so much so that it can be related to many different psychological constructs (Zimbardo & Boyd, 1999). Temporal focus is a cognitive construct, defined as the extent to which CEOs normally allocate their attention to perceptions of the past, present, and future (Shipp et al., 2009). Shipp et al. (2009), corrected the ill conceptualization of temporal focus and differentiate it from related but not similar temporal perspective concepts like temporal-attitude, temporal orientation, polychronicity, rhythm, and temporal depth. They defined it as the intention an individual allocates thinking about the past, present, and future. This conceptualization of temporal focus is content-neutral and it does not include the emotion about these time dimensions. Simply it addresses the temporal discretion exercised by a person (Shipp et al., 2009; Yadav et al., 2007). People have a high degree of control over the allocation of their attention and can freely shift their attention among future, present, and past periods. If an individual is thinking equally about the past, present, and future, then he/she is said to have a balanced temporal focus and hyper-temporal. On the other hand, when individuals emphasize more in either of the three frames, a cognitive temporal bias would appear (Taber, 2013; Shipp et al., 2009). People with these different time focus have different understanding and perceptions of time in life (Shipp, et al., 2009; Zimbardo & Boyd, 1999). A habitually prompted temporal focus will become a dispositional style or a cause for individual differences. It predicts individuals' specific responses across situations and would appear to influence their decision-making (Muro et al., 2015; Zimbardo & Boyd, 1999). It is used in encoding, storing, and recalling experienced events, as well as informing expectations, goals, contingencies, and imaginative scenarios (Zimbardo & Boyd, 1999). The subject of temporal-perspectives has gained increasing popularity in management and strategy literature (Klassen & Hajmohammad, 2017). However, a handful of studies have explored how the temporal focus affects their firm strategic decisions (Lin et al., 2018). Top managers base their decision-making processes on their preferred value system (Carpenter et al., 2004), in particular, their preferred temporal value system. Therefore, temporal focus provides a dominant logic for the decisions of top-level managers (Lin et al., 2018). Kaynak et al. (2013) clearly describe the influence of temporal focus on the managerial decision by affirming that individuals oriented in the past make their decision by relying on their previous experiences, while those concerned with the future tend to plan for future needs. Nadkarni & Chen, (2014), Indicated as present and future-focused CEOs' are positively related to the firms' rate of new product introduction, while past-focused CEOs' are associated negatively. Yadav et al. (2007), found out that future-focused CEOs are innovative. Though there are temptations to use temporal focus as a lance to study concepts in strategic management, it is not yet explicitly and utterly studied in strategic management, specifically, in the area of corporate mergers and acquisitions (Shi et al., 2012). However, some studies consider temporal focus using a proxy variable like experience and learning. Their view of time does not take all temporal focus dimensions into account. It inclines to either of the categories of temporal focus dimensions. It is why Shi et al. (2012) call for more temporal research in corporate acquisition setups considering fine-graded classifications of temporal focus as past, present, and future.

## **3. Hypothesis development**

### **3.1.1. Temporal focus and choice of diversifying acquisition**

In a diversifying acquisition, the acquiring firm face a risk from the acquisition process and the expansion outside of its current operations. However, in a focused takeover, the acquirer faces a risk only from the acquisition process (Alessandri et al., 2014). In comparison, diversifying takeovers are exposed to a high rate of market failure in the ex-ante as a result of a high level of

information asymmetry. It limits the breadth of the search of the acquirer and will make the target evaluation process very difficult. In the ex-post, it is tough to integrate the target firm. The acquirer also faces significant entry barriers from the incumbent firms in the target's industry (Aintablian et al., 2017; Galavotti et al., 2017; Renneboog & Vansteenkiste, 2019; Zaheer et al., 2010). At its operation stage in the post-acquisition period, it will result in a complex organizational structure. Therefore, the researchers argue that diversifying acquisition is riskier than a focused acquisition. However, it has traditionally been considering as expressions of explorative behavior (Lavie et al., 2010). As a result, the acquirer will be exposed to diverse learning opportunities from firms in different industries and promote change and development in the firm (Galavotti et al., 2017; Vasilescu & Millo, 2016). Therefore, using UE theory, the researchers made the following hypothesis on the link between CEOs' cognitive bias (temporal focus) and their choice for focused vs. diversifying acquisition.

The temporal focus of CEOs has connections to their personality and behavior. For instance, CEOs with high future focus are characterized by an internal locus of control, optimism, ambition, and risk-taking (Shipp et al., 2009). They believe that they make their destiny, not powerful others. Grounding on future information, they develop awareness and expectation of future events and opportunities (Shipp et al., 2009; Yadav et al., 2007). Likewise, they set their goal motivated by their ideal-self. As a result, they would be more optimistic about their future and develop more ambition to achieve their goal. This situation motivates them to take the risk of achieving their goal (Higgins, 1998; Kumar & Nathwani, 2012; Yadav et al., 2007). Change is an opportunity, not a potential threat for them. They will do all they can to harness the positive result of the change (Kumar & Nathwani, 2012; Shipp et al., 2009). It makes future-focused CEOs curious to exploit any opportunity and find "hits" (Crowe & Higgins, 1997). Therefore, as CEOs with high future focus are optimists, eager for advancement, accomplishments, and aspires to explore opportunities, they take risks. In a situation to choose a target for an acquisition, they will go for diversifying acquisition over the focused takeovers.

***Hypothesis1 (H1): an acquiring firm CEO with a high future temporal focus tends to choose a diversifying acquisition over a focused acquisition.***

CEOs' present focus is positively related to an internal locus of control and risk-taking behavior (Shipp et al., 2009). Present focused CEOs believes that their life events are the result of their action so that their goal is motivated by their ideal-self (Higgins, 1998; Crowe & Higgins, 1997). Besides, a present focus involves engaging in an impulsive activity. Thus, present-focused CEOs are aggressive to try and explore new things (Shipp et al., 2009). Alike future-focused CEOs, the goal of present-focused CEOs is motivated by ideal-self, they have the interest to see something new, and they are not afraid of the negative consequences of their decision. Therefore;

***Hypothesis2 (H2): an acquiring firm CEO with a high present temporal focus tends to choose a diversifying acquisition than a focused acquisition.***

Past focus is linked to neuroticism, which is being depressed, angry, anxious, worried, and insecure. It has a direct connection with an external locus of control and a negative association with optimism (Shipp et al., 2009). As a result, past focused CEOs attribute the result from their decision to fate or influential others. They set goals, motivated by their ought-self. So that, they develop a negative feeling and doubt about the outcome of their decisions. Thus, their strategic preference is to be prudent and precautionary to avoid mismatches to their goal (Crowe & Higgins, 1997; Scheier et al., 1994). By any means, they will averse to risks, so that in M&As, they

look to an option that helps them to minimize their risk. They are intolerant of failure (Crowe & Higgins, 1997). To reduce both ex-ante and ex-post risks (Zaheer et al., 2010), past-focused CEOs prefer to select a target they know more about (Galavotti et al., 2017; Renneboog & Vansteenkiste, 2019). By doing so, past-focused CEOs can minimize pitfalls and mistakes in their strategic moves (Lieberman et al., 2001). They feel more contented when they act within the boundaries of what they already know (Galavotti et al., 2017). Following this line of argument, the researchers theorize as follows;

**Hypothesis3 (H3):** *an acquiring firm CEO with high past temporal focus tends to choose focused acquisition than diversifying acquisition.*

### 3.1.2. The moderating role of CEO compensation

Traditionally it has been assumed that CEOs are risk-averse, while shareholders incline to be risk-neutral. This risk perception difference causes agency problems (Jensen & Meckling, 1976). Existent literature in agency theory suggests stock option and stock ownership to mitigate the agency problem (e.g., Mazur & Salganik-Shoshan, 2019; Olson et al., 2018; Sanders, 2001; Sanders & Hambrick, 2007). However, they have a different impact on the CEOs' risk perception (Sanders, 2001). Stock option pay has been considered since long before as a mechanism to align the interests of agents and shareholders (Sanders, 2001). It makes CEOs emphasize the upside potential of engaging in any strategic activity. CEOs will benefit when the stock price of the firm improved, while they lose nothing if the reverse happens. It makes CEOs to be more risk-taker (Olson et al., 2018; Sanders, 2001; Sanders & Hambrick, 2007; Wu & Tu, 2007). As explained above future and present-focused CEOs are risk-takers (Higgins, 1998; Shipp et al., 2009; Zimbardo & Boyd, 1999), on top of that, if the Board of Directors (BOD) of the firm decides to use stock option pay, it will aggravate the risk-taking behavior of the CEOs. On the other hand, Past focused CEOs are vigilant to engage in a risky activity (Higgins, 1998; Shipp et al., 2009; Zimbardo & Boyd, 1999). When stock option pay is used to align their interest with that of shareholders, their concern for being risk-averse will be compromised. So, they will try to consider risky strategic actions.

**Hypothesis 4a. (H4a):** *CEOs' future temporal focus will be more positively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock option pay than low stock option pay.*

**Hypothesis 4b. (H4b):** *CEOs' present temporal focus will be more positively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock option pay than low stock options pay.*

**Hypothesis 4c. (H4c):** *CEOs' past temporal focus will be less negatively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock option pay than low stock option pay.*

Like stock option pay, stock ownership also encourages decisions that can increase shareholder wealth. But their effect is different. Agency theory has been criticized for giving little consideration to the downside risk (Sanders, 2001). Unlike the traditional agency theory, behavioral decision theory suggests that consideration of downside risk is vital for decision-makers. The different CEOs' risk perception due to stock options pay and stock ownership leads to very different outcomes regarding risky decisions (Olson et al., 2018; Sanders, 2001; Wu & Tu, 2007). For CEOs who own shares, their wealth changes in direct proportion to shareholder returns. Besides, at any given point in time, their stock portfolio has currency. Therefore, in their strategic decision, they consider more the downside risk than the upside potential because the

CEOs may lose the value of their stock (Sanders, 2001). Either because shareholding CEOs avoid risky activity that does not increase the wealth of the shareholders or they have something to lose, shareholding CEOs will become more conservative and more risk-averse than non-shareholding CEOs (Olson et al., 2018; Sanders, 2001; Wu & Tu, 2007). As per the argument above, both future and present-focused CEOs are risk-takers. Their strategic inclination is to make progress by approaching matches the desired end state (Higgins, 1998; Shipp et al., 2009; Zimbardo & Boyd, 1999). If their firm BOD uses more stock ownership, the risk-taking level of the CEO will decrease, and they tend to choose more focused acquisition than diversifying acquisitions. However, past focused CEOs are risk-averse. Their strategic preference is to be prudent and precautionary and avoid mismatches to the desired end state (Higgins, 1998; Shipp et al., 2009; Zimbardo & Boyd, 1999). Because stock ownership makes them feel more about the downside risk of their actions, they will become more conservative and risk-averse than before.

**Hypothesis 5a. (H5a):** *CEOs' future temporal focus will be less positively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock ownership than low stock ownership*

**Hypothesis 5b. (H5b):** *CEOs' present temporal focus will be less positively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock ownership than low stock ownership.*

**Hypothesis 5c. (H5c):** *CEOs' past temporal focus will be more negatively associated with the choice of diversifying acquisition than focused acquisition when the firm uses more stock ownership than low stock ownership.*

## 4. Methods

### 4.1.1. Time frame and Sample

The sample of the study is drawn from the SDC Platinum M&A database, using a purposive sampling technique. M&A deals that satisfy the following list of criteria are included in the study sample. First, the deal needs to be announced in the year 2014 to 2018 and completed. In this study context, the announcement date is important as the M&A decisions are made when the deal is announced, not completed (Bae, et al., 2013). Regardless of the time, the deal must be completed as we need to know the deal values as an additional criterion. Second, to tackle the confounding effect of deal size on the CEOs' acquisition decisions, we have considered M&A deals with large sizes (i.e. greater than or equal to \$50 million). As smaller deal size invites less uncertainty it affects the CEOs' decision making (Bae, et al., 2013). Third, to single out the confounding effect of industry differences acquisition deals only from pharmaceutical and semiconductor industries are considered. These industries have considered for the reason that they are often studied in the strategy literature (Lin, et al., 2018), M&A in these industries are high and contributed the largest amount from the total \$4.1trillion deal announced in 2018 (J.P.Morgan, 2019), and it involves a high level of uncertainty as they are knowledge-intensive industries (Zaheer, et al., 2010). Forth, acquiring firms need to be public listed firms. Public listed firms provide information regularly for the general public (Bae, et al., 2013). It helped us to control the confounding effect of firms' ownership differences and uphold the appropriate amount of sample size. Finally, to avoid the mix-up of CEOs' temporal focus, the acquiring firms' CEO should be the same within the five fiscal years that immediately precede the deal announcement year (Nadkarni & Chen, 2014; Yadav, et al., 2007). These sets of criteria result in an initial sample of 390 M&A deals. Because of some missing values, 88 observations were dropped. It leaves 302 acquisitions completed by 169 acquirers located in 24 different countries for analysis.



#### 4.1.2. Variables description and measures

**Dependent variable;** the dependent variable is the acquirers' choice for diversifying vs. focused acquisition. In the initial phase of an acquisition process, the CEOs of acquiring firms have to choose from focused and diversifying acquisitions (Rennebooga & Vansteenkiste, 2019; Singh & Montgomery, 1987). Following Bea et al. (2013), the researchers measured it with dummy values by considering the four-digit Standard Industry Classification (SIC) code. The variable assumes a dummy value of 1 if the acquisition deal is a diversifying acquisition and 0 otherwise. An acquisition deal was considered as a focused acquisition if at least the first three digits of the SIC code from the target and the acquiring firm are the same, or else it has regarded as diversifying acquisition (Bea et al., 2013).

**Independent variables.** As the study is intended to evaluate the causal relationship between variables, following recent literature, all the main independent variables and the non-deal specific explanatory variables were lagged by a year from the year of the focal acquisition announcement. *CEO temporal focuses (future, present, and past temporal focus)* are the main independent variables of the study. Archival sources, specifically the Letters to Shareholders (LTS) of the firms have considered to measure it (Nadkarni & Chen, 2014; Yadav et al., 2007). Therefore, Following Nadkarni and Chen (2014) and Yadav et al. (2007), the researchers have applied a text analysis software called Linguistic Inquiry and Word Counting (LIWC) software to analyze the letters to shareholders (LTS) of the acquiring firms. The five consecutive years of LTS before the announcement of the acquisition deal were compiled and analyzed by the LIWC software to determine the values of the CEO's past, present, and future temporal focus (e.g., Nadkarni and Chen 2014; Yadav et al. 2007). As the LIWC software has progressed since its inception in 2001, the researchers have employed the recent available version i.e., LIWC15. The required LTS of the firms was collected from their annual reports through their websites.

*CEO compensation:* taken as a moderating variable on the association between CEOs' temporal focus and their choice for focused vs. diversifying acquisition. Since, stock option and stock ownership have a different effect on CEOs' risk-taking behavior (e.g., Agha, 2016; Mazur & Salganik-Shoshan, 2019; Olson et al., 2018; Sanders, 2001; Wu & Tu, 2007), both variables are considered independently. The *Stock ownership of CEOs* was measured as the total stock value held by the CEO at the end of a fiscal year right before the focal acquisition announcement year. It was calculated by multiplying the number of stock shares that a CEO holds by the respective financial year closing price (Wright et al., 2007; Wu & Tu, 2007). *CEOs' stock option* has computed as the average value of the stock option over the preceding three years of a focal acquisition announcement year (Sanders, 2001; Wu & Tu, 2007). The data regarding the stock option and stock ownership pay of CEOs were gathered from the Execucomp database. The missing values were filled from the corresponding year proxy statement of the firms considering appropriate exchange rates from the World Bank.

**Control Variables:** To improve the reliability of the model, the researchers identified and controlled the following variables. As far as the data source is concerned, M&A related information was collected from the SDC platinum database, while financial information was gathered from the Compustat database and firms' annual report considering the corresponding exchange rate from the World Bank.

*Slack resource and firm size*; Large firms with excess resources often diversify in an attempt to use up their abundant resources and capacity (Finkelstein, 1992). Absorbed, unabsorbed, and potential slack resources at a year before the focal acquisition announcement were considered (Bromiley, 1991; Greve, 2003a; Marlin & Geiger, 2015). *Absorbed slack* was calculated as the ratio of selling, general, and administrative expenses to sales in a given year. *Unabsorbed slack* was measured as a ratio of firms' current assets to their current liabilities (Bromiley, 1991; Greve, 2003a). *Potential slack*, however, was computed as a ratio of equity to debt so that the results are easy and straightforward to interpret (Kuusela et al., 2017). Then, a single composite measure of slack was formed as the unweighted sum of the standard values of absorbed, unabsorbed, and potential slacks (Luo et al., 2016; Miller & Leiblein, 1996). *The size of the acquiring firm* has directly related to the availability of resources and leverages the firm risky strategic decision (Moatti & Dussauge, 2015). It is measured by the natural logarithm of the number of employees of a firm (Adomako, 2017; Lin et al., 2018; Yadav et al., 2007).

The cross-border nature of the M&A deal and the state of the pre-M&A alliance relationship between acquirer and target firms impact the ex-ante information asymmetry and ex-post integration problem of an acquisition. As a result, they will affect the firms' acquisition target industry choice (Faems & Madhok, 2009; Zaheer et al., 2010). The *cross-border* nature of the deal was measured using dummy values as one for the cross-border acquisitions and zero for domestics. On the other hand, *a pre-merger and acquisition alliance with the target firm* was considered as a dummy variable. If the acquiring firm has no prior-alliance with the target firm in the five years immediately before the focal acquisition announcement year, then it has given a value of 1 and zero otherwise (Fang et al., 2015). Furthermore, *Acquiring firms' free cash flow*, *target firm public status*, *acquisition experience* of acquiring firm, and their *performance* held controlled. Via agency theory Marlin & Geiger, (2015) and Nohria & Gulati, (1996) argued that firms with more resources like free cash flow could be motivated to invest in risky projects. It is measured as an operating income before depreciation minus interest expense, taxes, preferred dividend, and common dividend divided by the corresponding book value of total assets (Chang & Tsai, 2013; Chen et al., 2000). The risk-level of an acquisition deal is also associated with the public status of the target firm, as public firms provide the firm's information to the general public on regular basis. It helps to reduce the information asymmetry as compared with private firms. Accordingly, it affects the target choice decision of the acquiring firm (Bae et al., 2013; Chang & Tsai, 2013). It was measured using dichotomies values equal to 1 if the target firm is a public listed firm and 0 otherwise. *Acquisition Experience of Acquiring firm* makes the firm learn from its practice and guide the subsequent acquisition decision (Fang et al., 2015). It is measured as a total number of acquisitions completed during the three years before the focal acquisition announcement year (Porrini, 2004; Haleblian & Finkelstein, 1999). Besides, firms' performance in the year right before the focal acquisition announcement year measured by its Return on Equity (ROE) and the number of words in the LTS has controlled in the regression models (Yadav et al., 2007).

#### 4.1.3. Empirical model

A binomial logistic regression model was in effect to see the impact of CEOs' temporal focus on the dependent variable. It is because of the categorical nature of the dependent variable and the mix of continuous and dichotomies independent variables (Hair et al., 1995). In the logistic regression model, the regression coefficients show the impact of the independent variable (CEOs'

temporal focus) on the probability of an outcome in the dependent variable to occur (i.e., choosing for diversifying acquisition, which carries the value of 1). The model has expressed as;

$$P(Y) = \frac{1}{1+e^{-Z}} \dots\dots\dots (4.1)$$

Where P(Y) is the likelihood of making a diversifying acquisition, and Z is the linear combination of the independent variables. That is,

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \dots\dots\dots (4.2)$$

Where  $\beta_0$  is the intercept,  $\beta_1 \dots \beta_n$  are the coefficients of the independent and control variables, and  $X_1 \dots X_n$  represent the independent variables.

## 5. Empirical findings

Table 1 reports the summary statistics of the variables included in the study. The mean value of the dependent variable is 0.473, indicating that 47 % of the sampled M&As deals are diversifying acquisition, while the remaining are focused acquisition deals. The independent variables of the study viz. CEOs' future, present, and past temporal focuses are correlated with the dependent variable as expected, and these correlations are statistically significant. CEO's future and present temporal focus are correlated positively with diversifying acquisition ( $r=0.23$ ) and ( $r=0.34$ ), respectively. However, the CEOs' past temporal focus is correlated negatively with the dependent variable ( $r=-0.216$ ). As presented in Table 1, the highest correlation value is 0.484 between the variable non-alliance and the firm's slack resource. It signposts as autocorrelation is not a threat to the subsequent regression analysis. However, to make sure that it is not a threat to the result of this study the researchers have checked the variance inflation factor (VIF) values for the direct effect regression models and found that the highest VIF value is 1.58, which is by far below the threshold point (VIF=10). It suggests that multicollinearity is not likely to present an issue in the regression analysis. Table 2 present the regression results of the hierarchical binomial logistic regression models. Model 1 of Table 2 includes only the control variables; model 2 adds the main effects; models 3 to 5 consider the moderating effect of stock option and stock ownership on the relationship between future, present, and past temporal focus and the dependent variable, respectively. The dependent variable is the CEOs' choice for diversifying vs. focused acquisition. Model 1 of Table 2 shows the coefficients of cross border acquisition and acquiring firms' CEOs' stock ownership is negative and highly significant. It tells that both the cross-border nature of the acquisition deal and the stock ownership of CEOs negatively affect the likelihood of making a diversifying acquisition. The cross- border nature of a diversifying acquisition prone the acquirer to more risk by letting it acculturate to the target's country culture in addition to the risk that is due because of industrial differences (Aintablian, et al., 2017; Galavotti et al., 2017; Vasilescu & Millo, 2016). To avoid the double-lair of enculturation, the acquiring firm may less likely to make a diversified acquisition. As far as the stock ownership of CEOs is concerned, it negatively affects the likelihood of making a diversified acquisition.

Table 1: Means, standard deviation, and correlations

Variable <sup>1</sup>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Mean	0.473	1.779	2.863	1.747	2.344	4.623	1.588	2.089	0.298	0.58	0.392	0.275	4.885	0.157	3.5
SD	0.501	3.575	3.192	3.678	4.446	5.457	0.979	1.935	0.459	0.495	0.666	0.448	3.107	0.386	1.881
(1) Diversifying Acquisition	1														
(2) Future focus	0.23*	1													
(3) Present focus	0.34*	0.26*	1												
(4) Past focus	-0.22*	-0.02	0.18*	1											
(5) Stock option	0.04	0.09	0.05	-0.12*	1										
(6) Stock ownership	-0.15*	-0.13*	-0.01	0.09	0.07	1									
(7) Slack resource	0.07	0.19*	0.14*	-0.01	0.08	0.03	1								
(8) firm size	0.16*	-0.06	-0.05	-0.04	0.36*	0.30*	0.47*	1							
(9) Cross Border	-0.22*	0.23*	0.23*	-0.18*	0.20*	-0.28*	0.37*	0.20*	1						
(10) Non-alliance	-0.47*	0.32*	0.32*	-0.38*	0.05	-0.29*	0.48*	-0.17*	-0.11	1					
(11) FCF	0.25*	0.18*	0.26*	-0.06	0.05	0.11	0.46*	0.32*	0.31*	0.33*	1				
(12) Target Pub. status	0.10	-0.05	-0.08	0.24*	0.15*	0.13*	-0.06	0.14*	0.25*	0.11	0.08	1			
(13) Acq. Experience	0.41*	0.05	0.02	-0.05	0.11	0.02	-0.00	0.18*	0.11	0.28*	0.34*	0.03	1		
(14) ROE	0.28*	-0.20*	-0.11	0.03	0.00	0.11	-0.05	0.22*	0.10	0.11	0.03	-0.01	-0.09	1	
(15) Length of Words	-0.03	-0.23*	0.03	-0.08	0.05	0.22*	-0.26*	0.35*	0.21*	0.04	0.17*	0.10	0.10	0.10	1

Source: Software output

<sup>1</sup> Diversifying acquisition (1= diversifying acquisition, and 0= focused acquisition); Cross-border (1= cross-border acquisition, and 0=domestic acquisition); Alliance (1= acquiring non-ally target, 0= acquiring ally target); Target Pub. Status (1= a public listed target firm, and 0= Private target firm).

\*Correlation is significant  $P < 0.05$

**Table 2: Results of the hierarchical logistic regression**

<i><b>VARIABLES</b></i>	<i><b>Model 1</b></i>	<i><b>Model 2</b></i>	<i><b>Model 3</b></i>	<i><b>Model 4</b></i>	<i><b>Model 5</b></i>
Slack resource	0.109 (0.275)	0.0306 (0.292)	0.0243 (0.302)	0.0204 (0.297)	0.0345 (0.292)
Firm Size	0.256† (0.150)	0.300* (0.151)	0.300* (0.151)	0.307* (0.152)	0.303* (0.151)
Cross Border	-0.893* (0.452)	-0.843* (0.422)	-0.843** (0.322)	-0.838* (0.325)	-0.865* (0.324)
Non-alliance	-0.390 (0.412)	-0.312 (0.331)	-0.308 (0.342)	-0.371 (0.421)	-0.360 (0.324)
Free Cash flow	0.745** (0.252)	0.593** (0.229)	0.595** (0.249)	0.574** (0.212)	0.644** (0.234)
Target Public	0.506 (0.350)	0.239 (0.198)	0.240 (0.218)	0.231 (0.213)	0.178 (0.183)
Acq. Experience	0.441*** (0.124)	0.434*** (0.123)	0.432*** (0.125)	0.425*** (0.125)	0.424*** (0.124)
ROE	0.143** (0.051)	0.118** (0.044)	0.118** (0.045)	0.119* (0.045)	0.105** (0.039)
Length of Words	-0.051 (0.114)	-0.052 (0.116)	-0.061 (0.116)	-0.063 (0.116)	-0.063 (0.117)
Stock option	0.104† (0.062)	0.112† (0.068)	0.022 (0.240)	0.136 (0.381)	0.076 (0.438)
Stock ownership	-0.188** (0.063)	-0.230** (0.089)	-0.228** (0.088)	-0.222** (0.076)	-0.234** (0.089)
Future focus		0.646*** (0.197)	0.581** (0.221)	0.422** (0.145)	0.521** (0.163)
Present focus		0.648* (0.292)	0.649* (0.293)	0.719* (0.355)	0.682* (0.297)
Past focus		-0.365** (0.132)	-0.368** (0.124)	-0.400* (0.165)	-0.926* (0.413)
Future focus X Stock option			0.067** (0.023)		
Future focus X Ownership			-0.025** (0.008)		
Present focus X Stock option				0.030 (0.184)	
Present focus X Ownership				-0.024* (0.012)	
Past focus X stock option					0.079* (0.037)
Past focus X Ownership					-0.038** (0.013)
Constant	-0.35*** (0.024)	-0.556*** (0.140)	-0.980*** (0.294)	-0.721*** (0.213)	-0.835*** (0.218)
Chi-square	98.25***	145.32***	162.64***	160.01***	159.79***
Pseudo R <sup>2</sup>	0.36	0.49	0.53	0.50	0.51
Observations	302	302	302	302	302

*Notes: Two-tailed tests; the dependent variable is diversifying acquisition (=1) or focused acquisition (=0); Relevant variables are centered before multiplication (interaction).*

*\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, † P<0.1*

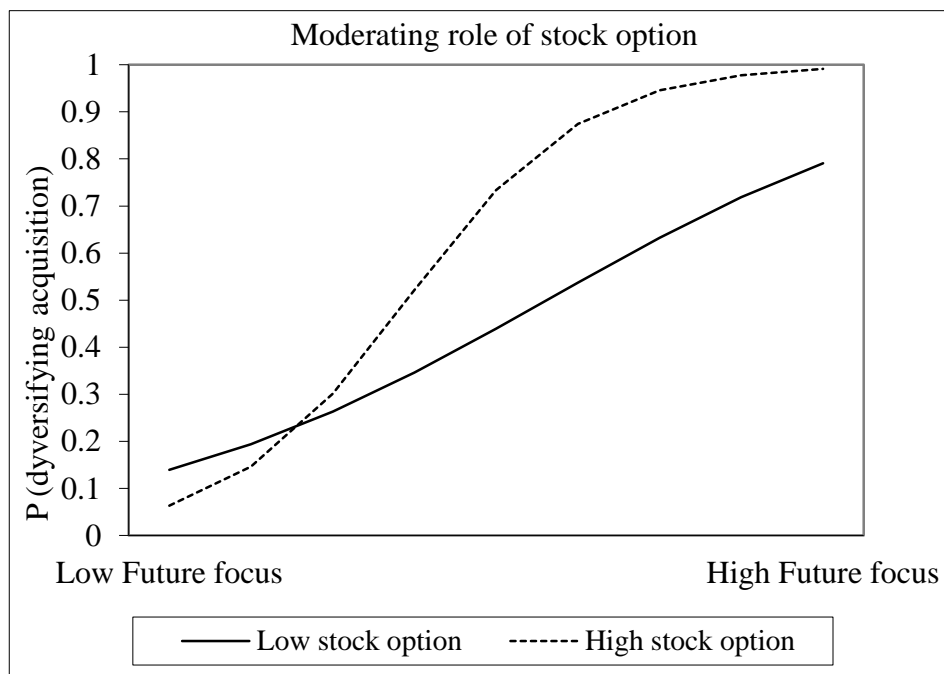
Source: Software output

As argued by behavioral agency theorists, stock ownership makes CEOs concerned about the downside risk than the upside potential (Sanders & Hambrick, 2007). Therefore, to deal with the downside risk, CEOs with stock ownership less tend to make a diversifying acquisition. Also, model 1 of Table 2 shows as the acquiring firms' free cash flow, performance (ROE), and acquisition experience are positive and highly significant. These indicate that these variables positively affects the likelihood of making a diversifying acquisition. Though the intent of the decision-makers has been considered, from different angles, in both behavioral and agency theories, the availability of resources affects the downside risk perception of decision-makers and makes them risk-taker (Cyert & March, 1963; Marlin & Geiger, 2015; Nohria & Gulati, 1996). Likewise, the availability of free cash flow and well firm performance (ROE) makes the CEOs take a risk and go for diversifying acquisition. Acquiring firms also learn from their past acquisition experience and manage their future acquisition decision accordingly (Fang et al., 2015; Roundy et al., 2016).

Model 2 of Table 2 incorporates the main independent variables the temporal focus of CEOs into the regression analysis. It helps to test the three main hypotheses of the study. The first hypothesis (H1) claims that the CEOs' future focus is positively associated with the choice of diversified acquisition over the focused one. As it appears in model 2, the coefficient of the future focus variable is positive and significant ( $\beta=0.646$ ,  $P<0.001$ ). It implies that the CEO's future focus is positively associated with the likelihood of making a diversified acquisition. It gives statistical support for hypothesis 1. Likewise, the second hypothesis (H2) also predicts a positive linkage between CEOs' present temporal focus and the likelihood of making a diversifying acquisition. The coefficient of the present focus variable from the same model confirms that the hypothesis is supported well ( $\beta=0.648$ ,  $P<0.05$ ). With hypothesis 3, the study has predicted as CEOs' past temporal focus negatively affects the likelihood of making a diversified acquisition. The coefficient of the past focus from the regression in the second model is negative and significant ( $\beta=-0.365$ ,  $P<0.01$ ). It indicates that the past temporal focus of CEOs significantly reduces the chance of making a diversifying acquisition. It provides support for hypothesis 3.

Models 3 to 5 of Table 2 were estimated to test hypotheses about the interaction effect of stock option and stock ownership. To overcome the possible autocorrelations problem because of the inclusion of the interaction terms, the researchers first took the mean-centered values of the variables and then creates the interaction terms. Hypothesis 4a states that CEOs' stock option positively moderates the relationship between CEOs' future focus and their likelihood of choosing a diversifying acquisition. The interaction of future focus with the stock option in model 3 is positive and significant ( $\beta=0.067$ ,  $P<0.01$ ). It shows that stock option motivates CEOs' to take a risk so that it positively affects the likelihood of future-focused CEOs making a diversifying acquisition. It is in line with hypothesis 4a. This fact is pictorially depicted in figure 1 using the interaction plot. The high and low level of a stock option is determined based on one standard deviation above and below its mean (e.g., Adomako, 2017; Wu & Tu, 2007). The positive moderation effect of the stock option has represented by the upward shift of the line for

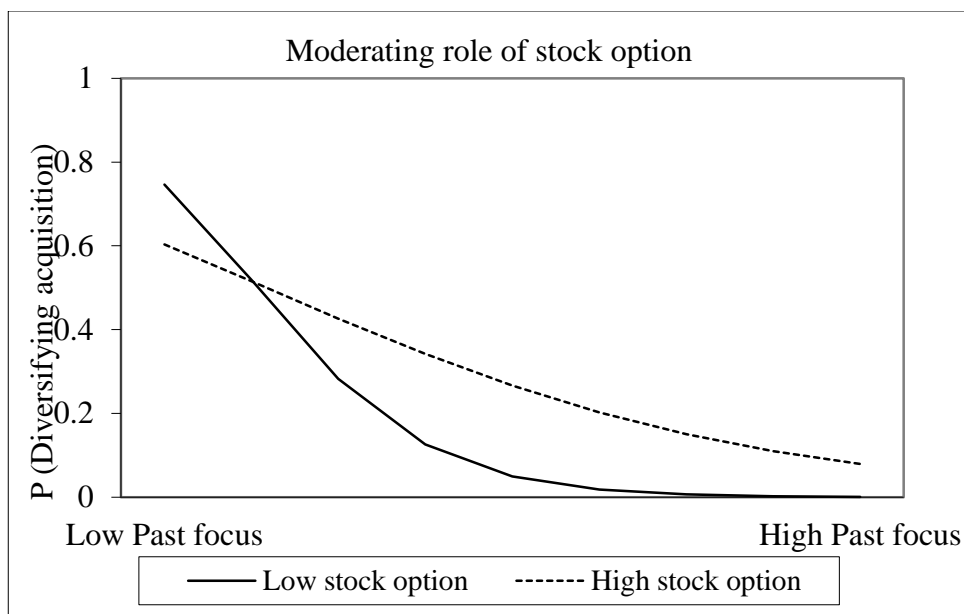
the high stock option of CEOs. The slope of the line when the stock option is high is greater than when the stock option is low. Hypothesis 4b states that the stock option of CEOs positively moderates the relationship between present focus and the likelihood of making a diversifying acquisition. Although the interaction of the present focus with the stock option in model 4 is positive as predicted, it is not significant ( $\beta=0.03$ ,  $P>0.1$ ). It showed that hypothesis 4b is not supported. At last, model 5 witnessed that hypothesis 4c has got support. A stock option has been expected to weaken the negative relationship between CEOs' past focus and the likelihood of making a diversifying acquisition. The coefficient of the interaction term (past focus X stock option) in the model is positive and significant ( $\beta=0.079$   $P<0.05$ ).



Source: Software output

**Figure 1: The moderating role of Stock option on the relationship between future focus and diversified acquisition.**

Figure 2 provides a graphical illustration of the moderation effect. The overall relationship between past focus and the likelihood of making a diversifying acquisition is negative, as it has been portrayed with negatively sloped lines. However, the graph for the high stock option has a weak negative slope than the low stock option. It witnesses the positive moderation effect of the stock option. However, the positive impact of the interaction term does not make the relationship between past focus and the dependent variable positive.



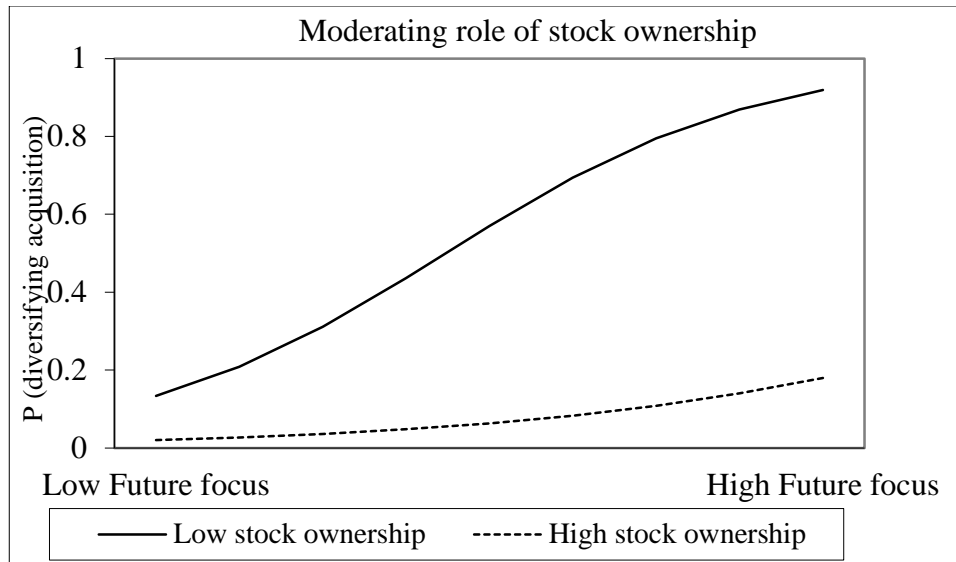
Source: Software output

**Figure 1: The moderating role of Stock option on the relationship between past focus and diversified acquisition**

Hypothesis 5a theorizes that stock ownership negatively moderates the relationship between future temporal focus and the likelihood of making a diversifying acquisition. Likewise, hypothesis 5b predicts the same negative interaction effect of stock ownership on the link between present temporal focus and the dependent variable. The interactions of stock ownership with future and present temporal focuses have been presented in models 3 and 4, respectively. The effects of the interaction terms are significant and negative ( $\beta = -0.025$ ,  $P < 0.01$ ) and ( $\beta = -0.024$ ,  $P < 0.05$ ), respectively. These show stock ownership negatively moderates the relationship between future focus and the likelihood of diversifying acquisition and present focus and the probability of a diversifying takeover. These provide strong empirical support for hypotheses 5a and 5b. Figures 3 and 4 graphically depict these effects, respectively. In both cases, the lines for high stock ownership are under the lines for low stock ownership. It indicates that when the CEOs' stock ownership is high, the CEOs will start to be sensitive about the downside risk of their strategic decision. Therefore, their probability of making a diversifying acquisition starts to decline.

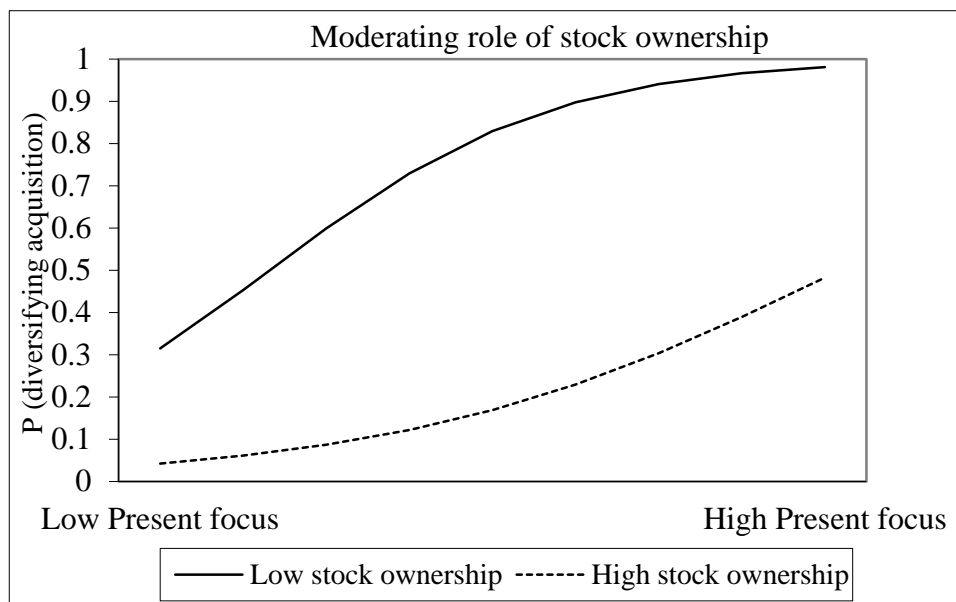
The last hypothesis (H5c) theorizes as stock ownership strengthens the negative association between past temporal focus and the likelihood of making a diversified acquisition. Model 5 present a negative and significant interaction term coefficient ( $\beta = -0.038$ ,  $P < 0.01$ ). It provides evidence as hypothesis 5c is supported. Figure 5 also visually showed the negative moderation effect of stock ownership. When the CEOs' stock





Source: Software output

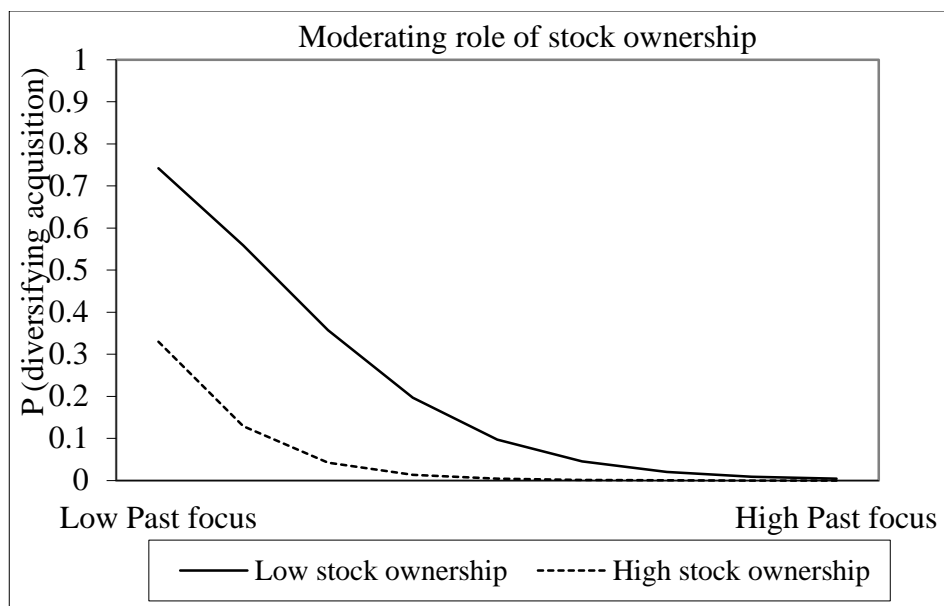
**Figure 2: The moderating role of stock ownership on the relationship between future focus and diversified acquisition**



Source: Software output

**Figure 3: The moderating role of stock ownership on the relationship between present focus and diversified acquisition**

ownership is high the line for the negative relationship between the past temporal focus and the dependent variable shift downward with a more negative slop value.



Source: Software output

**Figure 4: The moderating role of stock ownership on the relationship between past focus and diversified acquisition**

Some additional analyses have been conducted to check the robustness of the results. First, another individual level, acquisition deal level, firm-level, and industry level variables were taken into the model estimation and checked whether the results of the study are robust or not. As the study has intended to see the impact of CEOs' cognitive base on their strategic decision and UE perspective state as CEOs' observable characteristics affect the strategic decision making of firms (e.g., Carpenter et al., 2004; Hambrick & Mason, 1984), CEOs' age and tenure have controlled in a model. At the acquisition deal level, the percentage of shares bought and deal values were controlled, as they both have a link to the risky nature of the acquisition (Bae et al., 2013). A dummy variable has set that indicates the industry of the acquiring firm (pharmaceutical vs. semiconductor), to control the confounding effect of industry differences. At last, as the normative environment affects firms' strategic decisions (Zaheer et al., 2010), the cultural distance between the acquiring and target nation was taken into control. With the consideration of all the above mentioned additional variables, the results of the study were consistent with the result presented in Table 2. Second, the researchers have changed the measurement period of CEOs' temporal focus from 5 years to 3 years to see whether the result is consistent for CEOs' temporal focus with a different period. Likewise, the results showed no deviation from the one presented in Table 2. Lastly, Galavotti et al. (2017) explained that in cross-border M&As, acquirers have to acculturate to both the foreign national culture and the target's corporate culture. This double-layered acculturation makes cross-border M&As riskier than domestic acquisitions for similar target choices. The sample has been dissected into two sub-samples as domestic acquisitions and cross-border acquisitions. Then, a separate estimation was made to see whether CEOs' temporal focus has a different effect on the target choice of an acquiring firm in domestic and cross-border settings. The result was found to be consistent.

## 6. Conclusion and discussion

This study has intended to probe the link between the temporal focus of CEOs and their choice for diversifying vs. focused acquisition. At the micro-level, the researchers consider the UE perspective to theorize the possible link. It has proposed that different cognitive biases of CEOs due to differences in temporal focuses affect their acquisition target choice, differently. It enables the researchers to answer a call by Shi et al. (2012) for more temporal research in M&A setups. It extends the work of Nadkarni & Chen (2014) and Yadav et al. (2007) to corporate mergers and acquisitions setup. In support of Cannella & Holcomb (2005) and Carpenter et al. (2004) claim on the upper echelon perspective, the study confirms as UE theory can also suitably used to explain phenomena at the micro-level (individual CEO level).

The findings of the study provide additional evidence that the cognitive bias of a CEO, at the micro-level, affects his/her firm strategic process and outcome. How CEOs exercise the allocation of their scarce attentional resources has significant implications for the choice of an acquisition strategy. The future and present focuses of CEOs are significantly and positively related to the likelihood of making diversifying acquisitions. Due to industry differences between the acquirer and the target firms, diversifying M&As is more subjected to risk than the focused one (Alessandri et al., 2014; Galavotti et al., 2017; Mateev & Andonov, 2018). The positive associations of future and present temporal focus with the likelihood of making a diversifying acquisition agree with the findings of Shipp et al., (2009). Both the present temporal focus and future temporal focus are related to risk-taking behavior. CEOs with more future focus believe that their action, not chance or influential others makes their destiny. Therefore relying on future-oriented information, they develop greater awareness and anticipation of future events and opportunities. They are optimistic about their future and develop more ambition to embrace changes and exploit opportunities as well. It makes them ready to pay the cost of manipulating opportunities (Kumar & Nathwani, 2012; Shipp et al., 2009; Yadav et al., 2007). Making a diversifying acquisition lets their firm advance and explore more opportunities regardless of the associated risk level (Galavotti et al., 2017). So in a situation to choose between focused vs. diversifying acquisition, future-focused CEOs would be more intended to take the risk and go for a diversifying takeover. Likewise, high present focus results in an internal locus of control and optimism, so that CEOs with this temporal focus welcome changes and interested explore opportunities. Unlike future-focused CEOs, CEOs with this temporal focus do not rely on future information and less curious about future events. Their intent to engage in impulsive activity makes them dare to take even more risks than future-focused individuals (Shipp et al. 2009). This cognitive setup lets them engage in risky strategic activity. So, they choose a diversifying acquisition over a focused one, when they have to select a target for acquisition. The results of the study complement the findings of extant studies in strategic management, which relate the temporal focus of CEOs with a risky strategic decision. For example, Nadkarni & Chen (2014), found the future and present focus of a CEO positively affects the rate of new product introduction of firms. Likewise, Yadav et

al. (2007) found out that the future temporal focus of CEOs positively affects the innovation of their firm.

The study also reveals that the past temporal focus of CEOs negatively affects the likelihood of making a diversifying acquisition. This finding provides support for the results of Shipp et al. (2009) and Zimbardo & Boyd (1999) viz. a past temporal focus has a positive association with the risk-averse behavior of individuals. CEOs with this temporal focus emphasize thinking more about the past. They believe most that the chance and influential others determine the destiny of their decision. As a result, their awareness and cognizance about future events and opportunities remain restricted. The narcissistic personality and the pessimist behavior encourage them to operate within the familiar domain and resist a change (Shipp et al., 2009). Therefore, in an acquisition target selection decision, CEOs with this cognitive setup will go for focused acquisition and minimize the risk that corresponds to the decision process. This finding also complements Nadkarni & Chen (2014) findings, which states as the past temporal focus of CEOs negatively affects the rate of new product introduction of their firm. Additionally, using a theoretical lance of behavioral agency theory, this study also aimed to see the moderating role of the compensation of CEOs on the relationship between their temporal focus and their firm acquisition target choice. In agreement with Sanders, (2001) argument, the empirical finding of the study reveals as stock option and stock ownership affects the risk perception of CEOs differently. So, they moderate the links between the temporal focus of CEOs and the likelihood of making a diversifying acquisition in different ways. A stock option makes CEOs focus on upside potential than the downside risk so that they will be motivated to make risky strategic moves (Sanders, 2001). With a higher stock option, future-focused CEOs are more motivated to be more risk-taker and engage in diversifying acquisitions. Though past focused CEOs are risk-averse, because of the availability of a higher stock option, they will start to consider some risky moves. These findings are in line with the results of behavioral agency empirical studies (e.g., Olson et al., 2018; Sanders & Hambrick, 2007; Wright et al., 2007; Wu & Tu, 2007). However, the hypothesized positive moderating effect of stock option on the relationship between present focus and likelihood of making a diversifying acquisition is not supported. Though a stock option has been linked to the long-term value of a firm (Agha, 2016; Mazur & Salganik-Shoshan, 2019; Wright et al., 2007), present-focused CEOs have a now and here attitude (Shipp et al., 2009; Zimbardo & Boyd, 1999). So, the stock option of CEOs may not have any moderating effect on the link between the present focus of CEOs and the likelihood of a diversifying acquisition. Unlike the stock option, stock ownership is linked to current firm value and drag the attention of the CEO into the downside risk of making any strategic movies. Therefore, CEOs with stock ownership will be more prudent to averse to a risk associated with their decisions (Sanders, 2001). Although future-focused and present-focused CEOs presumed to be risk-takers, having an ownership stake late them curious about the potential risk due to making a diversifying acquisition. So that, they deter their aggression for making a diversifying acquisition. The interaction of past focus with ownership stake aggravates the risk aversion behavior of the CEOs. It is because stockholding CEOs may lose their share values due to the risk of engaging in diversifying acquisition (Sanders, 2001).

Shareholding CEOs do not want to jeopardize their immediate gain for uncertain future potential gain. These findings of the study support the results of studies that uncover the effect of stock ownership on the downside risk perception of CEOs and the risky decision-making behavior of CEOs (e.g., Agha, 2016; Olson et al., 2018).

## **7. Contribution and future research implication**

The perspective advocated in this research contrasts with the UE literature which uses top-level managers' observable characteristics as a proxy to their cognitive bias and value. The researchers directly consider the unobservable individual characteristics to see how the cognitive bias of CEOs affects their strategic decision. Under this perspective, the study contributes the following points for UE theory, M&A literature, and practitioners. First, unlike most UE studies, this study directly measures the cognitive base instead of proxy it with CEOs' observable characteristics. Second, it can be regarded, as a piece of the puzzle to bring the UE focus from the macro-level (TMT level) to the micro-level (individual CEO level) analysis and provide support for researchers who claim the unit of analysis in UE researches should consider CEO at individual-level as well (e.g., Cannella & Holcomb, 2005; Roundy et al., 2016). By responding to Shi & Prescott, (2012) call for additional temporal research in the M&A setting, this research makes three main contributions for literature in M&As. First, unlike the extant temporal studies in M&A (e.g., Fuad & Gaur, 2019; Meglio et al., 2017; Shi and Prescott, 2012), it positioned multi-dimensional (past, present, and future) temporal focus framework explicitly to probe as the CEOs attentional bias affects their choice between diversifying vs. focused acquisition. It explains Yu et al. (2016) question of why a firm is chosen over another as an acquisition target. Second, extant temporal focus studies in management and strategy have explained how temporal focus affects decisions like new product introduction, corporate entrepreneurship, competitive aggressiveness, and integration speed (Chen and Nadkarni, 2017; Nadkarni & Chen, 2014; Yadav et al., 2007). As an extension of this line of studies, the research highlights the importance of the temporal focus of CEOs in understanding corporate M&As decisions, specifically acquisition target selection. Third, considering the corporate governance variable, which has been regarded as a structural determinant of CEO behaviors and orientations, this study shows as the impact of the temporal focus of CEOs on acquisition target selection is altered, with the type and the level of CEOs compensation set by the BOD. At last, the study implies BOD, as an appointing and controlling unit of CEO. It helps them to evaluate the strategic moves of the CEOs based on their motive, earlier before actions. Besides, the study implies as BOD should watch the kind of compensation system to boost the attention of a CEO to the upside potential of target selection and drag down to the downside risk of acquisition target selection. Accordingly, this knowledge will help the BOD to understand when to support and criticize the decision of the CEO in the realm of the firms' acquisition target choice.

The results of this study are not free from some limitations. However, these limitations offer opportunities for future research. First, the sample is drawn from the SDC database of Thomson Financial and covers only public firms with high deal value. Therefore, generalizing these results to all private firms and public firms with smaller M&A deal

values may lead to a wrong conclusion. Future research can show whether the findings of this study are robust and can be generalized to private firms and public firms with smaller deal value. Second, following Yadav et al. (2007), the study used only LTS to compute the value of CEO temporal focus. Future research can triangulate the LTS with other archival sources like published interviews of CEOs, CEO speeches, and press releases made by the CEOs or use a survey method to assess CEO attentional bias more directly, instead of relying on indicators of CEO attention to cross-check the findings of this study. Third, the sample for this study is considered only from two high-tech industries; pharmaceutical and semi-conductor. It affects the generalizability of the study. The same research can replicate to see its external validity in different industry settings. Lastly, future research can use different theories and other context variables to see how temporal focus affects acquisition target selection decisions.

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