A Multi-Industry Assessment of the Influence of Dedicated and Transient Institutional Investors on Firms' Product Recall Strategies and Actions

by

Catherine Anne Helmuth

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Approved by

Dr. Brian Connelly, Chair, Professor of Management and Luck Eminent Scholar
Dr. David Ketchen, Professor of Management and Lowder Eminent Scholar
Dr. H.S. Feild, Torchmark Professor Emeritus of Management
Dr. H. Jack Walker, C & E Smith Associate Professor of Management
Dr. Christopher Craighead, Dove Professor of Supply Chain Management
Dr. Kang Bok Lee, Assistant Professor of Business Analytics in Systems and Technology

ABSTRACT

Product recalls represent a major concern for organizations and their stakeholders because of costly financial, reputational, and legal damages that ensue from well-publicized consumer safety crises. Organizations attempt to mitigate the adverse impact arising from product recalls by leveraging effective strategic recall processes. Of the recall processes available to companies, empirical evidence suggests firms' (a) product recall strategies and (b) post-recall actions represent important elements of successful product recall remediation efforts. While supply chain researchers have considered operational antecedents, academicians have largely ignored the influence of governance structures on firms' product recall strategies and post-recall actions. To illuminate the more nuanced effects offered by corporate governance structures, I draw on the theoretical tenets of agency theory. Specifically, I examine "agency problem II" by assessing the extent to which corporate governance structures impact firm outcomes through institutional investors' divergent dedicated and transient interests. As such, the following research question guided my dissertation: "How does the ownership structure of a firm influence the product recall strategy and post-recall actions a manager will implement?" My second research question concerned the moderating effect of chief executive officer (CEO) power on the relationship between ownership structure and firms' strategic recall processes. I collected data on a multi-industry sample of product recalls from publicly held organizations from 2006 through 2013 to address my research

questions and test my associated hypotheses. My sample includes a diverse set of product recall announcements from three governmental agencies: Consumer Product Safety Commission, Food and Drug Administration, and Food Safety and Inspection Service. Although I found significant relationships, the results of my dissertation were largely unanticipated. Despite my unanticipated results, my dissertation sought to contribute to the corporate governance and product recall literatures by demonstrating that high levels of transient institutional ownership were positively correlated with reactive product recall strategies. Further, I sought to add value to the CEO power literature by identifying CEO tenure and CEO ownership as potential moderating influences on the firm ownership−product recall strategy relationship. I discuss my dissertation's theoretical and practical implications while highlighting my study's limitations and potential directions for future research for corporate governance and product recall scholars.

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Jamie Dimon gave a poignant commencement address at Syracuse University in 2010. At commencement Mr. Dimon said, “Never fool yourselves into thinking that your success is yours alone.” His words resonated with me then, and now, seven years later, ring even truer. The guidance of the Auburn faculty in addition to the support of my family and friends have allowed me to complete my dissertation.

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LIST OF ABBREVIATIONS

BP	British Petroleum
CDPQ	Caisse de dépôt et placement du Québec
CEO	Chief Executive Officer
CII	Council of Institutional Investors
CPSC	Consumer Product Safety Commission
EPA	Environmental Protection Agency
FOIA	Freedom of Information Act
FDA	Food and Drug Administration
FSIS	Food Safety and Inspection Service
GAAP	Generally Accepted Accounting Principles
GE	General Electric
GEE	Generalized estimating equations
GM	General Motors
ISS	Institutional Shareholder Services
MHRA	Medicines and Healthcare Products Regulatory Agency
NHTSA	National Highway Traffic Safety Administration
R&D	Research and Development
SEC	Securities and Exchange Commission
SIC	Standard Industrial Classification
U.S.	United States of America

CHAPTER 1: INTRODUCTION

Child's Entrapment Death Prompts Big Lots Recall of Metal Futon Bunk Beds (Big Lots, June 16, 2011)

Reebok Recalls Bracelet Linked to Child's Lead Poisoning Death (Reebok International, March 23, 2006)

Product recalls refer to the removal or modification of defective products that are available for consumer purchase because an overseeing governmental agency or firm considers the product noncompliant with its standards (Food and Drug Administration, 2014). The threat to consumer safety posed by product recalls impacts firms' financial stability through high direct and indirect expenses (Marucheck, Greis, Mena, & Cai, 2011; Scharff, Besser, Sharp, Jones, Gerner-Smidt, & Hedberg, 2016). Firms incur large direct costs from the operational- and technical-level failures associated with product recalls including high inventory waste, business interruptions, and administrative expenses (Kumar & Schmitz, 2011). For example, Mattel Inc. directly attributed the firm's $71 million reduction in gross profit to an increase in selling and administrative expenses that resulted from its lead-based product recall (*Mattel Annual Report*, 2008). Indirect costs, however, often pose an even greater challenge for recalling firms that must combat reputational loss and waning market share that result from declining consumer loyalty (Cleeren, van Heerde & Dekimpe, 2013; Rhee & Haunschild, 2006). With 55 percent of consumers indicating they are willing to change their buying preferences following a product recall announcement because of issues regarding product safety (*PR Newswire*, 2007), firms often risk insolvency when they cannot absorb the high costs associated with product recalls (e.g., Siomkos, 1999). For instance, Westland/Hallmark Meat Packing Company went bankrupt after spending $116 million to execute a tainted

meat recall that destroyed the firm's reputation when subsequent media reports exposed gruesome details about the meatpacker's inhumane slaughter practices (Canavan, 2013). Given the impact of product recalls, firms must carefully consider how they will manage consumer safety issues that arise from the sale of defective goods (Arpan & Roskos-Ewoldsen, 2005; Siomkos & Kurzbard, 1994).

Empirical evidence suggests that firms manage the negativity associated with product recalls, in part, by (a) implementing an effective recall strategy and (b) employing post-recall actions that appease unfavorable press (Chen, Ganesan, & Liu, 2009; Zavyalova, Pfarrer, Reger, & Shapiro, 2012). One important factor pertaining to recall effectiveness is whether the CEO will implement proactive or reactive recall strategies (Claeys, Cauberghe, & Pandelaere, 2016; Fennis & Stroebe, 2014). Proactive recall strategies arise when firms announce their product recall before consumers become injured or ill. Reactive strategies, in contrast, occur after reports of harm surface (Hora, Bapuji, & Roth, 2011; Ni, Flynn, & Jacobs, 2014, 2015). Although proactive recalls are more socially responsible than reactive strategies and, thus, appear the obvious choice, the literature shows firms actually struggle with this decision because proactive product recalls are associated with greater stock price reductions than reactive product recalls (Chen et al., 2009; Hora et al., 2011; Siomkos & Kurzbard, 1994). Post-recall actions describe how, following organizational wrongdoing, firms' press releases to the media include particular information about a firm's intended approach to rectify problems associated with the recall. Specifically, recalling firms must decide whether to release information regarding their use of (a) technical actions, which directly address the origins

of product failure, or (b) ceremonial actions, which tend to gloss over the recall event by highlighting positive organizational actions (Zavyalova et al., 2012).

Although scholars often examine antecedents of product recalls including supply chain elements, few studies explicitly focus on assessing the effects of governance structures on firms' recall strategies and post-recall actions (Wowak & Boone, 2015). To date, much of the current antecedent research focuses on deepening our understanding of supply chain predictors of product recalls such as quality control measures, supplier relationships, and product traceability systems (Epelbaum & Martinez, 2014; Steven, Dong, & Corsi, 2014; Tse & Tan, 2012). While valuable, such research focuses on the relatively direct association between product recalls and supply chain focused variables (Speier, Whipple, Closs, & Voss, 2011; van Iwaarden, & van der Wiele, 2012), and, for the most part, ignores more nuanced effects offered from the strategic management literature including constructs from corporate governance.

To understand the more nuanced effects that corporate governance structures may have on firms' product recall decisions, I draw on the theoretical tenets of agency theory. Agency theory is a dominant theoretical framework that strategic management researchers oftentimes use to explain corporate governance phenomena including that of firm ownership (Daily, Dalton, & Cannella, 2003). From a historical perspective, firm ownership is deeply rooted within agency theory with Jensen and Meckling (1976: 309) notably stating, agency theory was, in effect, "a theory of ownership." Current investigations continue to substantiate Jensen and Meckling's original position. Accordingly, recent scholarship suggests firm ownership as a distinct, and highly influential, form of governance (Connelly, Hoskisson, Tihanyi, & Certo, 2010).

As empirical investigations amass about firm ownership, one class of owners that has garnered particular interest is institutional investors (Goranova & Ryan, 2014; Grinstein & Michaely, 2005; Helwege, Intintoli, & Zhang, 2012). According to agency based arguments, institutional investors represent a powerful class of principals who are capable of overcoming the monitoring deficits, information asymmetries, and diluted ownership positions that often limit the control of individual stakeholders (Dalton, Hitt, Certo, & Dalton, 2007). Compared to individual stakeholders, institutional owners are more adept at creating a knowledge-rich environment that increases their collective influence on firm actions through preferential connections to professional networks and media outlets (Chen, Harford, & Li, 2007; Ke & Petroni, 2004). Institutional owners often demonstrate their influence over firm actions through direct interventions that allow these principals to voice their strategic agenda (Gillan & Starks, 2007; McCahery, Sautner, & Starks, 2016). Despite institutional owners' influence, however, an emerging area of research proposes these investors do not always pursue the same strategic direction owing to their heterogeneous trading patterns (Bushee, 2004).

Porter (1992) captured institutional owners' divergent investment strategies by classifying these investors according to their *dedicated* or *transient* trading patterns. Dedicated investors rely on a long-term investment strategy where they hold their concentrated portfolios over time, which reduces the importance of firms' current earnings reports (Bushee & Noe, 2000; Bushee, 1999, 2004). In contrast, transient investors use a short-term investment strategy where they turn over their diversified portfolios in response to firms' current earnings announcements (Bushee, 1998, 2001). Dedicated and transient owners' heterogeneous investment foci correlate with their

preferences for firm executives to implement actions that align with their respective long- and short-term agendas (Connelly, Tihanyi, Certo, & Hitt, 2010).

Considering previous literature, I offer the following overarching research question: How does the ownership structure of a firm influence the product recall strategy and post-recall action a manager will implement? Building on agency theory, I investigate the "agency problem II" (Villalonga & Amit, 2006: 387) by examining how a class of principals, namely institutional owners, hold distinct interests that become apparent through investors' dedicated or transient nature. More specifically, I seek to explain how firm ownership structure (dedicated *vs*. transient owners) affects firms' strategic recall processes with regard to product recall strategy (proactive *vs*. reactive) and firm actions in the post-recall period (technical *vs*. ceremonial).

Additionally, I consider the effect of CEO power on these relationships (Combs, Ketchen, Perryman, & Donahue, 2007). Therefore, another pertinent research question is: Does CEO power change the nature of the relationship between a firm's ownership structure and its product recall strategy and actions? The addition of CEO power to my theoretical model provides insight into the well documented power struggle between agents and principals, by suggesting powerful executives may use symbolic management practices to assuage their institutional owner base (Westphal & Bednar, 2008). While agency theory is my dominant theoretical lens, I use symbolic management to explain why institutional investors hold less influence over firm actions when CEOs are in a position of power.

I tested my ideas using a sample of 282 product recalls from 69 publicly held organizations from 2006 to 2013. My sample includes a diverse set of product recall

announcements from three governmental agencies: Consumer Product Safety Commission (CPSC), Food and Drug Administration (FDA), and Food Safety and Inspection Service (FSIS). Product recalls represent an unanticipated external failure (Haunschild & Rhee, 2006), which requires additional research attention because of the public safety threat defective products pose to consumers and the financial consequences such incidents have on firms' stakeholders (Marucheck et al., 2011). With reports of high profile product recalls growing – from Merck's Vioxx fiasco to Sunland's peanut butter blunder – it is surprising that management researchers have largely ignored the impact of corporate governance constructs on this growing safety concern.

The current dissertation offers three potential contributions to the literature. First, I aim to contribute to the product recall literature by examining a new governance antecedent that may influence firms' strategic recall processes: institutional ownership. While the product recall literature largely accumulated its empirical findings from supply chain and operations management studies (e.g., Kumar & Schmitz, 2011), recent investigations suggest corporate governance variables, such as CEO compensation plans, might play an important role. For example, strategic management researchers found that executive compensation plans laden with stock options led CEOs to be less attentive to consumer safety threats posed by product recalls (Wowak, Mannor, & Wowak, 2015). While such scholarship suggests corporate governance antecedents are relevant to product recall studies, this research stream remains in its infancy (Wowak & Boone, 2015). Additional research will help scholars improve the literature's understanding of which corporate governance variables are most likely to impact firms' product recall decisions (Davidson & Worrell & 1992). I attempt to contribute to this developing

research stream by examining the influence of institutional owners, a well-studied corporate governance construct, within the product recall domain.

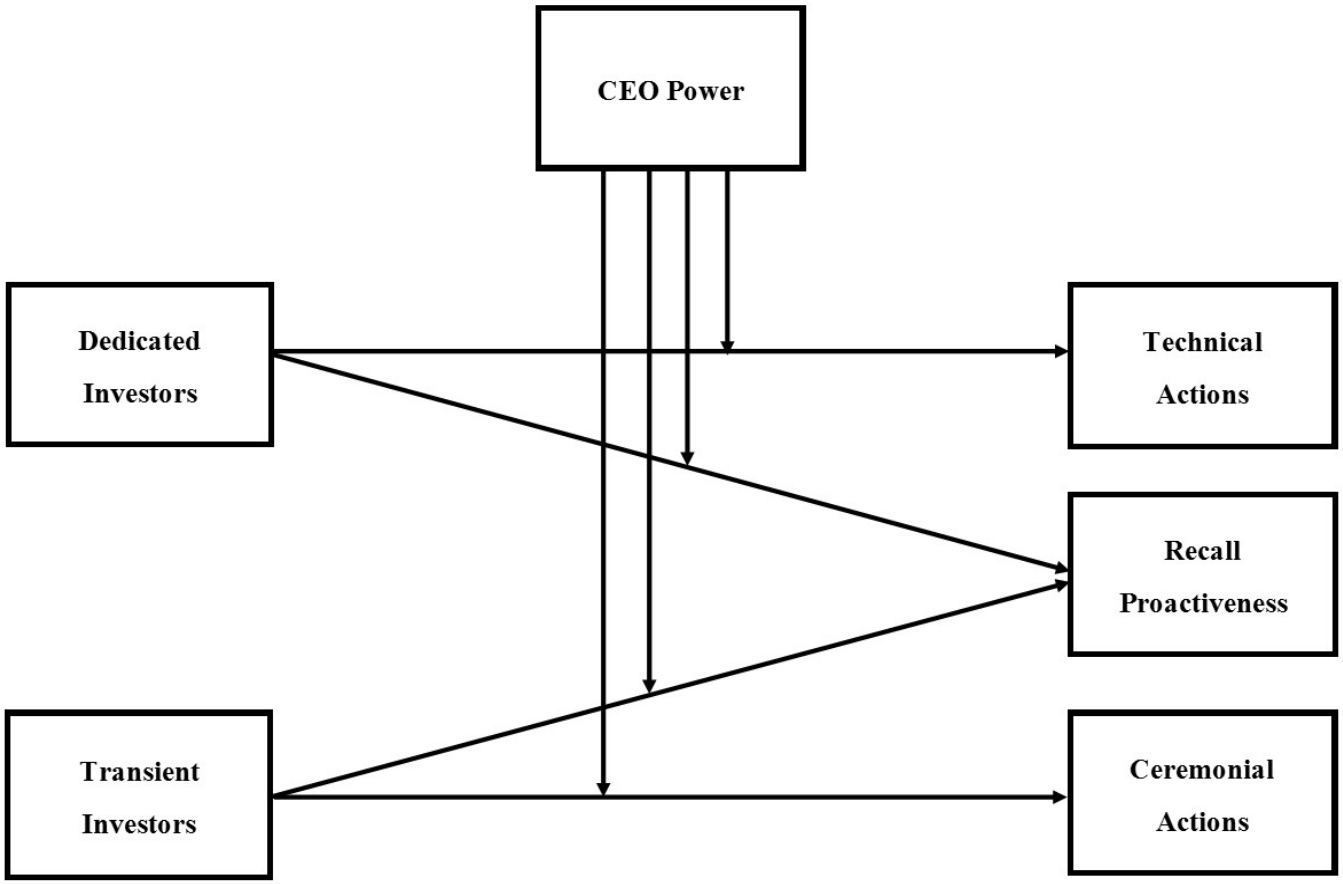
Second, I seek to contribute to the corporate governance literature by examining principal-agent relationships in a context where agents must respond to an external threat that arises from concerns about consumer safety and product quality. I study how a class of principals, specifically institutional investors, may impose their own will on firms that represent their agents (Goranova & Ryan, 2014). By considering the competing influence of dedicated and transient institutional owners, I investigate the strategic actions managers undertake to placate their institutional ownership base during times of organizational uncertainty (cf., Connelly et al., 2010; Shi, Connelly, & Hoskisson, 2017). Thus, the current study aims to offer insight into the principal-agent relationship when firms face competing institutional pressures during product-harm crises.

Third, this dissertation also offers a potential empirical contribution to research on product recalls. My contribution to the product recall literature attempts to answer a call from Wowak and Boone's (2015) literature review regarding firms' strategic recall processes. Wowak and Boone urge future researchers to examine precursory factors that may influence the type of strategic responses firm executives undertake to mitigate negative product recall impacts. While prior researchers offer opposing stakeholder viewpoints as one such factor that could impact firms' strategic responses, such studies have stopped short of undertaking any empirical testing (Hora et al., 2011). By quantitatively testing key factors associated with those strategies and actions firms ultimately selected, I attempt to identify the extent to which contemporaneous factors influence whether CEOs decide to implement (a) proactive or reactive recall strategies

and (b) technical or ceremonial actions (Chen et al., 2009; Claeys et al., 2016). Figure 1 illustrates my theoretical model.

My dissertation unfolds over four additional chapters. Chapter 2 includes an introduction to my conceptual framework, which uses agency-based arguments to review research on institutional ownership in addition to pertinent scholarship from the symbolic management, product recall, and CEO power literatures. Chapter 3 contains my hypotheses section where I offer empirical and theoretical evidence regarding my hypothesized direct and moderating effects. Specifically, Chapter 3 examines the direct effects of institutional ownership on recall proactiveness (recall strategy) and on firm actions in addition to explaining the possible moderating effects of CEO power on these relationships. Chapter 4 describes my research methods where I define my research sample, explicate my data collection procedures, and introduce my measures (dependent, independent, moderator, and control variables) as well as my analyses. I review the results from my data analyses in Chapter 4. Chapter 5 offers my discussion section and conclusion. Chapter 5 provides an explanation of my findings including my dissertations' potential theoretical and practical implications and outlines my study's limitations while offering directions for future research for scholars within the corporation governance and product recall fields of investigation.

Figure 1. Theoretical Model of Ownership Structure and Product Recalls Moderated by CEO Power



CHAPTER 2: CONCEPTUAL FRAMEWORK

Chapter 2 provides a review of the current literature that supports my dissertation, including the overarching theoretical framework for my research hypotheses: agency theory. I review the institutional ownership research, which includes the following areas of emphasis: institutional owner classifications, dedicated and transient institutional investor characteristics in addition to important myopic, financial, governance, strategic, and activist outcomes. The complementary theoretical perspective for my dissertation is symbolic management. I explain the key concepts within the symbolic management literature including decoupling, legitimacy, impression management, and the pacification of stakeholders. My review of the product recall literature spans four research streams. I review proactive and reactive product recall strategies as well as literature on firm responses to product recalls. My summary of the CEO power literatures concludes the conceptual literature relevant to my dissertation.

Agency Theory

The inherent costs that result from corporate structures that separate firm ownership and managerial control have been of interest to scholars for decades (e.g., Berle & Means, 1932). Scholars credit Jensen and Meckling's (1976) seminal article as the impetus that shifted the institutional logic, in the corporate governance literature, towards that of agency theory (Eisenhardt, 1989; Zajac & Westphal, 2004). Since the 1980s, corporate governance researchers have traditionally used an agency lens to frame their theoretical arguments including those about firm ownership (Daily et al., 2003). Under this theoretical umbrella, a key segment of corporate governance research uses

agency theory to describe relationships that exist between firm owners and their managers (Connelly et al., 2010; Dalton, Daily, Ellstrand, & Johnson, 1998).

In an effort to untangle the complexities surrounding firm ownership, agency researchers often classify owners as *insiders* or *outsiders* where inside owners include firm officers and members of the board of directors while blockholders and institutional investors are outside owners (Daily et al., 2003). Agency-based researchers typically describe the impact of inside ownership in terms of *alignment* while scholarship surrounding external ownership discusses the influence of these outsiders through *control* (Dalton, Daily, Certo, & Roengpitya, 2003). Given the scope of my dissertation, I examine the control of outside owners with an emphasis on the influence of institutional owners. In the context of agency theory, institutional owners assume the role of principals while firms, and by proxy their senior leaders, are agents.

Institutional Owners

The power and influence of institutional owners increased substantially over the past half-century. In 1955, institutional investors held about 11 percent of U.S. equities that ballooned to approximately 70 percent ownership by 2006 (Gillan & Starks, 2007). Institutional investors include entities such as banks, insurance companies, commercial trusts as well as endowment and pension funds (Bushee, 1998). According to the Securities and Exchange Commission (SEC, 2015), an *institutional investment manager* is an "…entity that either invests in, or buys and sells, securities for its own account" or any "…natural person or an entity that exercises investment discretion over the account of any other natural person or entity." The SEC mandates that institutional investors holding more than $100 million in an equity portfolio must file Form 13F with the

Commission. In 1975, congress passed section 13(f) of the Securities Exchange Act to increase disclosure by institutional owners to improve investor confidence (SEC, 2015). Throughout my dissertation, I use the following phrases and terms interchangeably: "institutional investment managers," "institutional investors," "institutional owners," "firm ownership," "firm owners," "owners," "institutions," and "investors."

The 1980s were a period of financial change that affected institutional investors' political power (Goranova & Ryan, 2014). An especially important year was 1985 because Jesse Unruh founded the Council of Institutional Investors (CII) while he was serving as the California state treasurer. Unruh and his public pension fund associates established the CII to share their new vision for increased shareholder activism and influence with the financial community (Gillan & Starks, 2007). Institutional investors believed that by banding together under the umbrella of the CII, shareholders could increase firm accountability by merging their individual votes to increase institutional power through proxy voting (CII, 2015). The CII currently supports an expansive network of general and associate client members who hold large investment portfolios that surpass $20 trillion in combined assets (CII, 2015).

Additionally, 1985 marked the launch of Institutional Shareholder Services (ISS). ISS is a corporation that assists institutional owners with their investment decisions by offering data analytic tools and quantitative models, which mitigate governance risk (ISS, 2015). The ISS presently has over 1,600 institutional clients and executes approximately 8.5 million proxy votes on an annual basis. The CII and ISS helped provide institutional owners with the advocacy and support they needed to change their role in the financial

community. In sum, the practical foundation provided by the CII and ISS contributed to the academic literature's knowledge of institutional investor classifications.

Classifying institutional owners. Financial management researchers initially classified institutional owners according to their level of monitoring, which evolved when Bushee (1998, 1999, 2001, 2004) introduced a taxonomy that classified institutional owners based on their prior trading behavior (Brickley, Lease, & Smith, 1988; Bushee, 1998, 1999, 2001, 2004). The notion of classifying institutional owners is traceable to early research in finance (e.g., Brickley et al., 1988). Brickley et al. (1988) classified institutions into three distinct categories: pressure-resistant, pressure-sensitive, and pressure indeterminate. Brickley et al.'s categorization captures institutional owners' level of vulnerability to managerial influence providing insight into whether an institution would resist or succumb to organizational pressures from top managers.

For example, *pressure-resistant* institutional investors include pension funds, foundations, and mutual funds while insurance companies, banks, and trusts are examples of *pressure-sensitive* institutions. Pressure-sensitive institutions are less likely to engage in firm monitoring than pressure-resistant investors because pressure-sensitive owners typically have business partnerships with the firms they retain ownership in, which results in a mutual dependence between the pressure-sensitive investors and the partnering firm. This mutual dependence makes pressure-sensitive investors vulnerable to a partnering firm's managerial influence and creates an environment where institutional owners are less likely to monitor managers with whom they work closely (Dalton et al., 2003). In contrast to pressure-sensitive institutional investors, pressure-resistant institutions are unlikely to have business partnerships, which makes them less sensitive to

managerial whims (Brickley et al., 1988; Dalton et al., 2003). The final category in the classification is *pressure indeterminate* institutional investors; however, recent scholarship suggests that these owners are not substantively associated with corporate governance outcomes (Connelly et al., 2010).

While the pressure-sensitive *vs*. pressure-resistant classification played an important role in the management literature, researchers ultimately replaced these categories with legal classifications (Bushee, 1998; Kochhar & David, 1996). From an information availability standpoint, legal classification schemes were the most obvious choice because most corporate governance databases offer the institution's legal classifications within their systems (Bushee, 2004). Thus, legal classifications expedited researchers' data collection and provided the corporate governance literature with additional empirical findings about banks, pension funds, and professional investor funds (Hoskisson, Hitt, Johnson, & Grossman, 2002; Ozer & Alakent, 2013).

Although research using legal classifications yielded important corporate governance insights, a major drawback of this approach is that it assumes there is little to no variation within institutions (Bushee, Carter, & Gerakos, 2014). Bushee's (1998) research, however, challenged this assumption by showing institutions held considerable internal variation regarding their investors' level of transient ownership. For example, banks contained 11 percent transient ownership while investment advisors reported 37 percent transient ownership (Bushee, 2004). Such large variations in transient ownership negated the assumption that institutions are relatively homogeneous and suggested researchers need to create a new classification scheme, which takes into account ownership heterogeneity among institutions.

To address the ownership classification issue, Bushee (1998, 1999, 2001, 2004) developed an institutional owner taxonomy based on investors' prior trading behavior; that is, dedicated, transient, and quasi-indexer investors. *Dedicated investors* are long-term owners who hold concentrated portfolios with low turnover and are relatively insensitive to current earnings (Bushee, 1998). In contrast, *transient investors* are short-term owners who hold diversified portfolios with high turnover and are sensitive to current earnings (Bushee, 1998). While it is more common for accounting scholars to use all three investor classifications, management researchers, more recently, have started to exclude quasi-indexer investors thereby directing greater attention to dedicated and transient investors (Connelly, Haynes, Tihanyi, Gamache, & Devers, 2016).

Current management researchers use Bushee's dedicated and transient owner classification because he based his investor groupings on trading observations from the strategic management literature (e.g., Porter, 1992). Compared to quasi-indexers, dedicated and transient owners garner greater research attention because they represent extremes within Bushee's classification scheme and hold less within-group variation. As a result, dedicated and transient owners are more conceptually distinct than quasi-indexers, which contribute to researchers' ability to empirically test and theoretically draw conclusions about these constructs. Overall, researchers expect quasi-indexers to have "less influence on firm outcomes," which is why I have excluded them from my dissertation (Connelly et al., 2010: 726).

Dedicated and transient investors. Bushee (1998) derived three, key investor characteristics using factor and cluster analyses based on institutional investor data from the University of Michigan Spectrum database: (a) degree of portfolio turnover, (b)

sensitivity to current earnings, and (c) degree of portfolio diversification. Bushee defined *level of portfolio turnover* through one short-term and one long-term measure of turnover whereas institutional owners' *sensitivity to current earnings* consisted of a three-variable aggregate. The first measure of sensitivity to current earnings assumed a linear relationship between (a) the magnitude of the change over the quarterly earnings and (b) the earnings change, while the remaining two variables accounted for any nonlinearity in the relationship (Bushee, 1998). Bushee based *degree of portfolio diversification* on four variables: degree of portfolio concentration, mean percentage holding, and two constructs that gauged the level of total equity investors devoted to firms where they held a sizeable equity position (see Bushee, 1998 for a detailed description). Table 1 summarizes dedicated and transient investors' characteristics while Table 2 offers practical examples of these institutional investor types.

Practical accounts suggest top managers are concerned with the level of institutional ownership their firms attract. For instance, the *Wall Street Journal* released an article stating that Jeff Immelt believed General Electric (GE) was "under-owned by institutional investors." Despite Trian Fund Management's $2.5 billion equity position in GE, Immelt stated his firm needed to attract additional institutional investors to strengthen its ownership structure (*Wall Street Journal*, 2016a). However, Immelt was specific about the type of institutional investor he wanted to attract, stating he preferred long-term institutional owners that were dedicated to his firm's continued success. To describe the different types of institutional owners Immelt alluded to, I review the literature about institutional investors' competing temporal orientations.

Table 1. Contrasts of Dedicated and Transient Institutional Investors' Investment Characteristics

Institutional Investor Characteristics	Institutional Investor Classification: Dedicated Investor	Institutional Investor Classification: Transient Investor
Time Orientation	• Low degree of portfolio turnover • Long-term investors • Stable ownership	• High degree of portfolio turnover • Short-term investors • Trading volatility
Current Earnings	• Less sensitive to current earnings • Low reactivity to fluctuations in current earnings • Less likely to engage in momentum trading	• More sensitive to current earnings • High reactivity to fluctuations in current earnings • More likely to engage in momentum trading
Diversified Portfolio	• Concentrated portfolios • Large ownership stake in select firms	• Diversified portfolios • Multi-firm ownership

Note. See Bushee (1998, 1999, 2004) for details on institutional investor characteristics.

Table 2. Practical Examples of Key Institutional Investor Types

Institutional Investor Characteristics	**Dedicated Investor Example:** ValueAct Capital Management[a]	**Transient Investor Example:** Melvin Capital Management[b]
Time Orientation	*Long-term focus*: ValueAct historically generates long-run value for firms in their investment portfolio. According to one investee, "ValueAct has a track record…in creating long-term value for the companies in which they invest." *Low degree of portfolio turnover*: ValueAct holds their investment position for an average of three to five years.	*Short-term focus*: Melvin has a reputation of creating short-term value through a turnover intensive strategy trading. High degree of trading volatility: Melvin actively traded 98 percent of its equity positions in first half of 2016. *High degree of portfolio turnover*: Melvin divested in 34 percent on its total investment positions in the 2nd quarter of 2016.
Current Earnings	*Low sensitivity to current earnings*: ValueAct retained ownership in Rolls-Royce after the firm's pretax profit fell by 32 percent according to first half 2016 reported earnings. *Lack of momentum trading*: ValueAct cultivates a trusting partnership with firms by building relationships with top managers and board members. Such relationships, for example, have afforded ValueAct a seat on the board of directors at Microsoft, Seagate Technology, Rolls-Royce, and 21st Century Fox.	*High sensitivity to current earnings*: Melvin quickly sold its equity position in Skechers, during the third quarter of 2015, when the firm fell short of its sales estimates. *Engages in momentum trading*: Melvin increased its equity holdings in Amazon during the 2nd quarter of 2015 profiting from the stock's 118 percent gain. However, Amazon's 2016 projected stock decline led Melvin to reduce its equity position during the 4th quarter of 2015 thereby limiting the fund's losses.
Diversified Portfolio	*Concentrated portfolio*: ValueAct secures large ownership positions in select firms. On average, ValueAct executes only 3 to 4 new investments annually.	*Diversified portfolio*: Melvin secures ownership positions in diverse selection of firms. Currently, Melvin has diversified holdings in different seven sectors.

Notes. [a]Denotes references associated with ValueAct: Ovide (2014) and Wall Street Journal (2016a, 2016b). [b]Denotes references associated with Melvin Capital Management: Foxman (2016) and NASDAQ (2016). Please see full references on subsequent page.

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Time orientation. Institutional owners hold different temporal orientations, which become apparent through their level of portfolio turnover (Bushee, 1998). Simply stated, dedicated owners invest in firms for the long-term while transient owners focus on firms' short-term profits (Bushee, 2001). Consequently, transient owners hold portfolios that turnover often, while dedicated owners do not turnover their portfolios of investments frequently and thus, provide firms with stable ownership (Bushee, 2004).

For example, Caisse de dépôt et placement du Québec (CDPQ) is a dedicated, long-term institutional investor. CDPQ revealed it was acquiring a 20 percent stake in Edelweiss Asset Reconstruction to provide the financial service firm with stable capital for its four-year expansion plan in India (*Yahoo Finance*, 2016). The partnership between Edelweiss Asset Reconstruction and CDPQ exemplifies a mutually beneficial agent-principal relationship with reports indicating the firm successfully opened its New Delhi office in March 2016 (*Yahoo Finance*, 2016).

To verify that dedicated and transient owners turnover their portfolios at different rates, researchers have examined how dedicated and transient investors' stock market trading patterns differed during an impending, negative current earnings announcement (Ke & Petroni, 2004). Transient owners quickly divested in firms the quarter before the upcoming loss became public (high-level of turnover), while dedicated owners held their investments during the previous, current, and subsequent quarters following the announcement (low-level of turnover; Ke & Petroni, 2004). Such results suggest that dedicated owners do not engage in the trading volatility that is common for transient owners who turnover their portfolios quickly. In addition to highlighting differences between transient and dedicated trading patterns, these findings suggest that negative

current earnings announcements may have intensified the degree of portfolio turnover transient investors experienced. Consequently, considering what mechanisms influence institutional owners' sensitivity to current earnings reports may be a germane area of investigation for corporate governance researchers.

Sensitivity to current earnings. Institutional owners differ regarding their sensitivity to current earnings announcements where dedicated investors are less sensitive to current earnings compared to transient investors (Bushee, 1998). Institutional owners' sensitivity to current earnings relates to the extent to which investors overvalue or undervalue the proportion of firm value associated with near-term earnings or long-run value (Bushee, 2001: 214, 224). While transient investors overvalue firms' short-term earnings and undervalue firms' long-term success, empirical evidence suggests dedicated owners, in contrast, are less sensitive to current earnings fluctuations and the proportion of firm value attributed to short-term earnings (Bushee, 2004).

The institutional practice of *momentum trading* developed from owners' sensitivity to current earnings (Bushee, 1999; Ke, Petroni, & Yu, 2008). By definition, momentum trading captures the degree to which institutional owners grow their position in firms with desirable earnings announcements and divest in firms with poor earnings announcements (Bushee, 1998). Transient investors are more likely to engage in momentum trading than are dedicated owners (Bushee, 1999). For example, a study of the unregulated tendencies of transient owners suggests these investors were highly sensitive to negative news, which causes them to rapidly decrease their holdings in firms with poor earnings announcements (Ke & Petroni, 2004). Practically speaking, momentum trading is a well-documented investment strategy. For example, fund

manager, AQR Capital Management states that it integrates momentum-scaling tactics within equity funds in an effort to maximize gains for its clients that are less risk-adverse (Swedroe, 2016). Comparatively, dedicated investors emphasize the importance of non-financial measures including the level of influence firms' top managers openly accept from outside investors (Chen et al., 2007). Such a focus on non-financial measures clarifies why dedicated ownership often explains relatively small amounts of variance in Bushee's (2004) empirical models that examine institutional owners' attraction to firms' past measures of financial performance.

Instead of valuing past financial performance measures, dedicated owners are more likely to consider a firm's willingness to comply with outside stakeholder advice as an important asset. For example, Carl Icahn, an institutional investor, sold his 46 million shares of Apple stock after he reportedly disagreed with the strategic direction that Apple's top managers laid out for its Chinese operation (Egan, 2016). While Apple's recent earnings reports showed a short-term loss, Icahn stated that it was Apple's strategic direction, not short-term performance, which caused him to exit (Egan, 2016). Further, Icahn stated that he would reconsider his divestment in Apple, if the firm's China situation changed (Egan, 2016). Such evidence suggests long-term institutional owners are less sensitive to short-term loss; instead, these institutional owners heavily weight their ability to influence a firm's senior leadership team. Overall, previous research suggests that institutional owners (dedicated *vs*. transient) differ in terms of their sensitively to current earnings.

Portfolio diversification. Institutional owners differ in their preferences regarding their level of portfolio diversification (Bushee, 1998, 2001, 2004). Porter's (1992) trading

observations of U.S. *vs*. German and Japanese investors inspired Bushee (1998, 2001, 2004) to consider how institutional investors held different levels of portfolio diversification. According to Porter, U.S. investors preferred more diversified portfolios that turned over often or selected investments that seemed relatively low maintenance, which required little attention from their equity partners (Bushee, 2004).

In contrast, German and Japanese investors held concentrated portfolios and took an interest in firms where they made sizable investments. Porter's (1992) portrayal of U.S. investors was similar to Bushee's (2004) final concept of transient or quasi-indexer investors while Porter's depiction of German and Japanese investors aligned with Bushee's definition of dedicated owners. Specifically, in Bushee's taxonomy, dedicated investors held concentrated portfolios that typically included large equity positions in relatively few firms. In contrast, transient investors had diversified portfolios that normally included smaller equity positions in relatively more firms. Overall, the academic literature suggests the degree of portfolio diversification is an important element of Porter's work, which ultimately contributed to Bushee's classification.

In an effort to bring the trading mentality of German and Japanese investors to the U.S., institutional investors from Wall Street formed a new coalition, Focusing Capital. The goal of Focusing Capital is to emphasize long-term investment strategies, which dedicated owners typically embrace (*Wall Street Journal*, 2015). Following this trend, institutional investors BlackRock and AXA have both recently joined Focusing Capital to help shift the financial industry's short-term business practices towards an emphasis on sustainable, long-term investment goals (*Wall Street Journal*, 2015). In sum, practical

accounts from institutional investors on Wall Street suggest Porter's (1992) typology is still relevant to business struggles that institutional owners face today.

Owner influence on firm outcomes. Agency theory suggests that institutional owners represent a unique class of principals that require specific research attention because of their influence on firm outcomes (Demsetz & Villalonga, 2001; Goranova & Ryan, 2014). Institutional owners use their sizable equity positions to manage the agent-principal relationship (Connelly et al., 2010; Grinstein & Michaely, 2005; Parrino, Sias, & Starks, 2003). Extant literature from agency theory suggests there are three mechanisms − exit, loyalty, or voice – used to manage divergent agent-principal interests (Hirschman, 1970). *Exit*, simply, refers to incidents where institutional owners terminate their equity position through a liquidation of their holdings (Bharath, Jayaraman, & Nagar, 2013; Qian, 2011). In contrast, *loyalty* refers to situations where institutional owners retain their equity position despite disagreements with managerial agents. *Voice-based governance* occurs when institutional investors pressure firms into specific strategic or tactical decisions through diverse means of activism (Black, 1992). Agency theory suggests that exit or voice-based governance represent the most widely used mechanisms that allows institutional investors to manage the agency conflict that ensues when managerial desires deviate from principal interests (McCahery et al., 2016).

Taken together, research regarding the agent-principal relationship suggests that institutional investors influence important outcomes including managerial myopia in addition to financial, governance, strategic, and activist decisions. I review the influence held by institutional owners beginning with the concept of managerial myopia as it relates to investors' short- or long-term temporal orientation.

Managerial myopia. Temporal orientation is one of the key characteristics used to classify institutional owner behavior (Bushee, 2004). As research on institutional investors' temporal orientation increased, so did the related concept of *managerial myopia* (also referred to as myopic pricing). According to agency theory, managerial myopia occurs when principals (institutional owners) lead agents (firms) to devalue the importance of long-term investments and, instead, place greater emphasis on shortsighted gains (Bushee, 1998; Hansen & Hill, 1991).

Bushee's (1998) study depicts the literature's joint focus on institutional investors' temporal orientation and managerial myopia through a tandem examination of these constructs. The goal of his study was to determine whether institutional owners' long- or short-term focus influenced the likelihood managers would cut their firms' investments in research and development activities to meet near-term profitably outcomes (Bushee, 1998). Dedicated institutional owners appeared to provide a supportive, monitoring role that generally lessened the pressure on agents to use myopic strategies. However, transient owners, in contrast, increased the pressure on agents to engage in such myopic behavior (Bushee, 1998). Bushee (2001) used his previous rationale to continue his research by examining the prevalence of managerial myopia within the context of transient investors. Empirical evidence supported Bushee's (1998) previous conclusion that firms with high levels of transient ownership preferred short-run over long-term earnings; however, his myopic pricing arguments received less support.

Around the period of Bushee's (1998, 2001) studies, other researchers were examining the notion of managerial myopia (Wahal & McConnell, 2000). However, these empirical investigations challenged the notion that institutional investors caused

managers to act myopically (Wahal & McConnell, 2000). Further, in Bushee's (2001) own follow-up study, he was unable to find strong support for his managerial myopia hypothesis. While such a result contradicted Bushee's (1998) initial conclusions, it supported the findings that strategic management scholars published 10 years earlier (e.g., Hansen & Hill, 1991). Specifically, strategic management researchers concluded, institutional investors did not propel managers into myopic research and development decisions, and, in fact, found support for the opposite relationship, that is, a positive association between firms' level of institutional ownership and investment in research and development activities (Hansen & Hill, 1991).

Given the mixed empirical support, managerial myopia remained an important research topic, which scholars frequently associate with institutions' differing investment horizons (Bushee, 1998, 2001; Hansen & Hill, 1991; Wahal & McConnell, 2000). For example, scholars began addressing the issue of managerial myopia by studying whether institutional investors' transient or long-term focus affected firms' earnings management strategies (Koh, 2007). Although, such investigations did not offer support for critics' longstanding belief that transient investors induced managerial myopia, the empirical evidence did show that transient and long-term institutional owners have different effects on firms' corporate earnings management strategies (Koh, 2007). However, more recently, empirical research suggests the concept of myopia still has important theoretical value especially in the field of entrepreneurship (Chrisman & Patel, 2012). As such, one study used the myopic loss aversion framework to explain why family and non-family firms made different research and development investments (Chrisman & Patel, 2012).

Owing to the inconsistent findings associated with managerial myopia, researchers expanded the theoretical foundation of the idea to include a new, potentially more relevant, construct: *short-termism.* Specifically, Marginson and McAulay (2008: 274) introduced *short-termism*, as an important corporate governance construct, which was theoretically separate from managerial myopia. By defining short-termism as a detrimental intertemporal tradeoff, researchers shifted their focus away from the concept of managerial myopia and towards the temporal differences existing within organizations. While the literature's conclusions regarding managerial myopia remain equivocal, empirical evidence strongly suggests dedicated and transient institutional owners hold different temporal orientations (Bushee, 1998, 1999, 2001, 2004; Chen et al., 2007; Ke & Petroni, 2004; Koh, 2007). In a quest to understand how institutional investors' different temporal orientation influences firm outcomes, researchers have turned their attention to financial and governance outcomes.

*Governance and financial outcomes***.** Institutional owners influence firm outcomes and hold important influence over firms' financial and governance decisions. Researchers have examined the characteristics of institutional investors that invested in firms with more desirable corporate governance structures in place (Bushee et al., 2014). While a general analysis of *total* institutional owners suggested there is little governance sensitivity among these investors, a finer-grained analysis revealed a small but important cluster of governance-sensitive investors (Bushee et al., 2014). Specifically, these governance-sensitive investors held different preferences regarding two, well-studied corporate governance constructs: boards of directors' composition and shareholder rights (Bushee et al., 2014). Such research highlights the importance of considering the

relationship between institutional ownership and other corporate governance constructs, such as CEO compensation (e.g., Westphal & Zajac, 1998).

Additionally, the structure and types of incentives in CEO compensation contracts is an important corporate governance issue because of the agency costs associated with misaligned managerial and stakeholder interests. For this reason, researchers examined the relationship between institutional ownership and specific elements of CEO compensation including bonuses, equity proportions, and the amount of weight placed on current earnings (Dikolli, Kulp, & Sedatole, 2009). Researchers found that firms with high levels of transient institutional ownership are more likely to have CEO compensation contracts that indirectly motivated executives to value shortsighted rather than long-term goals (Dikolli et al., 2009).

Further research confirms Dikolli et al.'s (2009) conclusion regarding the relationship between institutional ownership and executive pay. Specifically, Connelly et al. (2016) reported that institutional ownership structure is an important predictor of pay dispersion (the authors operationalized pay dispersion as a proportional variable where top manager compensation was the numerator and mean employee compensation was the denominator). Empirical evidence suggested firms with higher levels of dedicated investors tended to have smaller dispersions in pay while firms with higher levels of transient investors had larger pay dispersion gaps (Connelly et al., 2016).

In addition to executive compensation, institutional ownership appears correlated with firms' commitment to human resource practices including profit sharing and participation in decision-making (Mullins, Brandes, & Dharwadkar, 2016). Simply stated, firms with high levels of transient owners were less likely to adopt such human resource

practices (Mullins et al., 2016). While it is difficult to explicitly identify *why* a class of principals, such as dedicated and transient investors, differ with respect to firms' adoption of human resource practices, prior research about the agent-principal relationship shows institutional owners' heterogeneous trading characteristics correlates with their underlying motivation to invest in such organizations (Bushee, 1999, 2004).

Following this line of inquiry, the agent-principal literature suggests institutional owners' heterogeneous trading characteristics appear to impact additional firm-level outcomes including level of information technology capability and accounting choices (Bradshaw, Bushee, & Miller, 2004; Schafferling & Wagner, 2015). For example, firms' information technology capability is an important factor that affects whether long- or short-term investors moved forward with an investment (Schafferling & Wagner, 2015). Specifically, firms with above-average information technology capability appealed to institutional investors having long-term investment horizons more than short-term investors (Schafferling & Wagner, 2015). Such research suggests that firms must carefully consider how they convey their information technology capability to prospective investors especially if they are hoping to develop a partnership with dedicated investors that often provide stable ownership (Bushee, 2004).

In addition to considering the level of technology investment, empirical evidence, further, suggests corporate managers need to consider their accounting choices carefully (Bradshaw et al., 2004). From an accounting perspective, foreign firms' compliance with U.S. Generally Accepted Accounting Principles (GAAP) was an important predictor of whether institutional owners would invest in international ventures (Bradshaw et al., 2004). Specifically, U.S. institutional investors exhibited home bias by investing in

foreign firms that conformed to GAAP standards more frequently compared to firms having a lower level of GAAP conformity.

Research studies, such as those cited above, underscore the impacts of dedicated and transient ownership on important corporate governance and firm outcomes. However, such research does not explain *what attracts institutional investors* (Bushee, 2004: 32). To answer this question, researchers use agency theory to investigate a series of firm characteristics, which would help explain institutional owners' divergent preferences. From a financial perspective, dedicated owners preferred stable, low-risk firms that typically pay dividends (Bushee, 2004). Further, these long-term owners emphasized firms' non-financial assets, such as the power executives hold relative to that of shareholders, and more notably, other institutional investors (Bushee, 2004).

Dedicated investors typically avoid taking large equity positions in multiple firms because these investors prefer to focus their efforts on in-depth monitoring of a few, important organizations (Chen et al., 2007). In-depth monitoring helps investors gain important insights regarding the long-term viability of firms and the stability of their respective industry (Chen et al., 2007). Long-term investors do not make sudden trades when firms' report short-term losses because the informational advantages they receive from holding their concentrated portfolios over time outweigh the small disadvantages associated with near-term losses (Bushee, 2004). Empirical evidence suggests long-term owners only divested in unique cases of immense loss or when the institutional investor believed a firm's leaders no longer valued their strategic input (Chen et al., 2007).

Transient investors favor high performing, liquid firms that offer low dividend yields (Bushee, 2004). As such, transient owners are more likely to invest in firms with

higher persistent earnings growth because their stock prices are often sensitive to earnings fluctuations, which, when leveraged strategically, provides transient owners larger prospective profits (Bushee, 2004). Transient owners' focus on short-term prospective profits contributes to why this class of investors is attracted to firms with higher disclosure quality (where disclosure quality is based on ratings from the Association of Investment and Management Research across three reports: annual reports, interim reports, and investor relations' activities; Bushee & Noe, 2000). Transient owners desire firms with higher disclosure ratings because these firms often have greater stock liquidity, which increases the likelihood investors will be able to obtain short-term profits (Bushee, 1999). While beneficial for transient investors, firms with higher quality disclosure ratings are more likely to report subsequent instances of stock market volatility, which destabilizes firms' stock prices and may have costly implications over the long-run (Bushee, 1999, 2004).

Practical evidence suggests that firms may change their disclosure practices in order to appear less attractive to transient institutional owners that favor short-term performance. For example, in 2003, Coca-Cola revealed the firm was changing its disclosure practices to appease their leading institutional owner, Warren Buffett, who reportedly encouraged top managers at Coca-Cola to refocus efforts toward a long-term investment strategy (Forbes, 2002). Douglas Daft, who then served as Coca-Cola's CEO and Chairman, stated, "Our share owners are best served by this because we should not run our business based on short-term expectations. We are managing this business for the long-term" (*Forbes*, 2002). The previous example highlights the important role institutional pressures from short- and long-term owners play in firm governance. Thus,

firms should consider whether they are attracting dedicated or transient investors and whether these owners' interests align with their firms' investment needs (Bushee, 2004).

Overall, Bushee and his colleagues (Abarbanell, Bushee, & Raedy, 2003; Bushee, 1998, 1999, 2001, 2004; Bushee & Noe, 2000) provided important research insights regarding the effect of institutional ownership on firms' governance and financial decisions. Recent research has extended Bushee's initial findings by demonstrating that institutional owners may also impact firms' strategic outcomes.

Strategic outcomes. Institutional owners represent an important investor class that influences firms' strategic outcomes. Early research offered empirical support for the corporate governance belief that institutional investors are also concerned with firms' strategic decisions (Hoskisson et al., 2002; Tihanyi, Johnson, Hoskisson, & Hitt, 2003). For instance, such research provided important insights regarding the relationship between institutional investors, firm innovativeness, international diversification, and research and development investments (David, Hitt, & Gimeno, 2001; David, O'Brien, Yoshikawa, & Delios, 2010; Hoskisson et al., 2002; Tihanyi et al., 2003).

In the field of strategic innovation, empirical evidence suggested public pension funds favored internal innovation (e.g., investment in research and development to create new product lines) while professional investor funds sought external innovation activities through the acquisition of outside businesses to create new product lines (Hoskisson et al., 2002). Further, research in the international management domain suggested firms with investments from pension and professional investment funds were more likely to engage in foreign dealings; however, the relationship depended on the level of inside and outside board member involvement, respectively (Tihanyi et al., 2003). Given the

importance of board of director involvement, Ozer and Alakent (2013) examined how the level of *inside ownership* (i.e., the proportion of shares controlled by top managers and board of directors) affected firms' political strategy. The authors concluded institutional owners decreased the likelihood firms would leverage the *relational approach* to political strategy (Ozer & Alakent, 2013). While informative, research studies, such as those cited above, relied on legal classifications to empirically test their hypotheses instead of using Bushee's (1998, 2001) dedicated and transient taxonomy.

Institutional Owners and Firms' Strategic Outcomes. In an effort to understand how dedicated and transient institutional owners impact firms' strategic outcomes, I focus the remainder of my literature review on studies that exclusively used Bushee's (1998, 2001, 2004) classification. For example, more recently, researchers using the dedicated and transient institutional owner taxonomy have begun examining how long- and short-term investors influenced firms' earnings management strategies (Koh, 2007). From an academic perspective, previous research suggests that long-term institutional owners often bring investment stability, which attenuates some of the pressure on firms to employ aggressive strategies (Koh, 2007).

Practical evidence suggests the struggle firms face to resolve the pressures associated with aggressive earnings management strategies dates back to the late 1990s. For example, on September 28, 1998, Arthur Levitt, who then served as the chairman of the SEC, documented such institutional pressures through his influential speech titled "The Numbers Game." Levitt's speech most notably highlighted the accounting practices and earnings management strategies that allow firms to demonstrate positive performance

in the short-term in order to mask underlying failure (www.sec.gov/news/speech/speecharchive/1998/spch220.txt).

In addition to firms' earnings management strategies, research suggests dedicated and transient investors impact firms' competitive actions in dyadic rivalries where the level of dedicated and transient ownership correlates positively with the number of strategic and tactical competitive actions taken by firms, respectively (Connelly et al., 2010). Most recently, Connelly, Tihanyi, Ketchen, Carnes, and Ferrier (2017) considered how firms' institutional ownership structure related with their competitive repertoires. Their results suggested a positive relationship between the level of dedicated ownership and complexity of competitive actions taken by firms (i.e., competitive repertoires; Connelly et al., 2017). The agency-based literature shows institutional owners are influential partners that shape organizations' strategic outcomes while the institutional activism research provides a more detailed account of such owner influences.

*Institutional activism***.** Firm ownership is an integral element of shareholder activism research, which was introduced to the mainstream management literature about 15 years ago (David et al., 2001; Goranova & Ryan, 2014). *Institutional activism* captures actions taken by institutional investors to influence the strategic initiatives of firms in which they have a vested interest (Chowdhury & Wang, 2009). Specifically, institutional ownership has contributed to researchers' understanding of activism measures including proxy contests (Alexander, Chen, Seppi, & Spatt, 2010) and governance proposals (Gillan & Starks, 2000), such as option expensing (Ferri & Sandino, 2009), say-on-pay proposals (Cai & Walkling, 2011), and poison pills (Bizjak & Marquette, 1998). The institutional activism literature challenged the common

governance assumption that institutional investors gain their power through sizeable investments alone, which drove researchers to consider the importance of institutional owner action (e.g., Chowdhury & Wang, 2009; Goranova & Ryan, 2014).

From an academic perspective, researchers have continued to examine institutional activism through the lens of corporate social performance (Neubaum & Zahra, 2006), CEO compensation (Chowdhury & Wang, 2009), and firm wrongdoing (Shi et al., 2017). In the field of corporate social responsibility, scholars examined the moderating effects of owners' activism, temporal orientation, and degree of coordination. Empirical evidence suggests institutional investors' long-term ownership interests and degree of coordinated activism positively influenced firms' future engagement in socially responsible corporate practices (Neubaum & Zahra, 2006). Additionally, Chowdhury and Wang (2009) contributed to the institutional activism literature by examining the relationship between institutional activism type (proxy based activism *vs.* nonproxy based activism), board monitoring, and CEO compensation. Using a Canadian-based sample of organizations listed on the Toronto Stock Exchange, the authors concluded institutional activism affects executive compensation more strongly through proxy based activism compared to nonproxy based activism (Chowdhury & Wang, 2009).

Most recently, Shi et al. (2017) assessed how external corporate governance mechanisms, including the level of institutional activism by dedicated owners, influences financial fraud. The authors uncovered a positive relationship between firms' level of dedicated ownership and fraudulent activity, which represents a departure from the positive attributes typically associated with long-term owners (cf., Chen et al., 2007). Arguments from agency theory and cognitive evaluation theory suggest firm executives

may surrender to the pressure exuded by dedicated owners thereby suppressing managers' intrinsic desire to act properly, which results in higher instances of financial indiscretion (Shi et al., 2017). Such a finding demonstrates that researchers should consider conducting additional empirical investigations that help illuminate the full-range of strategic impacts − including both positive and negative firm outcomes − associated with high levels of dedicated ownership.

From a practical perspective, however, firms have been consistently handling the negative and positive effects of institutional activism. For example, executives, at times, will retaliate against institutional activism to regain control of their firm or deter a hostile takeover from investors. Pier 1 Imports adopted a poison-pill measure after activist investors from Alden Global Capital publicized their nine percent equity position in the firm (Ezequiel, 2016). However, Pier 1's aggressive business decision not only disappointed its largest institutional investor, Alden Global Capital, but also put the firm on the defensive when stakeholders learned that Pier 1 Imports' stock had plummeted 75 percent since Chairman Terry London took office (*PR Newswire*, 2016). Thus, firms must carefully consider their strategic decisions regarding institutional activism.

While the Alden Global Capital and Pier 1 Imports example highlights a struggling institutional owner-firm partnership, securing an investment for institutional investors, oftentimes, is quite positive for the firm. For instance, the relationship between ValueAct Capital and Micro Systems demonstrates a more positive exemplar. After activist investor, ValueAct Capital secured 5.9 million shares of Micro System's stock, the firm's stock price rose over seven percent (Callan, 2013). The juxtaposition of

ValueAct and Alden Global Capital's investments demonstrate the broad nature of the agent-principal relationship within the activism literature.

The ValueAct and Alden Global Capital cases provide a nice transition to my symbolic management literature review. I provide an overview of symbolic management following my summary of institutional owners because it is important to consider what mechanisms firms can use to mitigate the pervasiveness of institutional owner power. The symbolic management literature provides specific recommendations regarding impression management tools that provide an effective means to pacify institutional investors, which potentially limits their influence over organizational-level outcomes.

Symbolic Management

Symbolic management is an important strategic management perspective, which offers insight into the struggle firms face as they attempt to comply with the normative and institutionalized pressures imposed by the value systems in their external environments (Bromley & Powell, 2012; Meyer & Rowan, 1977). Within the context of corporate governance, scholars describe symbolic management as a social process, which occurs at a macro-societal level (Hambrick, Werder, & Zajac, 2008). Early contributions to the literature came from Meyer and Rowan (1977), Pfeffer (1981), and other institutional theorists (Perrow, 1999; Weber, 1930; Weick, 1976, 1982; Zucker, 1987).

Complementary theoretical lens. I use symbolic management to complement the theoretical tenets of agency theory in my dissertation (Daily et al., 2003). Recently, scholars have used the tenets of agency theory in tandem with outside theoretical perspectives to enhance the soundness of the literature's empirical and conceptual models (e.g., Hillman & Dalziel, 2003; Shi et al., 2017). Furthering this line of inquiry, Westphal

and Zajac (1994, 1998, 2001) developed a research stream that uses symbolic management in conjunction with agency theory to bolster the literature's understanding of corporate governance phenomena. Specifically, Zajac and Westphal (2004) leverage symbolic management to propose a socially based interpretation of the agent-principal relationship, which broadens the overly strict economic assumptions that are characteristic of agency-based arguments. I expand on this research stream by reviewing how symbolic management complements agency theory.

Symbolic additions to agency theory. Proponents of agency theory believe that corporate control mechanisms ease the inherent conflict between agents and owners (Daily et al., 2003). Theoretically, implementing mechanisms, such as independent board structures and long-term executive compensation contracts, constrains the desire of agents to act opportunistically (Eisenhardt, 1989; Jensen & Meckling, 1976). Further, according to agency-based arguments, institutional owners may pressure firms to comply with stakeholder-approved governance mechanisms to reduce the agency costs that occur when executives act in a self-interested fashion (Black, 1992; McCahery et al., 2016).

While the tenets of agency theory propose corporate control mechanisms allow principals to influence firm actions, empirical evidence questions this supposition (Dalton et al., 1998). For example, prior research suggests internal and external corporate control mechanisms often fail to reduce agency costs that arise from divergent owner-manager interests (Dalton et al., 2003; Krause, Semadeni, & Cannella, 2014). Such research challenges the traditional economic assumptions of agency theory while demonstrating the need for additional theoretical perspectives to overlay some of the harsh assumptions associated with agency-based arguments (Zajac & Westphal, 2004).

To fill this void, researchers have turned to symbolic management. Indeed, empirical evidence demonstrates symbolic management may attenuate some of the conflict that arises from competing principal and agent interests (Westphal & Zajac, 1994). That is, firms reduce agent-principal conflict by appearing to conform to stakeholder demands through symbolic, rather than substantive, change (Westphal & Zajac, 1998). More formally, Westphal and Zajac (1994, 1998) described such ceremonial activity as *symbolic resolution*. When implemented successfully, symbolic resolution allows firms to undermine the influence of principals thereby decreasing their power over firm-specific matters. To illuminate the practices associated with symbolic management, I review this research stream.

Symbolic management overview. Researchers often credit Westphal and Zajac with introducing symbolic management to the mainstream corporate governance literature through the topics of decoupling, legitimacy, and impression management (Fiss & Zajac, 2006; Westphal & Zajac, 1994, 1995, 1998, 2001; Zajac & Westphal, 1994, 1996, 2004). To help exemplify the processes of decoupling and legitimacy within the symbolic management literature, I define these terms based on Westphal and Zajac's (1998) study. They used long-term CEO compensation plans to examine the impact of firms' symbolic and substantive actions on firm governance issues. Stakeholders and institutional investors, especially, believe that firms need strong corporate governance mechanisms to control managers from acting in a self-serving fashion. Therefore, stakeholders place high value on specific control mechanisms, such as long-term CEO compensation plans. Stakeholders believe long-term CEO compensation plans provide a legitimate means to control executive behavior because such plans explicitly link

executive compensation with long-term market performance and, thus, motivate CEOs to implement strategies that promote continued organizational success.

Despite industry approval and stakeholder pressure to make discernable changes to executive compensation systems, Westphal and Zajac (1998) concluded the market responded positively even when firms acted *symbolically* and did not implement any *substantive* changes to their CEO pay structures. Firms engaged in symbolic change by simply announcing they were going to implement long-term CEO compensation plans but never actually followed through with the change. For substantive change to occur, firms would have needed to implement the executive compensation plans after its announcement, instead of just espousing approval (a symbolic action) for such a plan but taking no substantive actions regarding plan implementation.

By announcing the adoption of a specific long-term executive contract, but then failing to execute the actual contract, firms engage in *decoupling.* When firms decouple they appear to conform to demands of outside constituents, which increases firms' *legitimacy* from a stakeholder perspective (Westphal & Zajac, 1998). In addition, the use of socially legitimate language in proxy statements helps firms respond to stakeholder concerns and achieve a more positive market reaction. The symbolic *vs*. substantive changes that firms implement have repercussions regarding managerial control issues within the corporate governance domain. Overall, the symbolic management literature provides empirical evidence that firms decouple their symbolic and substantive changes in hopes of appearing legitimate to external audiences or constituents such as shareholders, institutional investors, and the stock market. My review of the decoupling literature focuses on Westphal and Zajac's (1994, 1998, 2001) foundational work.

Decoupling. The concept of decoupling dates back to work by several influential institutional, organizational, and social constructionists (Berger & Luchmann, 1966; March & Olsen, 1976; Meyer & Rowan, 1977; Weber, 1930; Weick, 1976). Decoupling is the result of a situation where firms appear to conform to outside demands through symbolic instead of substantive change (Bromley & Powell, 2012). When firms engage in symbolic change, stakeholders often believe corporate managers implemented a major transformation, which aligned with the external audience's agenda. However, from an intra-firm perspective, corporate managers either, (a) did not change their internal practices or (b) implemented new practices to satisfy firm-specific needs, which often do not align with the actions advocated by stakeholders (Westphal & Zajac, 1994, 1998).

To help clarify the concept of decoupling, I provide an example of actions taken by British Petroleum (BP). As a global need for firms to become more ecologically focused increases, researchers have looked to the green movement for examples of symbolic *vs.* substantive management practices. BP sought to capitalize on the green movement by appearing to adopt its own eco-friendly practices through an innovative campaign, while, in reality, the firm failed to follow through with these espoused initiatives. Specifically, BP released their *BP for Beyond Petroleum Rebranding Campaign* to stress the firm's commitment to renewable energy. However, secondary stakeholders quickly learned that BP's commitment to cleaner energy was simply a façade when the media uncovered the firm's environmentally damaging drilling practices that directly violated the firm's renewable energy campaign (Lyon & Maxwell, 2011). As the BP case highlights, firms often try to capitalize on the social legitimacy associated with being environmentally conscious, by decoupling their outward support of the green

movement from any observable implementation of such initiatives (or actions) that genuinely preserve the environment (Bromley & Powell, 2012).

From an academic perspective, the decoupling literature spans numerous contexts including human rights practices (Hafner-Burton & Tsutsui, 2005), education (Hallett, 2010), and environmental principles (Lounsburg, 2011). However, given the nature of my dissertation, I review decoupling research that focuses on corporate governance issues. In the field of corporate governance, researchers have sought to understand what conditions enhance the likelihood that firms engage in decoupling (Westphal & Zajac, 1998). To gain a greater knowledge of these conditions, early research on the topic focused on the impact of decoupling using long-term CEO compensation plans (Westphal & Zajac, 1994). Empirical evidence suggested firms were more likely to decouple the symbolic and substantive elements of their long-term CEO incentive systems when firms had influential CEOs and previous periods of lower performance (Westphal & Zajac, 1994).

In later corporate governance research, scholars expanded their examination of decoupling in a new context: stock repurchase plans (Westphal & Zajac, 2001). This new setting allowed researchers to identify an additional, significant predictor of decoupling (the number of direct and indirect interlock ties) while offering support for a prior research conclusion, which indicated firms were more likely to engage in decoupling when their CEOs held relatively more power than the board of directors (Westphal & Zajac, 2001). Overall, both contexts − long-term CEO incentive systems and stock repurchase plans − provided researchers with informative settings to test their symbolic management arguments regarding the inherent agency costs that are associated with misaligned agent and owner interests.

Symbolic management researchers consider decoupling as a *buffering mechanism*, which allows firms to appear legitimate to outsiders (Westphal & Zajac, 2001). When CEOs are more powerful than their boards of directors, they are more likely to use decoupling to undermine their board's monitoring ability by implementing governance practices that align with managerial, instead of stakeholder, interests (Westphal & Zajac, 1998). Executives engage in decoupling because it is an influential tool where firms appear to comply with external demands when they actually do not. Thus, powerful CEOs often used decoupling as an effective political tool, which allowed them to avoid institutional pressures from the board of directors. Given the effectiveness of decoupling, it is unsurprising, that Westphal and Zajac (2001: 220) concluded that decoupling was a common and predictable organizational occurrence; however, for the literature, this finding presented a change from how researchers typically viewed decoupling. Instead of viewing decoupling as a sporadic strategy for managing external pressure, this new perspective suggested decoupling was actually a widespread practice that executives used to manage a variety of different governance-related issues.

Initial symbolic management research suggested scholars should view decoupling as a *binary choice* where firms typically *say* one thing, but *do* something different (Fiss & Zajac, 2006: 1187). More recently, however, the decoupling literature broke away from the limiting, black-or-white language imposed by the say *vs*. do typology by considering how firms framed their strategic responses (*acquiescence frames vs*. *balancing frames;* Oliver, 1991). While bringing research attention to the actual language firms used to communicate to stakeholders, theoretically speaking, was not a new finding (e.g., Westphal & Zajac, 1998), it highlighted a need for scholars to consider how cognitive or

strategic frames influence symbolic management research (Fiss & Zajac, 2006: 1187). For example, recent studies have used cognitive framing to inform institutional nonconformity research, which has resulted in a new model of symbolic and material immunity (Lepoutre & Valente, 2012). The logic behind cognitive framing and its ties to institutional theory allowed management researchers to appreciate why comparable organizations have different responses − or different levels of immunity − to similar institutional pressures (Lepoutre & Valente, 2012).

Legitimacy. An important element of symbolic management and impression management research is legitimacy, which researchers trace back to early organizational theorists (Hannan & Freeman, 1989; Meyer & Rowan, 1977; Pfeffer, & Salancik, 1978). Despite conceptual issues stemming from the concept of legitimacy, I use the following definition: legitimacy refers to "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995: 574). According to Suchman (1995), researchers often divide the legitimacy literature into two segments (strategic-legitimate and institutional-legitimate). Strategic-legitimate researchers follow the work of Pfeffer (1981) that emphasizes the power of managerial influence while institutional-legitimate scholars draw on the work of Meyer and Rowen (1977), which stresses the socially constructed nature of cultural norms and symbols that permeate the institutionalized environment where organizations extract meaning.

Recent studies suggest legitimacy plays a key role in management research especially in the development of theoretical models. For example, Fisher, Kotha, and Lahiri (2016) demonstrated legitimacy was an important theoretical element of their

entrepreneurship model that identified three new venture, life stages: institutional pluralism, venture-identity embeddedness, and legitimacy buffering. In addition to theoretical models, qualitative investigations have been particularly helpful in moving legitimacy research forward as well. For example, a field study of U.K. start-up ventures contributed to our understanding of how entrepreneurs' level of resource acquisition depended, in part, on how legitimate potential lenders viewed the entrepreneurs (Zott & Huy, 2007). In a quest to develop the theoretical underpinnings of legitimacy, Zott and Huy (2007: 98) used evidence from their interviews with entrepreneurs to identify four *symbols* entrepreneurs leveraged to gain legitimacy and ultimately access to resources: personal credibility, professional organization, organizational achievement, and quality of relationships with stakeholders. Their qualitative evidence provided support for Suchman's (1995) legitimacy typology (pragmatic, moral, and cognitive legitimacy), which was important because it validated the notion that there were different types of legitimacy, and each was associated with specific behavioral elements.

An additional qualitative study contributed to the symbolic management literature by investigating the relationship between legitimacy and organizational wrongdoing, following the implementation of the Sarbanes-Oxley Act (MacLean & Behnam, 2010). The case study highlighted the consequences of decoupling through a *legitimacy façade* (MacLean & Behnam, 2010: 1499). The interviews and qualitative analyses demonstrated how a legitimacy façade normalized firm wrongdoing, which ultimately damaged the firm's image and cost the organization millions of dollars in fines and legal restitution (MacLean & Behnam, 2010). When firms decouple their symbolic and substantive actions, firms appear legitimate to stakeholders but illegitimate to employees who

understand the consequences of such false pretenses (MacLean & Behnam, 2010). Although firms may not intend on creating an environment that increases the likelihood of wrongdoing, the illegitimacy that employees perceive produces a setting where the organization normalized such unethical behavior.

From a theoretical perspective, MacLean and Behnam (2010) changed how researchers conceptualized legitimacy. Previous research focused mainly on how external audiences granted firms legitimacy through their level of conformity to outsider-imposed expectations. For example, one qualitative study specifically evaluated how the level of governmental pressure impacted the likelihood firms would self-regulate (Short & Toffel, 2010). Using data from the Federal Clean Air Act, the researchers demonstrated firms had a higher probability of obeying their symbolic pledge to self-regulate when the threat of substantial surveillance and high regulatory pressure existed (Short & Toffel, 2010). Short and Toffel's (2010) study highlights the inter-firm perspective that most researchers take to examine the concept of legitimacy. In contrast, however, MacLean and Behnam (2010) took an intra-firm perspective by considering how legitimacy perceptions of firm employees changed when they realized their employer was engaging in misconduct. Such an approach recognizes that a single firm may have many different legitimacy perceptions that arise from opposing perspectives. Although both legitimacy perceptions are socially constructed (Berger & Luckmann, 1966), the level of legitimacy employees associate with their firms, for example, may be different from the legitimacy perceived by external audiences.

Meyer and Rowan (1977) used the social constructionists' view to form their propositions regarding decoupling, institutionalization, and legitimacy. While symbolic

management constructs have been tested in traditional organizational settings (e.g., Zajac & Westphal, 1996), relatively less is known about the generalizability of these constructs in financial markets. To address this gap in the literature, Zajac and Westphal (2004) investigated whether stock market reactions to firms' stock repurchase plans supported the social constructionists or market learning perspectives held by financial economists. The stock market reinforced its own positive perceptions through the process of institutionalization, which substantiated the logic held by social constructionists rather than financial economists (Zajac & Westphal, 2004). Specifically, empirical evidence supported the social constructionist view, which suggested that social referencing, institutionalization, and legitimacy helped explain why the stock market continued to react positively despite growing empirical evidence that indicated firms were engaging in symbolic, rather than, substantive changes (i.e., decoupling; Zajac & Westphal, 2004). Overall, firms maintain or increase their legitimacy by implementing practices that external constituents sanction as appropriate for the organization's stakeholders.

Impression management and pacification of stakeholders. A struggle for power and influence often occurs between external stakeholders and a firm's managerial agents (Westphal & Zajac, 1994, 1998, 2001). External stakeholders socially validate the practices and procedures they want firms to implement internally. While firms may not want to implement these practices, they also realize that their external stakeholders are powerful, especially institutional owners, and that they need to pacify these investors (Westphal & Bednar, 2008). To pacify external stakeholders, firms engage in impression management. In the 1990's, case analyses provided important contributions to the impression management literature because these qualitative investigations allowed

researchers to derive their conclusions inductively, which resulted in rich theoretical developments (Dutton & Dukerich, 1991; Elsbach & Sutton, 1992). However, as research in the area of impression management developed, a sufficient amount of work accumulated for scholars to conduct quantitative investigations that permitted larger, more distinctive samples (Fiss & Zajac, 2006; Zajac & Westphal, 2004).

For example, Westphal and Zajac (2001) used a U.S. sample of organizations from the *Fortune* 500 and 1985 *Forbes* indexes to examine the impact of symbolic actions in the corporate governance research domain. Although the stock market reacted positively to symbolic activity, research suggests symbolic actions tend to discourage any real, substantive corporate governance changes (Westphal & Zajac, 1998, 2001). Additional research continued to examine the effect of symbolic management within the corporate political strategy research domain (Delmas & Montes-Sancho, 2010). Empirical evidence suggests the timing of firms' participation (late *vs.* early joiners) affected the type of strategy (symbolic *vs*. substantive cooperation) they adopted to change governmental policy (Delmas & Montes-Sancho, 2010).

In the context of agency theory, institutional owners are powerful principals who influence firms' external communities (Connelly et al., 2010). Therefore, firms must develop impression management tools to help them handle their relationships with institutional owners (Westphal & Zajac, 1998). When institutional ownership is high, firm executives may become concerned that these owners may exude their influence by attempting to implement governance mechanisms that jeopardize managerial interests (Gillan & Starks, 2007). CEOs engage in interpersonal discussions with institutional owners' fund representatives to keep institutional owners from proposing changes that

would negatively affect firms' governance structures or strategic direction from an executive perspective (Westphal & Bednar, 2008). Such interpersonal conversations, in general, help pacify institutional owners, which keeps these investors from using their power to propel organizational changes that would prioritize stakeholder interests above those of management (Westphal & Bednar, 2008).

While institutional investors represent an important group of external constituents, scholars suggest there are additional outside audiences that require research attention. For example, firms try to manage perceptions of financial analysts, (Westphal & Graebner, 2010), security analysts (Westphal & Clement, 2008), journalists (Westphal & Deephouse, 2011), and the media (Bednar, 2012). Firms successfully prompted largely positive reactions from the media by making symbolic rather than substantive changes to the level of board independence, which helped executives to maintain greater job stability and favorable pay contingencies (Bednar, 2012). Such large media reactions emphasize to CEOs the importance of the media and its influence on firm reputation and investor behavior. Effective use of the media helps to explain why executives who actively engage in impression management tactics garner positive press from journalists and other CEOs in their community (Westphal, Park, McDonald, & Hayward, 2012).

Overall, the symbolic management literature suggests the amount of influence held by CEOs, institutional investors, boards of directors, and other firm stakeholders affect an array of strategic management outcomes. My dissertation explores the effect of this impact in a new, unique context: product recalls. I review the product recall literature to provide an overview of the current research in this domain.

Product Recalls

Product recalls represent supply chain disruptions that both academics and practitioners agree require additional research attention. Supply chain disruptions represent a major threat to firms, especially considering the increasing globalization of supply chain networks (Blackhurst, Dunn, & Craighead, 2011). The increasing number of high-profile product recalls that resulted in consumer harm recently caught the attention of advocacy groups and governmental officials alike. For example, *Consumer Reports* and Nancy Pelosi, who then served as Speaker of the House, named 2007 as "the year of the recall" because of the hazards associated with numerous recalled toy products affecting infant and child consumers. The turmoil experienced in the toy industry in 2007, however, was not an isolated incident, and seemed to signal a larger, more disturbing trend that subsequently impacted the automotive industry. Specifically, *Forbes* and *Fortune* named 2014 "the year of the recall" because auto manufacturers recalled approximately 52 million cars, which affected almost one out of every five U.S. vehicles.

The automotive industry's woes, however, did not end in 2014. On May 4, 2016, the National Highway Traffic Safety Administration stated it was expanding its recall involving Takata air bag inflators to include an additional 35 to 40 million units. According to U.S. governmental reports, the faulty airbags led to over 10 fatalities and 100 injuries and will cost Takata billions of dollars in repairs and legal actions (*Fortune*, 2016*b*). Product recalls continue to be an important discussion point in the business popular press, which, more recently, has captured the attention of academic researchers.

Origins of product recall research in the management literature. I review the origins of product recall research within the broader context of the management

literature. I begin by reviewing the theories that inform product recall researchers and then provide an empirical overview including information about the five governmental agencies that regulate product recall announcements.

Management scholars highlighted the importance of understanding product recall effects through the publication of two, initial strategic management studies (e.g., Bromiley & Marcus, 1989; Davidson & Worrell, 1992). First, using efficient market theory, researchers investigated whether the negativity engendered by abnormal stock market returns actually deterred automobile firms from manufacturing defective vehicles (Bromiley & Marcus, 1989). Empirical evidence suggested that stock market penalties did not discourage firms from engaging in unacceptable corporate conduct as far as product recalls were concerned (Bromiley & Marcus, 1989). While informative, the strict automotive sample limited the generalizability of researchers' conclusions, which is why later scholars conducted investigations incorporating more inclusive samples. For instance, one research team examined stock price fluctuations following product failures using a distinctive, non-automotive sample of product recalls from firms listed on the New York or American Stock Exchanges from 1968-1987 (Davidson & Worrell, 1992). Such scholarship contributed to crisis management research and offered important insights regarding the (a) role of volition (i.e., involuntary or voluntary recalls) and (b) strategy firms should employ to mitigate negative market reactions following product recalls (i.e., replace or return the product; Davidson & Worrell & 1992).

Early contributions by management scholars (Bromiley & Marcus, 1989; Davidson & Worrell, 1992) paved the way for future researchers to broaden and incorporate other strategic management theories. For example, researchers used

transaction cost economics in addition to agency theory to explain their supply chain sourcing strategy hypotheses (Steven et al., 2014). Specifically, transaction cost economics accounted for monitoring and coordination costs, which are common in complex supply chains (Steven et al., 2014). Further, agency theory explained how information asymmetries that existed between different supply chain entities influenced manufacturer and supplier actions (Steven et al., 2014). As the product recall research domain grew, scholars began to incorporate several key strategic management perspectives to build their theoretical arguments such as, resource base view (Epelbaum & Martinez, 2014), resource dependency theory (Ketchen, Wowak, & Craighead, 2014), and signaling theory (Zhao, Li, & Flynn, 2013). Such strategic management perspectives provided the theoretical background and conceptual framework required for the product recall literature's empirical investigations (Wowak & Boone, 2015).

Empirical product recall studies have included a variety of qualitative and quantitative methods. Since this body of literature is in its early stages of development, qualitative methods, which allow research conclusions to flow from the data, have been one, well-utilized approach (Wowak & Boone, 2015). Ketchen et al. (2014) employed a grounded theory approach to gain valuable insights regarding how firms' resource portfolios influenced the type of recalls supply chain managers experienced. Their work resulted in a typology that characterized each recall type by specific attributes regarding firms' level of resource endowments and resource orchestration (Ketchen et al., 2014). I review Ketchen et al.'s recall types later in the dissertation.

In areas where data that are more empirical have been amassed, investigators also used quantitative methods to enhance the knowledge base of product recall research

(Chen & Nguyen, 2013). For example, scholars often use event studies, regression techniques, and large sample sizes to understand the impact of product recalls on post-crisis outcomes (Chen et al., 2009; Cleeren et al., 2013; Hora et al., 2011; Zhao et al., 2013). Later in the dissertation, I review the construct, product recall strategy, which researchers developed using secondary governmental data through an event study analysis (Chen et al., 2009). Researchers using quantitative methods tend to gather secondary data from governmental agencies to help ensure more comprehensive samples.

In the U.S., five governmental agencies generally oversee product recall announcements. These include the following: National Highway Traffic Safety Administration (NHTSA), FSIS, FDA, CPSC, and the Environmental Protection Agency (EPA; Ni et al, 2014). To date, most management researchers have focused on product recall announcements, which the NHTSA, CPSC, and FDA manage. While the FSIS remains an important source of product recall information, most publications using FSIS data appear in agriculture, production, or food science outlets (e.g., Thomsen & McKenzie, 2001). Compared to the other four governmental agencies, the EPA does not offer the level of data transparency and availability, which is likely why researchers typically have avoided environmental recall campaigns in their work.

Previous management research helped identify product recalls as an important organizational problem requiring further development and study. I provide a detailed review of the pertinent recall research streams that are most relevant to the current investigation in the hopes of closing the supply chain−strategic management divide.

Product recall research streams. I use Wowak and Boone's (2015) literature review to provide a synopsis of the current product recall research, which included 34

empirically and theoretically driven articles from management and marketing journals as well as supply chain, operations, and logistics outlets. The authors' review is the most up-to-date summary of the literature; and, therefore, I use their conceptualization in the current chapter. Specifically, Wowak and Boone organized current product recall research into four streams: (a) product recall precursors, (b) firms' product recall processes, (c) mitigation approaches taken by firms to lessen adverse effects of product recalls, and (d) product recall impacts on firms.

Of note, I continued my own literature search and added new studies published after Wowak and Boone's review was in press. For example, I included Maslach's (2016) article in addition to several pertinent product recall studies from additional economics, agriculture, and management research outlets (e.g., Carvalho, Muralidharan, & Bapuji, 2015; Cheah, Chan, & Chieng, 2007; Rhee, 2009; Rhee & Haunschild, 2006; Rupp, 2004; Rupp & Taylor, 2002; Shah, Ball, & Netessine, 2017; Spier, 2011; Thomsen & McKenzie, 2001; Wowak, Craighead, & Ketchen, 2016). Overall, the additional product recall studies that I located coincided with the themes identified by Wowak and Boone's literature review providing support for their evaluation of the current research. Table 3 reviews several key product recall studies from the management literature.

Table 3. Overview of Key Product Recall Studies in Management Organized by Product Recall Stream (Four Parts)

Part One: Product Recall Stream One: Product Recall Precursors		
Key Studies	**Empirical Setting**	**Study Variables**
Bromiley & Marcus (1989)	Secondary data collection, NHTSA: Automotive sample consisted of 91 recall announcements over four-time periods, 1967-68, 1972-73, 1977-78, 1982-83	• Examined whether stock market penalties discouraged firms from manufacturing flawed vehicles using three empirical perspectives • *DV*: Abnormal stock market returns
Li, Wang & Liu (2011)	Primary data collection: Surveyed 148 respondents from eastern and western China	• *IV*: Explorative learning, exploitative learning, product quality, government ties, financial ties • *Interaction Effects*: Learning (explorative, explorative) X ties (governmental, financial) • *DV*: Firm financial performance
Epelbaum & Martinez (2014)	Primary data collection: Surveyed 331 firms in the food industry, 2009 - 2010	• *IV*: Physical and human identification resources, physical and human communication resources • *DV*: Firm performance (efficiency and effectiveness)
Wowak, Mannor, & Wowak (2015)	Secondary data collection, FDA: Consumer and healthcare sample of product recalls from 386 CEOs, 2004 – 2011	• *IV*: CEO stock options, CEO tenure, CEO founder status • *DV*: Likelihood of product recall, number of product recalls

Part Two: Product Recall Stream Two: Product Recall Processes, Continuation of Table 3		
Key Studies	**Empirical Setting**	**Study Variables**
Chen, Ganesan, & Liu (2009)	Secondary data collection, CPSC: Toy sample of 153 recall announcements, 1996-2007	• *IV*: Product recall strategy (proactive *vs*. passive recall strategies) • *DV*: Abnormal stock market returns
Hora, Bapuji, & Roth (2011)	Secondary data collection, CPSC: Toy sample of 528 recall announcements from 216 firms, 1993-2008	• *IV*: Preventive *vs*. reactive recall strategy, manufacturing *vs*. design flaw, supply chain player • *DV*: Time to recall
Ketchen, Wowak, & Craighead (2014)	Primary data collection: Interviewed multiple (1-8) informants at 21 different firms in the food sector	• Identified four types of recalls (precise, overkill, cascading, incomplete) and developed an emergent resource typology, which includes firms' level of resource endowment and resource orchestration

Part Three: Product Recall Stream Three: Mitigation Approaches, Continuation of Table 3		
Key Studies	**Empirical Setting**	**Study Variables**
Davidson & Worrell (1992)	Secondary data collection, *Wall Street Journal* Index: Non-automotive sample of 133 recall announcements, 1968-1987	• *IV*: Recall remediation strategy, government-ordered *vs*. voluntary recall announcements, taking products off the market • *DV*: Abnormal stock market returns
Cheah, Chan, & Chieng (2007)	Secondary data collection, FDA for U.S. sample, MHRA for U.K. sample, Recall announcements from *The Pharmaceutical Journal*; 272 initial pharmaceutical product recalls (variant final sample), 1998 – 2004	• *IV*: Recall class, firm corporate social responsibility rating. country • *DV*: Announcement-day risk-adjusted stock returns
van Heerde, Helsen, & Dekimpe (2007)	Analytical modeling approach: Used an Australia recall case, which involved salmonella poisoning in Kraft peanut butter, 1996	• Used time-varying error-correction model to understand impacts of product safety failures. Examined product-crisis effects including: (a) cross-sensitivity, (b) cross-impact, and (b) same-company brand impact in addition to baseline sales reductions of the firm and specific recalled product
Zavyalova, Pfarrer, Reger, & Shapiro (2012)	Secondary data collection, CPSC: Toy sample of 940 firm-quarter observations from 21 firms, 1998 – 2007	• *IV*: Announcement of ceremonial and technical actions, magnitude of industry and firm wrongdoing • *Interaction Effects*: Announcement of firm actions (ceremonial *vs.* technical) X wrongdoing (firm *vs.* industry); firm wrongdoing X industry wrongdoing • *DV*: Tenor of media coverage
Ni, Flynn, & Jacobs (2014)	Secondary data collection, CPSC: Consumer product sample of 164 recall announcements for the 10 largest public U.S. retailers, 2000-2009	• *IV*: Product category, private *vs*. national brand, recall remedy strategy, level of hazard • *DV*: Abnormal stock market returns

Part Four: Product Recall Stream Four: Product Recall Impacts, Continuation of Table 3		
Key Studies	**Empirical Setting**	**Study Variables**
Haunschild & Rhee (2004)	Secondary data collection, NHTSA: Sample of 47 automakers that experienced a total of 2,287 recalls, 1966 – 1999	• *IV*: Cumulative production, cumulative voluntary and involuntary recalls, generalism *vs*. specialism • *DV*: Annual number of severe recalls for each automaker
Rhee & Haunschild (2006)	Secondary data collection, NHTSA: Sample of 15 U.S. automakers and 31 foreign automakers; 46 automakers experienced 1,853 recalls, 1975 – 1999	• *IV*: Product defects, reputation, substitutability, generalism *vs.* specialism. • *DV*: Market share change
Thirumalai & Sinha (2011)	Secondary data collection, FDA: Medical device recalls totaling 1,885 total recall events (276 usable), 2002-2005 (final sample varies)	• *IV*: Firm product and financial variables (product scope, growth prospects, sales, debt-to-equity ratio) • *DV*: Abnormal stock market returns, likelihood of future product recalls
Kalaignanam, Kushwaha, & Eilert (2013)	Secondary data collection, NHTSA: Sample of 27 automobile makes from 14 automobile makers that experienced 459 make-year observations, 1995 - 2011	• *IV*: Recall magnitude, shared product asset, and prior brand quality • *DV*: Future reliability, injury, and recall frequency
Zhao, Li, & Flynn (2013)	Secondary data collection, 42 recall announcements from Chinese firms in the automobile, pharmaceutical, food, and electronics industry, 2002 - 2012	• *IV*: Product recall announcement, recall strategy (passive *vs*. reactive), industry • *DV*: Abnormal stock return
Maslach (2016)	Secondary data collection, FDA: Investigated impact of failure on technological innovation using a medical device sample, total sample 14,770 technologies from 1,249 firms (14,490 firm-year observations), 1998-2010	• *IV*: Failure in novel innovations and failure in incremental innovations • *DV*: Novel innovations and incremental innovations

Notes. Consumer Product Safety Commission (CPSC), Dependent Variable (DV), Food and Drug Administration (FDA), Independent Variable (IV), Medicines and Healthcare Products Regulatory Agency (MHRA), National Highway Traffic Safety Administration (NHTSA).

*Product recall precursors***.** The literature on product recall precursors offers factors that influence the likelihood firms will experience product recalls. The precursor category is the most investigated of the four streams and accounts for approximately 44 percent of the total literature on product recalls (Wowak & Boone, 2015). The vast majority of the recall precursor articles exclusively examine supply chain issues. Specifically, in the supply chain domain, the literature on recall precursors stresses the importance of factors such as high-quality ISO 9001 processes (Chiarini, 2015), global supplier networks (Das, 2011; Tse & Tan, 2012), product traceability (Alfaro & Rabade, 2009; Epelbaum & Martinez, 2014), and sourcing decisions (Steven et al., 2014).

Supply chain factors remain important to recall precursor researchers; however, scholars are renewing their focus on corporate governance variables, which originated from earlier strategic management contributions (Bromiley & Marcus, 1989; Davidson & Worrell, 1992). For example, Wowak et al. (2015) used prior research assumptions, regarding the degree of market penalty associated with product recalls, to develop the rationale that informed their CEO compensation hypotheses (e.g., Bromiley & Marcus, 1989; Wowak et al., 2015). Specifically, they concluded when CEO compensation packages were laden with stock options, executives often acted less cautiously, which resulted in more product safety issues (Wowak et al., 2015). Overall, strategic management studies remain in the minority of articles comprising precursor recall research; however, this trend appears to be shifting as scholars (cf., Wowak & Boone, 2015) use product recalls in assessing corporate governance issues.

*Product recall processes***.** Research on product recall processes captures how organizations isolate and subsequently eliminate tainted products during recalls (Wowak

& Boone, 2015). Scholars engaging in recall process research have identified recall strategy (Chen, et al., 2009), Six Sigma (Kumar & Schmitz, 2011), and recall timing (Hora et al., 2011) as important areas of investigation. While valuable, such studies treat recalls homogeneously, which discount the uniqueness of recall type. Ketchen et al. (2014) addressed this shortcoming by developing an emergent resource typology, which coincides with four distinct recall process types (precise, overkill, cascading, incomplete).

I review Ketchen et al.'s (2014) recall process types to help situate the current dissertation within the larger discussion of product recalls. First, *precise recalls* occur when firms are able to (a) identify the specific malfeasance, which led to the product defect and (b) locate all defective products. The result is a full recovery of all harmful products and is the most desirable recall type. Second, *overkill recalls* arise when firms cannot identify which specific products are defective and/or the position of these products within the supply chain. Overkill recalls prioritize consumer welfare over supply chain efficiency since firms recall all potentially harmful products, which is expensive. During *cascading recalls*, firms issue multiple recalls for the same product over time. Cascading recalls result in less consumer protection, compared to overkill recalls, because firms are unable to recover all harmful products during the initial announcement. Said differently, defective products are available for purchase by consumers for a longer time compared to an overkill recall, which increases the likelihood customers will consume products and subsequently become injured or ill. *Incomplete recalls* occur when firms are unable to identify the specific malfeasance and/or location of all defective products, which leads to an inadequate recovery. Incomplete recalls are the least desirable recall type because firms do not recover all defective products or goods.

Mitigation approaches that lessen adverse effects of product recalls. Research on the role of mitigation tactics examines organizational decisions that lessen the adverse impact of recalls (Wowak & Boone, 2015). There are two main segments within the mitigation research stream. The primary segment of the mitigation literature offers several conceptual and empirical models for product-harm crisis strategies, which highlights the importance of the marketing and media variables in the post-recall period (Laufer & Coombs, 2006). Marketing researchers have used analytic modeling to show the importance of allocating additional funds to advertising in the post-recall period because such advertising investments may reduce the recalling firm's vulnerability to competitors in the marketplace (van Heerde, Helsen, & Dekimpe, 2007).

In addition to marketing, further research on recall mitigation tactics emphasized the media's role in marketing strategies following product recalls. Such research advocates that in the post-recall period, the effectiveness of firms' advertising and brand-pricing strategies depend on specific crisis characteristics including (a) the media's portrayal of firms with active product recalls and (b) whether firms openly accepted blame (Cleeren et al., 2013). Further, scholars have contributed to research on media reactions, by identifying the importance of firm actions in response to product recalls (Laufer & Coombs, 2006; Zavyalova et al., 2012). The literature on crisis management indicates when organizations engage in misconduct, their press releases to the media should include particular information about firm behaviors, including whether the firm implemented *technical* or *ceremonial* actions following the recall event (Zavyalova et al., 2012). I review the classification of firm actions, in detail, in the technical *vs*. ceremonial part of this dissertation chapter.

The second segment highlights the importance of external perceptions by examining factors that mitigate negative consumer reactions associated with product recalls. The severity of the recall hazard, unsurprisingly, influences consumers' reactions to product recalls where highly hazardous products garner the most negative consumer responses (Thomsen & McKenzie, 2001). Admittedly, it is difficult for firms to change a recalled product's hazard level; however, firms can influence the level of publicity associated with the recall announcement. In the auto industry, for instance, consumers were more likely to respond to hazardous vehicle recalls that were part of large-scale, publicized events of newer domestic models (Rupp & Taylor, 2002). Such research suggests organizations need to be especially careful of alerting consumers to the safety issues associated with vehicle recalls that received less media attention and for older models from non-domestic manufacturers.

Firms can also change the type of remediation strategy (refund, repair, or replace) offered to consumers affected by the recall. In the retail space, for instance, consumers preferred that organizations offer to repair or replace the recalled product instead providing a monetary refund to consumers (Ni et al., 2014). For large, consumer retailing corporations whether the recalled product was part of a national or private label influenced consumer reactions; that is, consumer reactions to recalls for low-hazard products that are part of a national brand were more positive compared to recalls for highly hazardous, private label products (Ni et al., 2014). In sum, firms should carefully consider the recommendations offered in the mitigation research stream to lessen the impact of negative consumer reactions.

Product recall impacts. The literature on organizational impacts of product recalls is the least researched of the four categories and accounted for only 12 percent of the articles in Wowak and Boone's (2015) review. Since this research stream is in its early stages, it is not surprising that empirical findings are relatively disjointed. Despite this disjointedness, scholars have concluded market penalties experienced by firms depend upon several, notable firm attributes. First, market penalties differed by country (Zhao et al., 2013). Specifically, current research shows the cultural norms found in Eastern vs. Western societies helped explain why the Chinese marketplace responded more negatively to product recall announcements than the U.S. market (Zhao et al., 2013).

Second, market responses depended on intangible factors, such as reputation, and more objective measures including firm financial and capital measures. Empirical evidence suggests that intangible measures, such as firm reputation, impact market reactions in the post-recall period (Rhee & Haunschild, 2006). However, the results are counterintuitive: firms with better reputations faced harsher market penalties than firms with poorer reputations (Rhee & Haunschild, 2006). While it seems plausible that firms with positive reputations would have accumulated some goodwill with consumers, which could have counterbalanced the negativity stemming from product recalls, the empirical evidence did not support this logic.

Regarding firms' financial and capital measures, the results are more intuitive, but there are some small inconsistencies with regard to the impact of firm size. Overall, stock market reactions were more negative when the product recall announcement was made by smaller, high-growth potential retailers (or distributors) compared to recall announcements initiated by larger, low-growth potential manufacturers (Ni et al., 2015).

Similarly, Thirumalai and Sinha's (2011) research suggests market responses depended on firms' financial composition including firms' revenue, growth potential, and product offerings. The authors' results suggested markets tended to punish firms with higher revenues, above-average growth potential, lower product scope, and lower debt-to-equity ratios more severely than small, highly leveraged firms with low growth potential and higher product scope (Thirumalai & Sinha, 2011). While Thirumalai and Sinha (2011) and Ni et al. (2015) concluded the market penalizes firms with high-growth potential more so than low-growth potential firms, the two studies reported contradictory evidence regarding firm size (revenues). Such contradictory evidence suggests future researchers should consider additional factors, including potential moderators and contextual variables, which may help examine the relative influence of firm size.

While researchers readily acknowledge the importance of studying firm-level attributes, on a theoretical level, product recall impacts are oftentimes related to frameworks from organizational learning. For example, scholars have investigated the organizational impacts of product recalls by examining how product failures contribute to our theories of organizational learning (Li, Wang, & Liu, 2011). Research suggests volition, which examines whether the recall was voluntary or involuntary, appears to be an important factor that influences firms' learning ability (Haunschild & Rhee, 2004). Specifically, firm-initiated recalls (voluntary recalls) resulted in greater learning compared with government-mandated recalls (involuntary recalls; Haunschild & Rhee, 2004). Kalaignanam, Kushwaha, and Eilert, (2013) contributed to the organizational learning literature by demonstrating that product recalls helped firms produce more reliable vehicles for future consumers. The authors concluded that product recalls had a

positive influence on consumer safety by decreasing the number and severity of future consumer accidents in the automotive industry (Kalaignanam et al., 2013).

Most recently, strategic management studies contributed to the organizational learning literature by uncovering how firms failed technological innovations influenced the likelihood of future company innovativeness (Maslach, 2016). Maslach (2016) emphasized the importance of considering firm responses (changing *vs*. persisting) to organizational failure, which opened a discussion of firms' strategic responses following product recall remediation efforts. Organizations face important decisions regarding their post-recall strategic responses, which I highlight in my review of the proactive and reactive product recall literature.

Proactive and reactive recalls. Chen et al. (2009) developed a classification of product recall strategies. Proactive strategies occur when recalling firms announce product recalls before consumers become injured or ill. Thus, press releases about the recall do not contain any incidents of consumer harm. In contrast, reactive strategies (also called passive strategies) occur when firms announce product recalls after consumers become injured or ill. These recall press releases contain reports of consumer harm (Chen et al., 2009; Hora et al., 2011; Ni et al., 2015).

To help clarify the recall proactiveness construct, I provide an example of a proactive strategy using Tesla's Model X vehicle recall and then offer an example of a reactive strategy using Ace Bayou Corporation's beanbag chair recall. Tesla used a proactive strategy by recalling 2,700 Model X vehicles before the firm or NHTSA received any reports of consumer injury associated with their product. Tesla indicated that once an internal test identified the defect, it immediately issued the recall to ensure

consumer safety (*Wall Street Journal*, 2016b). Thus, the press release issued by Tesla about their Model X vehicle recall did not report any incidents of consumer injury.

In contrast, Ace Bayou Corporation used a reactive strategy when the firm and overseeing governmental agency (i.e., CPSC) jointly issued a recall for beanbag chairs that caused two fatalities. The press release indicated Ace Bayou Corporation was voluntarily recalling 2.2 million beanbag chairs after receiving reports that a 13-year old boy and three-year-old girl suffocated because of a design defect associated with the chair's foam beads (CPSC, 2016). Since the press release about the beanbag chair recall contained two explicit incidents of consumer injury, the incident represents a reactive recall strategy. In the current dissertation, I refer to recall strategy in terms of firms' *recall proactiveness*, where proactive recalls occur when firms act preemptively and announce the product recall before the respective governmental agency (or recalling firm) receives incident reports of consumer harm resulting from injury or illness. Throughout my dissertation, I will use the following phrases and terms interchangeably: "product recall strategy," "recall strategy," "recall proactiveness," "proactiveness," "proactivity," "proactive," "proactive recall," and "proactive product recall."

Given the importance of firms' decisions regarding their recall strategy, researchers have continued to investigate which supply chain and management factors influence this construct. For example, researchers examined the relationship between recall proactiveness and time to recall (Hora et al., 2011). *Time to recall* is the difference in time between the date the firm initially sold the product and the date the firm and an appropriate governmental agency formally recalled the product (i.e., the date of the press release). Overall, reactive recall strategies appeared to have shorter recall periods (i.e.,

time to recall) compared to proactive strategies. Researchers theorized reactive recalls are associated with faster recall times because once firms receive an incident of consumer injury they react immediately and issue a recall to lessen public safety concerns. Thus, firms tended to make quick decisions to minimize the potential harm to the public (Hora et al., 2011). In contrast, proactive recalls often take longer to announce because recalling firms are often afraid of the backlash from their stakeholders following recall announcements. Proactive product recalls are associated with greater stock market loss compared to reactive strategies because the market construes such actions as an indicator for considerable future financial loss (Chen et al., 2009). Accordingly, firms may take their time and weigh the financial *vs*. societal consequences regarding their decision to announce the product recall before any incidents of public harm occur thereby lengthening the time to recall (Hora et al., 2011).

Past research suggests two additional variables influence the financial impact associated with the firm's recall strategy: (a) the firm's geographic location and (b) the growth potential associated with the supply chain entity. First, research indicates the firm's geographic location (China *vs*. U.S) influenced the financial impact of proactive and reactive recall strategies where Chinese firms using reactive recall strategies experienced greater market penalties compared to Chinese firms using proactive recall strategies (Zhao et al., 2013). While the Chinese empirical findings were opposite of the U.S. results, researchers explained that the inconsistent findings coincided with the cultural differences existing between Chinese and Western cultures. Second, Ni et al. (2015) identified an interaction effect between recall strategy and the growth potential associated with the supply chain entity. Overall, the research suggests firms with higher

growth potential need to be especially cognizant of the message sent to the market following proactive recalls because the market may gauge such proactiveness as a signal of substantial future loss (Ni et al., 2015). Given the importance of recall strategy, the current dissertation seeks to extend the nomological network of the construct by including key predictors from the strategic management literature.

Firm actions in response to recalls. Management scholars have a long history of classifying firm actions. The practice dates back to the work of Hannan and Freeman (1984) who offered a core vs. peripheral classification of organizational structures. More recently, management scholars have developed new typologies, which, for example, examine the technical vs. institutional actions firms use to respond to strategic initiatives (Lamertz & Baum, 1998). Building on the theoretical foundation offered by the technical vs. institutional classification (Godfrey, Merrill, & Hansen, 2009), Zavyalova et al. (2012) developed an updated classification of firm actions using a sample of firms that experienced a product recall. Since I specifically examine the actions firms use to respond to product recalls, Zavyalova et al.'s (2012) study offered an empirically grounded classification, which was pertinent to my dissertation. Thus, I use Zavyalova et al.'s (2012) classification of firm actions (technical or ceremonial) in my dissertation.

*Technical actions***.** *Technical actions* directly address the origin of the product failure and contain operational or technical information regarding the product recall (Zavyalova et al., 2012). For example, technical actions may include operational-level announcements of the following post-recall firm actions: shipment fluctuations, modifications to the firm's quality control procedures, containment efforts for defective products, in addition to further monitoring of the firm's production, manufacturing, and

distribution plants (Zavyalova et al., 2012). Additionally, technical actions may include reports of firm actions that impact consumers (e.g., changes to consumer remediation strategies) or mention announcements of governmental interventions such as external inquiries that address the root cause of the product failure including firm activities that directly or indirectly led to the product recall (Zavyalova et al., 2012).

To help clarify the technical action construct, I offer an example of the operational activities Nestlé's management engaged in after the firm faced a recall for its Maggi Noodles in India. In several press releases to the media, Nestlé announced the firm was withdrawing and subsequently destroying the potentially tainted product from its global operations to ensure consumer safety. Specifically, Nestlé went on to release a three-step withdrawal plan with specific technical information that resulted in the elimination of 400 million packets of Maggi Noodles (Nestlé, 2015). For example, Nestlé (2015) reported it was using high-temperature thermal destruction that combined the contaminated noodles with fuel to destroy the tainted product. The specific logistical- and operational-level information offered by Nestlé's press release regarding the withdrawal effort and elimination of the tainted Maggi Noodles, provides an example of technical actions taken by a firm in the wake of a product recall.

*Ceremonial actions***.** *Ceremonial actions*, in contrast, do not address the origins of product recalls but rather focus on positive organizational attributes or actions taken by firms in the post-recall period. (Zavyalova et al., 2012). Ceremonial actions, therefore, include announcements of the following firm activities: charitable giving, fundraising efforts for worthy causes, corporate name changes, celebrity testimonials, promotions, release of firm awards or company recognition, and promoting socially conscious events.

To provide an illustrative example, Kraft Foods issued a press release on March 17, 2015, that recalled 242,000 cases of Kraft Macaroni and Cheese Boxed Dinners after the firm learned some consumers found small pieces of metal in the product. Following the recall, on March 24, 2015, Kraft announced it would be opening volunteer registration one month early for its charitable golf tournament, which focuses on feeding the hungry. The press release provides an example of Kraft's ceremonial actions because the press release exclusively covered Kraft's charitable giving and did not mention the product recall (*PR Newswire*, 2015). In order to classify Kraft's actions as technical, instead of ceremonial, Kraft would have needed to address the recall that transpired just a few days prior and provided consumers with technical or operational information about the product safety issue. In conclusion, I examine the influence of two main types of firm actions (technical *vs*. ceremonial actions) in the post-recall period, which contributes to our understanding of firms' strategic responses to safety problems.

The current literature suggests product recalls represent a major consumer safety concern that threatens firms' financial stability and has negative implications for intangible factors such as firm reputation and brand image (Wowak & Boone, 2015). Executives must pay close attention to any operational-level issues that, if unmanaged, may lead to defective products and consumer safety problems. I highlight this point through a short product recall vignette that emphasizes the importance of CEO power in firms' product recall decision-making.

CEO Power

The distribution of power among top managers and CEOs is paramount to consumer safety concerns resulting from product recalls (Wowak et al., 2015). In the

aftermath following a product recall, especially after consumer fatalities, firm investigations often highlight factors that contributed to the production of defective products and their untimely recall. For example, on May 29, 2014, the *Valukas Report* emerged after General Motors' (GM) failed ignition switch recall caused 54 vehicle crashes, which led to approximately 12 fatalities (*Bloomberg*, 2014).

The *Valukas Report* contained key examples of specific boardroom conduct that may have contributed to the magnitude of the GM recall and subsequent loss of life. Specifically, when speaking of why GM did not implement proactive safety measures, an executive labeled it "as an example…of the 'GM nod,' when everyone nodded in agreement to a proposed plan of action, but then left the room and did nothing" (*General Motors*, 2014: 2). The *GM nod* helped explain that GM executives did not fail to execute the recall because there was never an underlying intent to implement the proactive safety measures (*Bloomberg*, 2014). Such a scenario begs the question: what would have happened if an influential CEO − who held top managers accountable for the implementation of the safety measures − led GM's boardroom discussions? In an effort to understand the impact of executive influence on important organizational outcomes, I review the CEO power literature.

Strategic management researchers have used several different classifications to measure CEO power (e.g., Barkema & Pennings, 1998; Combs et al., 2007; Finkelstein, 1992). Finkelstein (1992: 506) conceptualized CEO power as, "the capacity of individual actors to exert their will," which leverages research from several influential researchers (e.g., Allison, 1971; Child, 1972; Mintzberg, 1983; Tushman, 1977). Finkelstein brought CEO power into the strategic decision-making literature through his four-factor approach:

structural, ownership, prestige, and expert power. While theoretically grounded, Finkelstein's approach has received equivocal empirical support. For example, Daily and Johnson's (1997) follow up study, which used a comparative executive sample, offered little support for Finkelstein's conceptualization.

Given these mixed findings of Finkelstein's (1992) approach, researchers turned their attention to the *covert* (CEO social capital) and *overt* (amount of firm shareholdings) aspects of CEO power (Barkema & Pennings, 1998). The *covert* elements of CEO power included CEO tenure, firm diversification, and founder status (strategic management researchers largely define founder status as a binary variable that indicates whether an executive was an original founder of the focal organization) while executive equity holdings served as the *overt* aspect of CEO power. Empirical evidence suggested the covert and overt aspects of CEO power related to manager pay where the covert elements of CEO power influenced the curvilinear relationship, which existed between CEO overt power and executive compensation (Barkema & Pennings, 1998).

Although covert aspects of CEO power, like founder status, remained an important area of empirical investigation, research suggests executive power is a multidimensional construct (Adams, Almeida, & Ferreira, 2005; Buyl, Boone, Hendriks, & Matthyssens, 2011; Wasserman, 2006). Thus, researchers needed a conceptualization of CEO power, which accounted for the different elements of executive influence (Cannella & Shen, 2001; Finkelstein & D'Aveni, 1994; Jackling & Johl, 2009).

While no conceptualization of CEO power includes all plausible elements of CEO power, Combs et al. (2007) developed a measure that has been widely adopted by strategic management researchers. Indeed, Combs et al.'s (2007:14) measure has gained

wide acceptance from scholars because the authors used the “most researched” and “best supported” elements of executive influence. Thus, I use Combs et al.’s conceptualization of CEO power in my dissertation, which includes three measures: (a) CEO tenure, (b) CEO ownership, and (c) CEO duality. I provide a detailed account of Combs et al.’s measure of CEO power in the Method’s Chapter (Chapter 4).

CHAPTER 3: HYPOTHESES

Theoretical Overview

I examine how the agent-principal relationship unfolds between firms and their institutional ownership base during an impending product recall. Under agency theory, institutional owners represent a class of principals whereas firms and their CEOs assume the role of managerial agents. While agency theory traditionally proposes principals hold uniform interests, more recently, agency-based research suggests certain classes of owners, specifically institutional investors, hold divergent goals (Villalonga & Amit, 2006; Werder, 2011). Considering these divergent interests, I explore how opposing ownership structures (dedicated and transient owners) affect firms' strategic recall processes with respect to product recall strategy (proactive *vs*. reactive) and firm actions in the post-recall period (technical *vs*. ceremonial).

Agency theory suggests agent-principal conflict arises, in part, because principals impose their will on agents (Daily et al., 2003). One way managers attempt to satisfy principals' desires is through symbolic management. Symbolic management allows managerial agents to pacify or fool their institutional owner base by appearing to comply with stakeholder demands without actually incurring the costs and constraints associated with genuine implementation (Westphal & Zajac 1994, 1998, 2001). However, the level of power held by managerial agents – namely firm executives − is an important factor that influences an organization's ability to use symbolic management practices effectively. Empirical evidence suggests CEOs that held high levels of power were more likely to use their authority to curtail pressures from institutional owners successfully (Westphal & Bednar, 2008). In sum, the practices of symbolic management fit nicely

within the theoretical framing of agency theory by offering a socially based explanation of the agent-principal relationship (Zajac & Westphal, 2004).

Direct Effects of Institutional Ownership on Recall Proactiveness

The trading characteristics of dedicated institutional investors lend themselves particularly well to allowing dedicated investors to support proactive recalls (Bushee, 1998, 2001). For example, dedicated owners hold concentrated portfolios, so they can devote their resources to developing firm- and industry-specific knowledge (Bushee, 2004). With investments in only a few firms, dedicated owners often become experts in those firms' products and industries allowing these owners to secure private gains from their advantageous investment decisions (Chen et al., 2007). From a product recall perspective, firm-specific knowledge may inform dedicated owners of the operational and technical failures that often lead to consumer harm at an organizational-level while industry-specific knowledge offers dedicated owners a broader-view of the cascading effects product recalls have on the focal firm's market stability.

Taken together, dedicated owners' depth of knowledge increases their understanding of the operational intricacies that may underlie a firm's motivations to act proactively. Such knowledge is important because it allows dedicated owners to understand the long-term financial penalties that could ensue from reactive recalls that result in consumer harm. For instance, stakeholders at Peanut Corporation of America experienced, first hand, such financial damage when a deadly salmonella outbreak forced executives to file for bankruptcy, after the firm failed to issue a proactive recall for its tainted peanut butter (Canavan, 2013). Dedicated investors are more likely to advocate for recall proactiveness because these investors' firm- and industry-specific knowledge

provides them with an appreciation of the long-run financial and reputation benefits (Claeys et al., 2016; Siomkos & Kurzbard, 1994) associated with proactive recalls.

Further, dedicated owners tend to maintain their investment portfolios over time (Bushee, 2004), allowing them to form committed, long-term relationships with board members and top executives. The relationships dedicated owners develop with these individuals create a mutual trust (Connelly et al., 2010). Empirical evidence suggests senior leaders often draw on this trust when implementing important strategic decisions (Simsek, 2007). Following this logic, when CEOs call for proactive recalls, dedicated owners will likely honor their long-standing relationships with key firm members and support the strategic direction. Dedicated investors will tend to support firms' proactive recall announcements because these investors understand that proactive recalls represent recoverable supply chain glitches (Kalaignanam et al., 2013), that produce the least long-run damage to firms' reputation and brand image. Thus, as knowledgeable and interested stakeholders, dedicated owners will support their firms' decision to recall their defective products in a proactive fashion.

In addition, dedicated investors are less sensitive to current earnings reports; therefore, they are likely to sustain their ownership position even when firms experience negative current earnings announcements (Bushee, 2001; Bushee & Noe, 2000). Proactive recalls may result in negative current earnings because of the short-term costs associated with a supply chain glitch (Chen et al., 2009; Hendricks & Singhal, 2003). Firms that implement proactive recalls often experience supply chain disruptions as operations managers work with their up- and down-stream partners to rectify production failures (Craighead, Blackhurst, Rungtusanatham, & Handfield, 2007; Lyles, Flynn, &

Frohlich, 2008). Such disruptions wreak havoc on firms' operations systems and generate short-term financial expenses. For example, one study found such costs ranged from $50 million to $100 million dollars per day, based on data collected by the Center for Transportation and Logistics at the Massachusetts Institute of Technology (Rice & Caniato, 2003). Thus, in the short-term, firms that use proactive recalls may experience negative current earnings announcements from the immediate expenses that operations managers incur from isolating and subsequently eliminating defective products (Kumar & Schmitz, 2011). However, negative current earnings announcements are less concerning to dedicated institutional investors because they are more interested in the long-run advantages of being proactive. Thus, these arguments support the following association:

> *Hypothesis 1: The level of dedicated ownership is positively associated with recall proactiveness.*

Compared to dedicated owners, transient investors are less likely to encourage firms to act proactively. One reason is that transient owners secure equity positions in a large number of companies, which decreases their ability and motivation to develop firm-specific knowledge about each of the firms in which they invest (Bushee, 2004; Bushee & Noe, 2000). Transient owners' lack of firm-specific knowledge decreases their understanding of the operational intricacies that may influence an individual firm's decision to implement a proactive recall. Further, since transient investors lack firm- and industry-specific knowledge (Chen et al., 2007), it is difficult for these short-term investors to place proper strategic value on firms' proactive recall decisions. This inability to evaluate such strategic implications (Connelly et al., 2010) diminishes transient owners' capacity to make informed investment decisions regarding the strategic

and financial impact of proactive recalls. Without a clear picture of the overall implications, transient owners are less likely to support firms' proactive recall decisions.

Additionally, since transient owners turn over their investments quickly, this class of investors is unable to develop deep relationships with top executives, thereby reducing the level of trust between these key parties (Bushee, 1998; Connelly et al., 2010). Lack of trust between transient owners and key organizational members restricts top managers' willingness to implement proactive recalls because top managers worry that transient investors will quickly exit the relationship (Bharath et al., 2013; Qian, 2011) when the recall announcement becomes public. Transient owners are likely to divest in organizations that issue proactive recalls because their turnover intensive investment strategy diminishes their ability to realize gains from long-term relationships with firms in their investment portfolio.

Transient investors, in contrast to dedicated owners, are also highly sensitive to current earnings reports, so they are likely to flee at the first sign of trouble (Bushee, 2004; Ke & Petroni, 2004). Proactive recalls represent a supply chain glitch that firms associate with significant short-term loss (Chen et al., 2009; Hendricks & Singhal, 2003). Specifically, empirical evidence links supply chain glitches with an approximate seven percent loss of shareholder value during the period around the negative current earnings announcement (Hendricks & Singhal, 2002). Transient investors are highly sensitive to negative current earnings announcements because the market losses associated such negative reports are especially damaging to these investors' short-term time horizon (Bushee, 1998). To limit their short-term losses, transient owners are more likely to sell their equity positions in firms before a damaging current earnings announcement

becomes public (Ke & Petroni, 2004). Since proactive recalls lead to negative current earnings announcements and subsequent short-term losses, transient owners are, therefore, likely to divest in firms that implement proactive recalls. Considering the previously referenced literature, I hypothesize that:

> *Hypothesis 2*: *The level of transient ownership is negatively associated with recall proactiveness.*

Firm Actions in the Wake of Product Recalls

Following the announcement of a product recall, managers must choose the extent to which they will engage in technical actions, designed to solve future problems possibly at great cost to the firm (Hendricks & Singhal, 2002), or ceremonial actions, designed mainly to assuage stakeholders' concerns (Zavyalova et al., 2012). For example, technical actions involve firm announcements containing supply chain information about operational changes that directly address the origin of product failure such as improvements to quality control procedures, shipment approaches, or product traceability systems (e.g., Alfaro & Rabade, 2009; Steven et al., 2014). In contrast, ceremonial actions do not address the origins of product recalls, but rather focus on actions associated with positive organizational conduct including charitable giving or fundraising (Zavyalova et al., 2012). Arguments from the symbolic management literature suggest executives typically prefer ceremonial actions to technical actions. Ceremonial actions are preferable because these low-cost actions allow firms to mask the underlying supply chain failure through symbolic appeasement while avoiding the up-front costs associated with technical actions, which require substantive change (Zajac & Westphal, 2004).

Dedicated owners, though, are unlikely to be fooled by ceremonial actions (Shi & Connelly, 2016) and instead might pressure managers to take technical actions in the

wake of a recall with a view toward actually remedying the problem. Dedicated owners have intimate product knowledge owing to their concentrated portfolio holdings (Chen et al., 2007), so they are likely to understand potential solutions and appropriately value managerial efforts to solve supply chain problems. Dedicated owners' intimate knowledge of the long-run operational benefits of technical actions enables them to appreciate that technical actions are the most advantageous post-recall firm response. Specifically, dedicated owners will likely understand technical actions that allow firms to address the root cause of the product recall (Epelbaum & Martinez, 2014), which reduces the likelihood that supply chain defects will lead to future issues.

Moreover, because of the relationships dedicated institutional investors often develop with board members and top managers (owing to their low portfolio turnover), the structures are in place for information to flow about what the firm will do to solve their problems and how they will successfully implement their solutions (e.g., McCahery et al., 2016). The flow of information between dedicated owners and key organizational members enables dedicated owners to recognize the benefits offered by technical actions, which institutional owners with less developed relationships may not realize. Dedicated investors understand technical actions allow firms to reduce stakeholder apprehension by openly addressing a product recall (Zavyalova et al., 2012) through direct acceptance of the operational failure. Thus, dedicated investors' ownership position allows them to appreciate that technical actions may attenuate some of the negative press surrounding the recalling firm by repairing media perceptions through coverage that emphasizes correcting the supply chain issue.

Lastly, because dedicated investors are not overly concerned about current earnings reports (Bushee, 2004), they are more apt to endure the potentially negative short-term ramifications of genuine technical fixes to supply chain problems. Technical actions may negatively affect firms' current earnings announcements because of the short-term costs associated with implementing supply chain solutions (Kumar & Schmitz, 2011). For example, Nestlé spent 70 million dollars on operational and technical expenses to execute a recall that led to substantial short-term loss for investors when the firm's stock price plummeted approximately 20 percent (*Fortune*, 2016*a*). While Nestlé's investor confidence recovered over time, the firm's immediate, current earnings losses demonstrated that when organizations use technical actions during the post-recall period, it increases the likelihood that they could experience negative current earnings announcements in the short-term. Based on the arguments above, I propose:

> *Hypothesis 3*: *The level of dedicated ownership is positively associated with the firm's announcement of technical actions.*

In contrast, transient institutional investors are more susceptible to symbolic management practices (Shi et al., 2017), so managers might turn to such practices as a means of assuaging their ownership base while keeping short-term losses to a minimum. One factor that makes transient investors vulnerable to symbolic management is their limited product and supply chain knowledge, owing to their diversified portfolios (Bushee, 2004) makes them less able to understand proposed solutions.

Transient investors' limited supply chain knowledge decreases their ability to make prudent decisions regarding a firm's post-recall actions because these investors are less likely to understand managers' true intentions. Absent such knowledge, top managers can fool transient investors with greater ease because they lack valuable

knowledge about key operational and technical elements of the business. Transient investors' lack of supply chain knowledge, thus, affords managers the opportunity to implement ceremonial actions, which align with their managerial goals (Gaspar, Massa, & Matos, 2005). As such, CEO opportunism may drive the relationship between transient owners and ceremonial actions instead of transient owners' intrinsic desire, or direct encouragement, for firms to act ceremoniously.

Another factor contributing to transient investors' vulnerability to symbolic management is their lack of managerial relationships that results from frequent portfolio turnover, which exacerbates information asymmetries and inhibits their ability to evaluate managerial announcements critically (Bushee, 1998, 2004; Chen et al., 2007). Lack of information flow between transient owners and key organizational members increases the probability top managers will successfully hide valuable information from their institutional investors (Gaspar et al., 2005). Since valuable information lies within the organization, executives could push their firms to use ceremonial actions to avoid the large, upfront cash expenditures that technical actions typically require. Firms with high levels of transient ownership, therefore, are more likely to respond with ceremonial actions following a recall because top managers are capitalizing on transient owners' lack of information by implementing firm actions that align with their own preferences.

Even if transient institutional investors were able to determine that managerial actions are ceremonial, there is some possibility that they would want them anyway because such actions can fool the markets and yield improvements in short-term earnings reports, which is precisely what transient investors desire (Bushee, 2004; Ke & Petroni, 2004). Ceremonial actions allow firms to highlight their prosocial behaviors to the media,

such as fundraising for worthy causes, while minimizing the operational costs associated with the product recall (Zavyalova et al., 2012). When firms implement ceremonial actions, executives are often attempting to bolster their short-term current earnings by providing examples of positive organizational conduct in order to improve the recalling firm's media perceptions (Zavyalova et al., 2012). Because ceremonial actions hold the potential of positively affecting firms' current earnings announcements, transient investors are more likely to be swayed by the firm's symbolic attempts to promote ceremonial activity. Considering the previously referenced literature, I posit that:

> *Hypothesis 4*: *The level of transient ownership is positively associated with the firm's announcement of ceremonial actions.*

Moderating Effects of CEO Power

Agency theory suggests firm ownership is likely to be more important to some CEOs than to others (Bundy, Shropshire, & Buchholtz, 2013; Westphal & Bednar, 2008). For instance, the literature suggests that executives holding considerable power are less concerned about the governing influence held by their ownership base compared to CEOs that hold less power (Krause et al., 2014; Westphal & Zajac, 2001). Consequently, I expect CEO power (Combs et al., 2007) could be a key boundary condition of the influence of institutional investors.

CEOs can adopt positions of power in many ways (Cannella & Shen, 2001; Finkelstein, 1992), but scholars have focused on three key mechanisms of CEO power that I expect are especially informative for and pertinent to the context at hand. These are the (a) CEO's tenure, (b) ownership position, and (c) unity of command (Combs et al., 2007). Long-tenured CEOs are powerful because they create strategic alliances with influential employees and stakeholders (Simsek, 2007). Furthermore, CEOs with high

personal ownership in the firm are powerful because their executive shareholdings increase the proportion of CEO-controlled voting shares, which helps them gain control at shareholder meetings and affords them an extra measure of legitimacy at board meetings (Daily & Johnson, 1997; Krause et al., 2014). CEOs who are a major stakeholder display their ownership power through their legal right to influence strategic decisions (Combs et al., 2007). Lastly, CEOs that also hold the position of board chair are powerful because holding both positions centralizes the most influential management and board positions, thereby increasing CEOs' control (Krause & Cannella, 2013; Krause, Semadeni, & Cannella, 2013). For instance, when executives hold multiple titles, such as CEO and board chairman, their structural power increases because their firm's hierarchy confirms their authority (Finkelstein, 1992).

While researchers have not directly examined CEOs' preferences for proactive *vs.* reactive recalls, the literature suggests powerful CEOs seem to prefer proactive recalls because this socially responsible strategy often results in less reputational damage, compared to reactive strategies (Claeys et al., 2016). Limiting reputational damage improves the recalling firm's long-term prospects of restoring credibility with consumers (Arpan & Roskos-Ewoldsen, 2005). With 86 percent of consumers indicating they are concerned about the product recalls incident rate (*PR News*wire, 2007), CEOs realize restoring goodwill among consumers is an important first step in leading a successful recall effort that reestablishes their firm's long-run value in the marketplace (Cleeren et al., 2013; Laufer & Coombs, 2006). Dedicated investors are likely to support a CEO's recall proactiveness because these owners provide firms with stable ownership that emphasizes firms' long-term prospects over short-run performance. Accordingly,

dedicated owners may be willing to absorb some of the short-term losses often associated with executives' proactive recall decisions because they realize such recall proactiveness will ultimately benefit the firm, and its institutional ownership base, over the long run.

When CEOs have high power, dedicated owners are better able to foster recall proactiveness because these CEOs can implement that which these powerful shareholders desire. The social status that CEOs develop through their senior leadership position (Daily & Johnson, 1997) changes the nature of the relationship between dedicated owners and recall proactiveness. Powerful CEOs develop high social status within their firms, which creates a loyal network of organizational followers who will reinforce the CEOs' strategic decisions (Pfeffer, 1981; Simsek, 2007). Because high power CEOs likely share dedicated owners' strategic agenda, these investors will nurture their relationship with influential CEOs to gain access to their loyal follower base who by proxy are likely to support dedicated owners' initiatives (Finkelstein & D'Aveni, 1994; Simsek, 2007). Consequently, it is easier for dedicated owners to orchestrate their strategic initiatives when CEOs are powerful because these executives can use their influence to create consensus among key organizational members and stakeholders, which generates outward support for a firm's recall proactiveness.

In contrast, when CEOs have low power, dedicated institutional investors may not be as effective in fostering proactiveness because now the shareholders must influence not only the CEO but also a broader constituency to see their desires implemented. CEOs with low power develop fewer close relationships with key organizational members and stakeholders, which diminishes their network of loyal supporters (Finkelstein & Hambrick, 1989; Simsek, 2007). Since low power CEOs lack the strategic support that

typically surrounds the executive office (Krause et al., 2014), dedicated owners cannot rely solely on their relationship with a CEO to implement their strategic agenda. Instead, dedicated owners must generate support by convincing a broader network of constituents about the reputational and social benefits associated with proactive recall strategies. When CEOs have low power, dedicated owners, therefore, may spread their attention over a larger group of stakeholders, which diminishes their ability to foster proactive recalls. Accordingly, I propose that:

> *Hypothesis 5*: *CEO power amplifies the positive relationship between the level of dedicated ownership and recall proactiveness. The relationship is more positive when CEO power is high.*

Transient institutional investors are likely to be opposed to proactive recalls, but powerful CEOs may not be all that concerned about their preferences. Powerful CEOs may show little concern with transient owner preferences because these CEOs realize transient investors struggle to place proper the strategic value on firms' proactive recall decisions. CEOs recognize that transient investors' inability to assess such strategic value undermines their influence as institutional investors (Bushee, 2004; Connelly et al., 2010). Powerful CEOs may capitalize on transient owners' diminished influence by implementing recall strategies that align with their managerial preferences. Since powerful CEOs prefer proactive recalls, these CEOs may attenuate the negative association between transient ownership and recall proactiveness thereby diminishing the influence of transient owners.

Similarly, less powerful CEOs are more vulnerable to the whims of their ownership base, so transient investors at firms where CEOs have low power could have a more commanding influence on reducing recall proactiveness. One reason low-power

CEOs maybe more vulnerable to the influence of transient investors is that they pose a creditable threat of exit (Bharath et al., 2013; Parrino et al., 2003). Transient owners may threaten to exit the relationship by pressuring CEOs to implement firm strategies that align with their preferences (McCahery et al., 2016; Qian, 2011). While low-power CEOs may not agree with transient investors' agenda regarding proactiveness, they are more likely to comply with transient owners' demands because they realize such a liquidation by transient owners would negatively impact their firm's market position and stock price. Thus, I hypothesize the following:

> *Hypothesis 6*: *CEO power dampens the negative relationship between the level of transient ownership and recall proactiveness. The relationship is less negative when CEO power is high.*

While dedicated institutional owners prefer that firms use technical actions in response to recalls, powerful CEOs may resist those preferences and avoid implementing technical actions because those actions could be a burden to CEOs. Technical actions offer genuine solutions to supply chain glitches (Zavyalova et al., 2012); however, the financial burden associated with these actions may keep CEOs from implementing the technical fixes that dedicated owners prefer. For example, a recent governmental investigation showed managers at General Motors failed to issue a technical fix, which was later associated with a deadly recall, because they believed the remedy was *too expensive* to implement (*Bloomberg,* 2014). Whereas most CEOs feel burdened by technical actions, high-powered CEOs are in a unique position because they possess the requisite influence needed to change their firms' post-recall responses. For instance, powerful CEOs may use their unity of command to pressure boardroom members into approving firm actions that align with these CEOs' interests (Davidson, Jiraporn, Kim, &

Nemec, 2004; Krause et al., 2014; Westphal & Zajac, 1994). Thus, high powered CEOs are less likely to comply with dedicated owners' recommendation to use technical actions because these executives are more equipped to shape how their firms respond to recalls.

Less powerful CEOs, on the other hand, are more likely to comply with pressure from their dedicated institutional owners by implementing the technical actions these long-term investors generally prefer. The power dynamic between institutional owners and CEOs influences the type of actions firms ultimately implement (Gillan & Starks, 2007; Westphal & Bednar, 2008). While less powerful CEOs still consider technical actions burdensome, their low level of influence provides them with less substantive control over firm actions. During the post-recall period, dedicated owners may capitalize on CEOs' lack of substantive control by directly voicing their preference for technical actions. Less powerful CEOs are typically more amenable to dedicated owners' direct interventions, which increases the likelihood their firms will use technical actions in the post-recall period. More formally, I propose that:

> *Hypothesis 7*: *CEO power dampens the positive relationship between the level of dedicated ownership and the firm's announcement of technical actions. The relationship is less positive when CEO power is high.*

For high-power CEOs, high levels of transient institutional ownership provides an opportunity to fool the market by using ceremonial actions (Shi et al., 2017), but when transient institutional ownership is low, there is less reason for them to turn to ceremonial actions in the post-recall period. While transient owners may not openly support firms' use of ceremonial actions, CEOs consider transient owners' level of institutional ownership to be an important factor, which influences their ability to accomplish the difficult task of making ceremonial actions appear substantive (Westphal & Bednar,

2008). As such, when CEOs are powerful, high levels of transient institutional ownership provides executives with an opportunity to take ceremonial actions while low levels of transient ownership may decrease executives' ability to realize such symbolic change. Specifically, high levels of transient ownership allow powerful CEOs to capitalize on these investors' monitoring inabilities and information deficiencies by implementing ceremonial actions, which align with executives' managerial interests (Gaspar et al., 2005). While low levels of transient ownership, in contrast, reduce executives' motivation to invest valuable resources on ceremonial actions because CEOs realize their institutional owner base is not large enough to validate such an investment. Therefore, without a sizeable institutional ownership base to target, powerful CEOs hold less incentive to use their symbolic management practices to fool the market.

Since CEO power is the driving factor in the relationship between the level of transient ownership and the firms' announcement of ceremonial actions, it is important to consider the impact of less powerful CEOs as well (Busenbark, Krause, Boivie, & Graffin, 2016). When CEOs have low power, they may not have the ability to pull off the challenging task of making ceremonial actions appear substantive, so even if they are provided with high levels of transient institutional ownership, they may not be able to capitalize on the opportunity via ceremonial activity. Low-power CEOs may not possess the political skill needed to make their firm's ceremonial actions appear substantive because these low-power executives have less managerial control given their lack of embeddedness in their firms' social networks (Pfeffer, 1981; Simsek, 2007). Thus, compared to powerful CEOs that often capitalize on transient owner weaknesses with relative ease, less influential executives often cannot take advantage of transient owners'

monitoring inabilities and information deficiencies toward their goal of ceremonial activity. In sum, transient institutional investors' vulnerability to symbolic management practices facilitates CEOs' ability to implement ceremonial actions during the post-recall period. Taking the above arguments together, I posit that:

> *Hypothesis 8*: *CEO power amplifies the positive relationship between the level of transient ownership and the firm's announcement of ceremonial actions. The relationship is more positive when CEO power is high.*

In sum, my hypothesized relationships seek to add value to the extant literature by examining the influence of institutional owners in an innovative context while incorporating a previously unconsidered moderator variable: CEO power. Table 4 provides an overview of my proposed hypotheses, which detail my direct effects (Hypothesis 1 − Hypothesis 4) and moderating effects (Hypothesis 4 − Hypothesis 8).

Table 4. Proposed Study Hypotheses

Study Hypothesis Given in Dissertation Proposal
Hypothesis 1: The level of dedicated ownership is positively associated with recall proactiveness.
Hypothesis 2: The level of transient ownership is negatively associated with recall proactiveness.
Hypothesis 3: The level of dedicated ownership is positively associated with the firm's announcement of technical actions.
Hypothesis 4: The level of transient ownership is positively associated with the firm's announcement of ceremonial actions.
Hypothesis 5: CEO power amplifies the positive relationship between the level of dedicated ownership and recall proactiveness. The relationship is more positive when CEO power is high.
Hypothesis 6: CEO power dampens the negative relationship between the level of transient ownership and recall proactiveness. The relationship is less negative when CEO power is high.
Hypothesis 7: CEO power dampens the positive relationship between the level of dedicated ownership and the firm's announcement of technical actions. The relationship is less positive when CEO power is high.
Hypothesis 8: CEO power amplifies the positive relationship between the level of transient ownership and the firm's announcement of ceremonial actions. The relationship is more positive when CEO power is high.

CHAPTER 4: METHOD

Sample

The sample for my dissertation includes S&P 500, publicly traded firms that experienced one or more product recalls between the years 2006 through 2013 from one of three industrial sectors. My final sample includes 282 product recalls from 69 unique S&P 500 firms. On average S&P firms in my sample experienced four product recalls during my eight-year sampling window. The maximum number of product recalls experienced by a single firm was 24 while the minimum reported value was one. Appendix A provides the relative frequencies of the product recalls in my sample.

I chose the sampling frame for my dissertation for four key reasons. First, I selected the firms listed in the S&P 500 because it is highly representative of large U.S. firms. This set of prominent companies captures approximately 80 percent of the available U.S. market capitalization with assets totaling an estimated 2.2 trillion dollars (S&P 500 Dow Jones, 2016). The Dow Jones and U.S. index committee sets stringent requirements regarding market capitalization, liquidity, residency, sector classification, financial viability, and treatment of initial public offerings, which firms must satisfy to be eligible for inclusion in the S&P 500 list (S&P Dow Jones Indices, 2016). Such stringent requirements have led market analysts to consider the S&P 500 to be the best single indicator of large cap U.S. equities thereby signifying the index's goal to reflect the U.S. market (S&P Dow Jones Indices, 2016). My search indicated that the S&P index consisted of 706 firms, some of which entered or dropped out of the S&P 500 during the 2006 through 2013 sampling period.

Second, I use publicly traded firms because of their visibility and regulatory environment. Compared to privately held companies that enjoy less governmental

regulation, the SEC imposes mandatory reporting requirements on publicly traded U.S. firms including corporate governance disclosures about institutional ownership and executive officers (SEC, 2015). The SEC requires that institutional owners, holding investment discretion over $100 million in Section 13(f) securities, file Form 13F with the commission quarterly (SEC, 2015). Further, the SEC mandates that public companies file Form 10-K with the commission, which includes information regarding directors and executive officers in part III, items 10 and 12 of the report (SEC, 2011).

Third, the timeframe of 2006 through 2013 is relevant for my multi-industry assessment of product recalls, in part because an eight-year window is comparable to previous product recall investigations that use periods ranging from seven to 10 years (Cheah et al., 2007; Zavyalova et al., 2012). When using secondary data, product recall researchers often face restricted timeframes because of data availability issues. For example, Thirumalai and Sinha's (2011) product recall database from the medical device sector restricted their timeframe to a short, four-year period: 2002 to 2005. I faced similar data restrictions because governmental documentation on recalls occurring before 2006 is insufficient for this study's multi-industry context. Specifically, archival data for product recalls in the cosmetics, food, and medical sectors commenced in 2006. Thus, at the time of this research, study data were available only from 2006 through 2013.

Fourth, product recalls span multiple industries and affect a wide-range of perishable and nonperishable goods, which increases the importance of using broad samples. Thus, I drew upon data from three independent, governmental agencies: (a) CPSC, (b) FDA, and (c) FSIS. The CPSC supervises the widest range of product recalls including goods for consumers' homes, businesses, and personal needs. Similarly, the

FDA oversees a diverse array of recalls from the cosmetics, food, and medical sectors. The FSIS regulates the commercial meat, poultry, and egg supply to protect consumers from illness or injury from tainted or mislabeled products. Table 5 offers a detailed list of the goods overseen by the governmental agencies in my sample (CPSC, FDA, and FSIS).

Table 5. Perishable and Nonperishable Goods Grouped by Governmental Agency

Governmental Agency	Goods under Regulation
Consumer Product Safety Commission[a]	• child nursery equipment and supplies • toys • sports and recreational activities and equipment • home communication, entertainment, and hobby equipment • personal items • packaging and containers for household products • yard and garden equipment • home workshop apparatus, tools and attachments • home and family maintenance products • general household appliances • space heating, cooling, and ventilating equipment • housewares • home furnishings and fixtures • home structures and construction materials
Food and Drug Administration[b]	• human drugs • animal drugs • medical devices • radiation-emitting products • vaccines • blood and blood products • transplantable human tissue • animal feed • cosmetics
Food Safety and Inspection Service[c]	• meat • poultry • eggs

Notes. Goods information is available at: [a]https://www.cpsc.gov/About-CPSC/Agency-Reports/Annual-Reports/ [b]http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm049070.htm
[c]http://www.fsis.usda.gov/wps/portal/informational/aboutfsis

Data Collection

For data collection, I used the governmental Website, www.recalls.gov, to identify whether an S&P 500 firm experienced a product recall. This Website provides a central hub that links researchers to the appropriate online product recall archive for each governmental agency. The governmental Website allowed me to perform searches to determine whether a specific company recalled a product within my timeframe. I compiled a panel of firm-year observations that met my sampling specifications by performing manual searches for each of the 706 S&P 500 firms. For those organizations identified, each firm must have complete data for all measures in my study.

Having identified my sample of firms and their recalls, I searched the online governmental archives of the CPSC, FDA, and FSIS for *initial* product recall press releases (also referred to as initial press releases). The initial press release, because of governmental regulation, represents the first document where a firm directly acknowledges its recall to the public (Chen et al., 2009). Since firms' initial product recall press releases were of theoretical interest, I excluded those press releases that gave product warnings or press releases calling for product recall expansions, reannouncements, or updates. The CPSC, FDA, and FSIS each have their own online record that archives initial product recall press releases. The CPSC provides a searchable interface for initial press releases through a case archive while both the FDA and FSIS use similar systems[1] that amass unedited press releases from prior notification reports.

[1] Press releases for products regulated by the CPSC are available through www.saferproducts.gov. Press releases of FDA regulated products and goods are available via the following link, http://www.fda.gov/Safety/Recalls/. Please note since the time of data collection, the FDA has changed the search parameters of its archive. Press releases of FSIS regulated products are available via the agency's recall archive: http://www.fsis.usda.gov/wps/portal/fsis/topics/recalls-and-public-health-alerts/recall-case-archive.

Given the continuity of data and rigorous reporting required by federal agencies, the governmental archives provided a reliable means of data collection (cf. Wowak & Boone, 2015). I included initial product recall press releases for all S&P 500 firms from the three governmental archives that met my sampling criteria.

After obtaining my sample of initial press releases, I continued my data collection by searching for *firm-initiated* press releases via Lexis Nexis. Firm-initiated press releases refer to announcements made by organizations after the initial press release became available to the public. To locate firm-initiated press releases, I used Lexis Nexis to search for "*Company Press Releases*" while omitting additional media sources such as "Newspapers," "Magazine Publishing," "Periodical Publishing," that may have potentially confounded my analyses. Appendix B provides an initial product recall press release sample and two firm-initiated press release samples that represent a technical and ceremonial (post-recall) firm action.

The company press release function in Lexis Nexis allows researchers to search for firm-initiated press releases from 26 separate outlets including two of the foremost leading sources, *Business Wire* and *PR Newswire* (Lexis Nexis, 2016). Wire services are valuable because they offer access to the original version of the press release that enables researchers to capture firm responses. The academic community often relies on firms' press releases issued by *Business Wire* and *PR Newswire*, which is why I emphasized their inclusion in my research (Carter & Dukerich, 1998). Figure 2 provides an illustration of my data collection process while Table 6 lists the Lexis Nexis sources.

Figure 2. Summary of Data Collection Process

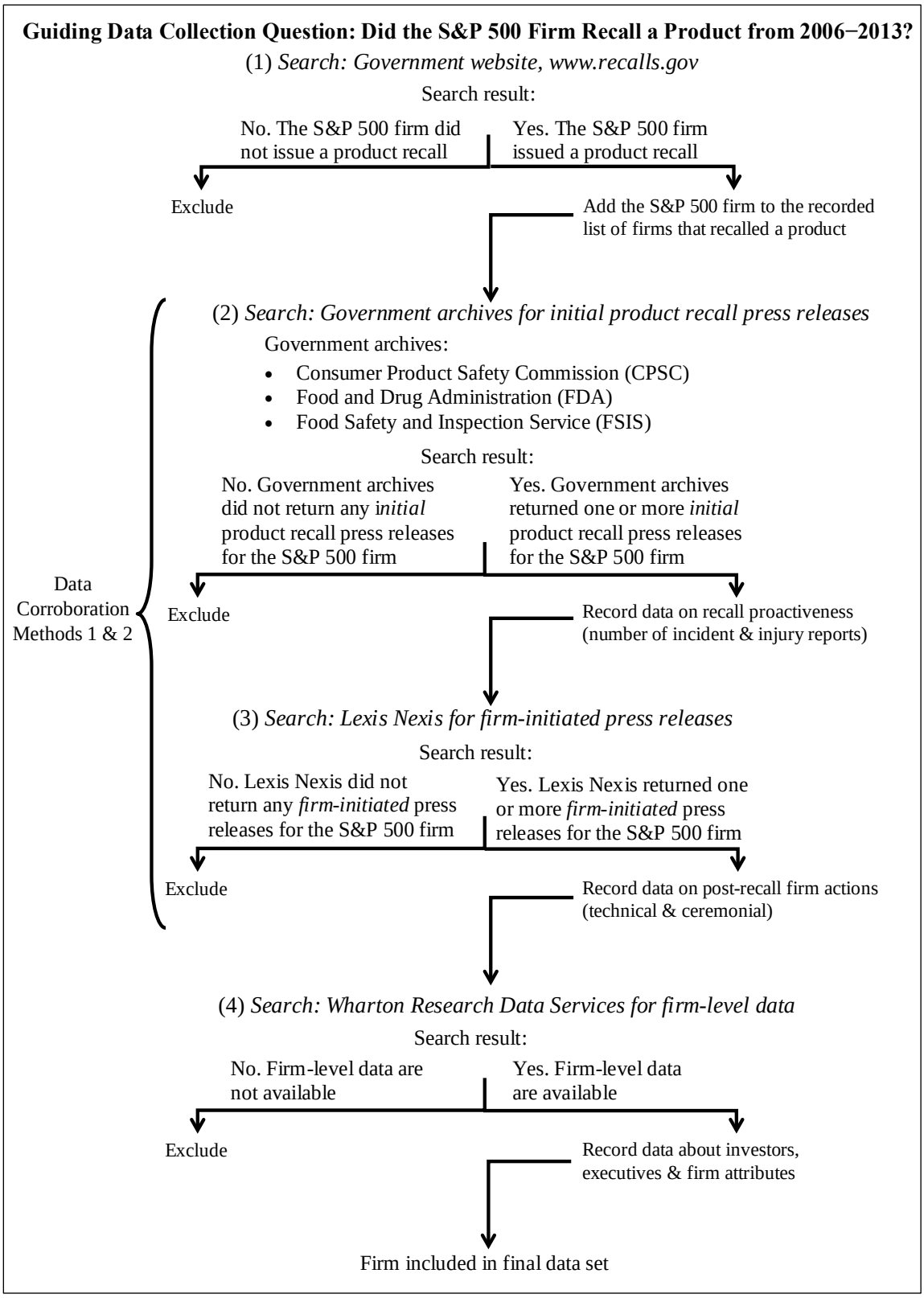


Table 6. Source Information for Lexis Nexis Press Release Searches

Lexis Nexis Source Information
ACN Newswire
Business Wire
Canada NewsWire
Cision Nordic Companies Press Releases (Scandinavia)
CSRWire
EWorldWire
GlobeNewswire
JCN Newswire
Knobias.com
Lexis Nexis Australia News
Marketwired
MediaNet Press Release Wire
News Release Wire
NOSLIB; TOPNWS
Press Association Mediapoint
PR Newswire
PR Newswire Asia
PR Newswire Europe(French)
PR Newswire Europe(German)
PR Newswire Europe(Spanish)
PR Newswire UK Disclose
Send2Press
TheNewswire.ca
The New York Times Blogs
Thomson Reuters ONE
UPI (United Press International)

Note. Source information is available via Lexis Nexis**.**

I used Wharton Research Data Services to obtain firm-level data for my independent, moderator, and control variables. Specifically, Thomson Reuters' institutional (13f) holdings database provided access to my independent variable. Compustat and Institutional Shareholder Services (formerly known as RiskMetrics) facilitated access to my moderator variable. I compiled my control variables from the product recall governmental archives as well as Compustat.

For my dependent measure, recall proactiveness, I used structured content analysis to collect incident and injury data from initial product recall press releases from the governmental archives. Similarly, I used structured content analysis for my post-recall technical and ceremonial firm action data via firm-initiated press releases in Lexis Nexis (see the dependent measures' section of this chapter).

Data Corroboration

Amid the data collection, I utilize three, separate corroboration methods to enhance my sample's data integrity. The first method (1) involved verifying my sample of initial product recall press releases. The first method allowed me to ensure that the S&P 500 firm was the recalling organization of record (i.e., initiated the product recall). In the second data corroboration method (2), I affirmed my sample of firm-initiated press releases. The second method helped me to confirm that the press release was from the S&P 500 firm that initiated the product recall. My third data corroboration method (3) consisted of submitting data requests through the *Freedom of Information Act* (FOIA) to the federal government. The third method provides an external check on the accuracy of my manual coding process. Table 7 summarizes the details I implemented using the three data corroboration methods.

Table 7. Summary of Data Corroboration Methods

Data Corroboration	Source	Document Type	Quantity Reviewed	Process
1st method	Government archives	Initial product recall press releases	8,535 initial product recall press releases Subsample of ≈17,000 additional FDA safety, inspection, and compliance documents (from 36,601 total)	*Four-step process*: (1) Read press release title to determine the recalling firm (2) Verified the S&P 500 firm managed the product recall remediation strategy and was listed as the consumer contact (3) Verified the S&P 500 firm received injury and incident report data (4) Verified the number of S&P 500 firms associated with the product recall effort was two or less
2nd method	Lexis Nexis	Firm-initiated press releases	21,107 firm-initiated press releases	*Three-step process*: (1) Used Lexis Nexis' advanced search application to build my own segment search (2) Limited my data source to "*company press releases*" in Lexis Nexis (3) Verified the "*source*" or "*contact*" listed in the press release matched the S&P 500 firm name
3rd method	Freedom of Information Act request (FOIA)	Product recall summary document	546 product recalls	*Process summary*: Compared the product recall sample of S&P 500 firms released by the Food Safety Inspection Service (FSIS) to my manual coding process to provide an external check on the accuracy of my coding

Data corroboration method 1: Corroborating initial product recall press releases. I developed the 1st data corroboration method to ensure that the S&P 500 firm initiated the product recall using identifiers available from the initial product recall press release. Method 1 was important because the searchable interface from the governmental archives was not sensitive enough to identify press releases where only the S&P 500 firm initiated the product recall. Instead, the search results included all press releases that mentioned the S&P 500 firm's name regardless of the organization's role in the product recall. Accordingly, the interface from the governmental archives oftentimes produced product recall press releases where the S&P organization simply played an auxiliary role in the recall process.

I reviewed an estimated 8,535 initial product recall press releases using Data Corroboration Method 1. These press releases resulted from my search of the CPSC, FDA, and FSIS governmental archives. Because of idiosyncrasies unique to the FDA governmental archive, I took a precautionary step by verifying my FDA sample of product recalls through an additional sample that amassed to 36,601 documents. Of the 36,601 additional FDA documents, I reviewed a subsample of approximately 17,000 documents that focused on safety, inspection, and compliance matters including enforcement reports and market withdrawals from product recalls. The document review and subsequent steps that I developed in application of Data Corroboration Method 1 resulted from a telephone discussion with a government analyst who had detailed knowledge of product recall archives and initial product recall press releases.

The 1st method included four steps. In Step 1 of Data Corroboration Method 1, I read the title of the press release to determine whether the S&P 500 firm initiated the

product recall. Most press releases adhered to the following format allowing for clear identification of the recalling organization of record: Firm "**X**" issues a voluntary recall for product "**Y**." For instance, my search of the FDA governmental archives for Abbott Laboratories returned a product recall press release on July 28, 2009, titled, "Abbott Issues Voluntary Recall of Powersail Coronary Dilatation Catheters." I could easily verify the firm initiating the product recall when the title followed this format.

In Step 2, I read the product recall remediation strategy and consumer contact listed in the press release to confirm whether the S&P 500 firm conducted the product recall. Recalling firms offer remediation strategies to consumers as a corrective action including refunding, repairing, or replacing defective products. I examined the initial product recall press release obtained from my search of the governmental archives to confirm whether the press release listed the S&P firm under the *Remedy* section. Further, I confirmed whether the press release listed the S&P 500 firm as the *Consumer Contact*. I determined that the S&P 500 firm, in fact, conducted the product recall when I could confirm (a) the focal S&P firm oversaw the product recall remedy, and (b) the firm was listed as the consumer contact.

The second step of corroboration was important because cases arose where the title of the recall did not indicate definitively if the S&P 500 firm was involved in initiating the product recall. Figure 3 provides a sample case where I needed to examine the S&P 500 firm's role in the product recall (Wilton Industries *vs*. Target).

Figure 3. Wilton Industries and Target Product Recall Press Release

Consumer Product Safety Commission

Wilton Industries Recalls Chefmate Tea Kettles Due to Burn Hazard; Sold Exclusively at Target

August 20, 2013

Recall Summary

Name of product: Chefmate 2-Quart Tea Kettles

Hazard: Steam can travel up the handle, or water can spill from the spout, posing a burn hazard to the consumer. In addition, the leaking steam can cause the kettle to fail to whistle. If water completely evaporates from the kettle, the aluminum bottom can melt onto the stove and pose a burn hazard.

Remedy: Refund

Recall date: August 20, 2013

Recall number: 13-269

Consumer Contact: Wilton Industries toll-free at (866) 255-9237 from 8 a.m. to 4:30 p.m. CT Monday through Thursday, 8 a.m. to 1 p.m. CT Friday or online at www.wilton.com and click on Recalls for more information

Recall Details

Description: This recall involves Chefmate 2-quart tea kettles sold with a black enamel finish and a solid black resin handle. The Chefmate logo is stamped on the bottom of the aluminum tea kettle.

Remedy: Consumers should immediately stop using the recalled tea kettles and return them to any Target store, or contact Wilton Industries for a full refund.

Incidents/Injuries: The firm has received 13 reports of incidents, including five reports of steam traveling up the handle, three reports of hot water spilling from the spout and a report of a hot handle. In addition, four consumers reported the tea kettle base melting onto the stove burner. No injuries have been reported.

Sold Exclusively At: Target stores nationwide and online at Target.com from January 2006 through May 2013 for about $9.

Importer: Wilton Industries Inc., Woodridge, Ill.

Manufactured In: Indonesia and China

Units: About 716,000 in the United States and 1,400 in Canada

In my search of product recalls initiated by Target (an S&P 500 firm) the governmental interface returned a press release titled, “Wilton Industries Recalls Chefmate Tea Kettles Due to Burn Hazard; Sold Exclusively at Target” (CPSC, 2013). My search returned the press release because Target was the exclusive retailer of the recalled product. From reading the press release I learned that Target played a supplemental role (i.e., retailing) in the product recall. However, Wilton Industries initiated the product recall, not Target. Consequently, I excluded the Wilton Industries press release from my sample because Target did not initiate the product recall.

Within Step 3 of Method 1, I verified that the S&P 500 firm was the organization that received injury and incident report data (when available). Locating the company that received the injury and incident report data was critical because such consumer harm information plays a key role in the timing of product recall initiation, public announcement, and strategy. Because consumer harm reports are key drivers in firms’ product recall strategies (Chen et al., 2009; Hora et al., 2011), when I could demonstrate that an S&P 500 firm received the injury and incident data, I corroborated that the firm initiated the product recall.

During Step 4 of Method 1, I excluded product recalls initiated by more than two firms to ensure that an S&P 500 firm had substantial control over product recall initiation and subsequent remediation efforts. Large-scale product recalls, involving more than two firms, typically present the amalgamation of multiple organizational views, which confounds an individual firm’s specific recall strategy and post-recall actions (Ni et al., 2014). Because the goal of the current study was to analyze specific firms’ recall strategy and post-recall actions, I eliminated such large-scale product recalls that obfuscate the

decision-making process in individual companies. In sum, I included all product recalls that represented an action clearly initiated by the S&P 500 parent organization where the S&P 500 firm conducted the product recall effort. Appendix C illustrates Data Corroboration Method 1 using a press release from Deere & Company.

Data corroboration method 2: Corroboration of firm-initiated press releases. I developed Data Corroboration Method 2 to ensure the press releases produced from my Lexis Nexis searches were initiated from the S&P 500 firm. I reviewed an estimated 21,107 firm-initiated product recall press releases using Method 2. The application of Method 2 involved three steps.

In Step 1 of Method 2, I employed the advanced search application in Lexis Nexis for my search. Utilizing advanced search was beneficial for the current study because this application allows for user-defined search requests that meet unique parameters. The advanced application setting allowed me to build my own segment search, which specified the unique S&P 500 firm name in Lexis Nexis' *Search Criterion* while adhering to a specific timeframe of interest. Second, I limited my search to "*Company Press Releases*" using the *Data Source* function in Lexis Nexis. I used firm-initiated press releases exclusively because the recalling firm generates these reports to broadcast intraorganizational affairs, which limits potentially biased, edited information from outsiders (Carroll & McCombs, 2003; Henry, 2008). Step 3 involved reading each individual press release to verify that the S&P 500 firm appeared as the *Source* or *Contact* for the press release. The *Source* and *Contact* press release identifiers allowed me to confirm that the recalling organization initiated the press release. Since my goal

was to understand firm actions, this confirmatory step was essential because it allowed me to eliminate actions from outside organizations or media outlets.

While conducting my search of the firm-initiated press releases via Lexis Nexis, I excluded duplicate press releases that represented the same firm action. I determined whether a press release was a duplicate by examining the title, content, and date of the press release. Competing news wire services would sometimes release duplicate press releases on the same date with identical titles and content offerings. Lexis Nexis' *Duplicate* function helped me to identify such cases.

Data corroboration method 3: Government information. I performed my third data check by submitting data requests to the federal government through the FOIA. The FOIA allows researchers and private citizens access to specific information from the federal government through a formalized process known as a "request."

To enhance my sample's integrity, I requested product recall data for S&P 500 publicly held firms from the three governmental agencies overseeing product recalls in my sample. I formally submitted my FOIA requests on March 27, 2016, to the CPSC, FDA, and FSIS. While I received acknowledgement emails from all three governmental agencies confirming the receipt of my requests, only the FSIS processed my complete requests (as of the writing of this document). The timing of the receipt of the additional governmental data is unclear; however, one federal representative stated that they are still processing requests that were submitted in 2014. The data procurement process is often quite lengthy because of the volume of FOIA requests.

Given the length of time that the FSIS needed to process my data request, I had already completed my own search of the Food Safety Inspection Service's governmental

archive. Thus, I could easily compare the results of the FSIS against my own manual coding procedures between 2006 and 2013. There was a 95 percent convergence between my manual coding and the FSIS data. Specifically, the FSIS identified 22 product recalls by S&P 500 firms while I identified 21 product recalls.

The single discrepancy resulted from a product recall for marinated beef products (product recall number 051-2011), which I omitted from my sample. The discrepancy occurred because the product recall press releases, which I manually coded, stated Malcolm Meats initiated the product recall. However, the FSIS identified both Malcolm Meats and Sysco Food Services (an S&P 500 firm) as recalling establishments because Malcolm Meats was "doing business as" (for) Sysco Food Services. Although the press release did not mention the relationship between Malcolm Meats and Sysco Food Services, the discrepancy is unsurprising because the FSIS' data access is much greater compared to the data available in product recall press releases. Even the best-intentioned manual coder could not have reached the same conclusion as the FSIS because the information about Sysco Food was not available in the press release. Although not perfect, I believe my manual process was sound because the sample of product recalls released by the FSIS was largely equivalent to the sample of product recalls produced by my manual coding process.

Measures

The Measures' section describes my dependent, independent, moderator and control variables used in my dissertation. Table 8 provides an overview of the measurement, description, and data sources associated with my study variables.

Table 8. Overview of Study Variables

Study variable	Measurement	Description	Source	Key references
Dependent variables				
Recall proactiveness	Dummy variable, Code 1 for press releases that exclude incidents of consumer harm and 0 otherwise[b]	Product recall strategy	Initial firm press release from government archives	Chen, Ganesan, & Liu, 2009; Hora, Bapuji, & Roth, 2011; Ni, Flynn, & Jacobs, 2015
Technical actions	Dummy variable, Code 1 for press releases where the firm used technical actions in the post-recall period, 0 otherwise[c]	Press releases that address the origin of the product recall and contain operational information	Firm-initiated press release from Lexis Nexis	Zavyalova, Pfarrer, Reger, & Shapiro, 2012
Ceremonial actions	Dummy variable, Code 1 for press releases where the firm used ceremonial actions in the post-recall period, 0 otherwise[c]	Press releases that do not address the origin of the product recall, but rather focus on focus on positive organizational attributes	Firm-initiated press release from Lexis Nexis	Zavyalova, Pfarrer, Reger, & Shapiro, 2012
Independent variables				
Level of dedicated institutional ownership	Percentage of shares outstanding controlled by owners classified as dedicated	Long-term owners holding concentrated portfolios with low turnover that are less sensitive to current earnings	Thomson Reuters	Bushee, 1998, 1999, 2001, 2004; Connelly, Tihanyi, Certo, & Hitt, 2010
Level of transient institutional ownership	Percentage of shares outstanding controlled by owners classified as transient	Short-term owners holding diversified portfolios with high turnover that are sensitive to current earnings	Thomson Reuters	Chen, Harford, & Li, 2007; Ke & Petroni, 2004; Koh, 2007

Study variable	Measurement	Description	Source	Key references
Moderator variables				
CEO power				
CEO tenure	Number of years of executive service	Increases the CEO's level of expert power through key relationships	Execucomp	Combs, Ketchen, Perryman, & Donahue, 2007; Simsek, 2007
CEO ownership	Percentage of CEO controlled voting shares	Increases the CEO's level of corporate control through voting power	Execucomp	Daily & Johnson, 1997; Westphal & Zajac, 1995, Zald, 1969
CEO duality	Dummy variable, Code 1 when CEO also served as the chairman of the board of directors, 0 otherwise	Increases the CEO's level of structural power via multiple titles and board control	Compustat	Krause, Semadeni, & Cannella, 2014
Control variables				
Total CEO compensation	Total compensation for each CEO including: salary, bonus, total value of restricted stock granted, total value of stock options granted, long-term incentive payouts, and all other annual compensation [a]	Sum of executives' salary, bonus, and outstanding options	Execucomp	Combs, Ketchen, Perryman, & Donahue, 2007; Wowak, Mannor, & Wowak, 2015
CEO Gender	Dummy variable, Code 1 for male CEOs 0 otherwise	Identifies the CEO's gender as either male or female	Execucomp	Lee & James, 2007
Firm size	Net annual sales reported by the focal firm[a]	The firm's main source of revenue in U.S. dollars	Execucomp	Chen & Nguyen, 2013;

Study variable	Measurement	Description	Source	Key references
Prior financial performance	Net income before extraordinary items and discontinued operations divided by total assets[a]	Return on assets	Execucomp	Chen & Nguyen, 2013; Kalaignanam, Kushwaha, & Eilert, 2013
Prior recall experience	Count variable of the total number of recalls issued by a single firm	Organizational learning effects	Government archives	Haunschild & Rhee, 2004; Maslach, 2016; Rhee, 2009
Level of quasi-indexer institutional ownership	Percentage of shares outstanding controlled by owners classified as quasi-indexer	Owners that use a buy-and-hold investment approach, comparable to an indexing strategy	Thomson Reuters	Bushee, 2004; Connelly, Hoskisson, Tihanyi, & Certo, 2010
Year	Dummy variable for each year in my sample	Temporal fluctuations	Government archives	Wowak, Mannor, & Wowak, 2015;
Industry	Dummy coded industry groupings developed using a firm's Standard Industrial Classification (SIC) code	Predefined industry-level groupings based on Fama and French's industry definitions	Compustat	Amburgey & Miner, 1992; Zhao, Li, & Flynn, 2013
Product recall remediation strategy	Dummy variable, Code 1 for firms that offered consumers a remediation strategy, 0 otherwise	Corrective actions that firms offer their consumers after a product recall such as refunding, replacing, or repairing recalled products	Government archives	Chen, Ganesan, & Liu, 2009; Hora, Bapuji, & Roth, 2011

Notes. [a]The Compustat (Execucomp) User's Guide provided the variable operationalization or description; [b]developed additional operationalizations for recall proactiveness: (a) number of consumer injuries and (b) number of incident reports; [c]developed an additional operationalization for firm actions that represented the number of technical (ceremonial) post-recall firm actions.

Dependent variables. My first dependent variable was recall proactiveness (product recall strategy). Recall proactiveness captures whether firm executives expedited their recall efforts, through immediate recognition of the organizational failure, or passively waited to alert authorities until the recall escalated likely resulting in consumer harm (Chen et al., 2009; Hora et al., 2011). Firms respond using a proactive strategy by announcing product recalls to the public in the absence of consumer harm. In contrast, reactive strategies occur when firms wait until reports of harm surface to acknowledge the consumer safety threat (Ni et al., 2015).

I used structured content analysis to code the initial product recall press release to gather information about firms' recall proactiveness. Structured content analysis allows researchers to draw evidence from relevant published material, such as press releases, that are of theoretical interest (Jauch, Osborn, & Martin, 1980). Chen et al. (2009) found the content of an initial press release that discusses consumer harm to be theoretically relevant because it reflects a firm's proactive or reactive recall strategy. Following established structured content analytic procedures, I used the initial product recall press release to obtain data relating to the absence or presence of consumer harm for this dependent measure (Duriau, Reger, & Pfarrer, 2007).

To identify whether a firm implemented a proactive or reactive recall strategy, I studied the initial press release for reports of consumer harm associated with each recall event (Ni et al., 2015). Most initial product recall press releases explicitly included the number of consumer injuries, illnesses, and incident reports directly caused by the defective product (Hora et al., 2011). I excluded any product recalls associated with a chronic hazard that developed over time because these recall events may obscure the

coding process (Chen et al., 2009). Further, I excluded recall events that did not contain enough information to discern whether the product recall was proactive or reactive from the usable sample (Ni et al., 2015).

I obtained data to support three operationalizations of recall proactiveness from the initial product recall press release. First, I used Chen et al.'s (2009) measure because it received general acceptance in the literature and with product recall researchers in particular. Chen et al. (2009) used a dummy variable to indicate whether the initial press release excluded or included consumer harm. Following prior studies, I operationalized recall proactiveness as a binary variable where I coded "1" for press releases that excluded incidents of consumer harm and "0" for press releases that included incidents of consumer harm (Chen et al., 2009). Key articles that measure recall proactiveness include Ni et al. (2015) and Hora et al. (2011).

I developed additional operationalizations of recall proactiveness to enhance the construct's robustness. I extended Chen et al.'s (2009) measure by collecting information about the number of injury, illness, or fatality reports associated with incidents of reactivity. While this count variable signifies a summative score including all reports of consumer harm (i.e., injury, illness, or fatalities), I labeled this operationalization "number of injuries" or "number of consumer injuries" for simplicity. Including a quantitative measure of consumer harm adds richness and greater precision to the binary operationalization by allowing me to assess the severity of product recall events.

My third operationalization of recall proactiveness was the number of incident reports that resulted from the product recall. I defined incident reports as the number of consumer reports that documented the product defect, but did *not* result in consumer

harm (i.e., consumer injury or illness). Despite the lack of injuries or illnesses, consumer-reported incidents characteristically include cases where the defective product posed a hazard to customers or resulted in property damage. I created this additional operationalization of recall proactiveness to capture cases where consumer-reported incidents alerted firms to a potentially hazard defect; however, because of the recalling firms' proactivity, or fortuitousness, no injuries or illnesses occurred. I refer to "consumer-reported incidents," "incident reports," and "incidents" interchangeably in my dissertation for this operationalization of recall proactiveness. I reverse coded consumer-reported incidents to assist with the interpretation of my hypothesis testing.

To illustrate the importance of adding the number of consumer-reported incidents to my operationalization of recall proactiveness, I use General Electric's 2007 product recall. On May 16, 2007, General Electric issued a dishwasher recall. Governmental archives show General Electric received a total of 191 incidents reports from consumers concerning the dishwasher's defects. Of the total 191 incident reports, consumers documented serious product hazards including 56 reports of property damage that resulted from dishwashers overheating and 12 reports involving fires in the dishwasher area. While a substantial volume of consumer-reported incidents suggests a lack of recall proactiveness, the press release did not report any consumer injuries. Under the prior operationalization of recall proactiveness, General Electric's recall strategy would have been coded as "proactive" because the presence or absence of injury reports, not incident reports, drove the variable's coding. The General Electric case highlights the need to include the number of incident reports as an important factor of recall proactiveness. Even though prior researchers have included the number of consumer injuries and

incident reports in their empirical investigations, these operationalizations have not been the focal variables of interest in the study (cf. Zavyalova et al., 2012).

My other two dependent variables were *technical actions* and *ceremonial actions*, which characterize the type of response that CEOs use in the post-recall period to manage the negative media attention associated with the product safety concern (Zavyalova et al., 2012). Key articles that measure technical and ceremonial actions include Godfrey et al. (2009) along with Kirsch, Goldfarb, and Gera (2009). Firms engage in technical actions when their press releases discuss the origin of the product failure that led to the recall and contain operational-level information. Prior research suggests technical actions typically included firm-level activities that concern production, manufacturing, or administrative processes that overtly relate to the product recall event or broader supply chain activity (e.g., Epelbaum & Martinez, 2014; Tse & Tan, 2012). Examples of technical actions in the current study included firm-initiated press releases of organizations' (a) recall statements and clarifications, (b) recall remediation programs, (c) recall notification systems, (d) quality concerns, and (e) supply chain changes. Conversely, firms engage in ceremonial actions when their press releases do not reference the product recall but focus on positive company attributes or initiatives (Zavyalova et al., 2012). Examples of ceremonial actions in the present investigation included firm-initiated press releases of organizational actions representing (a) charitable donations, (b) celebrity partnerships, (c) firm awards, (d) socially conscious actions, and (e) philanthropic events. Tables 9 and 10 offer examples of technical and ceremonial actions from the current study.

Table 9. Technical Action Examples Grouped by Content Area

Definition: Technical actions address the origin of the product recall and contain operational information aimed at resolving the supply chain glitch.

Content Area	Firm	Press Release Title Classified as a Technical Action
Recall Statements & Clarifications	Pfizer	Pfizer Issues Statement on Voluntary Recall
	Bausch & Lomb	Bausch & Lomb Clarifies Media Reports on the Voluntary Recall of Specific Lots of ReNu Solution
	Baxter International	Baxter Provides Update on Heparin Reactions; Company Provides Additional Instructions to Clinicians to Mitigate Risk of Reaction While Working to Identify Root Cause
Recall Remediation Programs	Dell	Dell Updates Battery Replacement Program
	Mattel	Mattel Announces Voluntary Recall of 6 Toys as a Result of Extensive Ongoing Investigation and Product Testing
	Gateway	Gateway Launches Voluntary Battery Exchange Program
Recall Notification Systems	Kroger	Kroger Endorses Rapid Recall Exchange and Encourages All Suppliers to Join Exchange
	Target	CPSC & Target Announce New In-Store Recall Notification System
	St. Jude Medical	St. Jude Medical Launches Riata Communication Website; New website is dedicated to updating the physician community on Riata silicone lead information
Quality Concerns	Dollar General	Dollar General Implements More Frequent and Rigorous Lead Testing; Retailer tests every shipment and switches to domestic supplier for jewelry
	Hershey	The Hershey Company Has Never Purchased Milk from China; All Hershey Products are Safe to Consume
	Kroger	Kroger Reassures Customers; Retailer Restocks Stores with Ground Beef from Other Suppliers
Supply Chain Changes	General Electric	GE and SandLinks Demonstrate Breakthrough System Solution for Tracking the Location and Condition of Assets In-Transit; New Solution provides unprecedented views into the supply chain
	Hewlett-Packard	HP Increases Accountability of Business Groups by Realigning Operations Functions; Supply Chain, Procurement, Logistics, Order-Fulfillment, Related Functions to be Fully Integrated into Businesses
	CareFusion	CareFusion Enters into Supply Chain Services Agreement with OM HealthCare LogisticsSM, a Business Unit of Owens & Minor

Table 10. Ceremonial Action Examples Grouped by Content Area

Definition: Ceremonial actions do not address the origin of the product recall, but rather focus on positive company attributes or initiatives.

Content Area	Firm	Press Release Title Classified as a Ceremonial Action
Charitable Donations	Kellogg	Kellogg Company Commits $500,000 to Hurricane Sandy Relief Efforts; Donation includes cash and food
	Dollar General	Dollar General Gives $100,000 to the U.S. Marine Corps Toys for Tots Foundation
	Big Lots	Big Lots Teams up for Annual Toys for Tots Drive; Campaign Kicks Off with $20,000 Charity Shopping Spree Featuring WSYX 6 News Team and Stinger
Celebrity Partnerships	Office Depot	NASCAR Driver Tony Stewart and the Office Depot Foundation Team up to Donate 4,500 Sackpacks to Chicago-Area Kids
	Procter & Gamble	Procter & Gamble Announces 10 Additional Partnerships with U.S. Olympic Athletes; Sasha Cohen, Julia Mancuso among Total Team of 16 P&G U.S. Athletes
	Avon Products	Reese Witherspoon Helps Celebrate Avon Walk for Breast Cancer Washington, D.C.
Firm Awards	Deere & Company	Deere earns position among World's Most Ethical Companies for seventh straight year
	Abbott Laboratories	Abbott Named One of the 'Top Employers' in the Biotech and Pharmaceutical Industry by Science Magazine
	J.C. Penney	J.C. Penney Receives Corporate Equality Index Award
Socially Conscious Actions	General Electric	GE Project Plant-a-Bulb Promotes Environmental Awareness, Brightens Landscapes with 100,000 Flowers
	Hewlett-Packard	HP Brings Hope and Smiles to Children and Families Finding Strength at Select Ronald McDonald Houses
	Ross Stores	Ross Stores Partners with Boys & Girls Clubs of America to Promote Academic Success for Young People
Philanthropic Events & Initiatives	PetSmart	PetSmart Charities Holiday National Adoption Event a Resounding Success
	Honeywell International	Honeywell Supports White House Initiative to Hire and Train Veterans
	Sears Holdings	Sears to Host "Super Back-to-School Saturday" Retailer to contribute percentage of sales to new anti-bullying initiative

Similar to the coding of the dependent variable, recall proactiveness, I used structured content analysis to code firm-initiated press releases to measure firms' use of technical or ceremonial actions (Duriau et al., 2007). Compared to initial press releases that are the byproduct of government regulation, firm-initiated press releases are more likely to portray the message that organizational members wanted to disseminate to outside constituencies. Firm-initiated press releases allow for the greatest insight into the type of actions the CEO preferred because such releases receive the blessing of corporate executives before the firm announces them publicly. Such evidence led Zavyalova et al. (2012) to conclude that firm-initiated press releases provided theoretical insight regarding the type of actions organizations use to respond to threats created by the initial press release. Specifically, firm-initiated press releases allow companies to either address the product defect in a direct fashion (technical actions) or evade operational issues via ceremonial activity. Following content analytic standards, I coded firm-initiated press releases for the absence or presence of technical or ceremonial actions while bypassing press release announcements that did not discuss companies' post-recall responses.

To pinpoint how firms responded during the post-recall period, I reviewed firm-initiated press releases for the one-month window following the initial product recall announcement. I used a binary measure for each category of firm actions where "1" indicates that the firm used technical (ceremonial) actions in the post-recall period and "0" indicates that the firm did not use technical (ceremonial) actions in the post-recall period (Zavyalova et al., 2012). In addition to the binary measure, I recorded the number of technical (ceremonial) actions the organization took in the post-recall period. Although prior researchers have coded firm actions in the quarter after the product recall

transpired, I recorded the firms' technical and ceremonial activities during the immediate 30-day period after the initial press release, which I identified from the initial press release (Zavyalova et al., 2012). By selecting the following one-month period, I increased the likelihood, compared to prior studies, that the firm-initiated press release included material associated with the product recall.

Overview of coding process. To ensure consistency in coding my dependent measure, post-recall firm actions, I used a two-stage process to obtain an interrater reliability estimate. In stage one, a second rater and I (a) reviewed the codebook, (b) coded a subsample of press releases independently, and (c) discussed those coding results to clarify any systematic disagreements identified in the procedure. During stage two, I calculated interrater reliability by asking the second rater to independently code a random subsample of press releases representing 25 percent (N = 260) of my total sample. To ensure the interrater reliability coefficient was not artificially inflated, I used a different subsample of press releases during the first and second stages of the coding process. Thus, the subsample used to identify any a priori systematic disagreements was different from the subsample used to calculate the interrater coding reliability. In the following paragraphs, I describe stage one and two in detail.

Stage 1 of coding process. The second coder and I met to begin the coding reliability process during stage one. The second coder holds a PhD and has previous experience in content analysis and coding qualitative data. I reviewed my dissertation's codebook that contains variable definitions and firm-initiated press release examples with the second coder. To promote consistency, we studied the codebook together giving the second coder an opportunity to ask questions about my definitions of technical or

ceremonial firm actions. The second coder and I independently coded a subsample of firm-initiated press releases. Afterwards, we met to compare our technical and ceremonial codes and discuss any disagreements.

We resolved any cases that resulted in disagreement through discussion between the second coder and myself (Jauch et al., 1980). Discussing possible inconsistencies at the beginning of the coding process helped us to identify potential disagreements that may have potentially confounded any ensuing coding. Prior scholarship suggests developing research teams where the second-rater acts as a discerning reviewer often enhances the soundness of the coding process (cf. Lepoutre & Valente, 2012). Therefore, allowing a second coder and myself the opportunity to evaluate a subsample of the recalls independently and then discuss any coding disagreements likely enhanced the consistency of the coding process (Duriau et al., 2007).

Stage 2 of coding process. Calculating interrater agreement on a subsample of data represents an important reliability check that organizational researchers oftentimes use to enhance the robustness of their conclusions. Accordingly, a recent content analytic review estimated that approximately 62 percent (61 studies out of 98 total articles) of qualitative studies published in the management literature used multiple coders to demonstrate appropriate levels of post hoc interrater agreement (Duriau et al., 2007). While scholars agree calculating post hoc, interrater agreement enhances a study's robustness, there is some debate regarding the most appropriate subsample size for this check. Some researchers preferred smaller subsamples representing roughly 10 percent of their total data (e.g., Arndt & Bigelow, 2000; Connelly et al., 2010; Osborne, Stubbart, & Ramaprasad, 2001), while other scholars employed larger subsamples approximating 25

percent of the complete dataset (e.g., Mishina, Pollock, & Porac, 2004). Given the importance of demonstrating appropriate levels of interrater agreement, I used a conservative approach by asking the second researcher to code 25 percent of a random subsample of my firm-initiated press releases. Specifically, the independent researcher coded 260 firm-initiated press releases from the 1,040 total firm actions (technical and ceremonial) taken by S&P 500 organizations in my sample. I used an online random number generator to ensure that my subsample of 260 press releases was random.

I used my random subsample of post-recall firm actions to calculate interrater agreement through Krippendorff's Alpha (Krippendorff, 2004). I selected Krippendorff's Alpha because it provides an established estimate of reliability between multiple coders (Hayes & Krippendorff, 2007). Organizational researchers typically consider an alpha coefficient of 0.80 as the standard benchmark of reliability for Krippendorff calculations (Krippendorff, 2004). The reliability estimate for Krippendorff's Alpha for the current study was 0.91 (95% Confidence Interval: 0.68 − 1.00). Since my alpha coefficient exceeds 0.80, this value suggests the current study achieved an acceptable level of interrater agreement for my dependent measure, post-recall firm actions.

Independent variables. I classified my independent variables, level of dedicated institutional ownership and level of transient institutional ownership, following Bushee's (1998, 2001, 2004) taxonomy. I operationalized the level of dedicated (transient) ownership as the percentage of outstanding shares controlled by this respective classification of institutional owner. I assessed institutional ownership from investors holding investment discretion over $100 million in Section 13(f) securities that filed Form 13F with the SEC (SEC, 2015). I obtained the classification data from Bushee's

Website, http://acct.wharton.upenn.edu/faculty/bushee/IIclass.html, but explain the categorization process that underlies his taxonomy here. Bushee (1998) originally classified institutional investors as dedicated or transient based on a principal component factor analysis, with oblique rotation, of nine financial and accounting variables. The factor analysis revealed three overarching characteristics of institutions' past trading behavior: (a) level of portfolio turnover (PTURN), (b) sensitivity to current earnings or momentum (MOMEN), and (c) mean size of the institution's investment position in portfolio firms (BLOCK).

The first factor, PTURN, captures the level of turnover associated with an institution's investment portfolio and offers insight into the length of an entity's investment position (Bushee, 1998). High portfolio turnover scores oftentimes indicate that an institution implemented a turnover intensive strategy that led to an investment position of less than two years (Bushee, 1999). In contrast, low portfolio turnover scores suggest that an institution turned over its portfolio less frequently, which led to an equity position of greater than two years (Bushee, 2001). Current researchers often describe the portfolio turnover factor in terms of institutional owners' short- or long-term investment (time) horizon (Bushee, 2004).

The second factor, MOMEN (momentum), shows how sensitive an institution is to a firm's current earnings announcements. High momentum scores indicate an increased level of sensitivity to current earnings announcements. Institutions with high scores are more likely to grow their equity position in firms with desirable earnings announcements and divest in firms with poor earnings reports (Bushee, 1999). In contrast, low momentum scores suggest an institution was a *contrarian trader.*

Contrarian traders typically grow their equity positions in firms with negative current earnings reports and divest when firms have positive news (Bushee, 1998). Current corporate governance and accounting research suggests the momentum factor captures institutions' sensitivity to recent news or earnings reports (Bushee, 2004).

The final factor, BLOCK, indicates the mean size of the institution's investment position in portfolio firms. High scores suggest a larger than average investment size while low scores indicate a smaller than average position (Bushee, 1999; Bushee & Noe, 2000). Extant literature typically refers to this factor in terms of the level of portfolio diversification held by the institutional investor (Bushee, 2004).

In Bushee's classification, transient owners have high PTURN, MOMEN, and BLOCK scores (with BLOCK reverse coded), which led Bushee (1998) to conclude transient owners turned over their diversified portfolios frequently because of their high level of sensitivity to current earnings announcements. Dedicated owners, alternatively, were less sensitive to a firm's current earnings announcements and did not turnover their concentrated portfolios as frequently (Bushee, 2004). Thus, from a factor perspective, dedicated owners have low PTURN, MOMEN, and BLOCK (reverse coded) scores.

Moderator variables. My moderator variable, CEO power, captured executives' influence using measures of executives' level of expertise, ownership, and structural (hierarchical) power. I used Combs et al.'s (2007) conceptualization of CEO power to honor the multidimensional nature of executive influence. As such, I operationalized CEO power using three measures: CEO tenure, CEO ownership, and CEO duality (also referred to as unity of command). Following Combs et al. I created three, separate

interactions terms so that the effects of CEO tenure, CEO ownership, and CEO duality, represented distinct terms within the complete model.

CEO tenure. My first measure of CEO power was tenure. I measured CEO tenure as the number of years since the executive became the CEO (Wowak et al., 2015). Powerful CEOs often have longer tenures because executives develop firm-specific knowledge, skills, and abilities over the course of their employment, which enhances the executives' perceived expertise (Lewellyn & Muller-Kahle, 2012). Longer-tenure CEOs achieve higher levels of expertise by engraining themselves in their firm's political networks, which elevates their operational knowledge and social status (Westphal & Zajac, 1995). The social status that long-tenure CEOs often enjoy helps improve their rapport with top managers and board members through development of these key, working relationships (Zajac & Westphal, 1996). Such working relationships often increase CEOs' ability to shape their firm's strategic actions (Simsek, 2007). For example, one study found that longer-tenured CEOs were more likely to encourage top managers to accept riskier strategic initiatives while additional research suggests CEO power can shape board of directors' actions (Fiegener, 2005). Thus, over time, CEOs develop a personal mystique that results in an allegiance from top managers and board members, which substantiates the CEOs' power (Finkelstein & Hambrick, 1989).

CEO ownership. My second measure of CEO power was CEO ownership, which reflects the amount of voting shares the executive controls. I operationalized CEO ownership stake as a percentage of CEO controlled voting shares. CEOs who hold a large number of ownership shares are more influential because they capture both managerial and shareholder interests (Combs et al., 2007; Daily & Johnson, 1997). Strategic

management researchers often tie the CEO power dimension of ownership with the corporate control literature and the work of Zald (1969). Simply stated, CEOs with a larger ownership stake hold more control than CEOs with smaller ownership since these CEOs generate substantial influence from the voting power afforded to them through their equity holdings (Finkelstein, 1992).

CEO duality. My third, and final, measure of CEO power was CEO duality. CEO duality, or unity of command, occurs when executives serve as both the chief executive officer and chairman of the board of directors (Krause & Cannella, 2014). The relationship between CEO duality and executive power has long been of interest to strategic management researchers. Such research dates back to the work of Hambrick (1981) and remains a central aspect of the corporate governance literature today (see Krause et al. 2014, for a recent review of the CEO duality literature). Given the importance of CEO duality, researchers have continued to investigate its impact in several key strategic management contexts including CEO succession (Cannella & Lubatkin, 1993; Cannella & Shen, 2001), executive compensation (Krause & Semadeni, 2014), level of risk taking (Lewellyn & Muller-Kahle, 2012), and ability to rebound following financial uncertainty (Dowell, Shackell, & Stuart, 2011). Since product recalls threaten firms' financial stability (Haunschild & Rhee, 2004), it could be important to consider how dually appointed CEO-chairmen manage consumer safety problems associated with product recalls (Wowak et al., 2015). I measured CEO duality as a binary variable, with "1" indicating that the CEO also served as chairman of the board of directors and "0" otherwise.

Control variables. Previous scholarship suggests that additional variables, outside of those depicted in my direct and moderating hypothesized effects may influence my independent−dependent variable relationships. To partial out such effects, I controlled for four categories of variables: (a) executive and firm attributes, (b) temporal considerations, (c) industry, and (d) supply chain**.**

My first variable category, executive and firm attributes, included six controls (Haunschild & Rhee, 2004; Ni et al., 2014, 2015; Thirumalai & Sinha, 2011; Wowak et al., 2015). The first executive attribute I controlled for was *total CEO compensation*. Indeed, I controlled for the complex relationship between executive compensation and product recalls by using an aggregate measure of total CEO compensation. Prior research suggests it is important to include CEO compensation in product recall studies because executive payment packages that are laden with stock options may create an environment where product safety incidents are more common (Wowak et al., 2015). Indeed, option heavy incentive packages promote risky CEO behavior since executives often focus on the substantial gains, instead of potential losses, from their compensation plan (Sanders & Hambrick, 2007). I sought to partial out such effects by forming a measure of total CEO compensation that combines CEO salary, bonus, and options pay (Combs et al., 2007).

The second executive attribute I controlled for was *CEO gender*. I operationalized CEO gender through a dummy variable where "1" indicated the CEO was male, and "0" indicated the CEO was female. Empirical evidence suggests that CEO attributes are an important consideration that researchers should control for when analyzing product recall data (Wowak et al., 2015). One executive attribute that strategic management researchers have considered is the CEO's gender (Lee & James, 2007). Female CEOs are oftentimes

viewed as more conservative leaders, which lends support to the notion that gender-based variances impact the strategic direction of the organization (Palvia, Vähämaa, & Vähämaa, 2015). To reduce the potential influence of gender-based decision making on firms' product recall strategy and post-recall actions, I controlled for CEO gender. Key studies that theoretically support the use of CEO gender as a control include Lee and James (2007) in addition to Palvia et al. (2015).

My third and fourth firm-level controls are *firm size* and *prior financial performance.* I operationalized firm size using net annual sales and measure prior financial performance using return on assets, defined as net income divided by total assets. Previous scholarship suggests that companies with strong revenues and past performance typically have greater access to resources and capital, which may influence my dependent measure: firms' strategic recall processes (Kalaignanam et al., 2013). Quick access to resources and capital during a product recall is vital especially to firms implementing proactive recall strategies because firm executives are racing to alert the public of the potential harm before receiving a report of consumer injury or illness (Chen et al., 2009). Firms with poor sales and prior performance may lack the internal resources needed to mobilize a quick and effective product recall strategy that protects consumers while tempering the blitz of negative press. Following such logic, several recent articles have demonstrated the need to control for firms' financial attributes including Kalaignanam et al. (2013), Ni et al. (2015), and Thirumalai and Sinha (2011). Additionally, key articles that controlled for firm size include Chen and Nguyen (2013), Haunschild and Rhee (2004), and Steven et al. (2014).

My fifth firm-level control is *prior recall experience*. I included prior recall experience to partial out the effect of organizational learning in my sample of firms. I operationalized prior recall experience as the total number of recalls issued by a single firm. The organizational learning literature suggests firms' prior recall experience contributes to the formation of intuitional memories by capturing the operational failure that led to the product recall (Haunschild & Rhee, 2004; Rhee, 2009). For instance, Kalaignanam et al. (2013) used organizational learning theory to show that large-scale product recalls helped companies decrease the number and severity of future consumer accidents by creating automobiles that were more reliable. Important articles that support the need to control for the effects of organizational learning through firms' prior recall experience include Maslach (2016) and Steven et al. (2014).

My sixth and final firm-level control is *level of quasi-indexer institutional ownership*. I operationalized the level of quasi-indexer institutional ownership as the percentage of outstanding shares controlled by this respective class of institutional investor. Per Bushee's (1998) institutional investor taxonomy, quasi-indexer institutional owners historically use a buy-and-hold approach, which is comparable to an indexing strategy of high portfolio diversification. Quasi-indexers' adoption of an index strategy suggests their investment portfolios are unlikely to change because of individualized firm decisions or strategies (Bushee, 2004). Given quasi-indexers' lack of individualized firm investment, prior research suggests these institutional owners offer minimal value to organizational analyses on strategic- or operational-level outcomes (Connelly et al. 2010). Still, to limit any potential confounding effects, I controlled for level of quasi-indexer institutional ownership and included Bushee's complete taxonomy in all

models. Key articles that support this management of quasi-indexer institutional owners include Connelly et al. (2010) as well as Connelly et al. (2016).

I controlled for temporal effects using a dummy variable for each *year* included in my sample. Product recall studies typically include a control variable for year to partial out temporal fluctuations and to model any yearly variation within the sample itself (Maslach, 2016; Wowak et al., 2015). For example, Wowak et al. (2015) included year dummy variables in their model analyses to partial out temporal effects while Maslach (2016) added year to control for annual trends in his dataset. Further, Zavyalova et al. (2012) included a control variable for 1998 and 2007 because those two years were associated with the largest volume of product recalls in the toy industry. Noteworthy articles that support the inclusion of a temporal control include: Hora et al. (2011) in addition to Shah et al. (2017).

I controlled for *industry* because prior research suggests that product recall effects are not homogeneous across sectors (Chen & Nguyen, 2013). Indeed, one study concluded the impact of product recalls was more damaging to firms in the food sector compared to recalls in the automotive, electronics, or medical industries (Zhao et al., 2013). Further research supports the heterogeneous effect of industry by concluding that the stock market's response to product recalls in the medical device industry was less severe compared to typical reactions in the agriculture and automotive sectors (Thirumalai & Sinha, 2011). I controlled for *industry* effects using Amburgey and Miner's (1992) long-standing practice of categorizing organizations by their industry classification code. Specifically, I used the firm's four-digit Standard Industrial Classification code (SIC) to assign the organization to one of Fama and French's (2017)

five predefined industry groupings: consumer, manufacturing, high-tech, health, and other. Researchers have adopted Fama and French's groupings because the practice allows scholars to form an aggregate measure for industry without compromising the integrity of the categorizations (e.g., Shi, Zhang, Hoskisson, 2017). Please see Table 11 for the specific SIC codes associated with each industry grouping.

Lastly, I controlled for a supply chain element through firms' *product recall remediation strategy*. Product recall remediation strategy captures the corrective action that organizations offer to consumers following a product recall. Such strategies include offering to refund, replace, or repair the recalled product. I operationalized this control by creating a dummy coded variable where "1" indicated the firm offered consumers a remediation strategy and "0" indicated that the firm did not offer consumers a remedy. Empirical evidence demonstrates that remediation strategy is a notable supply chain component, which Ni et al. (2014) highlight in their analysis of retailers' management of product recall announcements. Ni et al.'s (2014) research suggests that remediation strategy may provide insight into the recalling firm's overarching approach to defective product containment. Following such logic, several recent articles have shown the need to control for such supply chain elements of the product recall including Chen et al. (2009), Hora et al., (2011), Ni et al. (2014), and Steven et al. (2014). Unless otherwise stated, I lagged all continuous control variables by one year and performed a log transformation on total CEO compensation and firm size.

Table 11. Fama and French's Five Industry Groupings

Industry	Examples	Standard Industrial Classification	
Consumer	Consumer Durables Non-Durables Wholesale Retail & Some Services	0100-0999 2000-2399 2700-2749 2770-2799 3100-3199 3940-3989 2500-2519 2590-2599 3630-3659 3710-3711	3714-3714 3716-3716 3750-3751 3792-3792 3900-3939 3990-3999 5000-5999 7200-7299 7600-7699
Manufacturing	Manufacturing Energy Utilities	2520-2589 2600-2699 2750-2769 2800-2829 2840-2899 3000-3099 3200-3569 3580-3621 3623-3629 3700-3709	3712-3713 3715-3715 3717-3749 3752-3791 3793-3799 3860-3899 1200-1399 2900-2999 4900-4949
High-Tech	Business Equipment, Telephone & Television Transmission	3570-3579 3622-3622 3660-3692 3694-3699 3810-3839 7370-7372 7373-7373 7374-7374	7375-7375 376-7376 7377-7377 7378-7378 7379-7379 7391-7391 8730-8734 4800-4899
Health	Healthcare Medical Equipment & Drugs	2830-2839 3693-3693 3840-3859 8000-8099	
Other	Mines, Construction Materials, Hotels, Business Service, Entertainment, Finance	All other Standard Industrial Classification codes	

Note. Fama E.F., French K.R; Detail for industry portfolios; http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html; 2017.

Analyses

Researchers developed generalized estimating equations (GEE) to create an analytic tool that produced unbiased regression estimates for longitudinal (panel) data or repeated measures designs that have dependent variables with non-normal distributions (Hardin & Hilbe, 2003; Zeger & Liang, 1986; Zeger, Liang, & Albert, 1988). While medical and health scientists readily adopted GEE, until more recently, management researchers limited their use of the technique (Ballinger, 2004). However, the use of GEE has notably increased within the corporate governance domain as researchers have accepted this method as an appropriate technique to analyze panel data (e.g., Hambrick & Quigley, 2013). Moreover, scholars have used GEEs to examine organizational-level outcomes, which are the mainstay of strategic management research (Crossland, Zyung, Hiller, & Hambrick, 2014; Ndofor, Sirmon, & He, 2011).

Management scholars have a history of using GEE to analyze product recall data (cf. Wowak & Boone, 2015). For example, Rhee and Haunschild (2006) used GEE to analyze their product recall data from the U.S. automotive industry using a sample of 54 automakers. In a subsequent study, Rhee (2009) employed GEE to analyze a similar automotive sample of unbalanced, pooled, cross-sectional data from 1975 to 1999, which provided the empirical grounding for his latest GEE analysis (Rhee & Kim, 2015). More recently, Wowak et al. (2015) applied GEE to analyze data from 386 firms that experienced product recalls while under regulation from the FDA from 2004 to 2011. Rhee and Wowak et al.'s quantitative method is especially relevant to my data analytic choice because the authors collected data that shares contextual similarities to my study including an analogous level of analysis and theoretical framework.

GEE represented a suitable analytic technique to test my hypothesized relationships for three major reasons. First, Liang and Zeger (1986) developed GEE to assist scholars in conducting regression-type analyses on dependent variables that are not normally distributed. Limited-range dependent measures, that violate the normality assumption, represent one class of variables that GEE allows researchers to analyze (Hardin & Hilbe, 2003). Since both my dependent measures are limited-range outcomes, GEE provides a suitable means of analysis by overcoming the strict normality assumption that underlies standard regression techniques (Ballinger, 2004).

Second, GEE allows researchers to manage data that have within-group correlation between observations or cases (Hardin & Hilbe, 2003). In the context of my study, the data are grouped or clustered by firm and the observations (cases) refer to the product recall announcements (Rhee, 2009). Product recalls clustered within a firm are likely to display a higher level of correlation compared to the correlation among product recalls arising at different organizations (McNeish, 2014). Such correlation arises because institutional similarities are greater within-firms than between-firms. While my within-firm observations likely share correlation, GEE allows scholars to limit model bias through advanced standard error estimation techniques (Ballinger, 2004; McNeish, 2014).

Third, GEE allows researchers to estimate unbiased regression coefficients on multilevel data with a small number of observations per cluster (McNeish, 2014). Oftentimes, the literature refers to such small sample multilevel data as *sparsely clustered data* (McNeish, 2014). A downfall of traditional multilevel data analytic techniques, such as mixed, random effects, and hierarchical linear models, is that these approaches frequently produce biased parameters when the number of responses within each cluster

is small. However, GEE overcomes this shortcoming (Clarke, 2008). Recent work suggests GEE produces unbiased regression coefficients and standard errors when each cluster contains as few as two cases (McNeish, 2014). My firm-clusters averaged about four product recall cases per organization, which fall within the sample size boundaries of simulated GEE models with sparsely clustered data. Thus, GEE provides a suitable means of analysis for my dissertation.

Scholars focus their attention on three, key elements of the model when conducting a GEE analysis. That is, researchers must specify the appropriate (a) dependent variable (family) distribution (b) correlational structure, and (c) standard error.

First, researchers must select the proper distribution of the dependent variable (Zeger & Liang, 1986). GEE allows researchers to select from several distributions including Gaussian, inverse Gaussian, binomial, Poisson, negative binomial, and gamma (Stata, 2017). While GEE offers several distributions, scholars consider binominal distributions as the gold standard for binary dependent measures (Ballinger, 2004). For count outcome measures, researchers have largely selected Poisson or negative binominal distributions (Hardin & Hilbe, 2003). Scholars decide between specifying Poisson or negative binominal distributions based on the degree of variability, or dispersion, within the data set. By examining the data variability researchers can conclude whether the data are overdispersed or underdispersed. Given the high dispersion of the current data, I selected a negative binominal distribution (Ballinger, 2004).

The subsequent step in fitting a GEE model is selecting the correlational structure (Certo, Withers, & Semadeni, 2017). Although the literature does not limit researchers to a predefined correlational function, the selection of the working form of the matrix

represents an important model specification (Hardin & Hilbe, 2003). Investigators select from six different options: (a) exchangeable, (b) independent, (c) unstructured, (d) autoregressive (e) stationary and (f) non-stationary (Stata, 2017). Product recall and corporate governance researchers, alike, frequently select an exchangeable correlational matrix because this structure models the within-cluster correlation without imposing strong temporal assumptions that underlie the other viable correlational matrices (Ballinger, 2004). For example, Wowak et al. (2015) used an exchangeable correlational structure, which allowed for clustering by firm executive in their product recall research. Additionally, examples of product recall studies employing exchangeable correlational matrices include Rhee and Haunschild (2006), Rhee and Kim (2015), Shah et al. (2017). Following earlier research, I specified an exchangeable structure.

The final step is selecting the proper type of standard error. Researchers have the option of specifying robust (also referred to as cluster), conventional, bootstrap, or jackknife standard errors for GEE (Stata, 2017). Similar quantitative research designs utilizing firm-level product recall data used cluster standard errors with Huber/White/sandwich estimators to correct for within-firm dependence (Rhee & Kim, 2015; Wowak et al., 2015). Cluster standard errors are preferable for two key reasons. First, cluster standard errors allow researchers to model within-firm correlation with minimal bias, which produces nominal Type I error rates (McNeish, 2014). Default standard error estimates (i.e., non-clustered) are problematic because they increase the type I error rates by ignoring within-firm correlation and artificially decrease the confidence interval around the standard error (Hardin & Hilbe, 2003). Second, cluster standard errors are robust to misspecifications within the correlational structure (Rhee,

Kim, & Han, 2006; Shah et al., 2017). Consequently, I used the cluster standard errors with Huber/White/sandwich estimators in my dissertation.

In sum, I selected a binominal distribution for my binary dependent measures and a negative binominal distribution for my count outcome measures (Hardin & Hilbe, 2003). Further, I specified an exchangeable correlational structure and used robust standard errors for all models to account for within-firm correlation (cf. Ballinger, 2004).

Results

The results of Hypotheses 1 through 4 represent my dissertation's main effects while the results of Hypotheses 5 through 8 show the moderating effects in my study. Table 12 provides the intercorrelation matrix and descriptive statistics for my dissertation variables. Recall proactiveness served as the initial dependent variable for the GEE analysis. I report my results using the number of consumer-reported incidents (reverse coded) as my operationalization of recall proactiveness (Hypotheses 1, 2, 5, and 6). For completeness, I tested Hypotheses 1, 2, 5, and 6 using the two alternative operationalizations and my results were substantively similar. Post-recall firm actions, which I classified as technical (Hypotheses 3 & 7) or ceremonial (Hypotheses 4 & 8), served as my second dependent variable for the GEE analysis. While I report these hypotheses using the number of technical (ceremonial) actions as my operationalization of post-recall firm actions, I also tested the binary operationalization and found similar results. Table 13 provides my GEE estimates predicting recall proactiveness and Table 14 offers my GEE estimates predicting post-recall firm actions.

Table 12. Descriptive Statistics and Intercorrelations Among Study Variables

	Variable	Mean	SD	1	2	3	4	5	6	7	8
	Dependent variables:										
1	Recall proactiveness: Binary operationalization[a]	0.76	0.42	1.00							
2	Recall proactiveness: Count of incident reports[e]	12.51	56.14	-0.19*	1.00						
3	Recall proactiveness: Count of injury reports[e]	1.50	5.65	-0.49*	0.55*	1.00					
4	Technical actions: Count operationalization[e]	0.19	0.93	0.07	-0.03	-0.03	1.00				
5	Technical actions: Binary operationalization[a]	0.08	0.28	0.03	-0.04	0.01	0.69*	1.00			
6	Ceremonial actions: Count operationalization[e]	2.05	2.59	-0.13*	0.00	-0.01	-0.05	-0.03	1.00		
7	Ceremonial actions: Binary operationalization[a]	0.64	0.48	-0.05	-0.02	-0.01	0.11	0.07	0.59*	1.00	
	Independent variables:										
8	Dedicated ownership[b]	8.03	7.61	-0.06	0.06	0.03	-0.05	-0.05	0.02	0.03	1.00
9	Transient ownership[b]	6.20	4.80	-0.01	-0.04	0.06	0.11	-0.02	-0.29*	-0.30*	0.01
	Moderator variables:										
10	CEO tenure[d]	5.07	4.17	0.13*	0.13*	0.09	0.01	-0.03	-0.13*	-0.03	0.04
11	CEO ownership[b]	0.66	1.33	0.04	0.07	0.10	0.03	-0.02	-0.16*	-0.20*	-0.03
12	CEO duality[a]	0.12	0.33	-0.05	-0.02	0.06	-0.06	-0.07	0.30*	0.18*	-0.09
	Control variables:										
13	Total CEO compensation[c]	9.10	0.67	-0.05	0.07	0.07	-0.03	0.01	0.23*	0.16*	-0.02
14	CEO gender[a]	0.97	0.16	0.02	0.02	0.01	0.01	-0.03	-0.05	-0.07	-0.14*
15	Firm size[c]	9.94	1.26	-0.07	0.05	-0.05	-0.13*	-0.04	0.50*	0.31*	-0.07
16	Prior financial performance[b]	6.31	6.85	0.02	-0.04	-0.05	0.10	0.04	-0.05	-0.09	-0.25*
17	Prior recall experience[e]	4.57	4.31	-0.08	-0.03	-0.04	-0.05	-0.04	0.24*	0.12*	-0.09
18	Quasi-indexer ownership[b]	30.80	10.55	-0.03	0.01	0.11	0.16*	0.07	-0.37*	-0.22*	0.05
19	Product recall remediation strategy[a]	0.13	0.33	-0.02	-0.07	-0.03	-0.06	-0.05	-0.09	0.03	-0.10

Table 12. Descriptive Statistics and Intercorrelations Among Study Variables, Continuation of Table 12

Variable	9	10	11	12	13	14	15	16	17	18	19
Independent variable:											
Transient ownership[b]	1.00										
Moderator variables:											
CEO tenure	0.05	1.00									
CEO ownership	0.27*	0.40*	1.00								
CEO duality	-0.17*	-0.11	-0.10	1.00							
Control variables:											
Total CEO compensation	-0.29*	0.04	-0.19*	0.16*	1.00						
CEO gender	0.05	0.03	0.03	0.06	-0.06	1.00					
Firm size	-0.58*	0.03	-0.25*	0.26*	0.35*	0.04	1.00				
Prior financial performance	-0.07	0.08	0.06	0.04	0.01	-0.10	-0.11	1.00			
Prior recall experience	-0.07	-0.14*	-0.10	0.10	0.26*	0.08	0.21*	-0.07	1.00		
Quasi-indexer ownership	0.40*	0.19*	0.37*	-0.22*	-0.14*	0.10	-0.51*	-0.09	-0.01	1.00	
Product recall remediation strategy	-0.07	-0.11	-0.10	0.02	0.02	0.00	-0.07	0.06	-0.17*	-0.07	1.00

*All correlations are significant at $p < .05$; SD = standard deviation. $N = 275–282$ product recalls. Unit of measurement is denoted by superscripts: [a]binary (1/0); [b]percentage; [c]natural logarithm transformed; [d]years; [e]count. For binary operationalizations: Variable name (1 = referent category): Recall proactiveness (1 = proactive recall); Technical actions (1= technical action); Ceremonial actions (1 = ceremonial action); CEO duality (1 = dually appointed CEO/chairman); CEO gender (1 = male); Product recall remediation strategy (1 = strategy offered). The table excludes the individual industry and time control variables; product recall researchers have historically omitted these controls (cf. Wowak et al., 2015).

Table 13. Generalized Estimating Equation Estimates Predicting Recall Proactiveness

	Main Effects: H1-H2			Interaction Effects: H5-H6					
Variable	**Model 1**			**Model 4**			**Model 5**		
Control variables:									
Total CEO compensation	-0.17	**	(0.04)	-0.19	**	(0.04)	-0.15	**	(0.04)
CEO gender	-0.24	**	(0.06)	-0.20	**	(0.07)	-0.05		(0.06)
Firm size	-0.05	*	(0.02)	-0.03		(0.02)	-0.04		(0.04)
Prior financial performance	-0.00		(0.00)	-0.00		(0.00)	-0.00	†	(0.00)
Prior recall experience	0.02	**	(0.01)	0.02	**	(0.00)	0.02	**	(0.00)
Quasi-indexer ownership	-0.00		(0.00)	-0.00		(0.00)	-0.00		(0.00)
Year dummies	Included			Included			Included		
Industry dummies	Included			Included			Included		
Product recall remediation strategy	0.15	**	(0.05)	0.22	**	(0.06)	0.04		(0.05)
Independent variables:									
Dedicated ownership (H1)	-0.01	**	(0.00)	-0.00	**	(0.00)	-0.00	*	(0.00)
Transient ownership (H2)	-0.03	**	(0.01)	-0.03	**	(0.01)	-0.06	**	(0.01)
Moderator variables:									
CEO tenure				0.01	*	(0.00)	-0.03	**	(0.01)
CEO ownership				0.10	**	(0.04)	-0.01		(0.02)
CEO duality				-0.05		(0.04)	-0.22	**	(0.08)
Interaction effects:									
CEO tenure X dedicated ownership (H5)				-0.00	*	(0.00)			
CEO ownership X dedicated ownership (H5)				-0.02	**	(0.00)			
CEO duality X dedicated ownership (H5)				0.01		(0.01)			
CEO tenure X transient ownership (H6)							0.01	**	(0.00)
CEO ownership X transient ownership (H6)							-0.01	*	(0.00)
CEO duality X transient ownership (H6)							0.02	**	(0.01)
Dependent variable:	*Number of Incident Reports*			*Number of Incident Reports*					
Wald chi-squared (*df*)	168.18 (19)[a]			260.12 (25)[b]			1072.16 (25)[b]		

Notes. [a]*N* = 282 product recalls; [b]*N* = 275 product recalls; Robust standard errors in parentheses; H = hypothesis. Number of incident reports is reverse coded to assist with interpretation. † $p < .10$* $p < .05$, ** $p < .01$

Table 14. Generalized Estimating Equation Estimates Predicting Post-Recall Firm Actions

	Main Effects (H3-H4)				Interaction Effects (H7-H8)			
Variable	**Model 2**		**Model 3**		**Model 6**		**Model 7**	
Control variables:								
Total CEO compensation	0.66	(0.40)	0.31 **	(0.10)	0.05	(0.04)	0.18 **	(0.06)
CEO gender	-4.26 **	(1.54)	-0.24	(0.26)	-0.39 **	(0.15)	-0.13	(0.15)
Firm size	-0.54	(0.44)	0.12	(0.08)	-0.03	(0.03)	0.07	(0.04)
Prior financial performance	0.04	(0.05)	0.00	(0.01)	0.00	(0.00)	0.00	(0.00)
Prior recall experience	0.21 *	(0.10)	0.03	(0.02)	0.02 *	(0.01)	0.02	(0.01)
Quasi-indexer ownership	0.06 *	(0.03)	-0.02 **	(0.01)	0.01 *	(0.00)	-0.07 *	(0.05)
Year dummies	Included		Included		Included		Included	
Industry dummies	Included		Included		Included		Included	
Product recall remediation strategy	-1.13	(1.05)	-0.04	(0.17)	-0.09	(0.09)	0.06	(0.09)
Independent variables:								
Dedicated ownership (H3)	-0.16 **	(0.04)	0.01	(0.01)	-0.02 *	(0.01)	0.01 †	(0.00)
Transient ownership (H4)	-0.07	(0.05)	-0.02 *	(0.01)	0.01	(-0.01)	-0.01	(0.02)
Moderator variables:								
CEO tenure					0.00	(0.01)	0.00	(0.02)
CEO ownership					-0.05	(0.08)	-0.07	(0.05)
CEO duality					0.14	(0.16)	0.36	(0.26)
Interaction effects:								
CEO tenure X dedicated ownership (H7)					0.00	(0.00)		
CEO ownership X dedicated ownership (H7)					0.00	(0.01)		
CEO duality X dedicated ownership (H7)					-0.08 **	(0.01)		
CEO tenure X transient ownership (H8)							0.00	(0.00)
CEO ownership X transient ownership (H8)							0.01	(0.00)
CEO duality X transient ownership (H8)							-0.02	(0.03)
Dependent variable: Firm action type:	*Technical*		*Ceremonial*		*Technical*		*Ceremonial*	
Wald chi-squared (*df*)	47.17 (19)[a]		227.37 (19)[a]		554.12 (25)[b]		281.43 (25)[b]	

Notes. [a]*N* = 282 product recalls; [b]*N* = 275 product recalls; Robust standard errors in parentheses; H = hypothesis.
† $p < .10$, * $p < .05$, ** $p < .01$

Hypotheses 1 through 4 examined the main effects. Hypothesis 1 stated that the level of dedicated ownership was positively associated with recall proactiveness. Model 1 provides the GEE estimate that examined this association. As demonstrated by Model 1, the coefficient for dedicated ownership is negative and significant ($p < .01$). Thus, the results suggest that there is a negative relationship between the level of dedicated ownership and recall proactiveness. While the relationship is significant, it is in the opposite direction of what I hypothesized. Thus, I did not find support for Hypothesis 1.

Hypothesis 2 captured the association between level of transient ownership and the same outcome measure, recall proactiveness. Hypothesis 2 proposed the level of transient ownership was negatively associated with recall proactiveness. Model 1 gives the coefficient that examined this relationship. Model 1 suggests the GEE estimate for transient ownership is negative and statistically significant ($p < .01$). Thus, the results suggest that there is a negative relationship between the level of transient ownership and recall proactiveness. Therefore, Hypothesis 2 was supported.

My third hypothesis predicted that the level of dedicated ownership was positively associated with the firm's announcement of technical actions. Model 2 gives the GEE estimate linked with Hypothesis 3. The coefficient for dedicated ownership is negative and significant ($p < .01$). The result for Model 2 suggests that there is a negative relationship between the level of dedicated ownership and the number of technical actions. While statistically significant, the relationship is in the opposite direction of what Hypothesis 3 originally proposed. Hence, the results did not lend support to Hypothesis 3.

Hypothesis 4 proposed a positive association between the level of transient ownership and the firm's announcement of ceremonial actions. The GEE estimate is

located in Model 3. The GEE estimate from Model 3 is negative and significant ($p < .05$). The coefficient for Model 3 suggests that a negative relationship between the level of transient ownership and the number of ceremonial actions exists. Although the relationship is statistically significant, it is in the opposite direction of my hypothesis. Consequently, Hypothesis 4 was not supported.

Hypotheses 5 through 8 examined the interaction effects. Following Combs et al.'s (2007) CEO power conceptualization, I formed three, distinct interaction terms so that I could account for the individual influence of CEO tenure, CEO ownership, and CEO duality (Dawson & Richter, 2006). Where applicable, I report the statistical significance of the interaction term and graph the simple slopes for each measurement of CEO power (Aiken & West, 1991; Dawson, 2014).

Hypothesis 5 proposed that CEO power amplified the positive relationship between the level of dedicated ownership and recall proactiveness; the relationship would be more positive when CEO power was high. The GEE estimates are located in Model 4. Model 4 shows negative, significant coefficients for the interaction terms between dedicated ownership and CEO tenure ($p < .05$) as well as CEO ownership ($p < .01$). However, the CEO duality interaction term is not significant. To further understand how CEO tenure and CEO ownership moderate the dedicated ownership and recall proactiveness relationship, I graphed the interactions. Please see Figures 4 and 5. The general graphical depiction does not represent the hypothesized relationship, which suggested that CEO tenure and CEO ownership both amplified the positive relationship between the level of dedicated ownership and recall proactiveness. Therefore, my results did not support Hypothesis 5.

Figure 4. Hypothesis 5: Moderation Effect of CEO Tenure on the Relationship between Dedicated Ownership and Number of Incident Reports

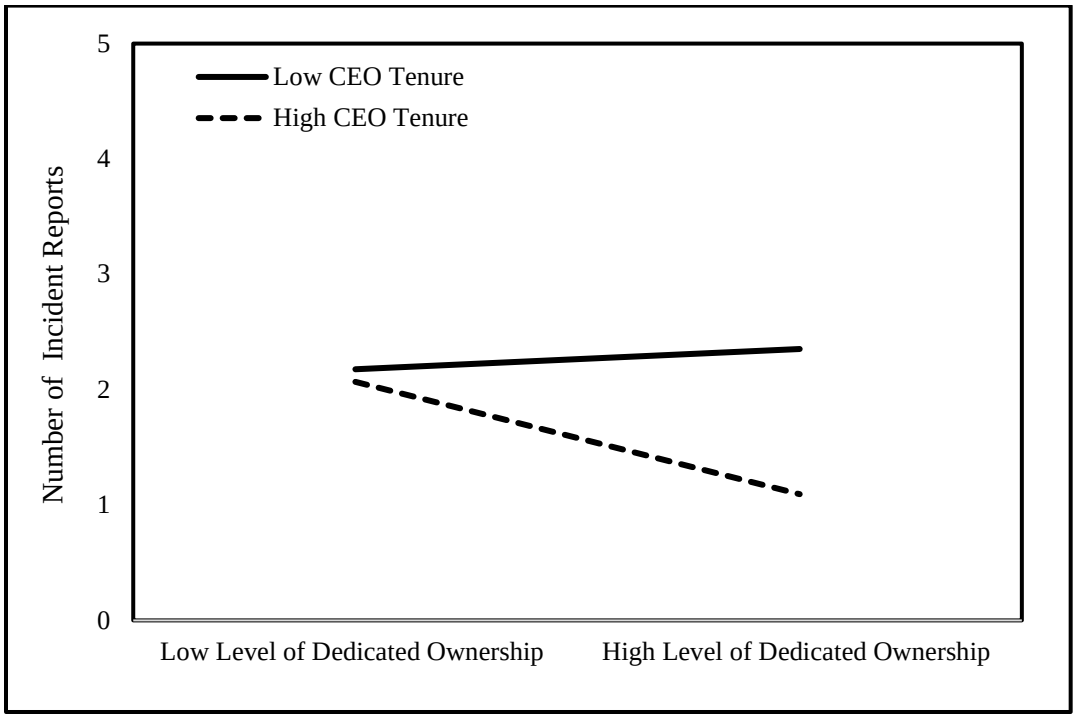
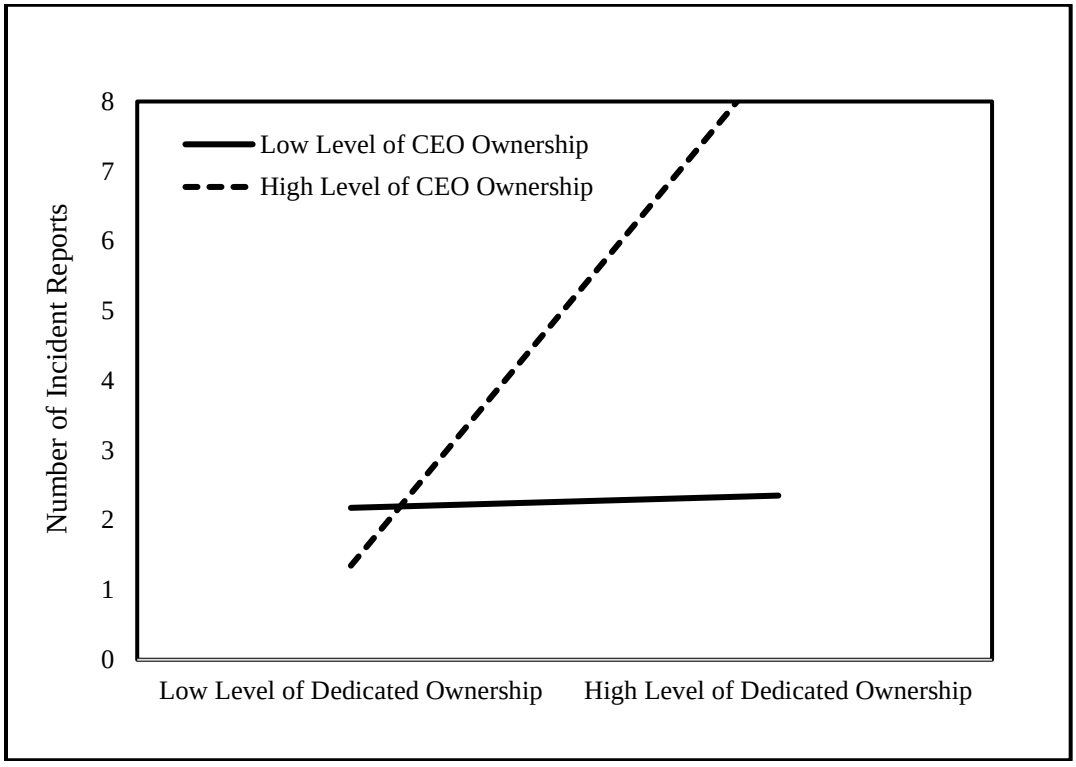


Figure 5. Hypothesis 5: Moderation Effect of CEO Ownership on the Relationship between Dedicated Ownership and Number of Incident Reports



Hypothesis 6 predicted CEO power dampened the negative relationship between the level of transient ownership and recall proactiveness. Accordingly, the relationship would be less negative when CEO power was high. Model 5 provides the coefficients associated with Hypothesis 6. Model 5 suggests that the CEO tenure ($p < 0.01$), CEO ownership ($p < 0.05$), and CEO duality ($p < 0.01$) interaction terms are statistically significant. The coefficients for CEO tenure and CEO duality are positive while the coefficient for CEO ownership is negative.

To interpret the moderating effects associated with Hypothesis 6, I graphed the three, significant interaction effects on separate plots. Please see Figures 6, 7, and 8. The graph illustrates that the moderating effect of CEO tenure, in general, represents the hypothesized relationship where long-tenured CEOs had fewer consumer-reported incidents under conditions of high transient ownership. However, the simple slopes for the moderating effect of CEO ownership did not show a dampening effect as I hypothesized. The simple slopes for the moderating effect of CEO duality displayed a slight crossover relationship; however, the differences between dually appointed CEOs and non-dually appointed executives, appeared minimal suggesting a nominal impact of CEO duality at best. In sum, the simple slope graphs do not lend substantial support to Hypothesis 6 (with the exception of CEO tenure).

Figure 6. Hypothesis 6: Moderation Effect of CEO Tenure on the Relationship between Transient Ownership and Number of Incident Reports

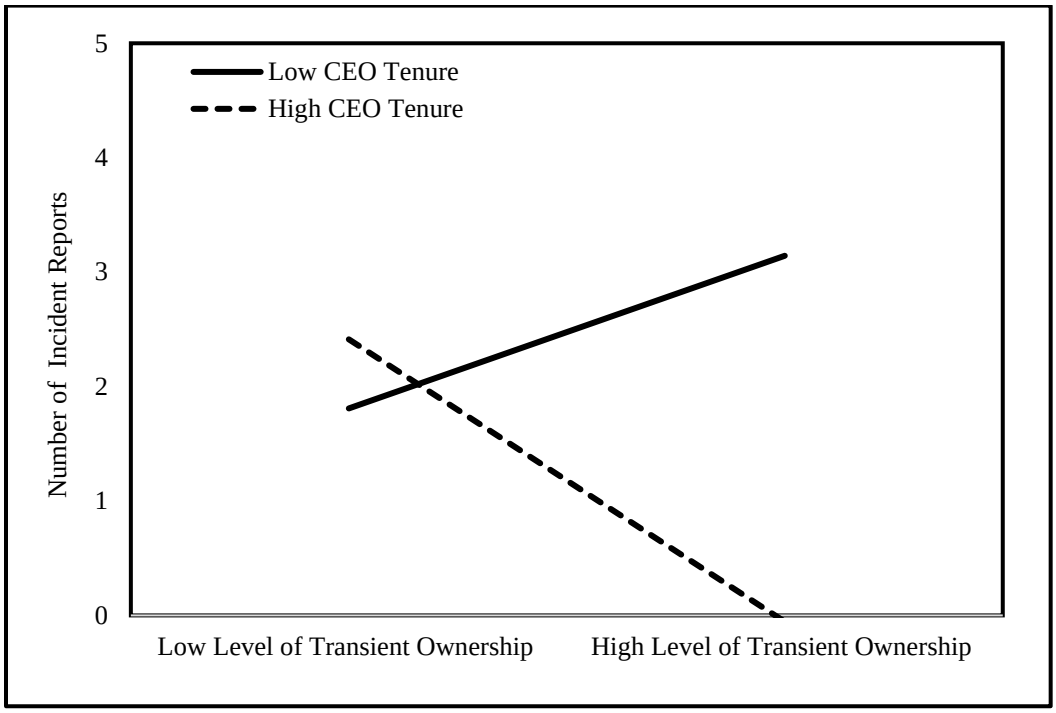


Figure 7. Hypothesis 6: Moderation Effect of CEO Ownership on the Relationship between Transient Ownership and Number of Incident Reports

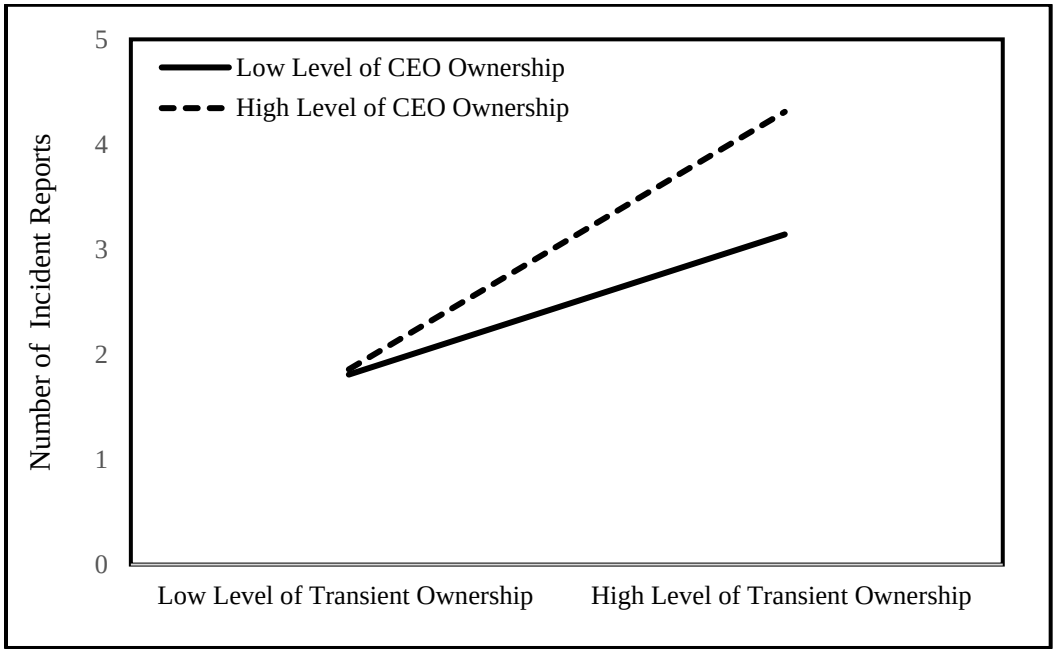
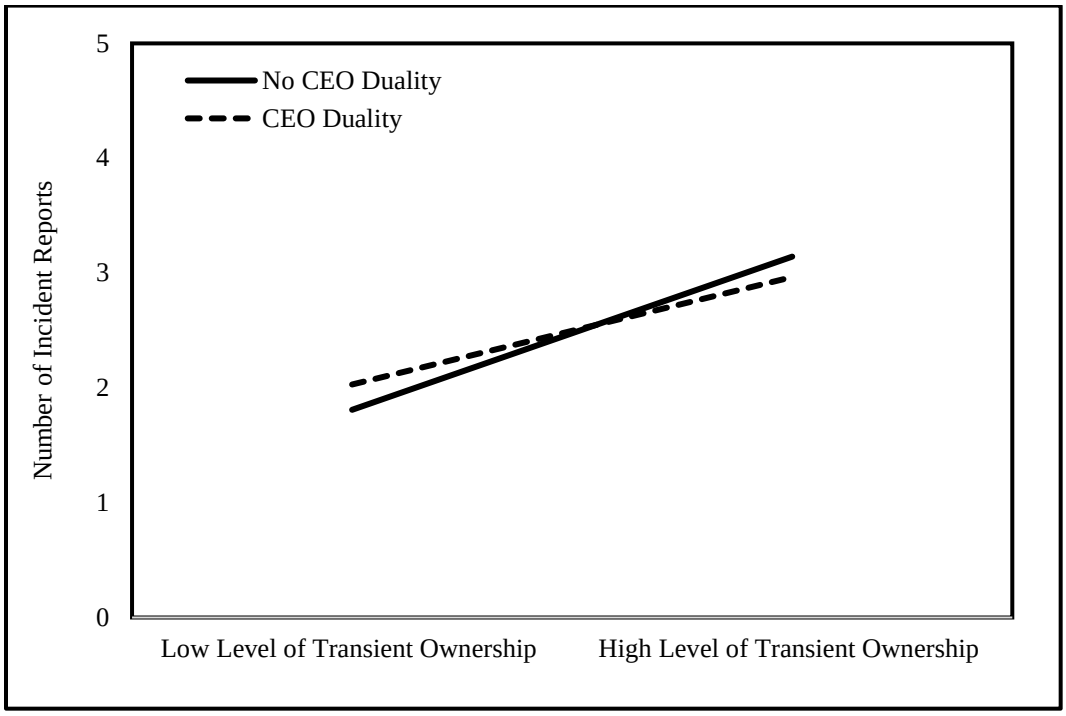
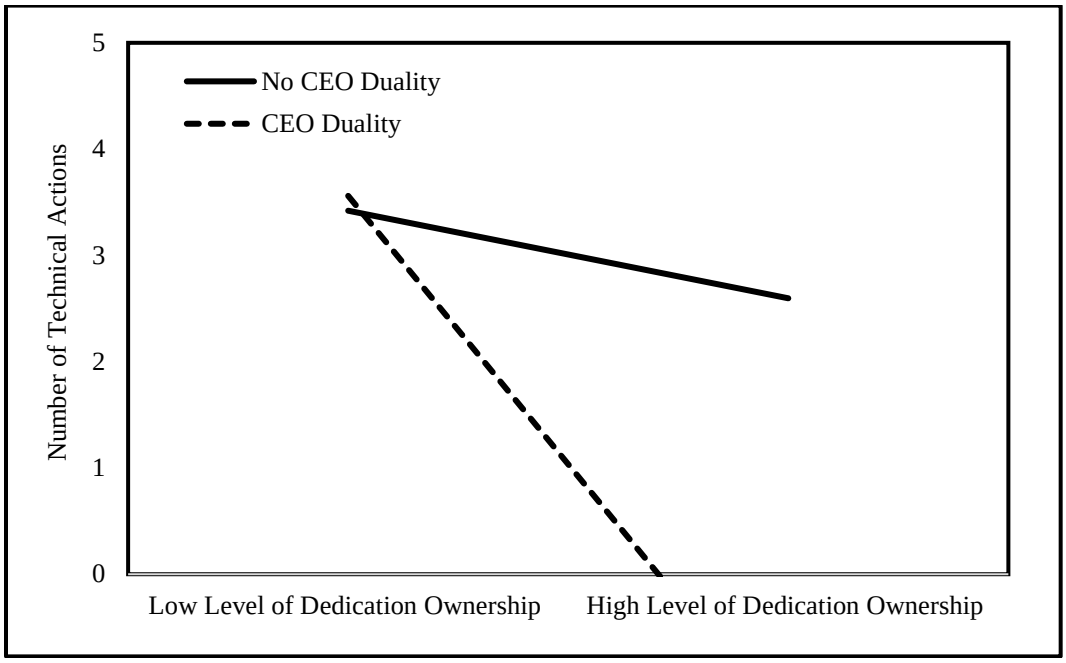


Figure 8. Hypothesis 6: Moderation Effect of CEO Duality on the Relationship between Transient Ownership and Number of Incident Reports



Hypothesis 7 stated CEO power dampened the positive relationship between the level of dedicated ownership and the firm's announcement of technical actions where the relationship would be less positive when CEO power was high. I provide the GEE estimates in Model 6. Model 6 shows a negative and statistically significant coefficient representing the dedicated ownership−CEO duality interaction effect ($p < .01$). The CEO tenure and CEO ownership interaction terms are not significant. To better understand the interaction between CEO duality and dedicated ownership, I graphed the relationship in Figure 9. The graphical illustration does not align with the hypothesized relationship, which suggested that CEO duality dampened the positive association among the level of dedicated ownership and the firm's announcement of technical actions. Therefore, I did not find support for Hypothesis 7.

Figure 9. Hypothesis 7: Moderation Effect of CEO Duality on the Relationship between Dedicated Ownership and Number of Technical Actions



Hypothesis 8 proposed CEO power amplified the positive relationship between the level of transient ownership and the firm's announcement of ceremonial actions; the relationship would be more positive when CEO power was high. Model 7 shows the coefficients associated with the interaction effects between transient ownership and ceremonial activity. As shown in Model 7, the interaction terms for CEO tenure, CEO ownership, and CEO duality are not significant. Thus, Hypothesis 8 did not receive support. Table 15 offers a summary of the results of my study hypotheses.

Table 15. Results of Study Hypotheses

Study Hypothesis	Result
Hypothesis 1: The level of dedicated ownership is positively associated with recall proactiveness.	Not supported Results show a significant relationship in the opposite direction of my hypothesis
Hypothesis 2: The level of transient ownership is negatively associated with recall proactiveness.	Supported
Hypothesis 3: The level of dedicated ownership is positively associated with the firm's announcement of technical actions.	Not supported Results show a significant relationship in the opposite direction of my hypothesis
Hypothesis 4: The level of transient ownership is positively associated with the firm's announcement of ceremonial actions.	Not supported Results show a significant relationship in the opposite direction of my hypothesis
Hypothesis 5: CEO power amplifies the positive relationship between the level of dedicated ownership and recall proactiveness. The relationship is more positive when CEO power is high.	Not supported
Hypothesis 6: CEO power dampens the negative relationship between the level of transient ownership and recall proactiveness. The relationship is less negative when CEO power is high.	Not supported Exception: Interaction effect between CEO tenure and firm ownership supports my proposed hypothesis
Hypothesis 7: CEO power dampens the positive relationship between the level of dedicated ownership and the firm's announcement of technical actions. The relationship is less positive when CEO power is high.	Not supported
Hypothesis 8: CEO power amplifies the positive relationship between the level of transient ownership and the firm's announcement of ceremonial actions. The relationship is more positive when CEO power is high.	Not supported

CHAPTER 5: DISCUSSION

My dissertation examines the relationship between corporate governance antecedents, namely institutional investors in addition to CEO power, and firms' strategic recall processes. The overarching research question that guided my investigation was: How does the ownership structure of a firm influence the product recall strategy and post-recall actions a manager will implement? To answer this question, I examined the extent to which dedicated and transient institutional ownership structures impact firms' strategic recall processes with regard to product recall strategy (proactive *vs*. reactive) and firm actions in the post-recall period (technical *vs*. ceremonial). My second research question concerned the moderating effect of CEO power on the relationship between ownership structure and firms' product recall strategy and post-recall firm actions.

I examined the effect of ownership structure on firms' product recall strategy in Hypotheses 1 and 2. To understand the underlying relationship between institutional investors and firms' product recall strategy, I studied the specific effect of dedicated and transient institutional ownership on firms' recall proactiveness. I hypothesized that dedicated and transient owners' divergent investment tendencies would influence firms' product recall strategy where dedicated investors preferred firms to implement proactive recalls while transient investors favored reactivity. However, the results did not support my prediction. The results, in contrast, suggested there was a negative relationship between the level of dedicated and transient ownership and firms' recall proactiveness. Specifically, increased levels of ownership from both classes of investors led to higher numbers of consumer-reported incidents suggesting a lack of recall proactiveness.

Hypothesis 1 suggested, unexpectedly, that the level of dedicated institutional ownership was negatively associated with recall proactiveness. While I based my initial hypothesis rationale on key investment characteristics of dedicated owners, recent research suggests dedicated owners may not perpetuate the type of positive, long-term organizational success once thought (Chen et al., 2007; Koh, 2007). For example, Shi et al. (2017) show a positive relationship between the level of dedicated ownership and the likelihood of organizations acting fraudulently. While historically long-term ownership is associated with positive corporate governance outcomes, my results illustrate that organizations with high levels of dedicated ownership should pay attention to institutional pressures that long-term owners impose on firm managers and executives (Bushee 2004; Schafferling & Wagner, 2015). Following such logic, my dissertation findings suggest that firm structures laden with dedicated investors may produce unforeseen strategic pitfalls by creating an environment where consumer incident reports are more likely to occur from reactive product recall strategies.

Despite the unexpected result associated with dedicated ownership, the effect of transient ownership lent support to Hypothesis 2, and, further, aligns with prior research on institutional investors (Connelly et al., 2010; Koh, 2007). The literature typically views transient investors as short-term institutional owners that are highly sensitive to adverse current earnings reports, which negatively impact their investment portfolios (Bushee, 2004). Since proactive recalls signify a supply chain glitch that diminishes stakeholders' short-term returns, it is unsurprising that transient investors would pressure firms to avoid proactive strategies (Chen et al., 2009; Hendricks & Singhal, 2003). While transient investors are unlikely proponents of consumer-reported injuries and incidents,

their sensitivity to negative current earnings announcements brought about by proactive recalls may explain why these short-sided investors tended to favor reactive management strategies. The results of my dissertation support the corporate governance literature's working conceptualization of transient institutional investors.

I examined the relationship between firm ownership and post-recall firm actions in Hypotheses 3 and 4. To understand the association between institutional investors and firms' post-recall actions, I studied the more nuanced effects of dedicated and transient institutional owners on firms' technical and ceremonial actions. Similar to my hypotheses regarding firms' product recall strategies, I proposed that dedicated and transient owners' differing investment approaches would impact firms' post-recall actions where dedicated investors favored technical activity while transient investors preferred ceremonial responses. Although the relationships were significant, they did not support the direction of my predicted associations. Accordingly, the results suggested that dedicated owners did not favor technical actions and transient owners did not prefer ceremonial actions. Both relationships were unexpected.

Despite the unexpected nature of the dedicated ownership and technical action relationship, new trends are emerging within the professional practice literature that may help explain this result. Business news reports suggest that firm executives must weed through fickle institutional investors who appear "dedicated" to determine their true intentions (*New York Times*, 2013). As the *New York Times* reports:

> While activists often cloak their demands in the language of long-term actions, their real goal is a short-term bump in the stock price. They lobby publicly for significant structural changes, hoping to drive up the share price and book quick profits. Then they bail out, leaving corporate management to clean up the mess. Far from shaping up

> these companies, the activists' pressure for financial engineering only distracts management from focusing on long-term global competitiveness.

While dedicated institutional investors historically craft narratives around long-term success, their new focus may emphasize short-term profits. For example, Nelson Peltz, an institutional owner, initially emphasized his long-term investment horizon to PepsiCo's senior leadership team. However, PepsiCo executives questioned Peltz's long-term intentions when he pressured PepsiCo into a short-term move that required PepsiCo to buy Mondelez, a firm where Peltz held substantial ownership (*Financial Times*, 2014). Peltz's recommendation showed PepsiCo that Peltz was not as dedicated to PepsiCo's long-term success as previously purported because Peltz's asset management firm − instead of PepsiCo − stood to benefit in the short-term from his strategic recommendation (*New York Times*, 2013). The Peltz example suggests that dedicated intuitional investors may be starting to flex transient tendencies by leveraging their key partnerships towards realizing short-term profitability goals.

In the context of post-recall firm actions, dedicated institutional investors, that are exhibiting short-term tendencies, are likely to counsel firms against technical actions. While technical actions offer actual solutions to supply chain failures, the financial burden associated with these actions may limit dedicated owners' preference for costly technical fixes that diminish short-term profits (Wowak & Boone, 2015; Zavyalova et al., 2012). Since dedicated owners possess intimate product knowledge owing to their concentrated portfolios, they can properly evaluate the immense short-term loss likely associated with technical actions and dissuade managers from implementing such operational fixes (Bushee, 2004; Chen et al., 2007). Thus, one possible explanation of my

unexpected findings is that factions within dedicated investor groups are focusing on short-sided profits making these investors wary of expensive, technical fixes.

In addition to the unexpected finding regarding the relationships between dedicated owners and firms' technical actions, the association between transient owners and ceremonial actions was also unforeseen (Connelly et al., 2010). I originally proposed transient institutional investors would be more susceptible to firms' symbolic management practices because these short-sided owners have limited firm-specific knowledge because of their diversified portfolios. However, recent empirical findings have raised questions regarding this theoretical rationale (Ke et al., 2008). Rather than viewing transient owners as uninformed investors, emerging research suggests these institutions are actually knowledgeable owners who may leverage strategic information from firm managers towards achieving their short-term performance goals (Ke & Petroni, 2004). For instance, quantitative reports have shown transient owners use their firm-specific knowledge to implement trading patterns to decrease the effects of firms' negative current earnings reports on their investment portfolios (Ke & Petroni, 2004). Following the logic that transient owners use their knowledge to avoid impacts of negative earnings reports, it seems logical that transient investors will also use their knowledge base to evade firm actions that have damaging short-term impacts (Bushee, 1998, 2004). Since ceremonial actions hold the potential of negatively affecting firms' short-term media reports, transient investors are likely to resist the firm's symbolic attempts to foster ceremonial activity (Zavyalova et al., 2012). Accordingly, one possible explanation of my dissertation findings is that transient investors are less vulnerable to

symbolic management practices than previously thought because of the firm-specific knowledge these owners possess.

After investigating the main effects of institutional ownership on firms' strategic recall processes, I tested the moderating effect of CEO power on these relationships in Hypotheses 5 through 8. I investigated the extent to which CEO power could be a key boundary condition of the influence held by dedicated and transient institutional investors (Combs et al., 2007). While the graphical illustrations of the moderating effects were unexpected, an interesting moderating result emerged for two elements of CEO power: (a) CEO tenure and (b) CEO ownership.

The first intriguing result came from the interaction between firm ownership and CEO tenure. Under high levels of dedicated and transient ownership, firms employing CEOs with longer tenures had fewer consumer-reported product recall incidents compared to less-tenured CEOs. Such a finding suggests long-tenured CEOs may utilize their years of executive service to diminish the negative influence of institutional investors on firms' recall proactiveness. My dissertation result from the firm ownership−CEO tenure interaction largely supports the findings of Wowak et al.'s (2015) product recall study, which emphasized the importance of CEO tenure. Empirical evidence suggests executives that hold long-tenures oftentimes attain higher levels of organizational expertise by engraining themselves in their firm's sociopolitical networks (Simsek, 2007; Westphal & Zajac, 1996). Such operational expertise allows CEOs to implement strategic actions, such as proactive recalls, that are in their firm's best, long-term interests. Despite the strategic whims sought by institutional investors, my results

suggest powerful CEOs can use their organizational tenures to constrain institutional pressures allowing for a more proactive approach to product recall remediation.

The second interesting finding concerned the firm ownership−CEO ownership interaction. Under firm ownership structures fraught with dedicated and transient ownership, organizations employing CEOs with higher equity positions appeared to have more product recall incident reports compared to executives with lower levels of ownership. In contrast to CEO tenure, CEOs with high ownership stakes may create an environment that amplifies the negative influence of institutional investors on firms' recall proactiveness. The results stemming from the firm ownership−CEO ownership interaction appears to align with the current strategic management literature (Sanders & Hambrick, 2007; Wowak et al., 2015). Historical evidence largely suggests that CEOs with high levels of ownership oftentimes become entrenched and work to diminish board of director influence in strategic decisions (Fiegener, 2005). Operating in such isolation may allow CEOs with large ownership stakes to implement reactive product recall strategies that reduce the potential, individual loss they would likely incur from stock market penalties that arise from proactivity (Chen et al., 2009). My findings suggest that the level of CEO ownership may be a key element moderating the relationship between firm ownership and recall proactiveness.

Theoretical Contributions

Although the majority of my findings were unexpected, lending little support to my hypotheses, the results of my dissertation may still contribute to the corporate governance and product recall literature streams. I discuss how my dissertation attempts to add to the corporate governance and product recall fields through three contributions.

My first contribution may add to the corporate governance literature. While most corporate governance researchers use agency theory to explore the influence of firm ownership structure on key performance outcomes, designed to create short- or long-term organizational gains, I investigated institutional investor influence on a negative organizational event (Connelly et al., 2010). Specifically, I explored how the agent-principal relationship unfolds among organizations and their institutional investor base during product-harm crises. My results suggest that transient institutional investors are a powerful class of principals who influence their agents' strategic decisions during times of trouble. For instance, my direct hypotheses show that during impending negative events transient institutional investors could triumph strategically by imposing short-term whims upon their firms' managerial agents. However, my moderating results challenge the simplicity offered by my direct effects by suggesting transient investor influence may not be as omnipresent as originally proposed.

My moderating results illuminate a CEO characteristic that may decrease some of the influence held by transient institutional investors (Combs et al., 2007). That is, CEO tenure could be an important boundary condition of transient investor influence. The results of my study suggest that long-tenured CEOs may limit some of the strategic pressure imposed by short-term institutional investors. By examining the direct influence of firm ownership and the moderating effect of CEO power, I offer two potential antecedents, transient ownership and CEO tenure, which could offer insight into the conflicting institutional and organizational pressures present during negative organizational events. My dissertations' initial contribution to the corporate governance literature emphasizes two elements: (a) institutional ownership researchers may want to

consider the potential pressure imposed by transient owners during times of trouble; and (b) CEO power researchers may want to account for executive characteristics, such as managerial tenure, when considering the mechanisms firms use to mitigate the negative influence held by such short-term institutional owners.

My second contribution seeks to bridge the corporate governance and product recall literatures. I aim to contribute to the product recall literature by identifying a distal stakeholder group that has been largely ignored by institutional investor researchers: end consumers. Admittedly, it is rare for institutional investor researchers to have the opportunity to develop models that examine more distal stakeholder outcomes. Due to the availability of secondary data from public organizations, extant corporate governance research, for the most part, has focused on more proximal outcomes that occur at the firm-level instead of the consumer-level. My dissertation's emphasis on product recalls is unique because it attempts to deepen the literature's understanding of the relationship between firms' ownership structure and end consumers' safety. My results suggest that high levels of transient institutional ownership may create safety concerns for end consumers through higher volumes of consumer-reported incidents. Consumer-reported incidents that stem from product defects could produce substantial harm to patrons. For example, on June 16, 2011, Big Lots recalled metal bunk beds following the death of a three-year old child who became entrapped. The press release describes a horrific scene where a young boy's head and neck became entrapped under the metal bed frame, as it was lowered into a flat position. Due to institutional investors' growing presence (Gillan & Starks, 2007) and the steady increase of product recalls leading to consumer harm

(Marucheck et al., 2011), it is remarkable that researchers have largely ignored the impact of corporate governance structures on this critical stakeholder group.

My third contribution aims to add to the product recall literature. I sought to add to the empirical body of product recall research by collecting a sample of product recall announcements from multiple industries. To accomplish this goal, I sampled publicly traded firms that experienced product recalls from three, distinct federal sectors, which represents a departure from typical empirical investigations that limit their examinations to a single product recall industry, domain, or sector (e.g., Hora et al., 2011, Rhee & Haunschild, 2006; Thirumalai & Sinha, 2011). My sample's diversity attempted to answer a call from Wowak and Boone (2015: 2), who noted the current literature's understanding of product recalls is still "fragmented" with particularly insufficient knowledge amassed with respect to the contextual impact of firms' product recall decisions. While single-industry studies contributed to the literature's early understanding of product recalls, such scholarship also created contradictory findings due to the context-specificity of the research (cf. Chen et al., 2009 *vs*. Zhao, Li, & Flynn, 2013). My motivation for using broad samples was to provide a deeper understanding of the underlying product recall relationships that span multiple industrial sectors and impact a wide-range of perishable and nonperishable consumer products.

Practical Implications

Examining the relationship between firm ownership structure and strategic recall processes may hold important practical implications. My findings suggest that executives may want to consider the pressure transient institutional investors impose on firms to

implement reactive product recall strategies. An illustrative case from Black & Decker offers contextual grounding for this statement.

The Black & Decker case suggests that ownership structures laden with transient investors may pose safety concerns to consumers. On September 9, 2010 Black & Decker issued a product recall for a power tool (orbit sander). During this timeframe, Black & Decker had a high level of transient ownership compared to the average percentage of ownership held by short-term investors in my sample. Black & Decker's level of transient ownership was approximately 2.5 standard deviations higher than the average level of short-term ownership held by my sample of S&P 500 firms.

The timeframe associated with Black & Decker's high level of transient ownership coincided with the firm's sluggish response to the orbit sander defect. The flawed power tool resulted in 73 consumer-reported incidents and 15 reports of injuries, including a serious facial laceration, before Black & Decker issued a formal product recall announcement. Black & Decker's sluggish response represented a reactive recall strategy because numerous incident reports and consumer injuries resulted from the defective orbit sander before the firm issued its initial public product recall announcement. While it is possible that alternative explanations exist for Black & Decker's reactivity, my findings suggest that the pressure imposed from transient institutional investors may have contributed to this outcome.

Practically speaking, stakeholders and end consumers, alike, should be cognizant of transient investor influence (Bushee, 2004; Gillan & Starks, 2007). Transient owners are powerful institutional investors who may pressure firms into executing reactive recall strategies to reduce their short-term losses (Bushee, 2001, 1999). Thus, during an

impending product recall, firm executives may need to stave off institutional pressure to implement organizational strategies that trade potential, short-term benefits for known, detrimental long-term outcomes.

Limitations and Future Research

I offer my dissertation's limitations in tandem with directions for future research in the hopes of generating tangible research questions that propel forward the product recall and corporate governance literature streams. Accordingly, I discuss my dissertation limitations while offering five plausible areas for future investigation. Please see Table 16 for my suggested directions for future research.

My initial limitation and direction for future research results from my measurement of recall proactiveness. I used number of consumer-reported incidents as my operationalization of recall proactiveness because of the richness captured from this count variable. Several recent investigations highlight the theoretical depth embedded within the recall proactiveness construct: Hora et al. (2011), Ni et al. (2015), and Zhao et al. (2013). Despite the literature's continued focus on recall proactiveness, two limitations still exist with the current operationalizations available to product recall researchers. The first limitation is the current operationalizations do not account for *when* the firm initially identified the product defect that led to the recall. Data limitations created by firm- and government-initiated press releases preclude researchers from identifying the date when firms detected the initial product defect. Regrettably, such press releases only state whether the product recall resulted in any consumer incident or injury reports and omit the date the firm detected the defect.

Table 16. Key Directions for Future Research

Research Topic	Key Direction for Future Research
Construct Refinement for Recall Proactiveness	How can the literature refine its operationalization of recall proactiveness?
	What proxy measure can researchers develop that captures when recalling firms initially learned of the product defect? What higher-order construct would this proxy measure serve within the product recall literature?
	How does the number of incident reports fit within the nomological network of firms' strategic recall processes?
Sample Specifications	Why do U.S. and international-based firms experience different strategic and financial outcomes from product recall announcements?
	What role does international regulation play in product recalls worldwide?
	How do firms' strategic recall processes differ in various geographic locations?
Governmental Regulation	Does governmental regulation influence firms' strategic recall processes?
	Do governmental agencies learn from each other to develop best practices?
	Do governmental agencies work together to expedite recall efforts? Or, do regulatory inefficiencies cause recall efforts to stagnate because of incompatible governmental processes?
Corporate Governance	Does the composition of a top management team impact product recall management? Which top manager characteristics, such as age, race, religion, and educational/functional background, are most important?
	Do institutional pressures from different stakeholder groups influence firms' strategic recall processes? Which stakeholder groups impose the greatest pressures?
	How can firms restore stakeholder trust after a product recall? Which mechanisms help firms store stakeholder trust?
Firms' Financial & Capital Attributes	What financial and capital attributes enhance the effectiveness of firms' product recall strategies?
	How do firms research and development intensity influence their post-recall actions?
	How do financial and capital constraints limit firms' strategic recall processes?

For example, Procter & Gamble recalled its Vicks' Sinex nasal spray on November 19, 2009, after finding bacteria *B.cepacia* in a small quantity of products during an internal quality check. Procter & Gamble's product recall represents a proactive strategy because no illness occurred; however, the press release does not allow researchers to pinpoint (a) when Procter & Gamble first identified the bacteria, or (b) how much time passed between the bacteria's initial identification and the public recall announcement. By identifying the product defect detection date, researchers can calculate precisely how long it took firms to initiate the product recall by subtracting the product recall press release date from the date the firm detected the product defect. However, if the exact date is unattainable, researchers might consider creating a proxy variable that captures when recalling firms learned of the product defect. Refining the literature's measurement of recall proactiveness would allow scholars to more fully investigate how the number of consumer-reported incidents and injuries fits within the nomological network of firms' strategic recall processes.

The second limitation of recall proactiveness also ensues from the variable's operationalization. Prior researchers have theorized that organizations that issue proactive recall strategies rely on their firms' internal audits or testing procedures to discover product defects (Chen et al., 2009). Such firm-implemented safeguards alert managers to product defects before consumer harm arises allowing them to initiate a proactive recall (Hora et al., 2011). For example, on August 17, 2009, Supervalu took proactive measures and recalled frozen macaroni and cheese dinners after routine sampling identified a potential Listeria contamination. However, in the case of reactivity, where firms recall products after reports of consumer harm surface, researchers encounter a limitation of the

current operationalizations: firms that issue reactive recalls may *not* have detected the product defect through firm-implemented safeguards as prior research suggests. For example, Medtronic issued a reactive recall for its Guidewires after consumer complaints and a patient injury alerted the medical superpower to the defect; the FDA press release strongly suggests that Medtronic had no prior knowledge of the product problem and, in fact, learned of the defect through the consumer incident reports. The current operationalizations of recall proactiveness are not sensitive enough to allow researchers to identify, and separate, those firms that knew about the problem (and did nothing) versus those firms that learned of the problem through consumer incident reports. While I have proposed additional operationalizations of recall proactiveness to increase the construct's robustness, this limitation still exists.

My third limitation and direction for future research originates from my dissertations' sample specifications. A limitation of my dissertation is that I restricted my sample to publicly traded firms listed on the S&P 500 index. I restricted my sample to these specifications because The Dow Jones and U.S. index committee ensures extreme vetting of its member firms guaranteeing that public corporations follow mandated reporting requirements, which increased my data's consistency and availability. However, to obtain membership on the index, firms must be headquartered in the U.S. thereby lessening internationally based firms in my sample. Recent scholarship suggests recalling firms that are members of international stock exchanges, including the Shenzhen A Share Stock Exchange or the Shanghai A Share Stock Exchange of China, had markedly different returns compared to firms that were listed on Western exchanges (Zhao et al., 2013). Since domestic and international firms experience different financial

outcomes associated with product recall announcements, I urge future researchers to contemplate studying additional international contexts (outside of China). Future researchers may consider comparing product recall announcements from various, geographic locations to assess how financial and non-financial outcomes vary because of regulatory norms associated with that region. Moreover, future researchers could explore how regulatory differences across geographic locations impact supply chain variables, such as product traceability and quality control systems, that may influence the efficiency of product recall remediation efforts.

My fourth limitation and direction for future research captures regulatory pressures from governmental agencies tasked with overseeing domestic product recalls within the United States. Although my study utilized a broad, multi-industry sample, a limitation of my dissertation is that I only examined recalls from three of the five, total governmental agencies. The sample for my dissertation included firms subject to regulation from the (a) CPSC, (b) FDA, and (c) FSIS. The current study does not include firms that were subject to automotive regulation from the NHTSA or environmental recalls from the EPA. I urge future researchers to (a) explore product recall outcomes using samples that are subject to individual regulation from the NHTSA/EPA or (b) consider a joint study that utilizes data from both governmental entities.

The EPA enjoys a close connection with the NHTSA through its authority over vehicle emission testing recalls. Since the EPA's jurisdiction over vehicle emission testing recalls complements the NHTSA's management of automotive recalls, future researchers may consider investigating whether these governmental agencies work together to expedite product recall efforts or if recalls stagnate because of inefficiencies

stemming from incompatible recall processes between the NHTSA and EPA. Future scholars may consider researching the events surrounding the EPA and NHTSA Volkswagen recall of the same vehicle model. Specifically, the EPA continues to manage a Volkswagen recall of 83,000 automobiles that includes 2013-2016 Volkswagen Touareg models while the NHTSA has a concurrent investigation on the same class of Volkswagen Touareg models (Environmental Protection Agency, 2016). Undertaking a multi-sector product recall study that utilizes the EPA, in addition to affiliated governmental agencies, may allow academicians to exploit a noteworthy opportunity noted in Wowak and Boone's (2015) literature review, which suggests an insufficient number of quantitative studies have examined the effects of environmental recalls.

My fifth limitation and direction for future research emerges from the finite scope of the corporate governance constructs used in my dissertation. While I sought to include key corporate governance constructs that are well-studied in strategic management, data availability issues confined the scope of my dissertation. It is likely that additional strategic management variables may be of theoretical importance in mapping the nomological network of product recalls. To further the literature's understanding of the potential link between product recalls and strategic management constructs, I encourage future researchers to consider the characteristics of the recalling firms' top management team. Upper echelons theory offers a strong basis to consider how top manager characteristics including age, race, gender in addition to educational and functional background, may influence firms' product recall strategies (Wowak & Boone, 2015). Identifying a subset of top management team characteristics that correlates with

successful product recall strategies, may allow scholars to provide recommendations regarding the composition of operationally savvy top management teams.

My sixth future research direction asks scholars to consider investigating how firms' financial and capital attributes may impact their product recall strategy and post-recall actions. While I controlled for important firm attributes such as net annual sales (size) and return on assets (past performance), additional variables may be of interest. One specific variable that could be of particular interest to researchers is firms' research and development (R&D) intensity. Prior research suggests that firms' research and development outlays may impact the organization's ability to rebound following a product recall due to internal resource constraints (Thirumalai & Sinha, 2011). Firms with high intensity R&D may leave themselves in a vulnerable position because they lack the internal capital needed to quickly pivot and implement time sensitive product recall strategies. For example, Thirumalai and Sinha (2011) and Wowak et al. (2015) accounted for R&D intensity in their models because such large, upfront investments may force companies into a reactive position. Consequently, firms with high R&D intensity may struggle to deploy capital from other research and development initiatives to satisfy a swift and decisive remediation effort. Taken together, I urge future researchers to consider the impact of R&D intensity in addition to other financial and capital attributes on firm' strategic recall processes.

Conclusion

The goal of my dissertation was to examine antecedent conditions associated with firms' product recall strategy and post-recall actions through the role of firm ownership and CEO power. Although many of my significant results led to unexpected findings, my

dissertation aimed to add value to the fields of corporate governance and supply chain management. I sought to contribute to the product recall literature by investigating a new corporate governance antecedent that may impact firms' strategic recall processes: institutional ownership. My findings suggest high levels of transient institutional ownership may be positively correlated with reactive product recall strategies. Further, my results sought to add to the CEO power literature by identifying executive tenure and ownership as important moderating influences.

The corporate governance literature has long held that institutional investors are key stakeholders in publicly traded companies (Gillan & Starks, 2007; McCahery et al., 2016). Practitioners and academics alike agree institutional investors likely influence firms' overarching financial and strategic outcomes (Goranova & Ryan, 2014). However, extant research has largely ignored the operational-level impacts institutional investors may have on firms' supply chain elements (Wowak & Boone, 2015). My analysis of firms' strategic recall processes may have helped illuminate the potential impact of short-term ownership structures on key operational-level decisions, which has broad implications for organizations, senior leadership teams, in addition to key stakeholder groups including the end consumer.

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APPENDIX A: RELATIVE FREQUENCIES OF PRODUCT RECALLS

Table A1. Relative Frequencies of Product Recalls Organized by Firm Name

	Firm Name	Number of Product Recalls by Firm (*N*)	Percentage of Product Recalls by Firm (%)
1	3M CO	1	0.35%
2	ABBOTT LABORATORIES	2	0.71
3	AMGEN INC	1	0.35
4	AUTOZONE INC	1	0.35
5	AVON PRODUCTS	3	1.06
6	BAXTER INTERNATIONAL INC	5	1.77
7	BED BATH & BEYOND INC	1	0.35
8	BEST BUY CO INC	5	1.77
9	BIG LOTS INC	9	3.19
10	BLACK & DECKER CORP	1	0.35
11	BOSTON SCIENTIFIC CORP	1	0.35
12	BRISTOL-MYERS SQUIBB CO	2	0.71
13	CAMPBELL SOUP CO	4	1.42
14	CAREFUSION CORP	2	0.71
15	CONAGRA FOODS INC	7	2.48
16	COSTCO WHOLESALE CORP	3	1.06
17	CVS HEALTH CORP	2	0.71
18	DEAN FOODS CO	2	0.71
19	DEERE & CO	11	3.90
20	DOLLAR GENERAL CORP	5	1.77
21	DOLLAR TREE INC	9	3.19
22	DONNELLEY (R R) & SONS CO	2	0.71
23	EMERSON ELECTRIC CO	1	0.35
24	FAMILY DOLLAR STORES	8	2.84
25	GAP INC	3	1.06
26	GENERAL ELECTRIC CO	11	3.90
27	GENERAL MILLS INC	9	3.19
28	GILEAD SCIENCES INC	1	0.35
29	HASBRO INC	2	0.71
30	HERSHEY CO	1	0.35
31	HEWLETT-PACKARD CO	2	0.71
32	HOME DEPOT INC	7	2.48
33	HONEYWELL INTERNATIONAL INC	4	1.42
34	HOSPIRA INC	17	6.03
35	JOHNSON & JOHNSON	2	0.71

	Firm Name	Number of Product Recalls by Firm (*N*)	Percentage of Product Recalls by Firm (%)
36	KELLOGG CO	2	0.71
37	KIMBERLY-CLARK CORP	1	0.35
38	KROGER CO	9	3.19
39	LEGGETT & PLATT INC	1	0.35
40	LOUISIANA-PACIFIC CORP	1	0.35
41	LOWE'S COMPANIES INC	1	0.35
42	MACY'S INC	4	1.42
43	MATTEL INC	5	1.77
44	MCCORMICK & CO INC	6	2.13
45	MEDTRONIC PLC	4	1.42
46	MERCK & CO	2	0.71
47	NIKE INC	1	0.35
48	NORDSTROM INC	6	2.13
49	OFFICE DEPOT INC	2	0.71
50	OFFICEMAX INC	1	0.35
51	PERRIGO CO PLC	1	0.35
52	PETSMART INC	2	0.71
53	PFIZER INC	2	0.71
54	PROCTER & GAMBLE CO	9	3.19
55	ROSS STORES INC	6	2.13
56	SAFEWAY INC	4	1.42
57	SEARS HOLDINGS CORP	6	2.13
58	SHERWIN-WILLIAMS CO	6	2.13
59	SMUCKER (JM) CO	1	0.35
60	ST JUDE MEDICAL INC	1	0.35
61	STANLEY BLACK & DECKER	1	0.35
62	STAPLES INC	2	0.71
63	STARBUCKS CORP	4	1.42
64	STRYKER CORP	2	0.71
65	SUPERVALU INC	4	1.42
66	TARGET CORP	24	8.51
67	TJX COMPANIES INC	1	0.35
68	TYSON FOODS INC	4	1.42
69	WAL-MART STORES INC	9	3.19
	Total Product Recalls	*282*	*100.00%*

Notes. *N* = Number of product recalls by firm; % = Percentage of recalls.

APPENDIX B: PRODUCT RECALL PRESS RELEASE SAMPLES

Figure B1. Sample Initial Product Recall Press Release from the Governmental Archive of the Consumer Product Safety Commission

Consumer Product Safety Commission

Big Lots Recalls Tabletop Torches Due to Fire and Burn Hazards

August 8, 2013

Recall Summary

Name of Product: Citronella Tabletop Torches

Hazard: Once lit, the glass citronella table torches can flare up and emit burning lamp oil onto consumers and property, posing fire and burn hazards.

Remedy: Refund.

Recall date: August 8, 2013

Recall number: 13-260

Consumer Contact: Big Lots toll-free at (866) 244-5687 between 9 a.m. and 5 p.m. ET Monday through Friday, or visit the firm's website athttp://www.biglots.comand click on "Recalls" at the bottom for more information.

Recall Details

Units: About 30,000

Description: This recall involves large and small round tabletop torches that have a wick and burn liquid citronella fuel. The large torches have a steel fuel container covered in multi-colored glass in a mosaic pattern. The large torch measures about 10 inches in diameter, 5 inches high, and weighs about 2 ½ pounds. The small torches have multi-colored glass fuel container with a metal and wire stand. They measure about 5 inches in diameter, 5½ inches high and weigh about one pound. "Table Top Torch distributed by Big Lots, Inc." and item #DC12-21111 (large torch) or Item #DC10-20160 (small torch) is printed on a yellow label on the bottom of the large torch and on a hang tag on the small torch.

Incidents/Injuries: Big Lots has received 20 reports of liquid fuel erupting from the torches with high flames, including two serious injuries with second and third degree burns and seven with minor burns. One of the serious burn injuries involved burns to the legs and abdomen and a second victim received burns all over the body while attempting to extinguish the flames. All of the incidents involved property damage.

Sold exclusively at: Big Lots stores nationwide from March 2013 through June 2013 for between $8 and $20.

Importer: Big Lots, of Columbus, Ohio

Manufactured in: India

Figure B2. Sample Initial Product Recall Press Release from the Governmental Archive of the Food and Drug Administration

Food and Drug Administration

Kroger Recalls Select Ice Cream Products Due to Possible Health Risk

January 19, 2009

FOR IMMEDIATE RELEASE -- CINCINNATI, Ohio, January 19, 2009 – The Kroger Co. said today it is recalling Private Selection Peanut Butter Passion Ice Cream sold in select stores because the peanut butter in the ice cream was supplied by Peanut Corporation of America and may be contaminated with Salmonella. Stores under the following names are included in this recall: City Market, Fred Meyer, Fry's, King Soopers, QFC and Smith's.

Stores the company operates under the following names did not receive any of the ice cream being recalled: Kroger, Ralphs, Dillons, Food 4 Less, Foods Co., Jay C, Scott's, Owen's, Baker's, Gerbes (sic), Hilander and Pay Less.

No illnesses have been reported in connection with the ice cream.

The FDA has indicated that Peanut Corporation of America is the focus of its investigation into Salmonella-related illnesses that may be linked to contaminated peanut butter.

Item Description: Kroger is recalling the following ice cream:

Private Selection Peanut Butter Passion Ice Cream sold in 48-ounce containers with a "Sell by" date of 9-13-2009 under the following UPC Code Number: 0001111054437.

Private Selection Peanut Butter Passion Ice Cream sold in 56-ounce containers with a "Sell by" date of 8-11-2009 under the following UPC Code Number: 0001111052816.

The ice cream was sold in City Market, Fred Meyer, Fry's, King Soopers, QFC and Smith's stores in the following states: Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Customers who have recently purchased this ice cream should not eat it and return the product to a store for a full refund or replacement.

No other Kroger products are involved in the recall. Kroger continues to follow FDA guidelines and, for the safety of customers, has withdrawn other products from sale that contain peanut butter ingredients implicated in this outbreak, as directed by the FDA and suppliers involved.

Salmonella is an organism that can cause serious and sometimes fatal infections, particularly in young children, the elderly, and persons with weakened immune systems. Healthy persons infected with Salmonella often experience fever, diarrhea, nausea, vomiting and/or abdominal pain. For more information, please visit the Centers for Disease Control and Prevention's Web site at www.cdc.gov.

According to the FDA, peanut butter sold in jars, including Kroger brand peanut butter sold in the retailer's family of stores, is not involved in the ongoing investigation.

Consumers who have questions about the ice cream recall may contact Kroger toll-free at (800) 632-6900. For more information, please visit www.kroger.com/recalls.

Figure B3. Sample Initial Product Recall Press Release from the Governmental Archive of the Food Safety Inspection Service

Food Safety Inspection Service

Recall Number 016-2007, Bacon (Insufficient Cooling)

March 27, 2007

CLASS II RECALL

HEALTH RISK: LOW

WASHINGTON, Mar. 27, 2007 - Kraft Foods Global, Inc., a Kirksville, Mo., establishment, is voluntarily recalling approximately 1,800 pounds of bacon due to insufficient cooling during processing, the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) announced today.

The following product is subject to recall:

12-ounce packages of "OSCAR MAYER 30% LOWER FAT, CENTER CUT BACON." Each label bears the establishment number "EST. 537V" inside the USDA mark of inspection. Each package also bears the statement, "best when used by 24 May 2007 A."

The bacon was produced on Feb. 11, 2007 and was shipped to a distribution center in California. The problem was discovered by the company. No reports of illnesses have been received by FSIS or the company from consumption of this product.

Consumers with questions about the recall should contact the company at (1-800) 323-4243. Media with questions about the recall should contact Oscar Mayer, Elisabeth Wenner at (1-847) 646-4271.

Consumers with food safety questions can "Ask Karen," the FSIS virtual representative available 24 hours a day at AskKaren.gov. The toll-free USDA Meat and Poultry Hotline 1-888-MPHotline (1-888-674-6854) is available in English and Spanish and can be reached from l0 a.m. to 4 p.m. (Eastern Time) Monday through Friday. Recorded food safety messages are available 24 hours a day.

Figure B4. Sample Firm-Initiated Press Release of a Technical Action

Business Wire

Pfizer Issues Statement on Voluntary Recall

February 1, 2012

NEW YORK--(BUSINESS WIRE)--Pfizer Inc. today issued the following statement regarding the voluntary recall of Lo/Ovral®-28 (norgestrel and ethinyl estradiol):

"We have announced a voluntary recall of Lo/Ovral®-28 (norgestrel and ethinyl estradiol) and Norgestrel and Ethinyl Estradiol Tablets (generic) birth control pills in the United States.

"We understand that this news can be very concerning and confusing for any woman who takes birth control pills to protect against unintended pregnancies.

"We share your concerns and want to provide you with the most up-to-date and accurate information.

"Recently, it came to our attention that there may be an issue with the way some of these pills were packaged…and that the inactive or placebo pill may have been placed out-of-order in some packs.

"Upon discovery of the issue, we took corrective action and notified the FDA.

"Based on our own rigorous internal assessments of this problem, we believe there are approximately 30 packs of birth control pills that may have received an inexact count or inactive tablet.

"Because of our high quality standards, should we identify even one package that does not meet our high standards, we will voluntarily recall the entire lot.

"Therefore, we have voluntarily recalled the 28 lots - which is approximately 1 million packs - to ensure that any possibly impacted product is removed from pharmacy shelves - and women who use the product are alerted.

"If you are a woman in the United States who has used Lo-Ovral or Norgestrel pills over the last several months, please consult with your physician and begin using a non-hormonal barrier method immediately.

"Patients can view pictures of the affected products and lot numbers included in the recall by visiting:

Correctly Packaged LoOrval Blister Pack Image - www.pfizer.com/img/news/LoOvralCorrectPkg.jpg
Correctly Packaged Norgestrel Image - http://www.pfizer.com/img/news/NorgestrelCorrectPkg.jpg...

Contact: Pfizer Inc.

Figure B5. Sample Firm-Initiated Press Release of a Ceremonial Action

Business Wire

GE Contributes $200,000 to Charities from NBC Universal's ``Clash of the Choirs'' Local New Haven charity to receive $50,000

December 20, 2007

NEW HAVEN, Conn.--(BUSINESS WIRE)--GE announced today that it would donate a total of $200,000 to four charities during the two-hour season finale of NBCU's live competition show, "Clash of the Choirs."

In "Clash of the Choirs," NBCU tapped five musical superstars -- Michael Bolton, Patti LaBelle, Nick Lachey, Kelly Rowland and Blake Shelton to embark on a musical challenge - to create America's "greatest" choir. One choir, Team Lachey, was voted by viewers at home as America's "greatest choir" and won the grand prize that will benefit their hometown.

Below are the other hometown charities that were each given $50,000:

Patti LaBelle – The Abramson Cancer Center & With Our Voices - Philadelphia, PA
Team LaBelle sang to support The Abramson Cancer Center, a national leader in cancer research, patient care, and education. The monetary contribution will go towards With Our Voices, a special research and outreach program for African Americans in the Philadelphia area to improve their access and usage of cancer screenings in breast, ovarian and prostate cancer.

Kelly Rowland – Bread of Life - Houston, TX
Team Rowland sang to support the Bread of Life, Inc. a non-profit organization associated with Kelly Rowland's church, St. John's United Methodist. Kelly and long-time friend, Beyonce Knowles, donated over $250,000 to augment the church's work and outreach in the community. The organization now has a transitional housing unit named in their honor, "The Knowles-Rowland Temenos Place Apartments," where at-risk families, the homeless, persons with HIV/AIDS, and developmentally disabled receive free temporary or long-term housing.

Blake Shelton – Project Rebuild & Army MWR - Oklahoma City, OK
Team Shelton was singing to support Project Rebuild, an organization dedicated to giving relief to Oklahoma residents who have lost homes in recent national disasters. Team Shelton was also supporting Army MWR, a comprehensive network of support and leisure services designed to enhance the lives of soldiers and their families. Their mission is to serve the needs, interests and responsibilities of each individual in the Army community for as long as they are associated with the Army, no matter where they are.

Earlier this week on the series premiere, GE announced a $250,000 contribution to the Disabled American Veterans (DAV) whose primary mission is to help build better lives for disabled veterans and their families.

Contact: GE Corporate

APPENDIX C: DATA CORROBORATION METHOD 1

I illustrate Data Corroboration Method 1 by using an initial product recall press release from Deere & Company. I provide a copy of the original Deere & Company press release at the end of this appendix. Of note, I offer the Deere & Company example to highlight the completeness of my first corroboration process; however, this press release is an unusually complex case. During my data collection of initial product recall press releases, I was able to confirm that the S&P 500 firm was the recalling organization of record by simply reading the title in the vast majority of cases. Thus, subsequent steps in the corroboration process (i.e., reviewing the remedy, consumer contact, consumer incident/injury report sections in the press release) typically allowed me to confirm that the S&P 500 firm initiated the product recall.

During step one, I read the title of the press release to determine whether Deere & Company initiated the product recall. The press release title reads, “John Deere Gas Barbecue Grills Recalled Due to Fire, Burn Hazards.” From the title, it is apparent that a John Deere product, namely a gas barbecue grill, was recalled; however, it is not clear whether Deere & Company initiated the product recall. Since step one did not result in inclusion or exclusion of this product recall event, I moved onto step two.

In step two, I identified the firm overseeing the product recall remediation strategy and consumer contact. The press release listed Mi-T-M Corporation in the remedy and consumer contact sections of the press release. However, while the press release did not list Deere & Company as a consumer contact, it did list Deere & Company in the remedy section along with Mi-T-M Corporation. Thus, the press release listed two firms in the remedy section (Mi-T-M Corporation and Deere & Company), but

only listed one firm in the consumer contact section: Mi-T-M Corporation. Given the inconsistency noted in step two, I moved to step three for clarification.

During step three, I identified the firm that received injury and incident report data announced in the recall press release. The injury and incident report section clearly stated that Mi-T-M Corporation received one report of a minor burn. According to the press release, Deere & Company did not receive any consumer harm data. Lastly, I verified from the press release title and content that more than two firms did not initiate the product recall. In fact, the press release identifiers strongly suggested Mi-T-M Corporation had unilateral control of the product recall confirming that a single firm initiated the remediation effort.

Based on the four-steps of the first corroboration process, I determined that Mi-T-M Corporation was the recalling firm of record. While Deere & Company played an auxiliary role in the product recall, by aiding Mi-T-M Corporation in the remediation effort, the firm's limited retail function did not allow for substantial control over the product recall. As the governmental analyst with whom I spoke explained, retailers oftentimes supplement recalling organization's remediation efforts to mitigate consumer harm although they were not responsible for the product recall. I determined that Mi-T-M Corporation initiated the product recall because the press release listed Mi-T-M Corporation as the responsible firm in both the consumer contact and remedy sections and, most importantly, was the sole recipient of the consumer harm data. Please note that the Deere & Company and Mi-T-M Corporation example was included to demonstrate the first data corroboration process; it is not associated with the second or third data corroboration processes that I reviewed in the Methods section.

Figure C1. Deere & Company Press Release

Consumer Product Safety Commission

John Deere Gas Barbecue Grills Recalled Due to Fire, Burn Hazards

September 13, 2006

Release #06-257

Name of Product: John Deere Gas Barbecue Grills

Units: About 3,100

Manufacturer: Onward Manufacturing, of Waterloo, Ontario, Canada

Importer: Mi-T-M Corporation, of Peosta, Iowa

Retailer: Deere & Company, of Moline, Ill.

Hazard: Operating the grill in windy conditions can blow the flame under the control panel, causing the grill to overheat or cause flashbacks. Flames could damage the hose that supplies gas to the burner, causing an uncontrolled flame. Also, the grill's control knobs could overheat, resulting in burns to hands.

Incidents/Injuries: Mi-T-M Corporation has received one report of a minor burn received when the user touched a grill's control knob that had overheated due to the flame blowing under the control panel.

Description: These are John Deere Gas Barbecue Grills with model numbers HR-BG6203 and HR-BG5202. The model number is on the CSA approval sticker on the back panel. The recalled grills have a John Deere symbol on the center of the hood and a John Deere decal plate below the control panel. These are 52,000 BTU grills with 460 sq. in. cooking surface. The Model HR-BG6203 includes stainless steel doors, stainless steel side shelves and a side burner rated at 10,000 BTU. The Model HR-BG5202 has stainless steel doors with black plastic side shelves.

Sold at: John Deere dealers from March 2006 through August 2006 for about $600 for the model number HR-BG6203 grill and about $500 for model number HR-BG5202 grill.

Manufactured in: Canada

Remedy: Consumers should stop using these grills and contact Mi-T-M Corp. or the John Deere dealer where the grill was purchased to receive a free repair kit.

Consumer Contact: Call Mi-T-M Corp. toll-free at (877) 535-5336 between 7:30 a.m. and 5:30 p.m. CT Monday through Friday, or visit the firm's Web site at www.mitm.com

Media Contact: John Lembezeder, Mi-T-M Corp., at (800) 367-6486, Ext. 208