How Does a Firm's Rumor Response Practice Affect Investors' Reactions to Rumors?

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Abstract

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Despite the unverified nature of rumors, prior research suggests that investors' judgments and financial market outcomes often reflect an overreaction to rumors. I use an experiment to examine how a firm's rumor response practice affects investors' reactions to rumors (i.e., their expected change in stock price and willingness to invest). Drawing on psychology theory on mental simulation, I predict and find that when rumors have positive (negative) implications, investors expect a greater increase (decrease) in stock price when the firm has a rumor response practice that is a no-comment practice compared to a discretionary practice. While I do not find a direct effect of rumor response practice on willingness to invest, I find that a firm's rumor response practice impacts investors' willingness to invest through their expected change in stock price. I also provide supplemental evidence of the effects of rumor response practice on ease of simulation. This study contributes to the growing literature on the effects of management disclosure practices and information intermediaries on investors' judgments. My results also inform managers and other stakeholders about how a firm's rumor response practice can have an unintended consequence of amplifying investors' reactions to rumors.

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DEDICATION

To Dexter, my family, and all who encouraged me along the way.

I. INTRODUCTION

Rumors have existed throughout history, but the advent of social media platforms and other internet-based information intermediaries (Allport and Postman 1946; Brunswick Group 2020; Drake, Thornock, and Twedt 2017; Miller and Skinner 2015) have increased both the prevalence and speed of dissemination of rumors in the financial markets (DiFonzo and Bordia 2000; Kimmel 2004). A rumor is defined as an unverified claim (DiFonzo, Bordia, and Rosnow 1994). Despite the uncertain veracity of rumors, investors often rely on rumors as if they were true (DiFonzo and Bordia 1997), and financial market outcomes often reflect an overreaction to rumors (Ahern and Sosyura 2015; Van Bommel 2003; Gao and Oler 2012; Pound and Zeckhauser 1990; Schmidt 2020). Consequently, regulators, firms, and academics have expressed concerns about the effects of rumors on investors and the financial markets (Ahern and Sosyura 2015; DiFonzo and Bordia 2000; Jia, Redigolo, Shu, and Zhao 2020; SEC 2021a). Although firms cannot control whether or when rumors occur, they can control how they respond to rumors. I use an experiment to investigate how firms' rumor response practices affect investors' reactions to rumors.

Examining the impact of firms' rumor response practices is important for several reasons. First, given how easily rumors can spread through internet-based information intermediaries (e.g., Reddit, Seeking Alpha), having a rumor response practice (i.e., a framework for responding to rumors) can help guide firms in dealing with rumors. It is likely unfeasible for a firm to promptly assess and comment on every individual rumor (Ahern and Sosyura 2015; Jia et al. 2020; McMillan 2020). As a result, some firms have a practice of not commenting on rumors (a no-comment practice), whereas other firms use their discretion to comment occasionally (a discretionary practice). Second, firms' rumor response practices influence investors' expectations of whether a firm will comment on a new rumor. Research shows that investors

"rely on past practices to predict a company's future activities" (Garavaglia, Mongold, and White 2021). Investors can learn about a firm's rumor response practice in several ways, such as from the firm's disclosure control policies, investor relations webpage, or even a news article discussing the rumor.[1] Consequently, a firm's rumor response practice will likely influence how investors think about the rumor. Third, there is a lack of consensus over the recommended rumor response practice (DiFonzo and Bordia 2002b). For example, firms may use a discretionary practice whereby they occasionally comment on rumors in order to control the narrative and avoid potential negative effects such as reputational costs (Pleis 2009). On the other hand, the National Investor Relations Institute (NIRI) recommends a no-comment practice (NIRI 2016). My study informs firms about how a rumor response practice can have an unintended consequence of amplifying investors' reactions to rumors.

I rely on psychology theory on mental simulation to develop predictions about the effects of rumor response practices on investors' reactions to rumors (e.g., Moulton and Kosslyn 2009). Due to the uncertain nature of rumors, investors who encounter a rumor will likely construct a mental simulation of the potential outcomes that can occur from acting on the rumor (Anderson, Carleton, Diefenbach, and Han 2019).[2] For example, investors will likely simulate potential profit outcomes from investing in the firm and the stock price subsequently changing in accordance with the valence of the rumor. When the rumor is positive (i.e., has positive implications for the firm), investors will likely expect an increase in stock price, whereas when the rumor is negative (i.e., has negative implications for the firm), investors will likely expect a decrease in stock price. Theory suggests that the ease of simulating potential outcomes will

[1] An article reporting a rumor may describe how the firm has previously responded to rumors if the authors have not yet obtained a comment or response from the firm (e.g., Deagon 2020).
[2] I use the word "investors" to refer to prospective investors who do not currently own shares in the company. I focus on prospective investors to test theory without introducing other factors that could affect current investors (e.g., motivated reasoning (Hales 2007)).

impact investors' reactions because ease of simulation is often used as a cue in determining the likelihood of an outcome occurring (Sherman, Cialdini, Schwartzman, and Reynolds 1985). Accordingly, when it is easier for investors to simulate potential profit outcomes, they are likely to more strongly believe that they will profit from the rumor.[3]

Firms' rumor response practices likely impact investors' ease of simulating potential profit outcomes by impacting the number of possible outcomes simulated. If a firm has a no-comment practice, the firm has *not* commented on past rumors and investors will likely infer that the firm will not comment on the new rumor. This practice limits the potential responses from the firm and therefore the number of possible outcomes for investors to simulate. In contrast, if a firm has a discretionary practice, the firm has *occasionally* commented on past rumors and investors will likely infer that the firm might comment on the new rumor. This potential for comment increases the number of possible outcomes for investors to simulate, which likely decreases their ease of simulating potential profit outcomes. Consequently, this decrease in investors' ease of simulating potential profit outcomes likely decreases how strongly they believe they will profit from the rumor and thus their reactions to the rumor. I therefore expect that when a firm has a no-comment practice, as opposed to a discretionary practice, investors' reactions to the rumor are amplified (i.e., investors will expect a greater change in stock price in accordance with the valence of the rumor and will be more willing to invest in the firm). In summary, I predict an interaction of rumor valence and rumor response practice on investors' expected

[3] It is important to note that an investor could also simulate potential losses. However, the content of investors' mental simulations likely reflects whether the veracity of the uncertain information could trigger a profit or loss for the investor (Epstude, Scholl, and Roese 2016). For current investors, a negative rumor could trigger a loss for the investor if the stock price decreases. However, prospective investors do not yet own shares of the firm, so a negative rumor would not trigger a loss, but instead a profit opportunity from making a bearish investment. Although prospective investors could incur a loss from investing in the firm, they are less likely to simulate a loss because it is inconsistent with their goals (Taylor et al. 1998) and a loss is less likely to result as a direct consequence of the rumor.

change in stock price. Specifically, when the rumor is positive and the firm has a no-comment practice, investors will expect a greater increase in stock price compared to when the firm has a discretionary practice, but when the rumor is negative, investors will expect a greater decrease in stock price. Additionally, I predict that when a firm has a no-comment practice, compared to a discretionary practice, investors are more willing to invest in the firm.

I test my predictions with an experiment using a 2 × 2 between-subjects design manipulating rumor valence (positive or negative) and the firm's rumor response practice (no-comment or discretionary). Participants are presented with background information about a hypothetical firm, UniformCo, and read a rumor from a news source about the outcome of the firm's bid for a contract with a customer. I manipulate rumor valence as either positive or negative by varying the implications of the rumor, such that the firm is likely to have either an increase or decrease in future revenue. I manipulate the firm's rumor response practice by stating that the firm has either *not* commented on rumors in the past or *occasionally* commented on rumors in the past. Participants provide their expected change in stock price, their willingness to invest, and respond to other measures.

Results partially support my predictions. Consistent with my expectations, I find that when rumors have positive (negative) implications, investors expect a greater increase (decrease) in stock price when the firm has a no-comment practice compared to a discretionary practice. I do not find a direct effect of rumor response practice on willingness to invest; however, I do find an indirect effect through investors' expected change in stock price. Mediation analyses provide evidence that investors' expected change in stock price mediates the effect of the firm's rumor response practice on investors' willingness to invest. I also provide supplemental process evidence supporting my theoretical predictions by demonstrating that participants in the no-

comment practice condition have greater ease of simulation than participants in the discretionary practice condition.

My study makes several contributions. First, I contribute to the growing literature on firm disclosure practices and the role of information intermediaries (Miller and Skinner 2015). Recent research on firm disclosure practices examines how firms' responses to activist short seller allegations impact market outcomes (Brendel and Ryans 2021) and how investors consider past practices to predict firms' constructive obligations (Garavaglia et al. 2021). Another study finds that responding to rumors can reduce the likelihood of being targeted for future rumors and limit the damage to the firm's market value (Xu 2021). I contribute to this literature by investigating how firms' rumor response practices influence investors' judgments. Another area of disclosure research examines how information intermediaries influence investors' judgments. For example, Jia et al. (2020) examine the role of social media in perpetuating price distortion from rumors, and other research examines the characteristics of information intermediaries that influence the effects of rumors in financial markets (Ahern and Sosyura 2015; Van Bommel 2003; Schmidt 2020). Concurrent research examines an intervention for mitigating the effects of fake news from information intermediaries (Grant, Hodge, and Seto 2022). These studies focus on understanding how characteristics of the investor and/or information intermediaries interact to influence investors' reliance on rumors and fake news, whereas I examine the role of firm practices in influencing investors' reactions. I contribute to this area of disclosure research by demonstrating how investors' reactions to rumors from other information intermediaries can be influenced by a firm's rumor response practice.

Second, I contribute to the accounting and psychology literature on mental simulation (Ferguson, Tresh, and Leblond 2013; Leitter, Koonce, and White 2021; Sedor 2002; Taylor, Pham, Rivkin, and Armor 1998). My study is one of the first to examine how disclosure

practices influence the role of mental simulation in investor decision-making. Prior research in accounting has examined the effects of managers' narrative disclosures on analysts' judgments (Sedor 2002) and investors' judgments (Leitter et al. 2021). I examine how a firm disclosure practice (i.e., rumor response practice) that does not directly change the firm's disclosure, but simply the range of the firm's potential disclosures, can impact investors. Additionally, I answer calls for research to examine the connection between individuals' mental simulations and their responses to uncertain information (Anderson et al. 2019), as well as the psychological forces at work behind rumors in financial markets (Kimmel 2004). I extend this literature by examining a new factor influencing investors' judgments: how a firm's rumor response practice impacts investors' ease of simulation.

Finally, my study provides insights relevant to both regulators and firms. The SEC and other regulators such as the Financial Industry Regulatory Authority (FINRA) are concerned about investors' reliance on rumors, the resulting stock price volatility, and firms' roles in influencing investors' reactions (Bain 2021; SEC 2015). Consequently, regulators occasionally request of firms to comment on rumors (Graffeo 2021). However, such requests conflict with NIRI's recommended best practice for firms to not comment on rumors (NIRI 2016). My results demonstrate that a no-comment practice can have an unintended effect of amplifying investors' reactions to rumors. My study therefore provides firms and regulators with a more nuanced understanding of the potential consequences of rumor response practices.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background on Rumors and Firms' Rumor Response Practices

Firms are increasingly concerned about rumors because they have become more prevalent through social media (Binham 2019) and can negatively impact firm reputation (Pleis 2009). A rumor is defined as an unverified claim (DiFonzo et al. 1994), the nature of which can

vary (e.g., it can be true or false, and have positive or negative implications).[4] In the financial markets, the content of rumors range from mergers and acquisitions to organizational changes, information about new products or contracts, and other items influencing the organization's reputation (Ahern and Sosyura 2015; DiFonzo et al. 1994; Pound and Zeckhauser 1990; Seidel, Hannigan, and Phillips 2020). In one survey, top public relations professionals from large Fortune 500 companies "reported hearing a rumor that they were concerned about on average almost once per week" (DiFonzo and Bordia 2000), highlighting the value of examining rumors in the financial markets.

There is an emerging literature on the effects of rumors on financial markets (e.g., Alperovych et al. 2021; Jia et al. 2020; Schmidt 2020). Prior research finds that investors often overreact to rumors, which can influence individual capital allocation decisions and market outcomes (Ahern and Sosyura 2015; DiFonzo and Bordia 1997; Pound and Zeckhauser 1990). For example, archival studies find that rumors are associated with high trading activity and returns around the day of rumor publication, which reverse only after several weeks (Ahern and Sosyura 2015; Gao and Oler 2012; Jia et al. 2020). Additionally, some analytical models assume that informed investors can profit from naive investors' overreactions to rumors (Van Bommel 2003; Schmidt 2020). Finally, prior experimental studies find that investors treat rumors as true despite recognizing that a rumor is not credible and believing that they themselves were not influenced by the rumor (DiFonzo and Bordia 1997, 2002a).

[4] My study focuses on rumors, which differs from fake news and other types of information from information intermediaries. Information from a rumor is unverified and there is likely uncertainty about whether the firm will comment or verify this information because firms generally have the option but not the obligation to do so (NIRI 2016). On the other hand, fake news and other information claiming to be sourced from the firm will likely be assumed to be verified (Gelfert 2018). Consequently, individuals are more likely to expect that the firm will comment on these other types of information if the firm has been misrepresented.

Rumors are also of interest to regulators (SEC 2015, 2018), who have taken steps to mitigate the impact of rumors on individual capital allocation decisions and market outcomes. For example, the SEC recently issued both an investor alert and a Tweet to warn investors about the dangers of relying on stock market rumors from social media (SEC 2015, 2018, 2021a, 2021b). Additionally, after the 2008 global financial crisis, the SEC and FINRA have tried to reduce the prevalence of rumors by prohibiting financial professionals from circulating any rumor that can plausibly be false or misleading (Colby, Portilla, and Lang 2009). Although the SEC does not have an official stance on whether firms should comment on rumors, stock exchanges may encourage firms to respond by asking them to comment on rumors when there is price volatility (Couture 2018). However, due to the abundance of rumors, firms are unlikely to be able to respond to all rumors (Ahern and Sosyura 2015).

A rumor response practice indicates whether a firm occasionally comments on rumors (i.e., a discretionary practice) or does not comment on rumors (i.e., a no-comment practice), and can inform investors about how a firm is likely to respond to a new rumor. Investors can read about a firm's rumor response practice on the firm's website, such as on the investor relations page, in the firm's governance committee policies, or in the firm's disclosure control policies.[5] A firm's rumor response practice can also be inferred from the firm's previous responses to rumors (e.g., if the firm has commented on a rumor in the past, the firm may have a discretionary practice. If the firm has not commented on a rumor in the past, the firm may have a no-comment

[5] SEC Rules 13a-15 and 15d-15 require issuers to maintain disclosure controls and procedures as part of their internal controls over financial reporting. Additionally, the NYSE and NASDAQ stock exchanges require firms to have a "policy on disclosure controls", in which some firms include their rumor response practice. Appendix A shows examples of a discretionary practice and a no-comment practice from the firms' investor relations policies.

practice). Additionally, investors can learn about a firm's rumor response practice from news articles containing the rumor.[6]

There is variation in firms' responses to rumors and hence firms' rumor response practices. For example, prior research finds that in a sample of 501 merger rumors published by the media, in 46 percent of reports target firms declined to comment, in 1 percent firms provided an indirect comment, in 3 percent firms confirmed the rumor, in 4 percent firms denied the rumor, in 8 percent firms could not be reached, and 38 percent of reports did not mention a firm comment or request (Ahern and Sosyura 2015). A firm's rumor response practice may be established based on what the firm's board or disclosure committee believes to be the optimal practice for managing rumors and addressing stakeholder concerns (NIRI 2016). Accordingly, firms may follow a discretionary practice to allow managerial discretion in determining how best to address an individual rumor. On the other hand, NIRI suggests that firms should follow a no-comment practice to decrease the potential for making a misleading statement or creating any future liabilities (NIRI 2016). I draw on psychology theory to make predictions about how a firm's rumor response practice affects investors' reactions to rumors.

Mental Simulation from a Rumor

I rely on psychology theory on mental simulation to develop predictions about investors' reactions to rumors (e.g. Moulton and Kosslyn 2009). By definition, a rumor is an unverified claim (DiFonzo et al. 1994), and is thus uncertain. Accordingly, theory suggests that when an individual encounters a rumor, they try to make sense of the uncertainty by constructing a mental simulation of the possible outcomes that could occur from acting on the rumor (Anderson et al.

[6] For example, Grubhub's discretionary practice was made apparent in a news article reporting Uber's rumored acquisition of Grubhub. On the day the rumor was spread, the article noted that Grubhub had denied another acquisition rumor a few months previously (Deagon 2020).

2019; Ferguson et al. 2013; Lee and Qiu 2009; MacInnis and Price 1987; Moulton and Kosslyn 2009; Taylor et al. 1998). Prior research finds that these simulations of possible outcomes are influenced by the individual's goals (Taylor et al. 1998). In an investment context, prospective investors have a goal of making a profit. Consequently, prospective investors who encounter a rumor are likely to simulate potential profit outcomes from acting on the rumor. For example, when there is a positive rumor, prospective investors are likely to simulate potential profit outcomes from making a bullish investment (e.g., buying shares or call options and the stock price subsequently increasing). Conversely, when there is a negative rumor, prospective investors are likely to simulate potential profit outcomes from making a bearish investment (e.g., shorting shares or buying put options and the stock price subsequently decreasing).

Theory suggests that investors' simulation of potential profit outcomes will influence their reactions to the rumor (Kahneman and Tversky 1982). For example, because investors' profit is directly tied to stock price movements, investors will likely expect a change in stock price in accordance with the valence of the rumor (i.e., whether the rumor has positive or negative implications). When investors simulate a rumor that is positive (suggesting a potential stock price increase) they will likely expect an increase in stock price. Similarly, when investors simulate a rumor that is negative (suggesting a potential stock price decrease) they will likely expect a decrease in stock price. The magnitude of investors' reactions likely depends on how strongly they believe the simulated outcomes will occur.

Prior research finds that individuals use their ease of simulating an outcome as a cue when forming their beliefs about how likely it is that an outcome will occur (Leitter et al. 2021; Levi and Pryor 1987; Sherman et al. 1985). Specifically, when an outcome is easier to simulate, individuals are more likely to believe that the outcome will occur (Sanna, Schwarz, and Kennedy 2012; Tormala, Petty, and Briñol 2002). It follows that when it is easier for investors to simulate

potential profit outcomes from acting on the rumor, they should be more likely to believe that they will obtain a profit, which amplifies their reaction to the rumor (i.e., they will expect a greater change in stock price or be more willing to invest in the firm). I next explain how a firm's rumor response practice likely impacts investors' ease of simulation of potential profit outcomes.

The Effect of Rumor Response Practice

A firm's rumor response practice likely influences the number of possible outcomes in an investor's mental simulation and thus their ease of simulation of potential profit outcomes. When a firm has a no-comment practice, the firm has *not* commented on past rumors and so is expected not to comment on the new rumor, limiting the possible responses from the firm and therefore the number of possible outcomes for investors. On the other hand, when a firm has a discretionary practice, the firm has *occasionally* commented on past rumors and so may comment on the new rumor, increasing the number of possible outcomes for the investor. The possibility of a comment increases the number of possible outcomes that investors can simulate because the variability in content and timing of a potential comment may lead to a greater number of potential profit outcomes for investors.

The number of possible outcomes in an investor's mental simulation likely influences investors' ease of simulation of potential profit outcomes (Johnson-Laird and Byrne 1991; Keogh and Pearson 2017; Lee and Qiu 2009).[7] Prior research suggests that individuals experience greater ease of simulation when there are fewer possible outcomes than when there are a greater number of possible outcomes (Lee and Qiu 2009). One element of ease of simulation is individuals' ease of generating thoughts about a particular outcome (Schwarz

[7] My study differs from Leitter et al. (2021) who examine how specific disclosure formats can increase ease of simulation. They find that providing more concrete information to simulate by separately identifying assets can increase ease of simulation. In my setting, the different rumor response practices could result in more *potential* information in a mental simulation but do not directly provide more information. As a result, I do not expect that this potential for more information would increase ease of simulation.

2004). One reason that individuals may experience greater ease of simulation when there are fewer possible outcomes to simulate is because there is likely a tradeoff between the number of outcomes simulated and the amount of thoughts that can be generated about each outcome (Keogh and Pearson 2017). As such, when there are fewer possible outcomes, it is likely easier for investors to generate more thoughts about each particular outcome (i.e., potential profit outcomes). As described in the previous subsection, individuals use their ease of simulating an outcome (i.e., number of thoughts generated about the outcome) as a cue for the likelihood of the outcome occurring (Tormala et al. 2002). Consequently, I expect that when there are fewer outcomes in an investor's simulation (i.e., when the firm has a no-comment practice), the investor will have greater ease of simulating potential profit outcomes than when there are a greater number of outcomes (i.e., when the firm has a discretionary practice), which increases how strongly they believe that they will obtain a potential profit.

Alternatively, prior research finds that simulating numerous scenarios could increase how strongly the individual believes an outcome will occur (Dougherty, Gettys, and Thomas 1997). However, in this stream of research, this relationship is contingent on the numerous scenarios leading to the same particular outcome for the individual (Hirt and Markman 1995). When the firm has a discretionary practice, investors will likely simulate numerous scenarios of the firm's potential comment. However, these scenarios are unlikely to lead to the same amount of profit (i.e., the same particular outcome) for the individual. For example, a firm confirming the rumor compared to a firm providing a vague but positive comment would likely lead to different amounts of profit for the individual. I therefore expect that investors simulating numerous scenarios as a result of the firm's discretionary practice are unlikely to increase their belief about obtaining a profit from acting on the rumor. Instead, I expect that the greater number of possible outcomes from a discretionary practice will make it harder for investors to generate thoughts

about each potential profit outcome (Keogh and Pearson 2017). Therefore, I expect that a discretionary practice decreases investors' ease of simulating potential profit outcomes compared to a no-comment practice, and this likely decreases how strongly they believe that they will obtain a potential profit.

Taken together, when a firm has a no-comment practice, compared to a discretionary practice, I expect that investors have greater ease of simulating potential profit outcomes. Finally, when investors have greater ease of simulating potential profit outcomes, they will more strongly believe that they will profit from acting on the rumor. I expect that investors' stock price expectations flow from their belief such that they expect a greater change in stock price when they more strongly believe that they will profit from acting on the rumor.[8]

In summary, I expect that a firm's rumor response practice interacts with rumor valence to influence investors' expected change in stock price. Rumor valence drives the direction of investors' expected change in stock price. When the rumor is positive, investors expect an increase in stock price and when the rumor is negative, investors expect a decrease in stock price. The firm's rumor response practice drives the magnitude of investors' expected change in stock price. When the firm has a no-comment practice, investors have greater ease of simulating potential profit outcomes than when the firm has a discretionary practice, which amplifies their expected change in stock price. Collectively, I expect an interactive pattern, such that when the firm has a no-comment practice compared to a discretionary practice, investors will expect a greater increase in stock price when the rumor is positive and a greater decrease in stock price

[8] It is also plausible that investors may have a stronger reaction to a rumor when the firm has a discretionary practice compared to a no-comment practice, contrary to the pattern I predict. When the firm occasionally comments on rumors, the rumor's uncertainty could be resolved sooner. Thus, investors could expect a larger potential profit (Ruan, Hsee, and Lu 2018), which could cause a stronger reaction to the rumor. However, this alternative theory is unlikely to be supported because when the firm has a discretionary practice it is still unknown whether the rumor's uncertainty will be resolved.

when the rumor is negative. This leads to my first hypothesis (see Figure 1, Panel A for a plot of my prediction):

H1: *For a positive (negative) rumor, investors will expect a greater increase (decrease) in stock price when the firm has a no-comment practice, compared to a discretionary practice.*

I also expect that rumor response practice will impact investors' willingness to invest. Prior research suggests that mental simulations increase individuals' willingness to take action (Pham and Taylor 1999). As a result, a greater ease of simulating potential profit outcomes will likely increase investors' willingness to invest. Consistent with the above reasoning, I predict that when the firm has a no-comment practice compared to a discretionary practice, investors will react more strongly to the rumor such that they will be more willing to invest in the firm.[9] This leads to my second hypotheses (see Figure 2, Panel A for a plot of my prediction):

H2: *Investors will be more willing to invest in an investment alternative when the firm has a no-comment practice, compared to a discretionary practice.*

III. EXPERIMENTAL DESIGN

To test my predictions, I conduct an experiment with a 2 × 2 between-subjects design, with rumor valence (positive or negative) and rumor response practice (discretionary practice or no-comment practice) as my manipulated independent variables. I manipulate rumor valence by presenting a rumor that has positive implications for the firm's future revenue stream ("positive" condition) or negative implications for the firm's future revenue stream ("negative" condition), while holding constant the context of the rumor. I manipulate rumor response practice by either informing participants that the firm has *not* commented on rumors in the past ("no-comment

[9] I predict a main effect of rumor response practice on willingness to invest, regardless of rumor valence. Willingness to invest captures the general willingness to invest in any type of investment. This reflects the natural setting where investors have the option of purchasing investment alternatives that enable them to profit regardless of the direction of stock price movement (i.e., investors can invest in short or long positions and put or call options).

practice" condition) or that the firm has *occasionally* commented on rumors in the past ("discretionary practice" condition).

Participants

I recruit a sample of 240 participants who have investment experience from Amazon Mechanical Turk via a two-stage screening process.[10] First, I utilize CloudResearch to identify participants who had previously indicated that they had investment experience and invite them to complete my initial screening survey. I then invite those who pass my initial screening survey to complete my study.[11] Participants earn $2 for completing my study, which took on average 8 minutes to complete. I choose participants with investment experience because my study requires familiarity with the stock market (i.e., profiting from the movement of stock price). This selection criteria ensures that participants have sufficient knowledge to complete my task without using more sophisticated participants than necessary (Libby, Bloomfield, and Nelson 2002).[12] On average, participants have taken 2.2 accounting courses and 2.5 finance courses, and 76 percent have a Bachelor's degree or higher educational qualifications.

Task and Procedures

Participants complete the experiment on their personal computers or devices by clicking on a hyperlink that leads to a Qualtrics survey. When they click on the link, Qualtrics randomly

[10] Approval from the author's university Institutional Review Board (IRB) was obtained for the use of human subjects for the experiment.

[11] CloudResearch (formerly TurkPrime) is a participant-sourcing platform that streamlines Amazon Mechanical Turk recruiting. As part of the platform, CloudResearch obtains demographic information about participants, and I utilize this to select participants who have indicated in the past that they have investment experience (Litman, Robinson, and Abberbock 2017). To verify the investment experience of my participant pool, I conduct an initial screening survey with a variety of questions about personal finance and investing to ascertain their investment experience. Participants received $0.25 for completing the initial screening survey, and those who indicated that they had purchased stock in the past were invited to complete my study.

[12] In my analyses, I exclude five participants who did not have the required investment experience and six participants who appeared to disregard task information and instructions—two participants who chose the decrease alternative in the positive rumor condition and four participants who chose the increase alternative in the negative rumor condition. The proportion of appropriate responses does not differ by condition (all *p-values* > 0.785, two-tailed). After these exclusions, my sample contains 229 participants.

assigns participants to one of four experimental conditions. Participants in all conditions receive instructions to assume the role of a prospective investor evaluating potential investment alternatives in UniformCo, a hypothetical firm in the uniform and corporate apparel industry.[13] Prior to reading information about the firm, participants receive training on two investment alternatives. I train participants on these two investment alternatives to ensure they understand how they can profit from acting on either a positive or negative rumor.[14] Appendix B, Panels A and B, show the training information screens. Participants then respond to two comprehension check questions that they must answer correctly before they can proceed (see Appendix B, Panel C). After completing the training, participants view background information about the firm. The background information specifies that the firm has ten large customers that comprise 85% of its revenue base and that revenue has been stable throughout the years. I provide this information to add context that winning or losing a large customer is not a regular occurrence for the firm. As such, the rumor presented on the next screen could have a significant effect on the firm if it is true.

Manipulation of Rumor Valence

In all conditions, participants read a rumor that contains new information about UniformCo's bid for a customer contract. I manipulate rumor valence by varying the rumor's implications for the firm as either positive or negative. The positive rumor states "A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will

[13] I created materials from press releases, Form 8-K filings, Form 10-K filings, and websites of companies operating in the uniform and corporate apparel industry.

[14] I train participants about two investment alternatives (the increase alternative and decrease alternative), which reflect bullish investments and bearish investments. The increase alternative is an abstract version of a long position/call option, and the decrease alternative is an abstract version of a short position/put option. I avoid mundane realism by abstracting away from specific details about the underlying financial instruments. This allows for a strong test of theory in examining the effects of firms' rumor response practices on investors' reactions, regardless of rumor valence

likely win its bid for a five-year contract with SecurityCo, a new customer. If UniformCo wins the bid, revenue will increase by 15–20%." The negative rumor states "A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will likely lose its bid for a five-year contract with SecurityCo, an existing customer. If UniformCo loses the bid, revenue will decrease by 15–20%." See Appendix C for images of the manipulations.

Manipulation of Rumor Response Practice

I manipulate rumor response practice on the same screen by modifying the information immediately following the rumor. In the no-comment practice condition, the text states that "UniformCo has not commented on rumors in the past." In the discretionary practice condition, the text states that "UniformCo has occasionally commented on rumors in the past."[15] My manipulation of rumor response practice is motivated by real-world reporting practices, where articles sometimes state whether a firm has previously responded to rumors (Deagon 2020). After reading the rumor, participants then answer a series of questions that I use to measure my dependent variables and other process measures.

Expected Change in Stock Price

To measure participants' expected change in stock price, I first obtain the direction of their expected change in stock price by asking: "UniformCo's stock price was $50 before the rumor was posted. What do you expect to be the effect of the rumor on stock price?" Participants select one of three responses: "increase in the stock price," "decrease in the stock price," or "no effect." For participants who expect an increase or decrease in the stock price, I then obtain the magnitude of their expected change in stock price by having them complete the following: "I expect the stock price after the rumor to be…" Participants who indicate they expect the stock

[15] When describing the rumor response practice, I do not provide information about specific prior rumors and firm responses to avoid introducing other information about the firm.

price to decrease select an amount on a scale from $0–50 and those who indicate they expect the stock price to increase select an amount on a scale from $50–100.[16] I measure the expected change in stock price by subtracting $50 (the original stock price) from participants' responses; a positive amount represents an expected increase in stock price and a negative amount represents an expected decrease in stock price.

Willingness to Invest

To measure participants' willingness to invest, I provide participants with two investment alternatives (a bullish or bearish investment) and ask several questions. Recall that in the training screens, participants are trained on the two investment alternatives to educate them on how they can profit when the company's stock price increases or decreases. After asking about their expected change in stock price, I inform participants about the investment alternative that corresponds to their expected directional change in stock price (i.e., the increase alternative if they think the stock price will increase, the decrease alternative if they think the stock price will decrease, and neither investment alternative if they expect no effect on the stock price). I then ask if they would like to proceed by considering purchasing the corresponding increase or decrease alternative or neither alternative. If participants choose to consider neither alternative, they move on to process and post-experiment questions. If they choose to consider either the increase or decrease alternative, I ask them two questions to measure their willingness to invest. First, I ask "How attractive is purchasing your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all attractive") to 100 ("Very attractive"). Second, I ask "How likely are you to purchase your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all likely") to 100 ("Very likely"). I create a single measure

[16] If participants select "no effect," they are assigned an expected change of $0. In the experiment, no participants selected this option.

of willingness to invest by averaging participants' ratings from these two questions. Participants who chose to consider neither alternative are assigned a value of 0 because they have chosen not to consider purchasing either investment alternative.[17]

Other Process and Post-Experiment Questions

After providing their expected change in stock price and willingness to invest, participants respond to a free-response question which asks, "Please provide a short description of your thought process (e.g., the factors or scenarios you considered) when deciding about the purchase of [*piped text – the increase / the decrease / neither*] alternative of UniformCo." Finally, participants answer several questions relating to controls and demographics.

IV. RESULTS

Test of H1: Expected Change in Stock Price

H1 predicts that for a positive (negative) rumor, investors will expect a greater increase (decrease) in stock price when the firm has a no-comment practice, compared to a discretionary practice. Table 1, Panel A reports the means and standard deviations of expected change in stock price by condition. Figure 1, Panel B shows the pattern of observed cell means for expected change in stock price. Expected change in stock price represents the difference between participants' expected stock price after the rumor and the original stock price of $50 (as described in section III). Stronger reactions to the rumor are consistent with a greater expected change in stock price (i.e., a more positive amount when the rumor is positive and a more negative amount when the rumor is negative).

<INSERT TABLE 1 AND FIGURE 1 HERE>

[17] Thirteen participants selected neither investment alternative. A chi-square test identifies no statistically significant differences in propensity to choose neither investment alternative across conditions ($p = 0.561$). These responses were included in the sample.

ANOVA results reported in Table 1, Panel B identify a statistically significant interaction of rumor valence and rumor response practice on expected change in stock price ($p = 0.037$), a statistically significant main effect for rumor valence ($p < 0.001$), and an insignificant main effect for rumor response practice ($p = 0.820$). I conduct follow-up tests of simple effects to further examine the differences in the means, reported in Table 1, Panel C. Consistent with my predictions, when the rumor is positive, investors' expected change in stock price (i.e., expected increase) is greater when the firm has a no-comment practice compared to a discretionary practice ($p = 0.094$, one-tailed). Similarly, when the rumor is negative, investors' expected change in stock price (i.e., expected decrease) is also greater when the firm has a no-comment practice compared to a discretionary practice ($p = 0.051$, one-tailed). Additionally, consistent with my expectations, regardless of whether the firm has a discretionary practice or a no-comment practice, investors have a more positive expected change in stock price when the rumor is positive compared to when the rumor is negative (both $p < 0.001$, one-tailed). In summary, I find evidence supporting H1 that a no-comment practice amplifies investors' expected change in stock price compared to a discretionary practice.

Test of H2: Willingness to Invest

Next, I examine how the firm's rumor response practice affects investors' willingness to invest. H2 predicts that investors will be more willing to invest in an investment alternative when the firm has a no-comment practice compared to a discretionary practice. I create a single measure of willingness to invest by averaging the participant's ratings of (i) the attractiveness of their selected investment alternative and (ii) the likelihood that they would purchase their selected investment alternative (Cronbach's alpha = 0.89). Figure 2, Panel A shows the predicted pattern.

<INSERT TABLE 2 AND FIGURE 2 HERE>

Table 2, Panel A reports the means and standard deviations of participants' willingness to invest by rumor response practice. Figure 2, Panel B displays observed cell means for participants' willingness to invest. An ANOVA is reported in Table 2, Panel B, including the hypothesized main effect test for H2, which reveals no statistically significant effect of rumor response practice on willingness to invest ($p = 0.434$, one-tailed). Follow-up simple effect tests in Table 2, Panel C also reveal no statistically significant effect of rumor response practice on willingness to invest both when the rumor is positive ($p = 0.531$, one-tailed), and when the rumor is negative ($p = 0.377$, one-tailed). Therefore, I do not find evidence supporting H2 (i.e., no statistically significant direct effect of rumor response practice on willingness to invest).

However, the absence of a direct or total effect may be due to one or more opposing indirect effects offsetting the effect of the process variable (Hayes 2018; Rennekamp 2012).[18] Prior research shows that testing for an indirect effect in the absence of a direct or total effect can further our understanding of the effects of important mechanisms (Hayes 2018; Rennekamp 2012). Accordingly, I test a path model to investigate a path through which rumor response practice affects investors' willingness to invest.

[18] For example, in my post-experiment questionnaire, I find that a discretionary practice increases investors' perceptions of management forthcomingness, compared to a no-comment practice ($p < 0.001$, untabulated**).** Prior research finds that forthcomingness increases investors' perceptions of management credibility (Mercer 2005), which may increase investors' willingness to invest. When the rumor is positive, if a firm with a discretionary practice is perceived to be more forthcoming than a firm with a no-comment practice, investors' willingness to invest in a bullish investment will likely increase from the positive effect of forthcomingness. As a result, forthcomingness could offset the effect of expected change in stock price on willingness to invest. However, it is an empirical question what the impact would be when the rumor is negative. More forthcomingness could have a negative or positive effect on willingness to invest in a bearish investment. Controlling for forthcomingness results in a non-significant main effect of rumor response practice on willingness to invest ($p = 0.164$, one-tailed untabulated), a marginally significant effect when the rumor is negative ($p = 0.077$, one-tailed untabulated), and a non-significant effect when the rumor is positive ($p = 0.547$, one-tailed untabulated).

Path Model Examining the Indirect Effect of Rumor Response Practice on Willingness to Invest Through Expected Change in Stock Price

I provide further support for my theory by testing a path model to validate that rumor response practice affects willingness to invest through expected change in stock price (i.e., an indirect effect). To test for indirect effects, I construct 90% confidence intervals with 5,000 bootstrapped resamples of data with replacement, using Model 4 of the PROCESS macro in SPSS (Hayes 2018). The model uses *Rumor Response Practice* as the independent variable (-1 for no-comment practice and +1 for discretionary practice), *Expected Change in Stock Price* as the mediating variable, and *Willingness to Invest* as the dependent variable.[19] See Figure 3 for the mediation model.

<INSERT FIGURE 3 HERE>

First, I examine the indirect effect of *Rumor Response Practice*. A statistically significant indirect effect is found if zero does not appear within the confidence interval. Figure 3 presents results for the indirect effect of *Rumor Response Practice* through *Expected Change in Stock Price*. Consistent with my expectations, the indirect effect of *Rumor Response Practice* is statistically significant (90% confidence interval: (-2.606, -0.367)). The model's coefficients reveal that *Rumor Response Practice* has a statistically significant negative effect on *Expected Change in Stock Price* (p = 0.012, one-tailed), consistent with a discretionary practice causing a weaker reaction to the rumor (i.e., a smaller expected change in stock price) compared to a no-comment practice. *Expected Change in Stock Price* has a statistically significant positive effect on *Willingness to Invest* (p = 0.001, one-tailed), consistent with investors being more willing to invest when they expect a greater change in stock price. Overall, these results provide further

[19] For the path analysis, I collapse conditions across *Rumor Valence* because I am testing the main indirect effect of *Rumor Response Practice* on *Willingness to Invest*. Consequently, I use the absolute value of expected change in stock price in the analyses.

support for the logic underlying H2 and show that *Rumor Response Practice* has an indirect effect on *Willingness to Invest* through *Expected Change in Stock Price*.[20]

Supplemental Evidence: Investors' Ease of Simulation

I also provide supplemental evidence for how a firm's rumor response practice influences investors' ease of simulation by analyzing participants' responses to the free-response question. Participants are asked to provide a short description of their thought process when deciding about the purchase of their selected investment alternative. Using their responses, I create two separate measures to proxy for ease of simulation.

First, I examine participants' imagery elaboration as a measure of ease of simulation. Prior research suggests that a greater ease of simulation of outcomes allows for more imagery elaboration (Lee and Qiu 2009; Ritchey and Beal 1980), which increases how strongly individuals believe the outcome will occur (MacInnis and Price 1987; Sanna et al. 2012). Following prior studies, I use a thought-sampling procedure to create a measure of imagery elaboration (MacInnis and Price 1987), by measuring the number of imagery thoughts (Lee and Qiu 2009). In my setting, individuals who have greater imagery elaboration would likely provide more thoughts about the potential impact of the rumor in their free-response. I create my measure of imagery elaboration by coding participant responses for each thought related to the potential impact of the rumor (e.g., impact on revenue, reactions from other investors, stock price movement, potential for profit). Blind to conditions, I manually code each participant's response as '1' or '0' for each of the above categories. I sum the totals for each participant response to create one measure of imagery elaboration (untabulated). I expect that participants in the no-

[20] As previously mentioned, a possible explanation for why I find a statistically significant mediation in the absence of a direct or total effect is that there may be one or more effects that work in the opposite direction to the expected change in stock price (Rennekamp 2012; Zhao, Lynch, and Chen 2010). Another possible explanation for why I find an indirect effect in the absence of a direct effect may be that the direct effect is relatively weak and requires a larger sample size in order to be detected (Shrout and Bolger 2002).

comment practice condition will have greater imagery elaboration than participants in the discretionary practice condition because theory predicts that greater ease of simulation leads to greater imagery elaboration (Lee and Qiu 2009). In line with this expectation, results (untabulated) indicate that participants in the no-comment practice had greater imagery elaboration than participants in the discretionary practice (mean [SD] = 2.43 [0.90] > 1.98 [0.83], $t_{227}=3.903$, $p < 0.001$, one-tailed), suggesting that participants in the no-comment practice condition have greater ease of simulation than investors in the discretionary practice condition.

Second, I examine participants' use of words related to rewards (i.e., mentions of potential for profit) as another measure of ease of simulation specific to simulating potential profits. I expect that investors with greater ease of simulation of potential profit outcomes are more likely to believe they will profit from acting on the rumor and thus are more likely to describe profiting from the rumor (i.e., obtaining a reward from acting on the rumor). I utilize the text analysis application LIWC2015 to analyze responses to the free-response question and identify responses that use words related to LIWC2015's "reward" category. The LIWC dictionary counts words such as "take, prize, benefit" in this category (Pennebaker, Booth, Boyd, and Francis 2015). This category is of particular interest because it captures participants' propensity to discuss the possibility of a reward to explain their willingness to invest. As expected, results (untabulated) indicate that participants in the no-comment practice were more likely to mention rewards than investors in the discretionary practice (mean [SD] = 2.38 [2.77] > 1.84 [2.38], $t_{227}=1.585$, $p = 0.057$, one-tailed). This set of results supports my expectation that participants in the no-comment practice condition have greater ease of simulation of potential profits than investors in the discretionary practice condition.

V. CONCLUSION

In my study, I provide evidence that a firm's rumor response practice interacts with rumor valence to influence investors' reactions to rumors. Using a controlled experiment, I also provide evidence demonstrating how a firm's rumor response practice influences investors' reactions to rumors through ease of simulation. I predict that investors' reactions to rumors (i.e., their expected change in stock price and willingness to invest) are amplified when the firm has a no-comment practice compared to a discretionary practice. My experimental results support the predicted effect on investors' expected change in stock price, but contrary to my prediction, I do not find a direct effect of rumor response practice on willingness to invest. However, I do find evidence that rumor response practice has a statistically significant indirect effect on willingness to invest, and this operates through investors' expected change in stock price. I also provide supplemental evidence that rumor response practice impacts investors' ease of simulation.

My study has several limitations, which provide opportunities for future research. First, I examine investors' reactions to firms' rumor response practices. Future studies could examine how investors' judgments are influenced by firms' specific responses to rumors in addition to firms' rumor response practices. Second, I utilize a strong test of theory in a general setting by not describing *how* the firm commented on rumors in the past. Future studies could examine how the effects that I document may be moderated by firms' specific previous comments, such as past confirmations or denials of rumors. Third, I choose to not specify the source of the rumor, because this could affect investors' perceptions of credibility. I expect that manipulating higher levels of credibility would produce a similar pattern but higher overall levels of expected change in stock price and willingness to invest since investors likely have greater ease of simulation when the information is from a highly credible source. Future studies could examine how varying the level of source credibility impacts investors' reactions. Finally, my experiment

focuses on prospective investors. I expect my findings to generalize for any investor who can profit from acting on a rumor. Future studies could examine the impact of rumor valence and rumor response practice on current investors who may experience a potential loss from negative rumors.

My study has both theoretical and practical implications. It contributes to the growing literature on disclosure (Miller and Skinner 2015) examining the impacts of social media and rumors in financial markets (Ahern and Sosyura 2015; Van Bommel 2003; Jia et al. 2020), and the accounting and psychology literature examining the role of mental simulation in financial decision-making (Leitter et al. 2021; Sedor 2002). Finally, my study also has practical implications for firms and regulators by demonstrating that a no-comment practice can cause an unintended effect of amplifying investors' reactions to rumors.

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APPENDIX A

Example Rumor Response Practices from Investor Relations Policy Documents

Panel A: Example of a Discretionary Practice

PROGRESSIVE

Investor Relations Policy

Responding to Market Rumors

Spokespersons will respond consistently to rumors, saying, "It is our policy not to comment on market rumors or speculation." We do not comment on questions associated with pending acquisitions or litigation or on loss reserves for specific events. The CEO will decide if circumstances warrant making a policy exception.

Panel B: Example of a No-Comment Practice

H&R BLOCK®

9. Market Rumors, Speculation or Pending Litigation

The Company does not comment on market rumors, speculation or pending litigation.

APPENDIX B

Experimental Excerpts

Panel A: Participant Training on the Decrease Alternative

As part of your evaluation of UniformCo, you will make a judgment about purchasing an investment alternative.

1) If you think the stock price will decrease:

You can purchase the **decrease** alternative to make money if the stock price decreases.

(Your gains = the amount of the stock price decrease X # of units purchased)

Example: Purchase 1,000 units of the **decrease** alternative when UniformCo's current stock price is $50.

e.g., If stock price decreases from $50 to $46:

Your gains =

($4 decrease) X (1,000 units) = $4,000.

Decrease alternative:

Stock price	Amount of the stock price decrease	Your gains per 1,000 units
50	0	$0
49	1	$1,000
48	2	$2,000
47	3	$3,000
46	4	$4,000
…	…	…
1	49	$49,000
0	50	$50,000

APPENDIX B (CONTINUED)

Panel B: Participant Training on the Increase Alternative

2) If you think the stock price will increase:
You can purchase the **increase** alternative to make money if the stock price increases.
(Your gains = the amount of the stock price increase X # of units purchased)

Example: Purchase 1,000 units of the **increase** alternative when UniformCo's current stock price is $50.

e.g., If stock price increases from $50 to $54:

Your gains =
($4 increase) **X** (1,000 units) = $4,000.

Increase alternative:

Stock price	Amount of the stock price increase	Your gains per 1,000 units
100	50	$50,000
99	49	$49,000
....	...	...
54	4	$4,000
53	3	$3,000
52	2	$2,000
51	1	$1,000
50	0	$0

On the next screen you will confirm your understanding of the investment alternatives. Then, you will receive information about UniformCo before providing your stock price expectations and investment judgment.

APPENDIX B (CONTINUED)

Panel C: Comprehension Check Questions for Investment Alternatives

1) If you purchase 3,000 units of the **decrease** alternative (at the current stock price of $50) and stock price decreases to $48, what would be your gains?

- Nothing
- $1 /unit X 3,000 units = $3,000
- **$2 /unit X 3,000 units = $6,000**
- $3 /unit X 3,000 units = $9,000

Correct! Your gains = the amount of the stock price decrease multiplied by # of units purchased (i.e., a decrease of $2 multiplied by 3,000 units = $6,000).

2) If you purchase 3,000 units of the **increase** alternative (at the current stock price of $50) and stock price increases to $52, what would be your gains?

- Nothing
- $1 /unit X 3,000 units = $3,000
- **$2 /unit X 3,000 units = $6,000**
- $3 /unit X 3,000 units = $9,000

Correct! Your gains = the amount of the stock price increase multiplied by # of units purchased (i.e., an increase of $2 multiplied by 3,000 units = $6,000).

APPENDIX C

Rumor Valence and Rumor Response Practice Manipulation

Panel A: Positive Rumor and No-Comment Practice

UNIFORMCO RUMOR
Posted: June 29, 2021 10:05 PM

A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will likely win the bid for a five-year contract with SecurityCo, a new customer.

If UniformCo wins the bid, revenue will increase by 15-20%.

UniformCo has not commented on rumors in the past.

Panel B: Positive Rumor and Discretionary Practice

UNIFORMCO RUMOR
Posted: June 29, 2021 10:03 PM

A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will likely win the bid for a five-year contract with SecurityCo, a new customer.

If UniformCo wins the bid, revenue will increase by 15-20%.

UniformCo has occasionally commented on rumors in the past.

Panel C: Negative Rumor and No-Comment Practice

UNIFORMCO RUMOR
Posted: June 29, 2021 10:02 PM

A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will likely lose the bid for a five-year renewal contract with SecurityCo, an existing customer.

If UniformCo loses the bid, revenue will decrease by 15-20%.

UniformCo has not commented on rumors in the past.

Panel D: Negative Rumor and Discretionary Practice

UNIFORMCO RUMOR
Posted: June 29, 2021 10:00 PM

A rumor was just posted on StreetRumors (a stock market rumor website) indicating that UniformCo will likely lose the bid for a five-year renewal contract with SecurityCo, an existing customer.

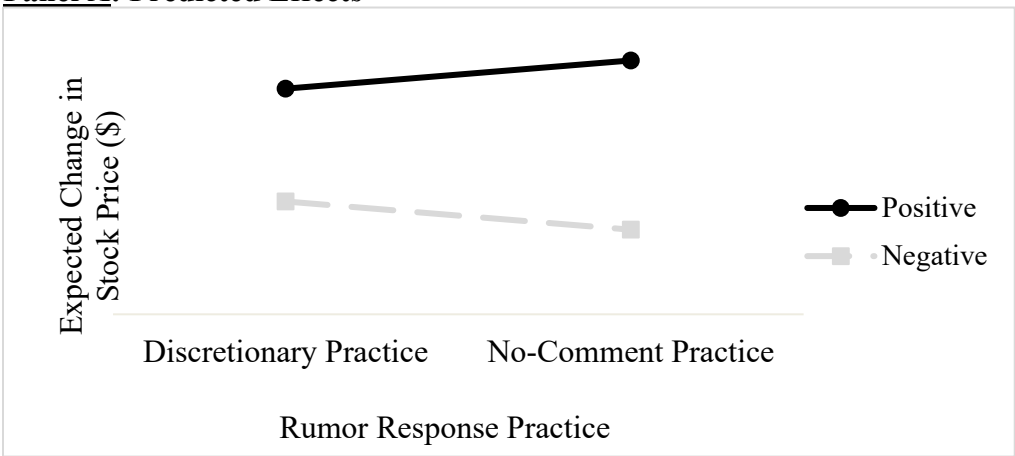
If UniformCo loses the bid, revenue will decrease by 15-20%.

UniformCo has occasionally commented on rumors in the past.

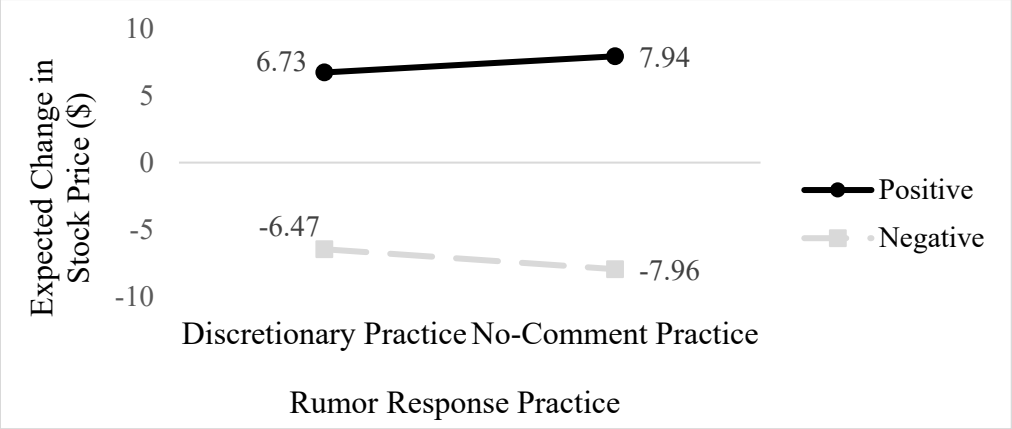
FIGURE 1

How Rumor Valence and Rumor Response Practice Affect Expected Change in Stock Price (H1)

Panel A: Predicted Effects



Panel B: Observed Effects

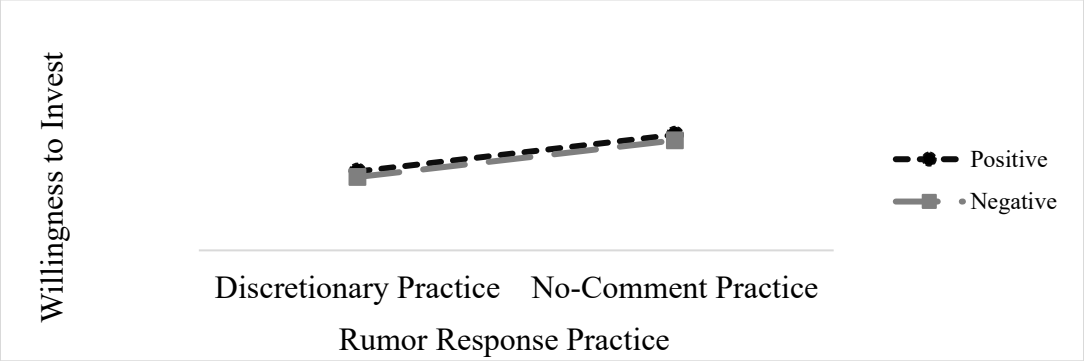


This figure depicts predicted and observed mean values for investors' expected change in stock price. I measure expected change in stock price by first asking "UniformCo's stock price was $50 before the rumor was posted. What do you expect to be the effect of the rumor on stock price?" Participants select one of three responses: "increase in the stock price," "decrease in the stock price," or "no effect." Participants who expect an "increase in the stock price" or "decrease in the stock price" are asked to provide a numerical value for their expected change in stock price by answering: "I expect the stock price after the rumor to be…" Participants who previously selected "decrease in the stock price" answer by selecting an amount on a scale from $0–50. Participants who previously selected "increase in the stock price" answer by selecting an amount on a scale from $50–100. Their expected change in stock price is calculated by subtracting $50 from participants' responses. In my experiment, I manipulate rumor valence by providing a rumor with either positive or negative implications for the firm. I manipulate rumor response practice by noting that the firm has not commented on rumors in the past (no-comment practice) or that the firm has occasionally commented in the past (discretionary practice).

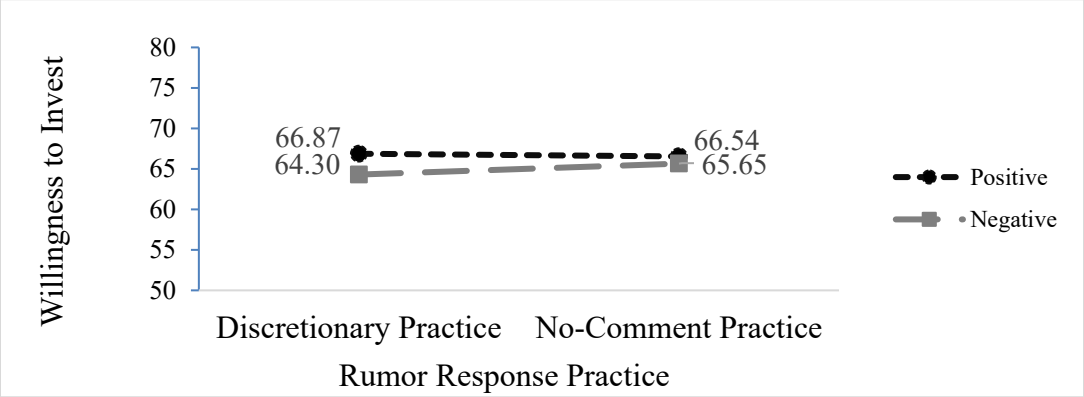
FIGURE 2

How Rumor Response Practice Affects Willingness to Invest (H2)

<u>Panel A</u>: Predicted Effect



<u>Panel B</u>: Observed Effect



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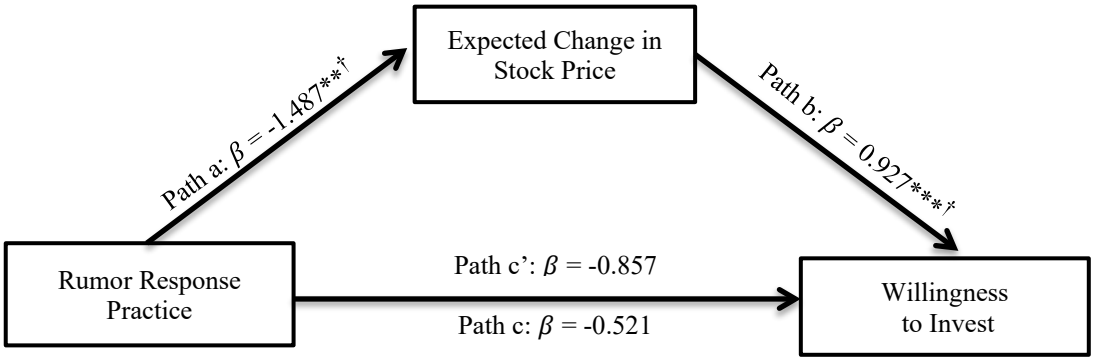
This figure depicts predicted and observed mean values for investors' willingness to invest. I provide participants with two investment alternatives (an increase and decrease alternative where they can obtain a profit if stock price increases or decreases, respectively). I confirm whether they want to consider the increase alternative, decrease alternative, or neither alternative. If they select the increase or decrease alternative, I measure their willingness to invest by asking two questions. First, I ask "How attractive is purchasing your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all attractive") to 100 ("Very attractive"). Second, I ask "How likely are you to purchase your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all likely") to 100 ("Very likely"). If participants initially select neither alternative, they do not answer these two questions and their responses are coded 0. I create a single measure of willingness to invest by averaging the responses (Cronbach's alpha = 0.89). In my experiment, I manipulate rumor valence by providing a rumor with either positive or negative implications for the firm. I manipulate rumor response practice by noting that the firm has not commented on rumors in the past (no-comment practice) or that the firm has occasionally commented on rumors in the past (discretionary practice).

FIGURE 3

Mediation Path Analysis: The Effect of Rumor Response Practice on Willingness to Invest via Expected Change in Stock Price



90% CI for Indirect Effect (*ab*): (-2.606, -0.367)

This figure depicts my mediation path analysis. Results are based on Model 4 in the PROCESS macro in SPSS (Hayes 2018). *Rumor Response Practice* equals -1 (+1) for the no-comment (discretionary) condition. To test the indirect effect of *Rumor Response Practice*, I construct 90 percent confidence intervals for the product of paths *a* and *b*, using 5,000 bootstrapped resamples of data with replacement (Hayes 2018). A statistically significant indirect effect requires that zero does not appear within the confidence interval. Path c' reflects the direct effect of rumor response practice on willingness to invest, and path c reflects the total effect (indirect effect plus direct effects. Table 1 (Table 2) presents descriptive statistics for *Expected Change in Stock Price (Willingness to Invest*).
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$
†One-tailed given directional prediction (all other *p*-values are two-tailed).

TABLE 1

How Rumor Valence and Rumor Response Practice Affect Expected Change in Stock Price (H1)

Panel A: Expected Change in Stock Price (Change), Mean [Standard Deviation], n = 229

Rumor Response Practice	Rumor Valence: Positive	Rumor Valence: Negative	Row Means
Discretionary Practice	6.73 [5.18] n = 57	-6.47 [2.77] n = 60	-0.04 [7.79] n = 117
No-Comment Practice	7.94 [5.58] n = 57	-7.96 [5.52] n = 55	0.13 [9.71] n = 112
Column Means	7.34 [5.39] n = 114	-7.18 [4.36] n = 115	0.04 [8.77] n = 229

Panel B: Analysis of Variance (ANOVA) Results

Source of Variation	***SS***	***df***	***MS***	***F*-statistic**	***p*-value**
Rumor Valence	12108.72	1	12108.72	509.645	<0.001
Rumor Response Practice	1.23	1	1.23	0.052	0.820
Rumor Valence x Rumor Response Practice	104.27	1	104.27	4.389	0.037
Error	5345.80	225	23.76		

Panel C: Follow-up Tests of Simple Effects

	df	***F*-statistic**	***p*-value**	
Effect of Rumor Valence given Discretionary Practice	225	214.367	< 0.001	†
Effect of Rumor Valence given No-Comment Practice	225	297.858	< 0.001	†
Effect of Rumor Response Practice given Positive Rumor	225	1.737	0.094	†
Effect of Rumor Response Practice given Negative Rumor	225	2.707	0.051	†

This table presents descriptive statistics, ANOVA results, and simple effects tests for investors' expected change in stock price. I measure expected change in stock price by first asking "UniformCo's stock price was $50 before the rumor was posted. What do you expect to be the effect of the rumor on stock price?" Participants select one of three responses: "increase in the stock price," "decrease in the stock price," or "no effect." Participants who expect an increase or decrease are asked to provide a numerical value for their expected change in stock price by answering: "I expect the stock price after the rumor to be…" Participants who previously responded "decrease in the stock price" answer by selecting an amount on a scale from $0–50. Participants who previously responded "increase in the stock price" answer by selecting an amount on a scale from $50–100. I then calculate their expected change in stock price by subtracting $50 from participants' responses. In my experiment, I manipulate rumor valence by providing a rumor with either positive or negative implications for the firm. I manipulate rumor response practice by noting that the firm has not commented on rumors in the past (no-comment practice) or that the firm has occasionally commented on rumors in the past (discretionary practice).

† *p*-values are one-tailed for directional predictions (all other *p*-values are two-tailed).

TABLE 2

How Rumor Response Practice Affects Willingness to Invest (H2)

Panel A: Willingness to Invest, Mean [Standard Deviation], n = 229

Rumor Response Practice	Rumor Valence: Positive	Rumor Valence: Negative	Row Means
Discretionary Practice	66.87 [19.45] n = 57	64.30 [24.83] n = 60	65.55 [22.31] n = 117
No-Comment Practice	66.54 [20.68] n = 57	65.65 [26.20] n = 55	66.10 [23.45] n = 112
Column Means	66.70 [19.99] n = 114	64.94 [25.39] n = 115	65.82 [22.83] n = 229

Panel B: Analysis of Variance (ANOVA) Results

Source of Variation	***SS***	***df***	***MS***	***F*-statistic**	***p*-value**
Rumor Valence	170.99	1	170.99	0.324	0.569
Rumor Response Practice **(H2)**	14.65	1	14.65	0.028	0.434 †
Rumor Valence x Rumor Response Practice	40.30	1	40.30	0.076	0.782
Error	118559.13	225	526.930		

Panel C: Follow-up Tests of Simple Effects

	df	***F*-statistic**	***p*-value**
Effect of Rumor Valence given Discretionary Practice	225	0.366	0.546
Effect of Rumor Valence given No-Comment Practice	225	0.042	0.838
Effect of Rumor Response Practice given Positive Rumor	225	0.006	0.531 †
Effect of Rumor Response Practice given Negative Rumor	225	0.099	0.377 †

This table presents descriptive statistics, ANOVA results, and simple effects tests for willingness to invest. I provide participants with two investment alternatives (an increase and decrease alternative where they can obtain a profit if stock price increases or decreases). I confirm whether they wish to consider the increase alternative, decrease alternative, or neither alternative. If they select the increase or decrease alternative, I measure their willingness to invest by asking two questions. First, I ask "How attractive is purchasing your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all attractive") to 100 ("Very attractive"). Second, I ask "How likely are you to purchase your selected investment alternative?" Participants respond on a 101-point scale from 0 ("Not at all likely") to 100 ("Very likely"). If participants initially select neither alternative, they do not answer these two questions and their responses are coded 0. I create a single measure of willingness to invest by averaging the responses (Cronbach's alpha = 0.89). In my experiment, I manipulate rumor valence by providing a rumor with either positive or negative implications for the firm. I manipulate rumor response practice by noting that the firm has not commented on rumors in the past (no-comment practice) or that the firm has occasionally commented on rumors in the past (discretionary practice).

† *p*-values are one-tailed for directional predictions (all other *p*-values are two-tailed).