

The case for humble expectations: CEO humility and market performance

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Abstract

Research Summary: In this study, we investigate the effect of chief executive officer (CEO) humility on firm's market performance. We argue and find that firms with more humble CEOs will have better market performance but not because they actually perform better but, rather, because they benefit from an expectation discount in the market. Specifically, we show that, all else equal, financial analysts announce lower earnings per share expectations for firms with more humble CEOs. This expectation discount sets the stage for those firms to meet or beat analysts' expectations resulting in improved market performance for firms with humble CEOs. We find support for our ideas with a sample of Standard & Poor's (S&P) 500 CEOs, operationalizing CEO humility with a videometric technique.

Managerial Summary: In this study, we investigate the effect of CEO humility on firm's market performance. We show that firms with more humble CEOs will outperform other firms in the market because financial analysts tend to set lower market expectations for firms with more humble CEOs increasing the probability that they will outperform those expectations. Rather counterintuitively, these firms do not have better market performance because they perform better but because they face lower expectations. Ultimately, the study demonstrates the importance of CEO characteristics for external evaluations and

perceptions about the firm with significant effects on investment performance.

KEYWORDS

analyst expectations, CEO, firm performance, humility

1 | THE CASE FOR HUMBLE EXPECTATIONS: CEO HUMILITY AND MARKET PERFORMANCE

A paradigm shift is unfolding before us. Humble chief executive officers (CEOs) are trending in both media and academic research as a preferable alternative to the arrogant, overconfident, hubristic, and narcissist types that made up the core population of dominant figureheads in US organizations leading up to the last economic crisis (Chatterjee & Hambrick, 2007, Chatterjee & Hambrick, 2011; Halebian & Finkelstein, 1993; Hayward & Hambrick, 1997; Hiller & Hambrick, 2005; Li & Tang, 2010). In 2015 alone, media mentions of humble CEOs more than doubled their average mentions per year of the previous decade with titles such as Huffington Post's "Google's new 'Low Key' CEO is so on trend" (Peck, 2015), Wall Street Journal's "The case for Humble executives" (Lublin, 2015) or Forbes' "Humble CEOs are best for business..." (Adams, 2014), and Google search mentions have risen more than 70% (Gaines-Ross, 2015). Leaders' humility has also been a fast-growing topic in management and psychology research (Ou et al., 2014; Weiss & Knight, 1980). Researchers have found that humble leaders empower top and middle managers leading to more collaborative top management teams (TMTs) and increased information sharing in the organization (Ou et al., 2014; Simsek, Veiga, Lubatkin, & Dino, 2005), provide clearer career perspectives to organizational members (Vera & Rodriguez-Lopez A., 2004), promote a strong sense of professional will that is not attached to personal success (Collins, 2001a, 2001b), and are models of participative leadership (Aime, Humphrey, DeRue, & Paul, 2014; Hackett & Wang, 2012; Morris, Brotheridge, & Urbanski, 2005).

While previous research has generated significant insights about how humble leaders, and more specifically humble CEOs, affect the social and informational interactions inside their organizations, it has little to offer to those concerned with how humble CEOs contribute to stock market success. Current theory focuses almost exclusively on the ways in which humble CEOs affect interactions in the organization, but humble CEOs can also be expected to color stock market expectations of organizational effectiveness because such expectations by market players (e.g., analysts, investors) are influenced by the implicit or explicit characteristics of CEOs (e.g., their humility) (Fanelli, Misangyi, & Tosi, 2009) with significant impact on trading behavior and the stock market valuations of firms (Stickel, 1995; Washburn & Bromiley, 2014; Womack, 1996). We can see three main reasons for the paucity of research on the relationship between humble organizational leaders and organizational market performance. First, current work about humble leaders assumes that the effectiveness resulting from team and individual performance gains inside organizations run by humble CEOs will translate to organizational market performance and therefore neglects the role of CEOs as representatives of the organization to the investment community among other external stakeholders, even when evidence shows that valuations are only loosely coupled with internal indicators of effectiveness (Meyer & Gupta, 1994; Scott, 1998).

Second, most recent work about the effects of CEOs on organizations is built around the upper-echelons perspective which focuses, for CEOs, on how CEO characteristics affect their decisions and

leadership behaviors (for a summary see, Fanelli et al., 2009 and therefore are more concerned with how CEOs affect organizational behaviors rather than the implications of CEO characteristics for external audiences. Third, researchers may have downplayed the external effects of humility because of the conflictive contradiction between humility as a virtuous trait for CEOs and its potentially negative perceptual effects on company value. While humility is considered and proposed in research and everyday life as a virtue (Newman, 1982; Owens & Hekman, 2012), with humble CEOs seen as cooperative, empowering, and virtuous leaders (Guillén & González, 2001; Hackett & Wang, 2012; Morris et al., 2005), humble individuals are also believed to be externally perceived as weak, lacking confidence and self-esteem (Emmons, 1998; Weiss & Knight, 1980), and inadequate for leadership (Tangney, 2000), especially by the “average person on the streets.” (Tangney, 2000, pp. 71). In line with this logic, firms with humble CEOs could experience an expectation discount (Exline & Geyer, 2004) that would negatively affect the external valuation of firms with humble CEOs. Therefore, humility researchers may have focused on the intra-organizational effects of such CEOs because this performance expectation discount affecting firms with humble CEOs seems to run contrary to the organizational value of the leadership virtues that proponents of humble CEOs see in them.

Yet, as we argue and find in this paper, humble CEOs as visible figureheads of their organizations for the investor community can be expected to have a positive effect on their firms' market performance. Both the economics and the finance literature have a long tradition of theory and findings regarding how the market rewards organizations for meeting or beating analysts' earnings expectations, with negative overreactions in market stock prices for firms that fail to meet expectations and swift rewards for actually meeting or beating those expectations (Barton & Simko, 2002; Kasznik & McNichols, 2002; Skinner & Sloan, 2002). We argue in this paper that analysts' forecasts will be lower (and implicitly more attainable) for firms with humble CEOs and therefore set the stage for those firms to have better comparisons between their actual earnings per share (EPS) and the analysts' EPS expectations resulting in improved market performance. Humble individuals avoid arrogant and self-contemptuous behaviors (Clark, 1992; Tangney, 2009), are deeply self-aware (Ou et al., 2014: 38), are fully aware of their abilities and limitations (Tangney, 2009; Templeton, 1997), and are externally perceived as weaker or less confident (Emmons, 1998; Weiss & Knight, 1980), leading analysts to assign them an expectation discount and therefore forecast lower earnings that make their organizations more likely to have better relative actual EPS when compared with analysts' EPS expectations.

Specifically, we show that organizations with humble CEOs are more likely to have lower analyst earnings expectations, perform above analysts' expectations, and have better market performance. We also show that performance above expectations leads to better market performance. As an additional test of mechanisms, we also show that humble CEOs result in lower media optimism for their firms and that such optimism is related to analysts' earnings expectations. Our paper makes two main contributions to research. First, it presents and tests a theory of the processes through which humble CEOs affect market players and outcomes for the organization. In doing so, it offers an answer to those concerned with how humble CEOs contribute to stock market success and reconciles internal views of the virtues of humble CEOs as leaders with external views of the value they bring by producing more realistic expectations for organizational performance. Finally, it contributes to methods in CEO humility research by utilizing a videometric approach (Petrenko, Aime, Ridge, & Hill, 2016) for measuring executives' humility. This video-based psychometric approach to the measurement of third party humility helps to address both the specific problems regarding self-report measures of humility that have been considered the “glaring gap in the literature” (Tangney, 2009, pp. 486) and the complexity implicit in the measurement of difficult to access executives that has traditionally limited the psychometrically valid measurement of CEO characteristics for strategy researchers.

2 | THEORY AND HYPOTHESES

Researchers in organizational theory and strategy have produced considerable evidence that the external evaluations of firms (e.g., media optimism, financial analysts' forecasts) are strongly influenced by the characteristics of CEOs (Fanelli et al., 2009; Malmendier & Tate, 2009; Olsen, Dworkis, & Young, 2013). Few external evaluators of firms dictate a company's expected performance as much as financial analysts (Filzen & Peterson, 2015; Kasznik & McNichols, 2002). Financial analysts are seen as trusted, savvy infomediaries (Deephouse & Heugens, 2009; Pfarrer, Pollock, & Rindova, 2010) who shape market expectations for firms by developing public forecasts of firms expected future quarterly or annual earnings (Barron, Kim, Lim, & Stevens, 1998; Clement, 1999). Constructing accurate forecasts is complex due to inherent information asymmetries between firms and analysts (Dowling & Moran, 2012). In order to reduce the complexity of forecasting (Karamanou & Vafeas, 2005), analysts distill information about the quality of the firm through market signals (Bartov, 1991; Doran, 1994), and CEO characteristics, such as humility in the case of this research, serve as important market signals and have significant effects on analysts' forecasts of organizational expected performance (Aboody & Kasznik, 2000).

In affecting analysts' forecasts of organizational expected performance, CEO characteristics in turn have a direct effect on organizational market performance because analysts' forecasts of organizational expected performance set the market expectation against which firm performance is measured. In fact, over the past few decades, whether a firm meets or beats its given annual or quarterly analysts' forecasts of organizational expected performance has been the simplest, most visible, and yet the most merciless measure of corporate success (Fox, 1997). This general logic for the impact of CEO characteristics on organizational market performance through their effect on analysts' forecast of expected market performance serves as the logic for our arguments about how CEO humility affects market performance in this manuscript. Specifically, we argue in this paper that firms with more humble CEOs will have higher market performance because analysts' forecasts will be lower (and implicitly more attainable) for firms with more humble CEOs and therefore set the stage for those firms to do better than the analysts' expectations, resulting in improved market performance.

Following this logic, we first argue that financial analysts will forecast lower performance for firms with more humble CEOs. There are strong theoretical reasons to expect external evaluations of CEOs' leadership abilities and therefore of the expected performance of their firms will tend to favor the arrogant (Hayward & Hambrick, 1997), overconfident (Li & Tang, 2010), hubristic (Hiller & Hambrick, 2005), and narcissist (Chatterjee & Hambrick, 2007, 2011) types that made up the core population of dominant figureheads (Haleblian & Finkelstein, 1993) in US organizations leading up to the last economic crisis. Alfred Schultz (Schutz, 1967) highlighted that people categorize others and respond to them as ideal types or representatives of a category. People's naive conceptions of leadership, the so-called implicit leadership theories or leader prototypes, are socially constructed conceptions about what leaders should be (Engle & Lord, 1997; Lord, Foti, & De Vader, 1984). This literature, central to research on perceived leadership attributes (e.g., Epitropaki & Martin, 2004, 2005; Lord, 1985; Lord & Maher, 1993), shows that people develop prototypes outlining the traits that characterize an ideal leader and make summary judgments of leadership effectiveness based on observations of prototypical attributes (Hollander & Offermann, 1990; Lord, 1985) using both social cues and their implicit leadership theories. People, in our case analysts, have constraints in their time or ability to access relevant information about an individual's leadership capacity and find it difficult to provide an unambiguous interpretation of past acts (Podolny, 2005) and therefore resort to

comparisons between the characteristics they perceive in the leader and the leader prototype they hold when evaluating leader effectiveness.

Based on implicit leadership theories, we argue that financial analysts will forecast lower performance for firms with more humble CEOs because prevailing accounts imply that leadership effectiveness is driven by perceived strength or boldness (Offermann, Kennedy, & Wirtz, 1994; Greenstein, 1994), masculinity and tyranny (e.g., Deal & Stevenson, 1998; Milton, 1905), charisma (Bass, 1988; Conger & Kanungo, 1987, 1998; House, Spangler, and Woycke, House, Spangler, & Woycke, 1991), and, in general, perceptions of McClelland's leadership motivation pattern (i.e., a high need for power, a low need for affiliation with others, and a high degree of self-control) (House et al., House et al., 1991; McClelland, 1985; McClelland & Boyatzis, 1982), all of which are associated with arrogant and overconfident rather than humble CEOs. Humble CEOs' low self-focus, their tendency to engage in behaviors such as recognizing others' strengths and contributions, their willingness to accept others' feedback and ideas, their owning up to personal weaknesses or mistakes (Owens, Johnson, & Mitchell, 2013), and their external perception as weak and somehow lacking self-confidence and passion (Emmons, 1998; Weiss & Knight, 1980), detract from the bold, direct, strong, and masculine images that produce positive evaluations of CEO effectiveness and higher performance expectations for firms.

Following our general logic for why firms with more humble CEOs will end up having higher market performance, it is important to note next that our first argument that financial analysts will forecast lower performance for firms with more humble CEOs has a fundamental effect on what has been considered the most merciless measure of corporate success: the ability of a firm to meet or beat analysts' expectations (Fox, 1997). One important effect of lowering analysts' expectations is that, all other things equal, firms with more humble CEOs will have a direct mathematical advantage to exceed analysts' expectations. That is, given that analysts will expect lower EPS from firms with more humble CEOs as theorized above, if firms with more humble CEOs do not actually perform differently than firms with less humble CEOs, firms with more humble CEOs will be more likely to have EPS that are comparatively better compared with analysts' expectations which is a key financial objective for firms because of its impact on market performance. We therefore expect a positive relationship between CEO humility and firms' actual EPS to analysts' EPS expectations. This increased probability to have EPS that are comparatively better than analysts' EPS expectations is independent of any potential effect of CEO humility on operational performance, which is the other side of the comparison between actual EPS performance and expectations. While these are independent, we think that our logic will be driven mostly, if not exclusively, by the effect of CEO humility on analysts' performance expectations. In fact, there are a number of theoretical reasons to expect that humble CEOs will have mixed or neutral effects on actual organizational performance. First, research in psychology has shown that humble individuals are neither less nor more capable than their less humble counterparts (Emmons, 1998; Templeton, 1997). Also, leadership approaches imply that while comparing humble leaders with the traditional images of leaders and the expectations of charisma may make humility may be perceived as a form of personal weakness (Exline & Geyer, 2004), it may also signal a leader's desire to serve (Collins, 2001a, 2001b; Smith, Montagno, & Kuzmenko, 2004) and that, therefore leaders' humility does not negatively affect humble leaders' performance (e.g., Morris et al., 2005). Finally, although CEO humility can lead to better team integration which could in turn help performance in highly dynamic environments (Ou et al., 2014; Ou, Waldman, & Peterson, 2018), it can also lead to longer implementation times, lower effectiveness, and less directive controls that may work against organizational performance in less dynamic activities and decisions. Therefore, we do not expect differences in actual performance between firms with more or less

humble CEOs. We therefore expect the ability of firms with more humble CEOs to have EPS that are comparatively better compared with analysts' expectations to be more broadly affected by lower expectations than by differences in operational performance.

The final element of our general logic for why firms with more humble CEOs will end up having higher market performance is based on the recognition that whether a firm meets or beats its given annual or quarterly expectations has been, for at least some decades now, the measure of corporate success with most impact in markets (Fox, 1997). For instance, several high-profile firms including Compaq Computer, Hewlett-Packard, Merck, Sears, and Starbucks have all been remarkably affected by missing their analysts' forecasts. Each company experienced, on average, a -12% return the following 3 days after the announcement of missing their EPS expectations by only one cent (Barton & Simko, 2002). Oracle Corporation suffered similarly in 1997. For their second fiscal quarter, Oracle reported 4% higher quarterly earnings than the following year, but failed to meet their analysts' expectations by a mere four cents. As a result, Oracle's stock dropped a record 29% the same day and cost Oracle around nine billion in market value (Skinner & Sloan, 2002).

Researchers in accounting, economics, and finance, have produced considerable evidence that markets reward organizations for their actual performance relative to analysts' earnings expectations (Ball and Brown, 1969; Barton & Simko, 2002; Kasznik & McNichols, 2002; Koh, Matsumoto, & Rajgopal, 2008). For example, Kasznik and McNichols (2002) found that the market rewards firms that consistently exceed the market's expectation, regardless of the firm's absolute level of performance, and Bartov, Givoly, and Hayn (2002) found that firms performing better than their performance expectation realized an average quarterly return almost 3% higher than firms performing lower than their expected level of performance. Similarly, researchers also found that failure to meet analysts' expectations signals disappointing firm performance and elicits strong punishment from the market (Brown, 2001; Matsumoto, 2002; Skinner, 1994; Skinner & Sloan, 2002).

Therefore, we expect a positive relationship between firms' actual EPS relative to analyst's expectations and market performance. If firms with humble CEOs are able to perform comparatively better than analysts' EPS expectations and, in turn, the market rewards organizations with better EPS compared with expectations, then firms with more humble CEOs should have better market performance. Putting the overall logic for the paper together, firms' actual EPS relative to analysts' expectations mediates the positive relationship between CEO humility and market performance because analysts reduce market expectations for firms with more humble CEOs. While it has been shown that the high stakes associated with meeting or beating analysts' performance expectations provide CEOs with motive to attain lower analysts' forecasts through earnings management (Matsumoto, 2002), humble CEOs have a natural trait that provides their organizations with less optimistic performance expectations and bodes well for their organizations' market performance. Because external perceptions of humble CEOs are less consistent with the prototypical image of effective leaders (i.e., less bold, direct, strong, and masculine than prototypical leaders), this results in less grandiose analysts' forecasted EPS for their firms and therefore make those expectations easier for their firms to have better actual EPS relative to analyst's expectations. Therefore, following our stream of logic, we argue that organizations led by more humble CEOs receive lower analysts' forecasted EPS which sets the stage for their firms to have better firms' actual EPS relative to analyst's expectations leading their firms to benefit with improved market performance (Bartov et al., 2002; Doyle, Lundholm, & Soliman, 2006). As a result of this overall logic, we present the following hypotheses:

Hypothesis (H1). *There will be a negative relationship between CEO humility and analysts' EPS expectations.*

Hypothesis (H2). *There will be a positive relationship between CEO humility and firms' actual EPS relative to analysts' EPS expectations.*

Hypothesis (H3). *There will be a positive relationship between firms' actual EPS relative to analyst's expectations and market performance.*

Hypothesis (H4). *There will be a positive relationship between CEO humility and market performance.*

Hypothesis (H5). *The relationship between CEO humility and market performance is mediated by actual EPS relative to analysts' expectations.*

One condition that could disrupt the logic for the effects on market performance outlined above would be the possibility that analysts actually learn and adjust their EPS expectations based on experience. This would imply that these effects would wane or rapidly disappear over time. However, that is not necessarily the case. Researchers suggest that analysts, despite being highly trained securities specialists, are not perfectly rational and are subjected to cognitive and social biases that can influence their evaluations (Brauer & Wiersema, 2018; Tversky & Kahneman, 1981). Furthermore, research in the accounting and finance literatures shows that analysts' forecasts are systematically biased and that analysts are persistent in their optimistic or pessimistic forecasts year after year (Abarbanell & Bernard, 1992; Ali, Klein, & Rosenfeld, 1992; Bradshaw, Drake, Myers, & Myers, 2012; Butler & Lang, 1991; Jacob, Lys, & Neale, 1999). Some studies have found that there is “no evidence of learning-by-doing” among analysts (Jacob et al., 1999, pp. 80) and others have shown that simple random walk time-series forecasts are more accurate than analysts' forecasts over long horizons (Bradshaw et al., 2012). This systematic bias among analysts may be a result of small sample sizes for a particular CEO and performance outcomes that are often noisy and ambiguous (e.g., Lounamaa & March, 1987; March & Sutton, 1997) making it difficult for analysts to discern cause and effect relationships given their information capacity constraints (Peng, 2005). Therefore, we do not expect this condition to effectively affect our logic or the results of our tests.

3 | METHODS

3.1 | Sample and data collection

Our financial and corporate data comes from Standard's Poor's COMPUSTAT industrial databases, our analysts' forecast data was obtained from the I/B/E/S database (Thomson Reuters), our analysts characteristics data comes from the Institutional Investor database, and our CEO characteristics data was collected through Videometrics, a video survey methodology. Our starting population included all Standard & Poor's (S&P) 500 firms for the years 2000–2013 inclusive, and excluded those that have no financial data available in COMPUSTAT. Next, we imposed two necessary filters on our data. First, we omitted CEOs who held temporary appointments, because CEOs who hold temporary appointments have different effects on their firms compared with permanent CEOs (Ballinger & Marcel, 2010). Second, we omitted CEOs when we were unable to acquire adequate publicly available Videometric data for the measurement of humility. The final annual sample includes a total of 185 CEOs and 1,256 firm-year observations based on control and year lag data

availability.¹ Our models of analyst evaluations include 122 CEOs and 881 firm-year observations because not all firms were present in the I/B/E/S data. To assess the representativeness of our data, we compared included and non-included firms in the final samples using the Kolmogorov–Smirnov (K-S) two-sample test (e.g., Siegel & Castellan, 1988; Westphal & Bednar, 2005). The results show that there were no significant differences with respect to CEO/firm-level variables between our sample and the population, including measures of CEO duality, CEO age, CEO ownership, CEO tenure, and Tobin's Q (TQ).

3.2 | Dependent variables

Finance and accounting scholars who study the effects of actual EPS relative to analysts' expectations on market performance have routinely used panels with either annual (Kasznik & McNichols, 2002) and quarterly (Barton & Simko, 2002; Koh et al., 2008) dependent variables. To acknowledge both approaches, while in this paper we present annual models, we have proceeded to also measure all of our dependent variables on a quarterly basis for additional robustness tests, because all our final and intermediate dependent variables (i.e., analysts' EPS expectations, actual EPS relative to analysts' expectations, Abnormal Returns (AR), TQ, and TSR) can be measured both on a year and quarter basis. Testing our models on a quarterly basis as a robustness test offers consistency with the alternative timings for tests in the finance and accounting literatures, provides a closer timing between announcement and performance for our TSR and TQ measures that may seem distal on a yearly basis, and allows us to test our general logic with two different time-frames adding robustness to our results. Figure 1, depicts the timing for both year and quarter-based measurement of our dependent variables.

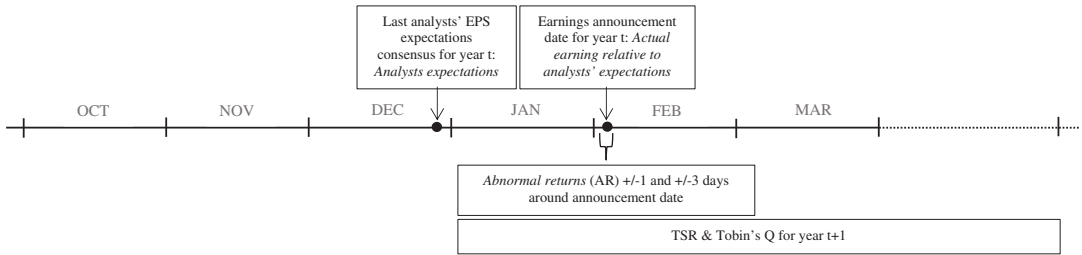
Analysts' EPS expectations: Analysts are important stakeholders in the marketplace and evaluate firms' future growth potential by setting their own performance forecasts for individual firms. Since analysts set market expectations for firms, extant finance and accounting literatures typically capture market performance expectations by aggregating all analysts' ratings following a given firm (e.g., Hong & Kubik, 2003; Kim, Lobo, & Song, 2011). Consistent with prior research, we operationalize analysts' EPS expectations as the I/B/E/S last analysts' consensus forecast for our focal firm's EPS for the year (t) and scaling it by the year-end firm's stock price for a given year.

Actual EPS relative to analysts' expectations: Following prior research in finance and accounting, we measured firms' actual EPS relative to analysts' expectation (Cheong & Thomas, 2011; DeFond & Park, 2001; Kasznik & Lev, 1995) as the difference between a firm's reported EPS for a fiscal period and the I/B/E/S last consensus forecast for the period issued for the firm, scaled by the end of period stock price for the firm. Our measure of performance above market expectation for the firm is the difference between firm's actual and forecasted EPS of the firm, scaled by the firm's stock price.

Market performance: We utilize three alternative measures of firms' market performance in our study: AR, Tobin's Q, and Total Shareholder Returns (TSR). AR, a commonly utilized measure of market performance in the finance and accounting literature that studies how firms' actual EPS performance relative to analysts' expectations affect the stock market performance of firms, was calculated as the average of the AR over a seven-day window ($-3, +3$ days) on either side of the actual earnings announcement date. This measure of market performance reflects the market performance around the announcement of actual earnings. As a robustness check, we also calculated average AR using a 3-day window ($-1, +1$) and, testing models with this alternative time window, the direction

¹In addition, we test our models in a quarterly panel of 4,291 firm-quarter observations and substantive results are consistent with our annual models in both directionality and significance.

(a) Year based measures:



(b) Quarter based measures:

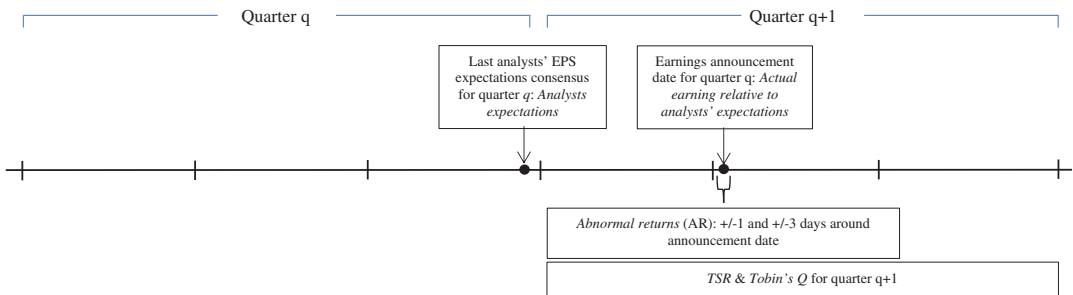


FIGURE 1 Timeline for measurement of analysts' earnings per share (EPS) expectations, actual EPS relative to analysts' expectations and market performance variables

and significance of our results remained unchanged² (Skinner & Sloan, 2002). AR reflect the “part of the return that is unanticipated by a statistical or economic model of anticipated returns” (Reinganum, 1985, pp. 51) and were calculated following prior research (Fama, Fisher, Jensen, & Roll, 1969; Hayward & Hambrick, 1997; Puffer & Weintrop, 1991), by subtracting estimated return³ from the firm's actual market return, then taking the average of that value for the days within the designated window around announcement.

Because we capture the effect on market performance of actual EPS performance compared with analysts' expectations (difference between actual performance for time t and last analysts' expectations consensus forecast for time t and) which is typically announced after the end of the year, we utilize our TQ and TSR variables measured for time $t + 1$. Consistent with the literature (e.g., Chung & Pruitt, 1994) we measure TQ as the ratio of the market value of a firm's assets, the combined market value of a firm's debt and equity, to their replacement value (Tobin, 1969). Our third measure of market performance, TSR, is a widely used measure of market performance (Quigley & Hambrick, 2012) as it reflects the compounded returns to shareholders for a given fiscal year. It is calculated by taking the difference in stock price over the year (end of year stock price minus beginning of year stock price) plus dividends and dividing it by the beginning of year stock price.

²We also tested our results with cumulative abnormal returns (CAR), an alternative to AR that is also widely utilized in finance and accounting. Results are qualitatively the same, as expected from the fact that both measures capture basically the same dimension because CAR represents the sum and AR represents the average of the results for the measurement window.

³The regression equation used to generate estimated return was estimated over the 300 trading days prior to last unaffected stock price date.

3.3 | Independent variable

Measurement of CEO humility: To measure CEO humility,⁴ we followed the videometric approach of Petrenko et al., 2016 for measuring personal characteristics of difficult to access individuals through third party ratings using the widely utilized and validated HEXACO scale (Ashton & Lee, 2005, 2009; Davis et al., 2016) on a sample of CEOs' public video-records. An important aspect of this measurement of humility for the purpose of this study is that in capturing an observed or external perception of the CEOs humility it aligns with elements of our theorizing that point to external perceptions of the CEO humility as mechanisms for our models. A potential weakness could be that in measuring humility through third party observation we may be capturing observed humility rather than inherent humility. However, building on the idea that observers can clearly identify targets' personality traits (Connelly & Hülsheger, 2012), prior research has validated the use of third-party ratings for measuring psychometric variables as having high operational validity (Oh, Wang, & Mount, 2011) and not suffering from the inflation of self-reports (Van Iddekinge, Raymark, & Roth, 2005). Using this approach has several benefits. First, it provides a direct but unobtrusive way to measure CEO characteristics (Petrenko et al., 2016), bypassing the reluctance of top executives to participate in survey research (Chatterjee & Hambrick, 2007, 2011) and therefore providing access to a large sample of CEOs whose videos are becoming increasingly ubiquitous online. Second, it provides the opportunity to measure the characteristics of CEOs with previously validated psychometric scales (such as, in this case, measuring humility using the HEXACO-60 scale) without concerns about social desirability biases or losses in response rates based on the sensitivity of the traits being measured (Cycyota & Harrison, 2006). Third, it avoids the criticism aimed at self-report measurements of humility based on evidence that humility cannot be appropriately measured using self-reports (i.e., humble people will not rate their humility highly) (Tangney, 2009). We specifically obtained videos showcasing focal CEOs in our sample from public internet sources and edited them to omit identifying information that could bias evaluations by coders, including their positions and company name (Petrenko et al., 2016). Similar to Gupta and Misangyi (2018), we recruited senior undergraduate students as raters in exchange for class credit. Raters were trained to appropriately assess and rate CEO humility utilizing a third person adaptation of the scale (Petrenko et al., 2016). To measure CEO humility, we combined the values of the four humility items from the Honesty-Humility scale of the HEXACO-60 scale (Ashton & Lee, 2005, 2009; Davis et al., 2016). These items measure humility by combining the modesty and greed-avoidance facets of the Honesty-Humility scale from the HEXACO-60 in order to avoid conflating honesty and humility in our measurement. This measurement demonstrated high coefficient alpha reliability ($\alpha = 0.74$) (Nunnally, 1978). A confirmatory factor analysis of the measure produced a CFI of 0.99. Moreover, raters demonstrated significant agreement on their ratings of CEO humility, $ICC(1, 3) = 0.37, p < .001, r_{wg} = 0.99$ (Bliese, 2000).

To ensure the robustness of our measurement, we performed several robustness tests that are discussed in detail in the online Appendix S1. First, we produced two alternative measures of humility. Second, we proceeded to validate our results utilizing expert coders as in Petrenko et al. (2016). Third, we assessed the stability of humility over time. Finally, we confirmed discriminant validity of humility with narcissism consistent with findings in psychology.

3.4 | Control variables

We control for CEO-, firm-, and industry-level potential confounding factors. Because external views about performance and market expectation may vary in part with leader's age and gender, we

⁴Our measure of CEO humility is available by request.

controlled for CEO age and gender. We also controlled for CEO power (Finkelstein, 1992) that might influence CEO's capability of promoting performance and shaping external perceptions for the firm, by including a measure of CEO tenure and a dummy for CEO duality (Yes = 1, if CEO is also a chairman of the board). To account for the influences of board on strategic decision and performance, we included two board-related controls: board independence, operationalized as the ratio of total number of independent directors to that of directors, and board size, measured as the number of directors on the board. To account for industry differences in analysts' forecasts we include both two level SIC codes for all industries and a dummy identifying high tech industries (Yes = 1) (Cooper, Day, & Lewis, 2001).

To control firm-specific conditions that might influence performance and market expectation of a firm, we controlled for firm size, measured as the logarithm of total employees. In addition, we controlled the current year performance by including return on assets (ROA). To account for the ability of a firm to meet its financial obligations, we controlled leverage ratio, measured as the ratio of total debt to stockholder equity. Finally, given the performance implications of corporate- and business-level diversifications (Hitt, Tihanyi, Miller, & Connelly, 2006), we further controlled a firm's diversification in terms of geographic areas and product categories using entropy measures (Chin & Semadeni, 2017; Kim, 2016).

We also account for several analyst specific characteristics that could influence a firm's performance forecasts: analyst experience, star analysts, earnings guidance, and number of analysts. Specifically, we measured analyst experience as a firm-level average of the number of years of experience of the analysts that cover each firm in each year (Wu & Zhang, 2009). Second, we control for star analysts. To generate this control, we utilized the Institutional Investor database that contains a list of analysts voted as "stars" to identify the star analysts covering each firm for every year in our sample. Then, we coded those analysts as 1 for "stars" (0 otherwise) and aggregated the number of star analysts for each firm and divided it by total number of analysts covering the focal firm in the focal year. Third, we control for forecast guidance measured as a dummy variable coded as 1 if the firm provided a point estimate forecast and 0 if otherwise (Washburn & Bromiley, 2014). We use this measure for earnings guidance because less than 40% of the firms provide guidance (Washburn & Bromiley, 2014).⁵ Finally, we include a control for the number of analysts covering a firm (Hameed, Morck, Shen, & Yeung, 2015).

3.5 | Endogeneity

The main endogeneity concern in our tests would be the possibility that more humble CEOs select onto firms with our pattern of findings. Theoretically, that would imply that more humble executives would either be selected or select themselves onto firms that are, *ceteris paribus*, more likely to receive lower EPS expectations and then beat those expectations with positive effects on market performance. The theoretical complexity of this potential selection issue leads us to believe that endogeneity may not be a significant concern in our study. It is difficult to conceive that firms that are undervalued by analysts would select more humble CEOs that might not contribute to their perception of earning potential in the market, and even more difficult to imagine such selection to co-occur with those firms having the earning potential to beat those expectations. Beyond this theoretical rationale and while our control variables and research design provide a conservative test of our hypotheses, we conducted two robustness checks to assess if this type of endogeneity created a potential

⁵We also test our models with the actual values of guidance and results are consistent to this alternative operationalization of forecast guidance.

problem for our findings. First, we explored the possibility that certain conditions could affect both CEO humility and our dependent variables. Following the prior research on strategic leadership characteristics (Chatterjee & Hambrick, 2007, 2011; Nadkarni, Chen, & Chen, 2016; Sanders & Hambrick, 2007; Tang, Mack, & Chen, 2018), we then proceeded to ran models that included an endogeneity control to control for this potential concern. To construct this control, we first identified a variety of potentially relevant predictors of CEO humility in firms and ran a first stage regression model for CEO humility. Five variables were broadly relevant predictors in our model: industry advertising intensity ($p = .025$), CEO total compensation ($p = .076$), firm size ($p = .019$), previous year market performance ($p = .021$), and industry stability ($p = .086$). The selection model, retaining the most relevant predictors (Sanders & Hambrick, 2007), was significant ($R^2 = 0.113$; $p < .001$). Using this selection model, we predicted a humility score and included that value as an endogeneity control in our second stage analyses. Results from that analyses yielded qualitatively similar results to the models presented below using our raw measure of CEO humility, suggesting that endogeneity was not a significant problem in our study.

Second, as a broader test for endogeneity concerns, we tested the correlation in our models between our raw score of CEO humility and the residuals of our models. Consistent with our theoretical intuition that selection of more humble CEOs onto firms with our pattern of findings is highly unlikely because of the complexity of the selection logic, we found that the raw score for CEO humility is uncorrelated with the error terms (very low correlations—between 0.01 and 0.03 for all the models— p values between .20 and .61) indicating that our models do not violate the assumption of uncorrelated error terms and therefore lending additional credibility to our results. We therefore proceeded to dispense with instrumentation for CEO humility in our models and present models using our raw measure of CEO humility in our results section and tables. In sum, our robustness tests suggest that endogeneity did not bias our results.

3.6 | Model and estimation

Because our sample consisted of longitudinal data for each CEO in which analysts' EPS expectations, actual EPS relative to analysts' expectations, and market performance metrics, reoccurred consistently on a yearly and quarterly basis, we follow the finance and accounting literatures and use panel approaches to test our hypotheses (Barton & Simko, 2002; Kasznik & McNichols, 2002). Specifically, given that we are primarily concerned with the outcomes of an invariant personal characteristic of CEOs (Chatterjee & Hambrick, 2007, 2011), CEO humility, to test our hypotheses, we used generalized estimating equations (GEE). GEE models have been widely utilized as an estimation method for such data in the strategic leadership literature because they explicitly account for the nonindependence of observations in panel data (Liang & Zeger, 1986). The models were specified with a Gaussian distribution and an identity link function. Because we assumed that observations within each set of CEO observations can be correlated, we used an exchangeable correlation structure (grouped by CEO) to account for any autocorrelation in the data (Gupta & Misangyi, 2018). Finally, we also specified robust standard errors in all models to help account for any misspecification in the correlation structure (Hardin & Hilbe, 2012). As a robustness test, in testing Hypothesis (H3), for which CEO humility was not the independent variable, we used a fixed-effect model to account for underlying firm-level heterogeneity (Certo & Semadeni, 2006) results remain consistent in directionality and significance with our models, thus we present the GEE models in our tables.

4 | RESULTS

Descriptive statistics and correlations are shown in Table 1 while Tables 2 through 5 report results for our hypotheses tests. Results for our predictions of the effects of CEO humility on analysts' EPS expectations and actual EPS relative to analysts' expectations are presented in Table 2. Table 3 reports the results of our predictions about how actual earnings relative to analysts' expectations affect firms' market performance and Table 4 shows the results for the effects of CEO humility on firms' market performance. In our Tables, the control variables models are presented first followed by models that introduce our variable of interest. Results for our mediation models are presented in Table 5.

In our first hypothesis, we predicted a negative relationship between CEO humility and analysts' EPS expectations. Results reported in Table 2 Model 2 ($b = -0.011$, $SE = 0.003$, $p = .001$) provide support for this hypothesis. This result has practical significance because it shows that when CEO humility increases by one SD , analysts' EPS expectations decrease by 24%. In addition, we performed tests of Hypothesis (H1). in quarterly models and found Hypothesis 1 is also supported at this shorter alternative timing frame ($b = -0.004$, $SE = 0.001$, $p = .005$).

Hypothesis (H2). proposed a positive relationship between CEO humility and actual EPS relative to analysts' expectations. The results reported in Table 2 Model 4 yield support for the hypothesis ($b = 0.001$, $SE = 0.001$, $p = .003$). The result of this hypothesis also suggests relevant practical effects because it shows that for every SD increase in CEO humility, actual EPS relative to analysts' expectations increases 11%. In addition, we performed tests of Hypothesis (H2). in quarterly models and found it is also supported at this shorter alternative timing frame ($b = 0.001$, $SE = 0.001$, $p = .004$). Considered in concert with our first two hypotheses, these results support the counterintuitive logic that humble CEOs are misconstrued by market analysts leading to an expectations discount, which sets the stage for humble CEOs to exceed market expectations.

In Hypothesis (H3)., we postulate that actual EPS relative to analysts' expectations is positively related to market performance. Result provide support for Hypothesis (H3). for all three measurements of market performance: AR, TQ, and TSR. First, results reported in Table 3 Model 6 ($b = 0.151$, $SE = 0.057$, $p = .009$) provide strong support for Hypothesis (H3). when market performance is measured as AR (average AR ± 3 days around the announcement date) and have important practical significance given that there is a 15% increase in AR for every SD increase in actual EPS relative to analysts' expectations.^{6,7} Second, results reported in Table 3 Model 8 ($b = 3.158$, $SE = 1.455$, $p = .030$) also provide support for this hypothesis when market performance is measured as TQ and imply important practical effects given that for every SD increase in actual EPS relative to analysts' expectations, the market performance of the firm increases by 2%. Finally, results reported in Table 3 Model 10 ($b = 7.802$, $SE = 2.442$, $p = .001$) also provide strong support for Hypothesis (H3). when market performance is measured as TSR and indicate important practical effects given that for every SD increase in actual EPS relative to analysts' expectations, the market performance of the firm increases 17%. In addition, we performed tests of Hypothesis 3 in quarterly models and found H3 is also supported at this shorter alternative timing frame: AR ($b = 0.012$, $SE = 0.005$, $p = .006$), TQ ($b = 1.210$, $SE = 0.517$, $p = .019$), and TSR ($b = 6.266$, $SE = 2.597$, $p = .016$).

⁶As a robustness test, results are consistent when AR is measured within a narrower window of ± 1 days around announcement date.

⁷We alternatively tested this model using fixed effects because this hypothesis did not include a stable trait (CEO humility) and we wanted to confirm it worked with an alternative specification, results were consistent with the results of the GEE models.

TABLE 1 Correlation and descriptive statistics

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Analyst EPS expectation	0.05	0.06																							
2 ARAE	0.01	0.01	0.08																						
3 Tobin's Q (TQ)	1.57	1.48	-0.15	0.04																					
4 TSR	0.09	0.43	-0.05	0.07	0.16																				
5 CAR	0.01	0.01	0.01	0.08	-0.01	0.07																			
6 ROA	0.06	0.07	-0.08	0.10	0.58	0.15	0.09																		
7 Earnings per share (EPS)	2.76	3.02	0.21	0.10	-0.02	0.19	0.07	0.27																	
8 Media optimism	-0.01	0.19	0.08	0.03	0.02	0.05	0.01	0.04	0.01																
9 High-tech industries	0.31	0.46	0.08	0.03	0.26	0.03	-0.01	0.17	-0.01	0.03															
10 Firm size	2.82	1.46	0.20	0.01	-0.20	-0.10	-0.04	-0.01	0.09	-0.06	0.01														
11 Leverage	0.80	4.48	-0.02	0.10	-0.08	-0.01	0.01	-0.07	0.03	0.01	-0.04	0.03													
12 Geo. diversification	0.48	0.42	0.14	0.05	0.19	-0.01	-0.01	0.16	0.11	-0.01	0.33	0.11	-0.06												
13 Corp. diversification	0.51	0.58	0.13	0.04	-0.16	-0.08	0.01	-0.06	0.01	-0.04	0.17	0.32	0.03	0.19											
14 Board independence	0.80	0.11	0.11	0.01	-0.13	-0.06	0.01	-0.02	0.06	0.01	-0.05	0.15	0.03	0.08	0.12										
15 Board size	10.71	2.84	0.09	-0.08	-0.33	-0.05	-0.03	-0.16	0.17	-0.01	-0.07	0.22	0.01	0.05	0.12	0.02									
16 CEO tenure	5.36	6.14	-0.13	0.01	0.10	-0.02	0.01	0.04	-0.08	0.02	0.06	-0.01	-0.03	-0.05	0.03	-0.06	-0.17								
17 CEO duality	0.91	0.27	-0.01	0.01	0.02	-0.01	-0.01	0.01	-0.02	0.02	0.03	-0.04	-0.08	0.02	0.01	0.02	-0.10	0.31							
18 CEO age	53.98	6.04	0.06	0.05	-0.12	-0.01	0.02	0.06	0.07	0.02	-0.06	0.10	0.01	0.06	0.10	0.09	0.06	0.34	0.11						
19 CEO gender	0.96	0.17	-0.23	-0.01	0.05	0.02	-0.01	-0.01	-0.01	-0.02	-0.01	-0.02	-0.15	-0.02	-0.01	-0.08	-0.03	0.08	0.06	0.01					
20 Analyst experience	13.16	2.47	0.09	-0.05	-0.12	-0.05	0.02	-0.01	-0.01	-0.03	-0.09	0.27	-0.01	-0.05	0.25	0.03	0.11	-0.16	-0.10	0.01	0.01				
21 Number of analysts	22.83	9.46	0.01	-0.01	0.10	0.01	0.01	0.05	0.06	-0.08	0.24	0.19	-0.03	0.27	0.02	0.06	0.04	0.12	0.04	0.03	0.11	-0.13			
22 Star analysts	0.26	0.95	-0.03	0.01	-0.06	-0.03	-0.04	-0.07	-0.05	0.05	-0.11	-0.20	0.05	-0.14	-0.09	-0.04	-0.07	0.01	0.01	0.03	0.02	-0.30	-0.21		
23 Earnings guidance	0.33	0.47	0.12	0.05	-0.01	0.01	-0.02	0.09	0.03	0.02	0.08	0.27	-0.03	0.03	0.13	0.09	0.06	-0.05	-0.01	-0.08	-0.03	0.08	-0.08	-0.10	
24 CEO humility	3.49	1.04	-0.11	0.01	0.07	0.06	-0.01	0.02	0.01	-0.03	0.07	0.06	-0.01	-0.03	0.02	0.04	-0.07	-0.03	-0.01	-0.06	-0.01	0.01	-0.05	0.01	0.01

Abbreviations: CAR, cumulative abnormal returns; ROA, return on assets; TSR, total shareholder returns.

TABLE 2 The effects of CEO humility on Analysts' EPS expectations and actual EPS relative to Analysts' expectations (ARAE): (GEE analyses)

Control variables	Model 1 (DV: Analysts' EPS expectations)		Model 2 (DV: Analysts' EPS expectations)		Model 3 (DV: Actual EPS relative to Analysts' expectations)		Model 4 (DV: Actual EPS relative to Analysts' expectations)	
	β	<i>p</i> -value	β	<i>p</i> -value	β	<i>p</i> -value	β	<i>p</i> -value
Tobins Q	-0.013 (0.003)	(.000)	-0.012 (0.001)	(.000)	-0.001 (0.001)	(.838)	-0.001 (0.001)	(.251)
Hightech industry	-0.019 (0.021)	(.361)	-0.019 (0.030)	(.529)	-0.003 (0.002)	(.216)	-0.003 (0.002)	(.204)
Firm size (log of employees)	0.011 (0.005)	(.038)	0.012 (0.002)	(.000)	0.001 (0.001)	(.235)	-0.001 (0.001)	(.948)
ROA	0.287 (0.125)	(.022)	0.300 (0.029)	(.000)	0.013 (0.003)	(.000)	0.019 (0.004)	(.000)
Leverage	-0.001 (0.001)	(.691)	-0.001 (0.002)	(.667)	0.001 (0.001)	(.000)	0.001 (0.001)	(.000)
Geographic diversification	0.002 (0.007)	(.705)	0.002 (0.007)	(.735)	-0.001 (0.001)	(.181)	-0.001 (0.001)	(.435)
Corporate diversification	-0.005 (0.004)	(.178)	-0.004 (0.004)	(.342)	0.001 (0.001)	(.270)	0.001 (0.001)	(.060)
Board independence	0.030 (0.016)	(.072)	0.016 (0.018)	(.376)	0.004 (0.001)	(.011)	0.003 (0.001)	(.061)
Board size	-0.001 (0.001)	(.572)	-0.001 (0.001)	(.466)	-0.001 (0.001)	(.010)	-0.001 (0.001)	(.014)
CEO tenure	-0.001 (0.001)	(.109)	-0.001 (0.001)	(.061)	-0.001 (0.001)	(.697)	0.001 (0.001)	(.600)
CEO duality	0.010 (0.004)	(.014)	0.009 (0.005)	(.115)	0.001 (0.001)	(.440)	0.001 (0.001)	(.667)
CEO age	0.001 (0.001)	(.763)	0.001 (0.001)	(.155)	-0.001 (0.001)	(.996)	0.001 (0.001)	(.497)
CEO gender	-0.094 (0.057)	(.100)	-0.100 (0.016)	(.000)	-0.001 (0.001)	(.997)	-0.001 (0.001)	(.903)
Analyst experience	-0.001 (0.001)	(.293)	-0.001 (0.001)	(.217)	-0.001 (0.001)	(.524)	0.001 (0.001)	(.965)
Number of analysts	0.001 (0.001)	(.732)	0.001 (0.001)	(.920)	0.001 (0.001)	(.420)	0.001 (0.001)	(.413)
Star analysts	0.005 (0.003)	(.079)	0.005 (0.002)	(.045)	-0.001 (0.001)	(.079)	-0.001 (0.001)	(.072)
Earnings guidance	0.011 (.188)		0.013 (.007)		0.001 (.817)		0.001 (.656)	

TABLE 2 (Continued)

Control variables	Model 1 (DV: Analysts' EPS expectations)		Model 2 (DV: Analysts' EPS expectations)		Model 3 (DV: Actual EPS relative to Analysts' expectations)		Model 4 (DV: Actual EPS relative to Analysts' expectations)	
	β	<i>p</i> -value	β	<i>p</i> -value	β	<i>p</i> -value	β	<i>p</i> -value
CEO humility	(0.008)		(0.004)		(0.001)		(0.001)	
			-0.011	(.001)			0.001	(.003)
			(0.003)				(0.001)	
Constant	0.120	(.094)	0.059	(.285)	0.001	(.729)	-0.002	(.622)
	(0.071)		(0.055)		(0.003)		(0.004)	
Wald chi-square	325.69	(.000)	397.66	(.000)	739.29	(.000)	755.85	(.000)
Observations	881		881		881		881	

Abbreviations: CFI, Comparative fit index; DV, Dependent variable; EPS, earnings per share; GEE, generalized estimating equations; ICC, Intraclass correlation coefficient; ROA, return on assets.

In Hypothesis (H4), we postulate that CEO humility will be positively related to market performance. Results provide support for Hypothesis (H4) for all three measurements of market performance: AR, TQ, and TSR. First, results shown in Table 4 Model 12 ($b = 0.002$, $SE = 0.001$, $p = .016$) provide support for this hypothesis and indicate that for every SD increase in CEO humility, AR increases by about 22%.⁸ Second, results presented in Table 4 Model 14 ($b = 0.113$, $SE = 0.042$, $p = .007$) support Hypothesis (H4) when firm market performance is measured as TQ. They indicate important practical effects given that for every SD increase in CEO humility, the market performance of the firm increases 9%. Finally, results reported in Table 4 Model 16 ($b = 0.030$, $SE = 0.013$, $p = .021$) provide strong support for Hypothesis (H4) when market performance is measured as TSR and indicate relevant practical effects given that for every one SD increase in CEO humility, market performance increases by 7%. In addition, we performed tests of Hypothesis 4 in quarterly models and found H4 is also supported at this shorter alternative timing frame: AR ($b = 0.001$, $SE = 0.001$, $p = .045$), TQ ($b = 0.0132$, $SE = 0.055$, $p = .017$), and TSR ($b = 0.126$, $SE = 0.059$, $p = .033$).

Because the logic of our hypotheses implies mediation, Hypothesis (H5) predicted that actual EPS relative to analysts' expectations would mediate the relationship between CEO humility and market performance. We proceeded to test it utilizing Baron and Kenny's (1986) four criteria to test for mediation effects (e.g., Cho & Hambrick, 2006; McDonald, Khanna, & Westphal, 2008; Quigley & Hambrick, 2012) that are widely utilized in the strategy literature. First, the independent variable must significantly predict the mediator. In our case, humility significantly predicts actual earnings relative to analysts' expectations ($b = 0.001$, $SE = 0.001$, $p = .003$). Second, the independent variable must significantly predict the dependent variable. In our case, humility significantly predicts market performance (AR: $b = 0.002$, $SE = 0.001$, $p = .016$; TQ: $b = 0.113$, $SE = 0.042$, $p = 0.007$; TSR: $b = 0.030$, $SE = 0.013$, $p = .021$). Third, the mediator must significantly predict the dependent variable, conditional on the presence of the independent variable in the model. To test this, we ran a model predicting market performance where both humility and earnings relative to analysts'

⁸As a robustness test, results are consistent when AR is measured within a narrower window of ± 1 days around announcement date.

TABLE 3 Actual EPS relative to Analysts' expectations (ARAE) on market performance: (GEE analyses)

Control variables	Model 5 (DV: AR)		Model 6 (DV: AR)		Model 7 (DV: TQ _{t+1})		Model 8 (DV: TQ _{t+1})		Model 9 (DV: TSR _{t+1})		Model 10 (DV: TSR _{t+1})	
	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value
High tech industry	0.015 (0.005)	[.005]	0.011 (0.002)	[.000]	0.386 (0.182)	[.034]	0.070 (0.177)	[.693]	0.288 (0.066)	[.000]	0.322 (0.066)	[.000]
Firm size (log of employees)	-0.001 (0.001)	[.116]	-0.002 (0.001)	[.001]	-0.185 (0.102)	[.070]	-0.047 (0.090)	[.597]	0.014 (0.013)	[.267]	0.014 (0.012)	[.218]
ROA	0.023 (0.008)	[.010]	0.045 (0.014)	[.014]	2.663 (0.883)	[.003]	3.485 (0.757)	[.000]	-0.190 (0.281)	[.498]	-0.321 (0.274)	[.241]
Leverage	0.001 (0.001)	[.492]	0.001 (0.001)	[.092]	0.001 (0.002)	[.422]	-0.128 (0.041)	[.002]	0.025 (0.017)	[.148]	0.011 (0.018)	[.525]
Geographic diversification	-0.001 (0.002)	[.363]	-0.002 (0.001)	[.109]	0.341 (0.206)	[.099]	0.520 (0.176)	[.003]	0.022 (0.038)	[.564]	0.023 (0.037)	[.527]
Corporate diversification	-0.001 (0.010)	[.549]	0.001 (0.001)	[.147]	-0.265 (0.115)	[.022]	-0.293 (0.120)	[.015]	-0.050 (0.023)	[.032]	-0.057 (0.022)	[.010]
Board independence	0.003 (0.004)	[.443]	0.004 (0.004)	[.311]	-0.351 (0.393)	[.373]	-0.411 (0.469)	[.381]	0.022 (0.108)	[.833]	-0.009 (0.104)	[.926]
Board size	-0.001 (0.001)	[.284]	0.001 (0.001)	[.187]	-0.092 (0.035)	[.010]	-0.079 (0.037)	[.035]	-0.010 (0.005)	[.076]	-0.007 (0.005)	[.150]
CEO tenure	-0.001 (0.001)	[.962]	0.001 (0.001)	[.697]	0.008 (0.016)	[.610]	0.032 (0.018)	[.083]	-0.006 (0.001)	[.000]	-0.006 (0.001)	[.000]
CEO duality	-0.001 (0.001)	[.420]	-0.001 (0.001)	[.775]	0.005 (0.125)	[.966]	0.154 (0.096)	[.109]	0.169 (0.050)	[.001]	0.160 (0.050)	[.001]
CEO age	0.001 (0.001)	[.451]	0.001 (0.001)	[.044]	-0.028 (0.014)	[.052]	-0.036 (0.017)	[.033]	-0.001 (0.002)	[.856]	-0.001 (0.001)	[.818]

TABLE 3 (Continued)

Control variables	Model 5 (DV: AR)		Model 6 (DV: AR)		Model 7 (DV: TQ _{t+1})		Model 8 (DV: TQ _{t+1})		Model 9 (DV: TSR _{t+1})		Model 10 (DV: TSR _{t+1})	
	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value
CEO gender	-0.002 (0.002)	[.281]	-0.003 (0.002)	[.239]	0.282 (0.271)	[.297]	0.361 (0.265)	[-.173]	0.110 (0.045)	[.014]	0.112 (0.047)	[.017]
Analyst experience	0.001 (0.001)	[.098]	0.001 (0.001)	[.098]	-0.028 (0.021)	[.185]	-0.010 (0.027)	[.703]	-0.004 (0.007)	[-.525]	-0.004 (0.007)	[-.572]
Number of analysts	0.001 (0.001)	[.705]	0.001 (0.001)	[.843]	0.006 (0.006)	[.271]	0.005 (0.006)	[.407]	0.001 (0.001)	[-.533]	0.001 (0.001)	[-.592]
Star analysts	-0.001 (0.001)	[.246]	-0.001 (0.001)	[.767]	-0.096 (0.031)	[.002]	-0.053 (0.035)	[-.135]	-0.003 (0.017)	[.843]	0.005 (0.017)	[.741]
Earnings guidance	0.001 (0.001)	[.518]	0.001 (0.001)	[.563]	0.146 (0.141)	[.302]	0.118 (0.145)	[.413]	-0.008 (0.026)	[.744]	-0.012 (0.026)	[.628]
ARAE			0.151 (0.057)	[.009]			3.158 (1.455)	[.030]			7.802 (2.442)	[.001]
Constant	-0.015 (0.007)	[.039]	-0.028 (0.007)	[.000]	4.503 (0.987)	[.000]	3.965 (1.231)	[.001]	-0.162 (0.221)	[.465]	-0.172 (0.177)	[.330]
Wald chi-square	158.79	[.000]	198.38	[.000]	390.44	[.000]	485.76	[.000]	219.80	[.000]	298.21	[.000]
Observations	881		881		881		881		881		881	

Abbreviations: AR, Abnormal returns; EPS, earnings per share; ROA, return on assets; TQ, Tobin's Q.

TABLE 4 The effects of CEO humility on market performance: (GEE analyses)

Control variables	Model 11 (DV: AR)		Model 12 (DV: AR)		Model 13 (DV: TQ _{t+1})		Model 14 (DV: TQ _{t+1})		Model 15 (DV: TSR _{t+1})		Model 16 (DV: TSR _{t+1})	
	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value
Hightech industry	0.001 (0.003)	[.762]	0.001 (0.003)	[.745]	0.354 (0.203)	[.081]	0.343 (0.204)	[.093]	0.290 (0.143)	[.043]	0.273 (0.143)	[.056]
Firm size (log of employees)	-0.001 (0.001)	[.182]	-0.001 (0.001)	[.161]	-0.186 (0.108)	[.084]	-0.185 (0.105)	[.078]	0.017 (0.011)	[.128]	0.011 (0.011)	[.347]
ROA	0.002 (0.011)	[.806]	0.003 (0.011)	[.807]	2.174 (0.984)	[.027]	2.219 (0.987)	[.025]	-0.162 (0.198)	[.412]	0.011 (0.211)	[.957]
Leverage	-0.001 (0.001)	[.125]	-0.001 (0.001)	[.102]	0.006 (0.052)	[.899]	0.005 (0.052)	[.922]	0.024 (0.017)	[.147]	0.026 (0.017)	[.120]
Geographic diversification	-0.001 (0.002)	[.698]	-0.001 (0.002)	[.851]	0.325 (0.232)	[.161]	0.327 (0.229)	[.154]	0.039 (0.033)	[.235]	0.041 (0.032)	[.202]
Corporate diversification	-0.001 (0.001)	[.283]	-0.001 (0.001)	[.341]	-0.293 (0.105)	[.006]	-0.291 (0.106)	[.006]	-0.056 (0.021)	[.008]	-0.044 (0.021)	[.039]
Board independence	0.004 (0.007)	[.588]	0.002 (0.007)	[.809]	-0.157 (0.429)	[.714]	-0.185 (0.424)	[.662]	0.001 (0.099)	[.986]	-0.066 (0.102)	[.518]
Board size	-0.001 (0.001)	[.340]	-0.001 (0.001)	[.358]	-0.077 (0.036)	[.036]	-0.077 (0.036)	[.035]	-0.011 (0.005)	[.047]	-0.010 (0.005)	[.067]
CEO tenure	0.001 (0.001)	[.427]	0.001 (0.001)	[.306]	-0.007 (0.026)	[.784]	-0.009 (0.024)	[.694]	-0.006 (0.001)	[.000]	-0.005 (0.001)	[.002]
CEO duality	-0.004 (0.002)	[.061]	-0.004 (0.002)	[.053]	-0.022 (0.126)	[.861]	-0.028 (0.126)	[.822]	0.147 (0.054)	[.007]	0.132 (0.055)	[.016]
CEO age	-0.001 (0.001)	[.259]	-0.001 (0.001)	[.291]	-0.019 (0.021)	[.359]	-0.016 (0.019)	[.402]	-0.001 (0.001)	[.645]	0.001 (0.001)	[.683]

TABLE 4 (Continued)

Control variables	Model 11 (DV: AR)		Model 12 (DV: AR)		Model 13 (DV: TQ _{t+1})		Model 14 (DV: TQ _{t+1})		Model 15 (DV: TSR _{t+1})		Model 16 (DV: TSR _{t+1})	
	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value	β	p-value
CEO gender	0.001 (0.003)	[.645]	0.001 (0.003)	[.681]	0.439 (0.251)	[.080]	0.438 (0.255)	[.086]	0.127 (0.067)	[.058]	0.114 (0.066)	[.086]
Analyst experience	-0.001 (0.001)	[.802]	-0.001 (0.001)	[.710]	-0.007 (0.022)	[.754]	-0.007 (0.022)	[.737]	-0.003 (0.006)	[.588]	-0.001 (0.006)	[.807]
Number of analysts	-0.001 (0.001)	[.761]	-0.001 (0.001)	[.693]	0.010 (0.007)	[.143]	0.010 (0.007)	[.127]	0.001 (0.001)	[.846]	0.001 (0.001)	[.946]
Star analysts	0.001 (0.001)	[.978]	0.001 (0.001)	[.996]	-0.099 (0.032)	[.002]	-0.101 (0.032)	[.002]	0.029 (0.023)	[.219]	0.029 (0.023)	[.219]
Earnings guidance	0.002 (0.002)	[.207]	0.002 (0.002)	[.127]	0.170 (0.156)	[.275]	0.175 (0.155)	[.259]	-0.009 (0.025)	[.709]	-0.003 (0.025)	[.905]
CEO humility			0.002 (0.001)	[.016]			0.113 (0.042)	[.007]			0.030 (0.013)	[.021]
Constant	0.021 (0.017)	[.236]	0.018 (0.017)	[.304]	2.662 (1.641)	[.105]	2.124 (1.464)	[.147]	-0.123 (0.229)	[.591]	-0.281 (0.236)	[.234]
Wald chi-square	58.66	[.000]	64.21	[.000]	416.26	[.000]	527.32	[.000]	158.79	[.000]	172.92	[.000]
Observations	1,256		1,256		1,256		1,256		1,256		1,256	

Abbreviations: AR, abnormal returns; GEE, generalized estimating equations; ROA, return on assets; TQ, Tobin's Q; TSR, total shareholder returns.

expectations (mediator) are included as predictors. The results show that earnings relative to analysts' expectations is significantly related to market performance (AR: $b = 0.148$, $SE = 0.066$, $p = .025$; TQ: $b = 2.696$, $SE = 1.265$, $p = .033$; TSR: $b = 7.238$, $SE = 2.588$, $p = .005$). Finally, as results displayed in Table S2 show (see online Appendix Table S2), the effect of humility on market performance is diminished in magnitude and significance (AR: $b = 0.001$, $SE = 0.001$, $p = .757$; TQ: $b = -0.039$, $SE = 0.072$, $p = .584$; TSR: $b = 0.027$, $SE = 0.015$, $p = .086$), satisfying Baron and Kenny's (1986) fourth criteria for mediation. Combined, these results provide empirical support for mediation in our models. These results are shown in Table S4 in online Appendix S4.

4.1 | Post-hoc analyses

As additional support for our logic, we ran four post-hoc supplementary tests. Detailed discussion and results for these post-hoc analyses are available in online Appendix S2. First, we investigated the potential alternative explanation for our results that CEO humility could have a direct positive effect on operational performance that, in turn, affects market performance. We proceeded to test the relationship between humility and operational performance. Our results for this test, displayed in Table 7 in online Appendix S2, show that CEO humility does not explain better operational performance when measured as both ROA ($b = -0.002$, $SE = 0.002$, $p = .461$) and actual EPS ($b = 0.122$, $SE = 0.151$, $p = .418$). This test shows that our results are not explained by improvements in operational performance. Second, as an additional test of the idea that firms with more humble CEOs get lower external stakeholders' expectations, we performed a post-hoc supplementary analysis examining the relationship between CEO humility and the next most important source for firm expectations, the media. Third, we investigated if the counterfactual argument that firms with more humble CEOs get higher market performance because of the lower expectations that their humbler CEOs generate in the market was counterbalanced in its effect for investors by less humble CEOs getting better market performance before actual EPS announcement based on the higher analysts EPS expectations they generate. Finally, we investigated the implicit assumption in our logic, supported by finance and accounting literature (Butler & Lang, 1991; Jacob et al., 1999), that analysts don't significantly correct the systematic bias in their predictions to address the possibility that the effect of CEO humility would only be short lived.

5 | DISCUSSION

Looking at the effect of humble CEOs on market stakeholders (i.e., analysts, media, and the market), we seek to resolve the apparent contradiction between the positive effects they bring to their firms in terms of producing the collaborative TMTs and increased information sharing (Ou et al., 2014; Simsek et al., 2005) through participative leadership (Guillén & González, 2001; Hackett & Wang, 2012; Morris et al., 2005) that is needed for today turbulent business environments, and the potentially damaging effects of their humility on external evaluations of the company. We argue and find that the low expectations they produce for their firms are actually beneficial to organizational market performance. This rather counterintuitive finding combines insights from social psychological theories about leadership evaluations and attributions (e.g., Epitropaki & Martin, 2004, 2005; Lord & Maher, 1993; Offermann et al., 1994) with accounting and finance theories about market performance of firms (e.g., Barton & Simko, 2002; Kasznik & McNichols, 2002; Kim et al., 2011; Koh et al., 2008). Specifically, we find that analysts' EPS expectations are lower for organizations with more humble CEOs, making organizations with more humble CEOs more likely to have improved

firms' actual EPS relative to analysts' expectations, which results in significant market performance effects for their firms. Therefore, our first contribution is to extend current theory about the positive effects of humble CEOs beyond intra-organizational findings by linking CEO humility to market performance via an expectations discount.

An implication of this theme is that the grandiose and overconfident leaders that have traditionally been the choice of external stakeholders may have been ultimately setting their firms up for lower performance in the market. In many ways, our findings therefore suggest that humble expectations have value for organizations. It also confirms that humble or grandiose styles may not be a signal of inherent ability to affect the actual operational performance of a business and that more complex configurations of characteristics may be at play. These findings contribute to the strategic capital and executive leadership literatures by increasing our understanding of the role that leader characteristics play in forming external evaluations of the firm and affecting their market success.

Second, to scholars particularly interested in humility, we offer an alternative logic for how humility perceptions may operate for individuals in general. Expectations are everywhere and always form a reference point for evaluations in life. Like market expectations, family expectations, parents' expectations, friends and co-worker expectations, emerge from cues about personal characteristics and produce a reference point for evaluations of actions that can affect how more or less humble individuals are rewarded or ultimately evaluated in their personal or work lives. It would be interesting to see if an equivalent process to the one suggested by our paper operates at lower levels of analysis. Thus, reconciling the dual internal and external views of humble leaders, internally viewed as virtuous and magnanimous with the external views as weak and inadequate. This reconciliation offers insight to those concerned with how humble CEOs affect external firm outcomes such as market performance. While in this paper we investigate these external perceptions and their influence on the performance of firms, further investigation may be granted on both the internal and external effects of appointing more humble CEOs.

Beyond the theoretical contribution, this paper offers a novel methodological approach to the measurement of humility to strategy and organizational researchers. The videometric approach utilized in this paper overcomes a number of the methodological limitations that limits the development of research on humble executives. First, it addresses the issue of reliance on self-report measures of humility, which has been considered a "glaring gap in the literature" (Tangney, 2009: 486). The videometric approach provides humility scholars with a viable alternative to self-report measures of humility by allowing scholars to gain third-party ratings using valid psychometric scales. While the measurement could capture observed humility, it is consistent with research that shows that third party-ratings are effective in capturing inherent personality traits beyond the limitations that self-reported measurements have for socially attractive constructs such as humility. Second, this approach minimizes the implicit complexity involved in measuring characteristics of leaders, who are often notoriously hard for researchers to access.

In conclusion, as views about leadership preferences continue to change and scholars and practitioners continue to advocate for more humanized, virtuous, and authentic, types of leaders, it was important to understand the implications leadership humility for the market as perhaps the most visible stakeholder of organizations. It is perhaps time too to try to understand how this type of leaders may affect other internal and external stakeholders' options and evaluations. We hope our research can help maintain the flow of interest on this important executive characteristic.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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