

The Effect of Managements' Financial Statement Manipulations on Unsophisticated  
Investors' Corporate Securities Valuation Judgments

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by

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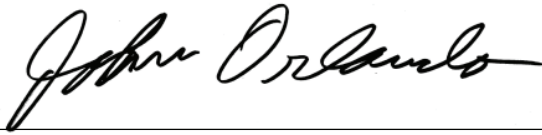
Approval Page

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Investors' Corporate Securities Valuation Judgments

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## Abstract

Management obfuscation theory suggests that company management may decrease market participant responses to negative information through increased complexity of the contextual content of financial statements. Despite recommendations from the SEC to use plain language in all financial reporting, company management continues to release financial statements that contain high contextual complexity during periods of decreased earnings. The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance. 100 U.S. based unsophisticated investors reviewed a hypothetical financial statement excerpt designed to obfuscate negative financial results. The results of the hierarchical regressions suggest that investors are negatively affected by management manipulation of financial statement language without regard for the investors' level of education, risk tolerance, or investment experience. 75% of investors elected to hold the investment in the poorly performing company. This result suggests that management obfuscation is an effective means of management manipulation for all classes of unsophisticated investors, and that that additional financial statement presentation regulation may be needed to protect investors.

## Acknowledgements

For Kati, Edith, and Margot.

## Table of Contents

Chapter 1: Introduction.....	1
Background .....	3
Statement of the Problem.....	7
Purpose of the Study.....	8
Theoretical Framework.....	9
Research Questions.....	13
Hypotheses .....	14
Nature of the Study.....	15
Significance of the Study .....	16
Definition of Key Terms .....	17
Summary .....	20
Chapter 2: Literature Review .....	22
Documentation .....	22
The Purpose of Financial Reporting .....	23
Efficient Market Theory.....	27
Agency Theory .....	30
Information Asymmetry and the Full Disclosure Principle .....	32
Highly Readable Financial Statement Disclosures.....	35
Processing Fluency and Cognitive Load Theory.....	36
Management Obfuscation Theory .....	39
Indicators of Fraud.....	54
Measurement of Contextual Complexity .....	56
Ethical Considerations of Management Obfuscation .....	58
Management Obfuscation Theory and Practice .....	60
Contradictions and Inconsistencies in Existing Theory.....	62
Future Research in Financial Statement Complexity .....	63
Summary .....	64
Chapter 3: Research Method.....	66
Research Method and Design.....	68
Population .....	69
Sample.....	70
Materials/Instruments .....	70
Operational Definition of Variables .....	72
Data Collection, Processing, and Analysis .....	75
Assumptions .....	80
Limitations .....	81
Delimitations .....	82
Ethical Assurances.....	82
Summary .....	87
Chapter 4: Findings .....	88

Reliability and Validity of the Data.....	89
Results.....	90
Evaluation of Findings.....	95
Summary.....	97
Chapter 5: Implications, Recommendations, and Conclusions.....	100
Implications.....	102
Recommendations.....	107
Conclusions.....	108
References.....	110
Appendix A: A Priori Power Analysis.....	118
Appendix B: Supplemental Materials.....	119
Appendix C: Informed Consent Form.....	125
Appendix D: Demographic Frequency Comparison Tables.....	127
Appendix E: Data Assumptions.....	129
Appendix F: Demographics Information.....	132
Appendix G: Post Hoc Power Analysis.....	134

## List of Tables

Table 1 <i>Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis One</i> .....	92
Table 2 <i>Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis Two</i> .....	93
Table 3 <i>Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis Three</i> .....	94



## Chapter 1: Introduction

Financial statements provide corporate stakeholders with the information they need to make rational capital allocation decisions (Bertomeu & Cheynel, 2013; Henry & Leone, 2016; Iatridis, 2016). Corporate stakeholders require accurate and complete financial statements to make sound investment decisions (Bens, Goodman, & Neamtiu, 2012; Henry & Leone, 2016; Iatridis, 2016). On the other hand, company management has incentives to report the financial condition of the company as positively as possible to maximize their compensation whether earnings are good or bad (Bens et al., 2012; Davis & Tama-Sweet, 2012; Fung, 2015; Kothari & Lester, 2012). The dichotomy between the information needs of corporate stakeholders, and the compensation of company management, which is known as the agency problem, creates potential questions regarding the trustworthiness of reported numbers (Albrecht, Holland, Malagueño, Dolan, & Tzafrir, 2015; Bertomeu & Cheynel, 2013; Fung, 2015). With regulatory penalties that could be assessed by engaging in financial statement fraud, the incidence of blatant misreporting remains low (Bertomeu & Cheynel, 2013; Fung, 2015). However, management obfuscation theory suggests that the pecuniary incentives for company management to report positive earnings may cause management to seek out less overt means of financial statement manipulation (Kothari & Lester, 2012; Lee, 2012; Rennekamp, 2012). Financial statement manipulation could harm unsophisticated investors who incorrectly perceive the value of the company (Kothari & Lester, 2012; Lee, 2012; Rennekamp, 2012).

Evidence suggesting that some mechanism of obfuscation in financial reporting influences investor behavior may be found in post earnings drift (De Franco, Hope, Vyas,

& Zhou, 2015; Lee, 2012; Li, 2008). Post earnings drift describes the tendency of securities prices to drift in the direction of positive or negative earnings after financial statements are released (Lee, 2012). Post-earnings drift is contradictory to the rapid share-price equilibrium that would be expected to be achieved under efficient market theory, suggesting that company management may have discovered a method of successfully delaying investor reactions to poor earnings (De Franco et al., 2015; Gandhi, Bulsara, & Patel, 2013; Lee, 2012; Murthy, Washer, & Wingender, 2011).

Research into post earnings drift, and other obfuscation methods, was aided by advances in software analysis tools that allow for the rapid analysis of financial statement content (Henry & Leone, 2016; Kearney & Liu, 2014; Loughran & McDonald, 2014). Content analysis of management word choice found numerous correlations between company performance and the narrative content of financial statements that led to the development of management obfuscation theory (Kearney & Liu, 2014). Management obfuscation theory suggests that company management may attempt to decrease market participant responses to negative information through increasing the complexity of contextual content in financial statements (Bloomfield, 2002; Elliott, Rennekamp & White, 2014; Feldman, Govindaraj, Livnat, & Segal, 2010; Ferris, Hao, & Liao, 2013; Huang, Teoh, & Zhang, 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo, Ramos, & Rogo, 2017; Rennekamp, 2012; Tan, Wang, & Zhou, 2014). Contextual complexity refers to the non-numerical content of financial statements such as word choice and statement layout (Rennekamp, 2012). By altering financial statement design elements in a way that decreases the potentially negative responses of corporate stakeholders, company management may achieve the objective of maximizing personal

rewards without the prosecution risk of fraudulent misreporting (Lee, 2012; Lo et al., 2017).

Researchers found that the speed of post earnings drift was correlated with the length of complexity of financial statement disclosures, with the most complicated disclosures leading to the longest periods of post-earnings drift (Feldman et al., 2010; Lee, 2012). Additional research exploring possible obfuscation methods has focused on company management's wording selection and financial statement layout choices (Hales, Kuang, & Venkataraman, 2011; Rennekamp, 2012). The development of management obfuscation theory continues with numerous questions unanswered regarding the extent and effects of management obfuscation on the market participants who rely on management assertions regarding company performance.

## **Background**

While company managements' contextual financial statement manipulations have been an area of focus for regulators, as demonstrated by the Securities and Exchange Commission (SEC) release of the *Plain English Handbook*, research examining the effect of management financial statement manipulations on market participants' valuation judgments has been limited until recently (Henry & Leone, 2016; Kearney & Liu, 2014; Rennekamp, 2012). When the *Plain English Handbook* was released, the difficulty of measuring contextual complexity left regulators with few methods of ensuring that readability guidelines were followed (Kearney & Liu, 2014). Recently, textual analysis of financial information has increased due to the ability to quickly parse and analyze large sets of financial data using new software-based tools (Henry & Leone, 2016; Kearney & Liu, 2014). With software based tools such as General Inquirer and

DICTION, sources including corporate-based, media-based, and Internet-based financial information have allowed the analysis of complex financial reporting datasets that are now easily accessible by researchers interested in the effects of management obfuscation on investor sentiment (Henry & Leone, 2016; Kearney & Liu, 2014).

Textual analysis is of interest to researchers and regulators because financial reporting contextual complexity may provide a difficult to regulate means for company management to misrepresent the true financial condition of a company (Lee 2012; Rennekamp, 2012). Management obfuscation theory suggests that company management may attempt to obfuscate poor earnings results using contextual complexity in financial reporting language (Bloomfield, 2002; Elliott et al., 2014; Feldman et al., 2010; Ferris et al., 2013; Huang et al., 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo et al., 2017; Rennekamp, 2012).

Hales et al. (2011) explored how investors perceive the future earnings potential of companies based on whether vivid language or pallid language was used in financial statements. The authors suggested that investors forecasted lower future earnings prospects when vivid language was used to describe poor earnings (Hales et al., 2011). Tone was also found to influence investors' perceptions of company performance with financial statements containing a change in tone from positive to negative leading to negative investor reactions (Feldman et al., 2010).

Rennekamp (2012) explored how investors perceived the content of press releases regarding company performance and found that investors had stronger reactions to press releases prepared using more readable language than press releases prepared with complex language. Rennekamp (2012) suggested that readers processing fluency

decreased when reading complex language press releases that led to a decreased confidence in their ability to rely on the message. Lo et al., (2017) found that firms who barely met prior year earnings had significantly more complex MD&A disclosures, suggesting that these firms engaged in earnings management to meet earnings expectations.

Lee (2012) examined how corporate securities trended after earnings releases and found that when management issued financial statements with high complexity or excessive length, the subsequent performance of the corporate securities tended to drift down slowly when earnings were poor, and drift up slowly when earnings were good. Lee (2012) suggested that contextual complexity stressed the processing fluency of financial statement readers who required more time to process and incorporate the information. This decrease in financial statement users' level of processing fluency was found to decrease market efficiency (Lee, 2012). Market efficiency refers to the speed in which new information regarding the company is incorporated into securities pricing (Lee, 2012).

Lehavy, Li, and Merkley (2011) explored the demand for analyst information and found that when management released information with excessive complexity the companies had a higher following of professional analysts. Lehavy et al. concluded that the increased cognitive load required on the part of financial statement users increased the demand for professional analysts to interpret and communicate the message of financial statements to investors using simple and concise language. In another study relating to the effects of financial statement language usage, optimistic and pessimistic language was found to have predictive qualities regarding the future performance of the

reporting firm (Davis, Piger, & Sedor, 2012). Management of firms who released positive language financial statements experienced higher subsequent share performance than would be expected from the numeric content of the results (Davis et al., 2012).

Huang et al. (2014) found that the tone of press releases influenced stock performance; with positive press releases leading to improved stock performance, even when the company released quantitatively negative earnings data. The results of these studies suggest that financial statements contain valuable and actionable data beyond the quantitative content of the statements (Davis et al., 2012; Huang et al., 2014). However, one related question that remains underexplored in existing literature is whether the complexity of financial statement language choices influences investor valuation judgments (Rennekamp, 2012).

The consideration management obfuscation based financial statement manipulation requires the exploration of related financial reporting theories. Two of the foundational theories that underlie management obfuscation theory includes efficient market theory and agency theory (Lee, 2012; Rennekamp, 2012). Efficient market theory suggests that market participants incorporate all available information in the price of publicly traded securities (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). Market participants seek positive and negative information regarding the performance of companies to accurately price securities (Kothari & Lester, 2012).

Agency theory suggests that because of monetary or ego-based rewards, company management may have an incentive to report positive information regarding the companies they manage, and a disincentive to disclose negative information (Bens et al., 2012; Jensen & Meckling, 1976). The information asymmetry that exists between

investors seeking information, and company management seeking to prevent the dissemination of negative information, does not allow market participants to completely rely on the information released by company management (Bertomeu & Cheynel, 2013). An extension of agency theory and information asymmetry is management obfuscation theory. Management obfuscation theory suggests that company management may seek to delay negative investor sentiment and reactions by obfuscating negative results using contextual complexity in the communication of relevant information, which is a form of financial statement manipulation (Bloomfield, 2002; Humpherys, Moffitt, Burns, Burgoon, & Felix, 2011; Li, 2008; Lo et al., 2017).

A quantitative non-experimental correlational design based on management obfuscation theory was completed to explore the effects of managements' financial statement manipulations on the valuation judgments of unsophisticated investors. The results of this completed study may be of interest to regulators seeking to maintain fair and efficient markets. Additionally, this study may be of interest to researchers seeking to understand the effects of management obfuscation theory.

### **Statement of the Problem**

Despite recommendations from the SEC to use plain language in all financial reporting, company management continues to release financial statements that contain high contextual complexity during periods of decreased earnings (Lee, 2012). Plain language reporting benefits unsophisticated financial statement users by keeping financial statement content assessable to those market participants without professional investing experience (Hales et al., 2011; Libby & Rennekamp, 2012; SEC, 2013). Investors possess a limited cognitive processing load that may allow company management to

obfuscate the financial results through contextual complexity (Lee, 2012; Rennekamp, 2012). Lee (2012) examined the relationship between decreased earnings and financial statement complexity. Rennekamp (2012) explored processing fluency of unsophisticated investors when reading contextually complex news releases. However, no researchers examined the management obfuscation theory effects of management financial statement manipulation on the valuation judgments of unsophisticated investors (Rennekamp, 2012). The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment. Correlations found between management financial statement manipulation and valuation judgments regarding related securities, while controlling for education, investing experience, and risk tolerance, suggest that additional regulation may be needed regarding the presentation of financial statements to protect unsophisticated investors (Kannadhasan, 2015; Rennekamp, 2012; Victoravich, 2010).

### **Purpose of the Study**

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance, to provide correlational evidence supporting or discrediting the existence of management obfuscation theory. The financial statement manipulation is the independent (predictor) variable. The investor valuation judgment is the dependent (outcome) variable. Investment experience, education level, and risk tolerance are



control variables. The target population of this study was U.S. based unsophisticated investors. The minimum sample size was 85 based on G\*Power 3.1 with alpha level of .05, medium effect size of .15, and power level of .80 for F test of multiple regression analysis with four predictors (Cohen, 1992; Faul, Erdfelder, Buchner, & Lang, 2009). Data was collected using the Survey Monkey® online survey tool. Hierarchical multiple regression analysis was performed to test the relationship between the complexity of financial statements and the investors valuation judgments of the hypothetical securities, controlling for investment experience, education level, and risk tolerance (Younhee & Mi Jung, 2016).

### **Theoretical Framework**

Miller and Power (2013) suggested that accounting research generally follows an empirical positivist reductionist method. Existing research into financial statement language contextual complexity does follow this paradigm (Bens et al., 2012; Lee, 2012; Rennekamp, 2012). Reductionism is the most prominent method of study in financial accounting because of the highly numeric and data-driven nature of the phenomena under study, and is the framework most aligned with the research problem regarding management obfuscation theory (Miller & Power, 2013). The following theoretical framework suggests that management obfuscation theory is built on the foundational theories of (a.) efficient market theory, (b.) agency theory, (c.) cognitive load theory, and (d.) processing fluency theory.

Efficient market theory suggests that securities prices reflect all relevant and available information (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). However, company management must first communicate all information relevant to the pricing

decision to market participants for market participants to price securities accurately under the efficient market theory (Lee, 2012). One complication to the free and complete communication of relevant information is the incongruence between the goals and incentives of management versus those of market participants (Baginski, Demers, Wang, & Yu, 2016; Lee, 2012; Libby & Rennekamp, 2012). Agency theory suggests that the differences between the goals of company management and those of market participants lead management to seek to maintain information asymmetry to maximize pecuniary or other ego-based rewards (Bens et al., 2012; Jensen & Meckling, 1976). Information asymmetry is the phenomenon where market participants have less access to information about the performance of a company than management of that company (von Alberti-Alhtaybat, Hutaibat, & Al-Htaybat, 2012). Adverse selection leads company management to selectively communicate positive information while failing to communicate, or incompletely communicate negative information to market participants (von Alberti-Alhtaybat et al., 2012). An extension of agency theory and information asymmetry is management obfuscation theory (Bens et al., 2012). Management obfuscation theory suggests that company management may seek to delay investor reactions by disguising negative results using contextual complexity (Bloomfield, 2002; Elliott et al., 2014; Feldman et al., 2010; Ferris et al., 2013; Huang et al., 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo et al., 2017; Rennekamp, 2012).

The importance of the free and complete communication of relevant information leads to public interest theory. Public interest theory suggests that regulatory oversight is required to protect market participants from adverse selection in financial reporting, as the free flow of accurate and complete information is a public good that protects capital

market participants (Bertomeu & Cheynel, 2013). To protect capital market participants, regulators including the SEC proscribe guidance regarding the form and content of financial statements prepared by company management (Lee, 2012). This guidance extends beyond the numerical content of financial statements to the presentation style (Rennekamp, 2012). Presentation style may influence the ability of market participants to fully process the information contained within the financial statements (Rennekamp, 2012). Processing fluency theory hypothesizes the mechanisms whereby market participants cognitively process the information contained within financial statements (Alter & Oppenheimer, 2009). Processing fluency theory suggests that the perception of information contained within financial statements will vary from market participant to market participant because each financial statement reader will encounter a varying level of difficulty in perceiving the message (Alter & Oppenheimer, 2009). Under cognitive load theory, each financial statement reader possesses a limited cognitive capacity that is exhausted when the information is too complex or lengthy for that reader (Lee, 2012). Thus, under management obfuscation theory, management may seek to maintain information asymmetry by exploiting the cognitive load and processing fluency limitations of investors by using language and contextual complexity in financial reporting that delays negative investor reactions to bad news (Bloomfield, 2002; Humpherys et al., 2011; Li, 2008).

Previous archival studies attempted to infer investor behavior from the pricing of corporate securities over a period after earnings releases (Feldman et al., 2010; Lee, 2012). While these researchers suggested that management may seek to use various forms of increased contextual complexity to mislead financial statement users when

earnings are poor, questions remained as to the whether the obfuscation goal of management directly alters successfully the decision-making process of investors who must decide whether to sell or continue to hold an investment in the company (Feldman et al., 2010; Lee, 2012; Rennekamp, 2012). An additional remaining question was how management obfuscation theory reconciles with the efficient market hypothesis, a foundational accounting theory that directly contradicts the assertion that management can influence market reactions to earnings data (Lee, 2012). An experimental study examined contextual complexity measured readers' perceptions of the contextual complexity of press releases, but did not measure how contextual complexity changes might influence the decision-making process of investors (Rennekamp, 2012).

While the multiple researchers who examined the premises of management obfuscation theory provided evidence supporting the theory, none tested whether contextual complexity influences the decision-making process using correlational methods. The importance of understanding whether financial statement manipulation through contextual complexity by management might alter the decision-making processes of individual investors relates to the efficiency and fairness of capital markets (Lee, 2012). Results of this study suggest that management can prevent the incorporation of relevant information into securities prices, which directly contradicts the central premise of the efficient market hypothesis, which suggests that market participants quickly and fully incorporate all relevant information into securities prices (Lee, 2012; Rennekamp, 2012).

Prior research into the theoretical foundations of management obfuscation theory found that managements' contextual manipulations may influence investors' perceptions

of the corporation and indirectly suggests that subsequent securities returns are affected (Lee, 2012; Rennekamp, 2012). Additional reductionist correlational research was recommended to test directly whether management manipulations of contextual complexity can prevent or delay individual investor decisions regarding whether to sell a security the investor otherwise would have sold (Rennekamp, 2012).

The theoretical foundations of management obfuscation theory include the financial theories of the efficient market hypothesis and agency theory, as well as theories from the social sciences including cognitive load theory and processing fluency theory (Bens et al., 2012; Hales et al., 2011; Huang et al., 2014; Lee, 2012; Lehavy et al., 2011; Lo et al., 2017; Mostyn, 2012; Rennekamp, 2012). While portions of these theories appear to be potentially contradictory in nature, an examination of the nature of theory describes how theory building is an iterative process where each researcher adds new insights that bring theory closer to describing how the observed phenomena performs (Stam, 2000). Additional research was suggested to reconcile remaining unanswered questions regarding management obfuscation theory (Rennekamp, 2012). These theories are explored further in Chapter 2 to elucidate how interactions between efficient market theory and agency theory interrelate with unsophisticated investor processing fluency, which leads to management obfuscation theory and the need for this completed research study in financial statement contextual complexity.

### **Research Questions**

A set of quantitative research questions and related research hypotheses are presented below with the aim of suggesting or discrediting that a significant correlation exists between management financial statement manipulations and unsophisticated

investors' reactions to those manipulations. For the quantitative research questions, a related null and alternate hypothesis is presented. The alternate hypothesis is presented to suggest that if a significant correlation is found between the variables that the alternate hypothesis may suggest a possible explanation as to the cause of the correlation (Leedy & Ormrod, 2015).

**Q1.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors?

**Q2.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the education level of unsophisticated investors?

**Q3.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors?

### **Hypotheses**

**H1<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the investment experience of unsophisticated investors.

**H1<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors.

**H2<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the education level of unsophisticated investors.

**H2<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for education level of unsophisticated investors.

**H3<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the risk tolerance of unsophisticated investors.

**H3<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors.

### **Nature of the Study**

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the securities valuation judgments of unsophisticated investors, controlling for investment experience, education level, and financial risk tolerance. A quantitative study was chosen because the primary objective of the study is to measure the effect of financial statement complexity on participant decision making, and quantitative studies are the most efficient means of statistically measuring specific relationships between variables (Venkatesh, Brown, & Bala, 2013). An additional benefit of the quantitative method for this study was control over variables, which increased the internal validity of the results (Cozby & Bates, 2012).

The advantage of a correlational design in this study is that it helped elucidate whether a relationship exists between the management financial statement manipulations and investor valuation judgments (Venkatesh et al., 2013). An additional benefit of this correlational design that is central to the research questions was the measurement of the extent of financial statement manipulation related effects on investors of differing levels of education, investment experience, and risk tolerance (Younhee & Mi Jung, 2016). Management financial statement manipulation was the independent (predictor) variable. The securities valuation judgment was the dependent (outcome) variable (Field, 2013). Investment experience, educational level, and financial risk tolerance were control variables (Field, 2013).

Hierarchical multiple regressions were utilized to measure any relationships that may exist between the predictor and outcome variables (Younhee & Mi Jung, 2016). Utilizing hierarchical multiple regression allowed for the measurement of the extent and significance of any relationships between the predictor and outcome variables (Younhee & Mi Jung, 2016). The strength of the correlations found suggested which segments of the investing public are most at risk from management obfuscation effects (Younhee & Mi Jung, 2016).

### **Significance of the Study**

Financial statement fraud has the potential to harm investors at all levels of income and investment experience (Bens et al., 2011). However, the SEC has demonstrated that protecting the least sophisticated investors is a stated objective of financial reporting regulation (SEC, 2013). One outcome of this study was the quantification of how management obfuscation in the form of selective financial



statement manipulation influences investor decision making. Thus, this research may be of interest to market regulators including the SEC as they seek to measure the effectiveness of existing financial reporting standards as well as create new standards designed to protect unsophisticated investors (SEC, 2013).

Rennekamp (2012) suggested that additional research was needed in financial statement obfuscation. As a burgeoning area of research, this study adds credence to the theoretical existence of management obfuscation theory. The theoretical contribution of this study includes correlational evidence regarding not only the existence of management obfuscation theory, but also how management manipulation effects valuation judgments, as well as what portion of the population of the investing public is most at risk from this type of management manipulation.

### **Definition of Key Terms**

Management obfuscation theory research explores how manipulations to the non-numeric content of financial statements influences unsophisticated investor perceptions. To complete correlational analysis, the non-numeric content must be operationalized in such a way that allows measurement and analysis. The following definitions provide context to essential terms used in management obfuscation theory research.

**Company Management.** Company management refers to those individuals employed by company ownership to oversee the short-term operations and long term planning of the company. Agency theory suggests that company management does not always have the same goals as company ownership. Information asymmetry may allow company management to selectively disclose negative information to the detriment of company ownership.

**Contextual Complexity.** Contextual complexity refers to the non-numeric aspects of financial reporting that increase or decrease the perceived difficulty of processing the content of financial statements. Contextual complexity may be increased through stylistic means including company management word choice, sentence structure, layout choices, verb tense and usage, or statement length (Kearny & Liu, 2014). Contextual complexity was measured using the previously validated textual analysis Flesch-Kincaid Grade Level test.

**Education Level.** Education level is the highest completed grade by a study participant. The more years of education a participant has completed, the greater the likelihood they have been exposed to texts of increasing levels of complexity (Victoravich, 2010). Education level corresponds with the Flesch-Kincaid Grade Level output and thus, provides a useful control variable to provide correlational data on the securities valuation judgments of participants.

**Financial Risk Tolerance.** Financial risk tolerance refers to the perceived level of risk an investor is willing to take in achieving financial objectives (Kannadhasan, 2015). Investors with a higher level of financial risk tolerance may be willing to invest in a potentially risky company if the investor perceives that the long-term payoff will be greater than in less risky securities (Kannadhasan, 2015). Thus, isolating the effects of financial risk tolerance is essential to understanding the valuation judgments of participants in this study.

**Flesch-Kincaid Grade Level.** Flesch-Kincaid Grade Level measures the readability of text by measuring the average sentence length of a passage, as well as the average number of syllables per word in that passage (Plucinski & Hall, 2012; Protheroe,

Estacio, & Saidy-Khan, 2015). Flesch-Kincaid was chosen for this study due to usage in recent accounting research that sought to measure the difficulty of accounting texts (Plucinski & Hall, 2012), as well as research measuring the complexity of measuring other financial information (Franco, Hope, Vyas, & Zhou, 2015). An additional benefit of Flesch-Kinkaid Grade Level is that a grade level score is easily calculated in existing word processing software (Plucinski & Hall, 2012). Lastly, useful benchmarks exist for grades of the accounting codification, such as grade 14 for accountants to understand accounting texts, and grade 20 found in the FASB codification itself (Farrell, Farrell, & Wells, 2010).

**Investment Experience.** Investment experience refers to the level of experience a securities investor has investing in corporate securities. Investors with many years of experience may possess a greater processing fluency in understanding the language used in financial statements and in the correct evaluation of securities value based on those reports (Victoravich, 2010). On the other hand, unsophisticated investors may possess a lower processing fluency in deciphering financial reporting, and have been found to assign unrealistically optimistic valuations to corporate securities (Victoravich, 2010)

**Management obfuscation.** Management obfuscation includes attempts by management to misrepresent the true financial condition of the company using contextual complexity rather than outright financial statement fraud (Rennekamp, 2012).

Management obfuscation attempts to decrease unsophisticated investor negative reactions to bad news using contextual cues that are incongruent with the true operating condition of the company (Rennekamp, 2012). These contextual cues might include using positive language and tone when delivering negative news, or using excessive complexity and

length to overwhelm the cognitive load of the reader when delivering negative results, but using simple to understand language when delivering positive results (Hales et al., 2011). Numerous methods of management obfuscation exist and are included in the design of the completed study.

**Securities.** Securities represent an ownership stake in the underlying corporation. The valuation of securities then is largely dependent on the expected future performance of the underlying corporation. Thus, information regarding the performance of the corporation is of great interest to securities shareholders and they seek to make valuation judgments (Kothari & Lester, 2012).

**Unsophisticated Investors.** Unsophisticated investors are those market participants who do not professionally manage investments and thus excludes: (a) money managers, (b) mutual fund managers, (c) pension managers, (d) trust managers, (e) professional securities analysts, and (e) individual professional day-traders (Rennekamp, 2012). Unsophisticated investors may possess a lower level of processing fluency and be more prone to over optimistically assign values to poorly performing companies (Victoravich, 2010).

## Summary

Management obfuscation theory suggests that management may attempt to mislead investors using contextual complexity in financial reporting to delay negative investor responses to that information (Bloomfield, 2002; Elliott et al., 2014; Feldman et al., 2010; Ferris et al., 2013; Huang et al., 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo et al., 2017; Rennekamp, 2012). Management obfuscation may disproportionately harm the least sophisticated investors (Hales et al., 2011; Libby &

Rennekamp, 2012), which is in direct contradiction to the SEC's mandate of protecting market participants without professional investing experience (SEC, 2013). A quantitative correlational study was completed to examine the relationship between the complexity of financial statement language and the valuation judgments of investors, controlling for investment experience, education level, and risk tolerance. 100 U.S. based unsophisticated investors recruited using Survey Monkey® reviewed sample financial statements designed to simulate management obfuscation. 85 U.S. based investors was the minimum required sample was determined using G\*Power 3.1 with an alpha level of .05, medium effect size of .15, and power level of .80 for F test of multiple regression analysis with four predictors (see Appendix A; Cohen, 1992; Faul et al., 2009). Participants completed surveys designed to measure their judgments of company value and management performance. Hierarchical multiple regression analysis using four predictors was used to determine whether any correlations existed between the investment decision of investors while controlling for education, risk tolerance, and investment experience. This analysis to provided further evidence suggesting the existence of management obfuscation theory, and additionally provided insights into how investment experience, education level, and risk tolerance, effected participants' judgments (Cohen, 1992; Faul et al., 2009). The following chapter will provide a detailed analysis of the underlying theories and existing research in management obfuscation theory.

## Chapter 2: Literature Review

The following literature review will suggest that management obfuscation theory is built on the foundational theories of (a.) efficient market theory, (b.) agency theory, (c.) cognitive load theory, and (d.) processing fluency theory. Within this review of the literature, the objectives and requirements of financial reporting are examined (van Mourik & Yuko, 2015). An examination of the objectives of financial reporting provides a baseline to measure variations from the stated objectives. Efficient market theory is explored as a basis for optimal securities price movement (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). Agency theory is examined to provide context into the incentives management may have to obscure poor earnings results to prevent decreases in securities prices (Bens et al., 2012; Jensen & Meckling, 1976). Next, processing fluency is examined to suggest a mechanism that management may exploit to obscure poor earnings (Forster, Leder, & Ansorge, 2013). Lastly, the central theory of this study, management obfuscation theory, is explored in the context of the previously explored theories. Existing research in management obfuscation theory was examined in detail to suggest areas where additional research was needed to expand the existing contextual complexity literature.

### Documentation

Research databases available from the Northcentral University library were the primary sources of peer-reviewed journal articles found within this dissertation proposal. EBSCOhost, ERIC, ProQuest, and Science Direct were the primary databases containing information relevant to the completed study. The primary keywords used in searches of these databases included: (a) *management obfuscation*, (b) *processing fluency*, (c)

*financial reporting*, (d) *tone management*, (e) *narrative disclosures*, (f) *cognitive load*, (g) *agency theory*, and (h) *efficient market theory*. The date range in each database was set between 2012 and 2017 to ensure that primarily recent research was included. Searches were limited to peer-reviewed academic journal articles. Journal articles were selected based on their relevance to management obfuscation theory and financial reporting practice.

### **The Purpose of Financial Reporting**

An understanding of management obfuscation theory requires consideration of the rules and objectives of U.S. GAAP financial reporting (Rennekamp, 2012). Further, an understanding of the rules and objectives of financial reporting provides a baseline to measure management financial statement manipulation against (Rennekamp, 2012). U.S. GAAP follows a conceptual framework created by the Financial Accounting Standards Board (FASB) that forms the basis for all authoritative accounting guidance (van Mourik & Yuko, 2015). Under the FASB conceptual framework, the objective of financial reporting is to provide information to present or potential investors or creditors that is useful in making sound asset allocation decisions (van Mourik & Yuko, 2015). An additional objective of financial reporting is to provide information that may allow external stakeholders to accurately assess the amounts and timing of future cash flows (van Mourik & Yuko, 2015). The ability to assess future cash flows allows external stakeholders to estimate the amount of cash generated by the company that may available to provide a return to stockholders, or repay the debts of creditors (van Mourik & Yuko, 2015). An additional objective of financial reporting is to provide information regarding

the value of assets of the company, as well as any claims against those assets in the form of liabilities or equity (van Mourik & Yuko, 2015).

The FASB conceptual framework achieves the objective of providing information that is useful to investors and creditors by establishing a unified codification of reporting rules that are directly linked to the stated objectives (van Mourik & Yuko, 2015). To achieve the objective of providing external stakeholders with information regarding future cash flow prospects the codification requires the preparation of a periodic profit and loss statement that through inference, allow the stakeholder to estimate future cash flows by extrapolating revenue trends (van Mourik & Yuko, 2015). Under U.S. GAAP accrual accounting the profit and loss statement is not enough to accurately assess the statement objective of reporting the timing of cash flows because revenue and expense recognition is not based on the timing of cash receipts or cash payments (van Mourik & Yuko, 2015). Thus, the FASB also requires a balance sheet that reports the amounts of payables and receivables that the company will realize in the form of cash as an additional reporting requirement (van Mourik & Yuko, 2015). An additional required financial statement element is the statement of cash flows, which classifies the receipts and payments of cash for an accounting period based on the categories of (a) operating, (b) investing, and (c) financing activities (van Mourik & Yuko, 2015). With these primary financial statements, and the statement of equity, an external stakeholder is provided with sufficient numerical information on the financial condition and financial performance of the company to make rational capital allocation decisions (van Mourik & Yuko, 2015). However, without context to the numbers, such as how capital assets are recorded; how leases are accounted for; and how judgmental accruals are calculated and



recorded; an external stakeholder does not have enough information to fully understand how management decisions may influence the reported numbers (Sunder, 2016). Thus, the FASB also requires notes to the financial statements, which provide detail regarding, for example, how revenue is recognized and what contingent liabilities may have future claims against the assets of the company (Sunder, 2016; van Mourik & Yuko, 2015).

From the foundation of the simple objective of providing information useful to external stakeholders in assessing the cash flows and resources of a company, a full set of financial statements emerge with the (a) income statement, (b) balance sheet, (c) statement of cash flows, (d) statement of equity, and (e) notes to the financial statements (van Mourik & Yuko, 2015). To prepare the financial statements the FASB enacted numerous rules in the accounting codification that cover nearly every situation that involves cash flows and entity resources (van Mourik & Yuko, 2015). These rules are designed to ensure that all relevant information, meaning any piece of information that would potentially change the asset allocation decision of a reasonable external stakeholder, is included (van Mourik & Yuko, 2015). By preparing financial statements using the same rules as other reporting companies, the FASB ensures that external stakeholders can compare the reporting company's financial statements to those of other reporting companies in the same or other industries (van Mourik & Yuko, 2015). Additionally, financial statements are required to be reported timely, meaning currently enough that the information included retains decision usefulness (van Mourik & Yuko, 2015).

Another qualitative characteristic included in the FASB codification is that financial statements must faithfully represent the financial condition of the reporting

company (van Mourik & Yuko, 2015). To ensure that financial statements faithfully represent the financial condition of the company, the FASB requires that information included in the financial statements must be verifiable, usually through independent audit, and additionally that the information is presented in a neutral manner free from management bias (van Mourik & Yuko, 2015). Additionally, financial statement information should be complete, meaning that all information needed for an external stakeholder to synthesize an accurate representation of the company is contained within the financial statements and the notes to the financial statement (van Mourik & Yuko, 2015). These attributes based foundational rules allow for the creation of financial statements that are truthful and fair representations of the reporting company when the objectives are followed with intention by management (Sunder, 2016).

Considering that financial statements must be both relevant and timely, as well as faithful representations of potentially highly complex business entities, and further that the financial statements must be (a) neutral, (b) complete, (c) consistent, and (d) comparable, the question of how management can achieve these objectives on a quarterly basis arises (Sunder 2016; van Mourik & Yuko, 2015). Additionally, in the performance of these objectives FASB standard setters suggest that company management must exercise due care in the preparation of financial statements (van Mourik & Yuko, 2015). Due care in this context means that management prepares the financial statements from a foundation of understanding the accounting codification and how to apply the codification to the specifics of the industry in which the company participates (van Mourik & Yuko, 2015). An additional explicit requirement from the codification is that management will present the financial statements clearly and concisely (van Mourik &

Yuko, 2015). A clear and concise presentation is considered essential to the understanding of financial information for all classes of financial statement users (Rennekamp, 2012). When considering financial statement users, the FASB suggests that financial statement users must have some base knowledge of finance and economics to give them the ability to make sense of the information contained in financial statements (van Mourik & Yuko, 2015). Additionally, the financial statement reader must exercise due diligence in analyzing and synthesizing the full content of the statements (van Mourik & Yuko, 2015). When financial statements are prepared following the accounting codification capital market participants have enough information to efficiently adjust share prices to an equilibrium point that includes all the risks and benefits inherent in ownership of the report company (van Mourik & Yuko, 2015). However, complications arise in market efficiency owing to the disparate incentives between company management and external stakeholders that requires further consideration when discussing the objectives and effectiveness of financial reporting (Baginski et al., 2016; Bens et al., 2012).

### **Efficient Market Theory**

Management obfuscation theory depends on unsophisticated investors misinterpreting the financial results of a company due to management financial statement manipulations (Lee, 2012). However, the ability of management to obfuscate poor performance through manipulations to contextual complexity that could lead unsophisticated investors to overvalue a security is contradictory to efficient market theory (Lee, 2012). Efficient market theory is one of the foundational theories of accounting and economics, and thus the contradictions between management obfuscation

theory and efficient market theory must be explored to provide essential context to management obfuscation theory (Lee, 2012).

Efficient market theory has three forms: (a) strong form, (b) weak form, and (c) semi-strong form. These forms vary based on how and what type of information is included in the pricing of securities (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). The strong form of the efficient market hypothesis suggests that securities prices incorporate all information from all sources (Gandhi et al., 2013; Murthy et al., 2011). This suggests that whether management publicly releases information through financial statements, or attempts to keep the information from the public through information asymmetry, this information will be reflected in securities prices (Gandhi et al., 2013; Murthy et al., 2011). The strong form of the efficient market hypothesis does not seem plausible considering the number of major economic scandals where numerous insiders knew of the financial manipulation and management's attempts to hide this information, but securities prices did not react until after the scandal was uncovered (Lee, 2012). Additionally, if the strong form of the efficient market hypothesis were true, management would be unable to prevent or delay financial statement users from selling a security by obfuscating financial results using contextual complexity (Lee, 2012).

Under the weak form of efficient market hypothesis, all historical data is reflected in the price of securities (Gandhi et al., 2013; Murthy et al., 2011). This historical performance information does not provide any additional information regarding future price movement, suggesting that market prices will move randomly from the perspective of information released in the past (Gandhi et al., 2013; Murthy et al., 2011). These unpredictable movements suggest that analysts and market participants cannot benefit

from market inefficiencies, as no patterns exist in price movement that analysts could discern and use to their advantage (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). The weak form of efficient market theory fails to describe the phenomenon of markets moving in response to press releases and other news releases in addition to SEC released 10-K and 10-Q statements.

The semi-strong form of the efficient market hypothesis postulates that all publicly available information is reflected in the price of securities (Gandhi et al., 2013; Murthy et al., 2011). Market participants quickly incorporate information from press releases and other management communications regarding the condition of a company (Gandhi et al., 2013; Murthy et al., 2011). Owing to the efficiency with which market participants incorporate this public information, no group of market participants can gain an advantage over any other group (Gandhi et al., 2013; Murthy et al., 2011). The semi-strong form includes the weak form criteria meaning that all past and present publicly available information from all sources are priced into securities (Gandhi et al., 2013; Murthy et al., 2011). The semi-strong form of the efficient market hypothesis is the form of greatest interest to a study into company management's ability to delay market participant reactions to poor earnings because under this form, management should not be able to delay investor reactions (Lee, 2012). If company management can delay investor reactions through contextual complexity, this delay would challenge the efficacy of the semi-strong form of efficient market theory because not all publicly available information would be incorporated into the price of securities (Lee, 2012). The goals of management and market participants do not appear well aligned, otherwise company management would not seek to introduce inefficiencies into capital markets through contextual

complexity, but instead would seek to provide full and transparent communication of all relevant facts to market participants (Lee, 2012). An exploration of agency theory may provide clues regarding why full and transparent communication does not form the basis of management to market participant communication and further suggest that management obfuscation theory is needed to explain the behavior of company management.

### **Agency Theory**

An exploration of agency theory is essential to a complete understanding of management obfuscation theory because it provides the management motive for manipulating financial statements (Bens et al., 2012). Agency theory suggests that the goals of company management and the goals of market participants are not aligned (Jensen & Meckling, 1976; Nyberg, Fulmer, Gerhart, & Carpenter, 2000; von Alberti-Alhtaybat et al., 2012). The goal of the market participant as the principle in the agency model is to receive and make decisions based on accurate and complete financial information regarding the current state of the company (von Alberti-Alhtaybat et al., 2012). Company management, acting as the agent of the market participant on the other hand, may have pecuniary and other ego-based incentives to provide information that falsely inflates the performance of the company (Baginski et al., 2016; Bens et al., 2012). This presentation of unrealistically good performance information is especially pronounced when company performance is poor (Bens et al., 2012).

Company management may feel pressure to deliver positive earnings to prevent their replacement by company owners (Bens et al., 2012). Research supports this hypothesis, with a significant correlation found between management turnover and firm

performance after merger events (Bens et al., 2012). Managements' perceived pressure may cause management to manipulate earnings through the recognition of unearned revenue or the adjustment of judgmental accruals, or any number of other schemes designed to increase earnings or decrease expenses (Bens et al., 2012). These schemes range from questionable, though arguable, management decisions, to outright fraud on the part of management (Bens et al., 2012). By manipulating earnings, management may seek to meet earnings targets that increase their personal compensation, or to appear more competent in the stewardship of company resources than reality would suggest (Bens et al., 2012). Research further suggests that management gains an advantage in the form of decreased turnover by misreporting, even when that misreporting is discovered in a future period that requires restatement of the financial results (Bens et al., 2012). Ego-based reasons, such as the need to validate previous management decisions regarding product launches and mergers and acquisitions, may provide additional explanations as to why management would seek to distort the true condition of the company from the principles in the agency relationship (Kothari & Lester, 2012; Libby & Rennekamp, 2012).

Under the semi-strong form of efficient market theory, all publicly available information should be included in securities pricing (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). However, if management can distort the true economic condition of the company through intentional misrepresentation for reasons described in the agency theory, additional theories are needed to describe how company management may be able to accomplish this misrepresentation. Information asymmetry provides an explanation as to how company management may be able to manipulate financial and non-financial

perceptions of company performance that will lead to the management obfuscation hypothesis (Bertomeu & Cheynel, 2013).

### **Information Asymmetry and the Full Disclosure Principle**

Management obfuscation theory is directly built on the concept of information asymmetry (Bertomeu & Cheynel, 2013). Information asymmetry refers to the phenomenon of one party in a transaction having information that the other party does not (von Alberti-Alhtaybat et al., 2012). In a financial reporting context, information asymmetry takes the form of company management having information that market participants do not (Bertomeu & Cheynel, 2013). This allows management to selectively disclose all positive information while not disclosing, or even misrepresenting, negative information (Bertomeu & Cheynel, 2013). In both cases, information asymmetry and selective disclosure allows management to maximize pecuniary and ego-based rewards (Bertomeu & Cheynel, 2013).

To minimize information asymmetry, market regulators operate under the full disclosure principle, meaning market regulations require company management to communicate all relevant information to market participants to aid those participants in making securities buy and sell decisions (Lee, 2012). Under management obfuscation theory management directly attempts to circumvent full disclosure through financial statement manipulations designed to obscure the true operating condition of the company (Rennekamp, 2012). Public interest theory suggests that the protection of capital market participants is a mandate of market regulators (Bertomeu & Cheynel, 2013; Kothari & Lester, 2012). Public interest theory suggests that the discovery and mitigation of threats to the full disclosure principle in U.S. financial markets is a mandate of capital market



regulators (Bertomeu & Cheynel, 2013; Kothari & Lester, 2012). Under full disclosure theory, market regulators protect capital market participants by ensuring that company management fully and in a timely manner communicates all information relevant to making buy or sell decisions (Bertomeu & Cheynel, 2013). Full disclosure protects the public interest by allowing capital market participants to make fully informed investment choices (Kothari & Lester, 2012). Under the full disclosure principle, regulators seek to minimize the deleterious effects of information asymmetry on market participants (Lee, 2012). An example of this deleterious behavior might include company management distorting the economic reality of the company when earnings are poor to prevent market participants from making a sell decision that would decrease the share price of the company (Lee, 2012).

Under full disclosure, company management is mandated by market regulators to disclose both positive and negative information (Lee, 2012). Managements' incentive to maximize disclosure when earnings are above expectations, and minimize disclosure when earnings are poor, presents a challenge to the semi-strong form of efficient market theory because market participants should quickly and efficiently price in the economic reality of the company even when management attempts to distort earnings (Lee, 2012). However, for market participants to maintain market efficiency all relevant information must be disclosed by management (Bertomeu & Cheynel, 2013). Agency theory suggests that the public good is not the primary motivation of management, and instead selfish desires for money and power may cause management to subvert the public good for their personal advancement (Huang et al., 2014). If management can obfuscate financial results successfully through contextual complexity, then market regulators' mandate to

protect capital market participants may be diminished (Bertomeu & Cheynel, 2013; Lee, 2012). To maintain the public good, market regulators must remain aware of potential means that management might undertake to subvert the public good so these schemes may be actively detected and regulated (Bertomeu & Cheynel, 2013).

While regulators seek to minimize information asymmetry by requiring management to make all relevant facts available within the financial disclosures of the company, company management may seek to increase information asymmetry in subtler ways than engaging in outright fraud through omission or misrepresentation (Libby & Rennekamp, 2012). One method of maintaining information asymmetry is the manipulation of language (Libby & Rennekamp, 2012). Management may choose language that is too difficult to understand by financial statement readers. In this way, company management may present factually correct information as required by regulators, while obtaining the same result as if the information had been disclosed (Rennekamp, 2012). Humpherys et al. (2011) suggested that management may seek to increase information asymmetry through complex contextual choices within otherwise numerically accurate financial statements. These contextual choices are designed to obfuscate the magnitude of negative information so that financial statement readers do not react, or react less severely, while at the same time avoiding sanction by regulatory bodies because the contextual choices are too subtle or subjective to regulate effectively (Humpherys et al., 2011). If negative financial results are not correctly perceived by financial statement users, financial statement users may not make the same sell decision they would make if they better understood the information (Lee, 2012; Rennekamp, 2012). Thus, company management's goal of maintaining information asymmetry to

gain an advantage over the shareholder by causing her or him to forgo or delay the decision to sell is achieved (Lee, 2012; Rennekamp, 2012). While research in financial statement language choice has been limited until recently, regulators have hinted at the importance of language use and presentation through guidance relating to financial statement presentation (Rennekamp, 2012; SEC, 1998, 2013).

### **Highly Readable Financial Statement Disclosures**

To decrease the information asymmetry that exists between company management and market participants, market participants have a high demand for information regarding the performance and state of the companies in which they invest (Libby & Rennekamp, 2012). However, financial statement users have varying levels of skill in analyzing financial statements (Lehavy et al., 2011). Sophisticated institutional investors may have a higher level of proficiency in analyzing complex language than the least sophisticated individual investors (Lehavy et al., 2011). Financial statement complexity then may have a stronger negative effect on users with the lowest level of financial sophistication (Rennekamp, 2012).

Regulators must consider the needs of all financial statement users and thus, to serve the public good, regulators must ensure that financial statements are complete, accurate, and generally accessible by financial statement users of all skill levels (Bertomeu & Cheynel, 2013). The SEC has stated that unsophisticated financial statement users, meaning those users without advanced financial educations or professional backgrounds, are a class of financial statement user that requires additional consideration when designing reporting regulations (SEC, 1998, 2013). To protect the interests of all financial statement users, including the least sophisticated users, regulators

have considered the issue of financial statement complexity in addition to those other more technical aspects of financial reporting (SEC, 1998, 2013). An SEC study on the ability of financial statement users to correctly perceive the information contained in financial statements suggested that unsophisticated investors were unable to understand the language contained in financial statements (SEC, 2013).

The SEC's Wheat Report suggested that complex language and presentation choices contained in investment prospectuses had the potential to harm unsophisticated investors (SEC, 2013). The SEC recommended that language used in prospectuses and other management communications should not be unnecessarily complex, lengthy, or verbose in nature (SEC, 1998, 2013). The SEC maintained clearly understandable financial disclosure as an area of focus as demonstrated by the issuance of The Plain-English Rule (421(d)) and the related issuance of the *Plain English Handbook* (SEC, 1998). The *Plain English Handbook* provides guidance on what constitutes plain English, including suggestions to use short sentences and simple language written in active voice (SEC, 1998). Further, the SEC included recommendations designed to increase readability through both writing style and presentation style including: (a) bulleted lists, (b) the avoidance of jargon, (c) the avoidance of double negatives, and (d) the avoidance of overly technical language (SEC, 1998). Processing fluency theory and cognitive load theory provide clues as to the importance of highly readable financial statements to unsophisticated financial statement users (Rennekamp, 2012).

### **Processing Fluency and Cognitive Load Theory**

With the foundations of why management may seek to obfuscate the financial condition of the reporting company through financial statement manipulations to

contextual complexity established, the mechanism of how management obfuscation theory can successfully influence investor valuation judgments must be explored.

Processing fluency theory suggests that individuals experience more or less ease in processing information (Jiang & Hong, 2015). The subjective feeling of greater difficulty in processing a message generally causes individuals to perceive messages less favorably than more easily understood messages (Jiang & Hong, 2015). Jiang and Hong (2015) suggested that the affective neural pathways underlying processing fluency effects are similar to emotional or mood response pathways.

Applications of processing fluency research may be found in financial planning, where advisors seek to craft simple messages regarding complex actuarial and investment returns in literature for clients (Jiang & Hong, 2015). A pamphlet describing investment needs that contained dense actuarial jargon might cause a client to perceive low processing fluency, which might cause the client to perceive the literatures proposed investment plan negatively, which might cause the patient to forgo investing at all, leading to an adverse retirement outcome (Jiang & Hong, 2015). Processing fluency has additional applications to fields as diverse as art and medicine, where viewers of art works tend to dislike art they perceive as difficult to understand, and patients avoid complex treatment plans when medical jargon is dense (Holman, 2013).

Processing fluency effects may be applied to financial statement language choices because different word choices present differing processing fluency challenges for financial statement readers (Libby & Rennekamp, 2012). Market participants possess limited cognitive processing capacity when reading financial statements and thus, more difficult to read financial statements may more quickly exhaust the capacity of financial

statement readers, preventing a level of processing that would allow the reader to make sound investment decisions based on the condition of the company (Lee, 2012).

Processing fluency theory suggests that when a market participant is presented with multiple items that require a cognitive load to process, market participants will generally prefer the item with a lower level of complexity (Forster et al., 2013; Jiang & Hong, 2015). Financial statement processing fluency may be defined as the subjective perception of how easily a market participant can process and comprehend the content of financial statements released by management (Libby & Rennekamp, 2012; Rennekamp, 2012).

Cognitive load refers to the overall level of mental exertion a financial statement must expend to process the content of financial statements released by management (Miller, 2010; Mostyn, 2012; Tsai & Thomas, 2011). Processing fluency is a function of the difficulty of language and stylistic presentation contained in financial statements (Jiang & Hong, 2015; Miller, 2010; Rennekamp, 2012). Cognitive load is a function of both complexity and the overall length of financial statements (Lee 2012; Miller, 2010). Cognitive load adds length as a metric because financial statements that are clearly written could still overwhelm the capacity of a financial statement reader if they are too long to process before the reader reaches mental exhaustion (Lee, 2012; Miller, 2010).

Company management may exploit market participants processing fluency limitations or cognitive load limitations to misrepresent financial results (Lee, 2012; Libby & Rennekamp, 2012; Miller, 2010). An important consideration of management attempts to overwhelm the processing fluency of financial statement readers is that these effects may vary depending on the financial literacy of the financial statement reader.

Thus, a financial statement reader with lower financial literacy may be influenced to a greater degree than a professional analyst, for example, leaving the least sophisticated of investors at a greater processing fluency disadvantage than other market participants (Libby & Rennekamp, 2012). Libby and Rennekamp (2012) suggested that management may seek to exploit both financial statement readers processing fluency and cognitive load, though questions remain as to how and whether management can manipulate financial statement user decisions through exploitation of these cognitive limitations.

### **Management Obfuscation Theory**

Management obfuscation theory suggests that management may seek to prevent or delay negative investor reactions to bad news by obfuscating relevant information through decreased readability of financial reports (Bloomfield, 2002; Elliott et al., 2014; Feldman et al., 2010; Ferris et al., 2013; Huang et al., 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo et al., 2017; Rennekamp, 2012; Tan et al., 2014). Management may wish to obfuscate the true operating condition of the company to receive increased pecuniary rewards or avoid replacement by company ownership (Bens et al., 2012). Management may also want the company to appear to be in better condition for ego-based reasons such as wanting to appear to be better stewards of company resources, or better decision makers (Bens et al., 2012). With career prospects poor for management that underperforms ownership expectations, and regulatory penalties high for management that commits financial statement fraud, management obfuscation presents a low risk opportunity to subtly misrepresent management performance (Bertomeu & Cheynel, 2013; Fung 2015; Tan et al., 2014). Management obfuscation allows company management to exploit the limited processing fluency of market participants to prevent or

delay market participant decisions regarding the suitability of an investment (Libby & Rennekamp, 2012; Rennekamp, 2012). Management obfuscation may be most detrimental to unsophisticated investors who have lower levels of processing fluency when analyzing complex financial data (Libby & Rennekamp, 2012). The following subsections detail existing management obfuscation methods as well as existing research to elucidate areas where additional research could add to existing theory.

**Management obfuscation theory based experimental research.** Tan et al., (2014) hypothesized that the readability of financial statements influenced investors' judgments when company performance was outside of performance benchmarks. The researchers hypothesized that when earnings were better than the benchmark, investors' judgments regarding future earnings would be higher if the financial statements were more readable, and conversely, investors' judgments regarding future earnings would be lower if lower than benchmark earnings results were presented in a highly readable format (Tan et al., 2014). The purpose of the quantitative design was to provide evidence that low readability of financial results decreases the understanding of investors (Tan et al., 2014). Tan et al. (2014) conducted an experimental study to determine whether management could disguise negative financial statement information and found that management manipulation of the readability of negative financial information led to a decreased understanding of the financial statement content. The researchers tested investor perceptions of highly readable disclosure excerpts for firms performing well and firms performing poorly and found that investor understanding of highly readable disclosures led to a better understanding of the condition of reporting companies (Tan et al., 2014). On the other hand, less readable disclosures resulted in decreased



understanding by investors for both well performing and poorly performing companies (Tan et al., 2014). Tan et al. stated that the welfare of investors may be diminished by the ability of management to disclose financial results selectively. The authors suggested that management may influence investor judgments by intentionally obfuscating financial statements when earnings guidance is negative to increase investors' views of the future earnings potential of the company (Tan et al., 2014). Additionally, management may alter the sections of financial disclosures with negative future implications to distort readers' perceptions of the company (Tan et al., 2014). This selective obfuscation discovery contributed additional insights to existing financial statement disclosure theory and expanded on the theories of previous researchers who suggested total statement complexity as a means of overwhelming readers' cognitive load (Lee, 2012; Tan et al., 2014). Questions remain after the study regarding whether decreased understanding leads to investor inaction in formulating and executing a decision to sell corporate securities. The significance of the findings included that management does not need to manipulate the full content of financial disclosures, but instead can focus on excerpts that contain the most negative information content (Tan et al., 2014). This finding suggests that management may achieve the obfuscation objective with minimum effort, and with a low likelihood of detection through textual analysis of the overall statements (Tan et al., 2014).

Rennekamp (2012) hypothesized that more readable disclosures led to more negative valuation judgments when earnings were poor and higher valuation judgments when earnings were good. Rennekamp conducted a quantitative experimental study to determine whether market participants could be harmed by management manipulation of

readability. A 2x2 between-subjects design was utilized with manipulations made to the readability and earnings of a press release for a fictitious soft drink company (Rennekamp, 2012). The primary dependent variable was the valuation judgment of investors while the primary independent variable was press release readability (Rennekamp, 2012). The construct of readability was operationalized through manipulations of press release elements including (a) sentence structure, (b) word choice, and (c) bulleted lists of key figures (Rennekamp, 2012). Participants were presented with either a highly readable or less readable press release with the same numerical earnings information (Rennekamp, 2012). Participants provided judgments regarding their valuation of the firm before moving on to the next phase (Rennekamp, 2012). In a second phase, participants were presented with a press release with the opposite readability metric they received in the first round (Rennekamp, 2012). Rennekamp (2012) discovered that if management increased the difficulty a financial statement reader encounters when reading earnings press releases, management may decrease the likelihood that the investor will react to that information. If an investor does not react to negative information by selling a security they otherwise might have sold if they understood the magnitude of the context, management will have effectively obfuscated information to the benefit of management and the detriment of the investor (Rennekamp, 2012). One particularly pernicious ramification of this result is that because the least sophisticated investors have the lowest level of processing fluency, they may bear a disproportionately high level of harm when compared with sophisticated investors who may read through management's attempt and react and sell, leaving unsophisticated investors holding a losing position (Rennekamp, 2012). Whether unsophisticated

investors would be more or less willing to sell a security if earnings are poor and contextual complexity is high was not asked in the study and remains an important question for the determination of whether unsophisticated investors are harmed monetarily by management obfuscation (Rennekamp, 2012).

While experimental evidence supporting the management obfuscation hypothesis continues to grow, non-experimental archival studies constitute most the extant literature on the subject (Henry & Leone, 2016; Kearney & Liu, 2014). The main line of reasoning in the extant archival literature explores the supposition that if management obfuscates financial results through contextual choices that lead to market pricing anomalies, then indirect evidence of this behavior may exist in the historical record of market prices (Henry & Leone, 2016; Kearney & Liu, 2014).

**Management obfuscation of 10-K and 10-Q statements.** To investigate the relationship between the vividness of language and the influence of that language on investor judgments in financial statements, an experiment was conducted to test the hypothesis that in a positive sentiment market, higher growth of earnings would be forecast by participants receiving vivid rather than pallid language financial statements (Hales et al., 2011). When presented with vivid rather than pallid language, investors anticipated lower earnings growth when presented with negative company news. Management may seek to increase stakeholders' reactions to positive information through word choice by using language that vividly portrays the results of the last quarter, potentially generating stakeholder excitement and a sense that investors may miss out on a lucrative opportunity if they do not invest (Hales et al., 2011). On the other hand, management may seek to decrease investors' adverse reactions to poor earnings by using

pallid language selected to decrease the negative emotional responses of investors that may lead to a decision to sell a security (Hales et al., 2011). While Hales et al. (2011) measured participants' perceptions of the future earnings prospects of companies under both vivid and pallid language and found that language did influence investor perceptions, the researchers did not measure whether these same participants would be more or less likely to sell the related corporate security, leaving unanswered the question that could most directly suggest whether investors are monetarily harmed by management obfuscation. However, when investors were presented with pallid language, reactions were muted. The implications of these findings included that management may influence market participant perceptions by using pallid language when communicating positive results when future earnings are expected to be poor (Hales et al., 2011). One threat to the validity of the results was the assumption by the authors that management seeks to decrease information asymmetry by communicating future earnings potential honestly (Hales et al., 2011). Hales et al. concluded that vividness of language has a significant impact on investors' judgments of firm performance.

Management obfuscation might also appear in financial statements prepared with unusually high complexity or unnecessary length (Lee, 2012). Lee (2012) examined the problem of post-earnings drift to determine whether one potential factor in the phenomena included financial statements that were difficult to read. The purpose of the quantitative study was to identify whether the readability of financial statements influenced investor perceptions (Lee, 2012). Lee hypothesized that securities supported by financial statements with less inherent readability would tend to drift more slowly than securities backed by financial statements that were more readable. Lee further

hypothesized that if participants are presented with financial statements with unnecessary length or complexity, market pricing reactions would be delayed and prices would drift more slowly toward a price representative of the true earnings of the company. For earnings to slowly drift toward a representative price suggested that some aspect of the earnings releases must interfere with the normal process of price discovery by market participants (Lee, 2012). Lee examined 60,161 quarterly financial reports by measuring share movement during the 60 days following the earnings release. The construct of complexity of length was operationalized by counting the number of words used in each report (Lee, 2012). The construct of word difficulty was operationalized by classifying all words used in each report using the Gunning–Fog index (Lee, 2012). Lee found a significant effect by completing regression analysis that compared post-earnings drift to statement length and statement complexity. Additionally, both statement length and word complexity were correlated with post-earnings drift (Lee, 2012). Analysis of financial statements of firms that that experienced slower than normal post-earnings drifts after releasing negative financial results suggested that these firms did release earnings statements with a combination of unusually high complexity and unnecessary length (Lee, 2012). This conclusion may suggest that management intentionally manipulates these aspects of financial reports to intentionally delay market participants' reactions to earnings releases (Lee, 2012). Lee suggested the implications of these findings included that management could manipulate either length or word difficulty to delay investor reactions to poor earnings results to the detriment of investors. One threat to the validity of the study was the disposition effect, a form of delayed price discovery (Ye, 2014). The disposition effect is a form of investor bias where delays of investor selling cause the

price of securities to fall more slowly than news would suggest (Ye, 2014). While Lee provided evidence that securities prices moved more slowly toward an equilibrium price when financial statements were overly complex or lengthy, the archival study could not assess which investors were responsible for price movements in the underlying securities. For example, unsophisticated investors may have lower account values than large hedge funds or pension funds, and thus, the individual buy or sell decisions of these investors may be muted against the movements of the market at large. Thus, the correlation found by Lee provided inferred but not direct evidence as to how contextual complexity affects unsophisticated investor decision-making. While Lee found that length and difficulty correlated to post-earnings drift, the author could only infer investor behavior indirectly through archival data rather than by more directly testing investor reactions to readability.

How changes in tone in financial statements affect the performance of securities surrounding the release date of the financial statements is another area of textual analysis study (Feldman et al., 2010). Feldman et al. (2010) focused on the management discussion and analysis section of 10-Q and 10-K statements because this section of the financial statements contains information that goes beyond financial measures and contains enhanced management discussion of company performance. An additional advantage of this section is that it allows for analysis of the subjective verbal content of financial statements that may be more predictive of future firm performance because management's privileged inside view of operations (Feldman et al., 2010). Feldman et al. was particularly concerned with tone changes from optimistic language to pessimistic language. When words were classified by tone as either positive or negative and compared against previously issued financial statements, the authors found that changes

in tone were highly correlated with positive or negative stock market participant reactions (Feldman et al., 2010). When these results are applied to management obfuscation they suggest that tone may provide an additional means of obfuscation that may allow management to delay the sell decision of market participants by carefully wording the management discussion and analysis section to contain positive language even when future earnings are expected to decrease (Feldman et al., 2010). Feldman et al. was primarily concerned with the predictive value of tone to future firm stock performance and used correlational regression of tone versus future stock valuation to measure this effect. Like previous correlational studies that used archival market data, the design of the study could not measure the effect of tone on individual investors. The question of how tone may influence the valuation judgments of individual investors, particularly, the unsophisticated investors that the SEC has a mandate to protect, remains unanswered.

Lo et al. (2017) examined 26,967 financial statements from 4,855 unique firms that closely met, or only slightly beat prior year earnings, and found that these firms had significantly more complex MD&A reports than firms that beat earnings by a wider margin. Lo et al. suggested the additional complexity was due to management obfuscation of earnings management techniques. Lo et al. further stated that lying is harder than telling the truth in financial reporting. To sell a convincing lie requires additional contextual complexity to create a narrative that is believable to financial statement users. Additionally, the authors hypothesized that cognitive dissonance on the part of management may require more complex fabrications to convince themselves that their obfuscated narrative is true (Lo et al., 2017).

A study examining the readability of company communications on the buy and sell decisions of analysts following the firms found that firms with less readable filings have a larger following of analysts (Lehavy et al., 2011). The higher number of analysts suggests that firms with less readable filings have a demand for analysts to expertly analyze and provide that information to less sophisticated investors (Lehavy et al., 2011). Lehavy et al. (2011) noted that the length and complexity of financial statements has necessarily increased because of increased regulatory requirements from FASB and SEC in areas such as (a) segment reporting, (b) stock option reporting, and (c) Sarbanes-Oxley reporting. Another finding of the study was that the amount of time it took for analysts to release reports following an earnings release is higher for firms with more complex reports, suggesting that analysts processing fluency is lower when reports are less readable (Lehavy et al., 2011). Additionally, stock movements more closely followed the recommendations of analysts for companies releasing less readable disclosures, suggesting that less sophisticated investors relied on the information more directly than they would if the statements were more readable (Lehavy et al., 2011). The results of this study suggest that a financial cost may be incurred by users of overly complex financial statements because these users must pay for expert financial analysts to simplify the message of the statements in the form of the analyst's report and buy or sell recommendation (Lehavy et al., 2011). A further cost to unsophisticated investors may be the lost profits or increased losses incurred between the time the financial statements are released and the time the analyst's report is compiled and distributed to these investors (Lehavy et al., 2011). These potential costs suggest additional research in the



area of financial statement complexity may be of interest to regulators as they seek to ensure fair and efficient capital markets (SEC, 2013).

An additional study tested whether managers attempt to obfuscate financial results through complex statement disclosures when firm performance is poor, while alternately disclosing more clearly when earnings are good (Li, 2008). The complexity of financial statements was examined and compared to earnings persistence over time with the expectation being that firms with positive earnings but high complexity will experience lower earnings persistence, while firms with negative earnings and high complexity will experience high earnings persistence (Li, 2008). Firms with lower earnings were found to file more difficult to read reporting (Li, 2008). Further, firms with earnings that increased year over year tended to release earnings reports that were easier to read than the prior year's reporting, while firms with declining earnings increased complexity on a year over year basis (Li, 2008). Profitable firms with complex reporting experienced lower earnings persistence, meaning their earnings tended to decline in future years even though current period reporting was positive (Li, 2008). A clear correlation between word choice complexity and firm performance was found causing the author to conclude that management uses disclosure readability as a strategic obfuscation technique (Li, 2008). Studies conducted on 10-K and 10-Q statements suggest that management may obfuscate financial results and prevent or delay investor reactions through manipulations to positive or negative tone, readability, length, or vividness of language (Feldman et al., 2010; Lee, 2012; Lehavy et al., 2011; Li, 2008).

**Management obfuscation of media related sources.** Textual analysis was used to measure tone of user expressed opinions on the website seekingalpha.com to determine

whether user sentiment predicts future stock returns (Chen, De, Hu, & Hwang, 2014). Using frequency of negative words allowed the authors to measure participant sentiment regarding the individual stocks that were the subject of articles on the website (Chen et al., 2014). The authors found that the articles and user commentary contained useful information beyond what was included in the financial statement and professional analyst reports (Chen et al., 2014). Chen et al. (2014) found that the overall sentiment was predictive of future stock movement with negative toned articles, for example, preceding future negative returns for the subject equities. This result suggests that seekingalpha.com authors are writing articles that expose security price inefficiencies and these inefficiencies are subsequently mediated through the buy and sell decisions of market participants based on the new information provided in the analyses (Chen et al., 2014).

Additional studies have examined earnings press releases and found that language communicates credible information about current and future expected firm performance and that earnings release readers respond to the information provided in these releases numbers (Davis et al., 2012). Davis et al. (2012) argued that press releases are a unified package of information that through qualitative and quantitative content allow investors to understand the relative performance of the company in the context of the wider market. The central argument of Davis et al. was that management communicates expectations of future firm performance that goes beyond the numerical content contained in the overall financial statements. The authors concluded that optimistic language in earnings releases were predictive in future firm performance and that management communicates information through press releases that go beyond the numbers (Davis et al., 2012).

When and how firms manipulate the tone of earnings press releases and how investors reacted to these manipulations was the focus of another study where the authors found that management was significantly able to manipulate investor market reactions over the short term with stock price increases that did not match the expected reaction based on the quantitative message of the press release (Huang et al., 2014). Huang et al. (2014) explored the hypothesis that when the tone of corporate disclosures is incongruent with fundamental data that future earnings and cash flows will be negative. The purpose of the quantitative design was to discover whether management engages in tone management (Huang et al., 2014). Huang et al. examined 14,475 earnings releases by analyzing the text of each release to assign a tone score. The construct of positive or negative tone was operationalized through classifications of tone from a word list designed for business research (Huang et al., 2014; Loughran & McDonald, 2014). The tone score of all words in the earnings releases were aggregated and averaged to determine an overall statement tone (Huang et al., 2014). This overall statement tone was compared to earnings to determine whether the tone score was congruent with earnings results (Huang et al., 2014). Statements with a positive tone, but negative earnings, were considered abnormally toned statements (Huang et al., 2014). Regression of abnormal tone with future earnings found that abnormally positive tone was predictive of persistently poor future earnings (Huang et al., 2014). When tone was found to be abnormal in relation to the numerical earnings results, future earnings and cash flows were lower than for firms with financial statement tones more congruent with current earnings (Huang et al., 2014). The researchers concluded that abnormal positive tone is predictive of poor future earnings, and that management may successfully mislead

investors (Huang et al., 2014). One threat to validity included the use of a business specific word list instead of word lists more commonly used in textual analysis research. The authors mitigated this risk by running regressions using alternate word lists and found that the results were robust across multiple lists (Huang et al., 2014). The researchers made a compelling case for the significance of the findings with many observations that significantly demonstrated a correlation between abnormal tone and future earnings weakness (Huang et al., 2014). By showing that management selectively engaged in tone management to mislead investors the researchers provided evidence that investors may be harmed when management engages in tone management (Huang et al., 2014). On the other hand, while the study provided evidence that management engaged in tone management, the archival study could not measure how tone manipulation influenced the decision-making processes of individual unsophisticated investors (Huang et al., 2014). Knowing whether unsophisticated investors are harmed by management tone manipulation is necessary to understand whether additional regulation is needed to protect investors from tone management.

**Management obfuscation of prospectuses for initial public offerings.** Authors explored how concrete language in prospectuses increased an investor's likelihood of committing capital to an initial public offering and found that investors were more willing to invest when management used concrete versus abstract language (Elliott et al., 2014). Concrete language was described as allowing for visualization of outcomes that are specific (Elliott et al., 2014). For example, if management suggested that under a plan to invest in an additional manufacturing facility to produce a specific product that revenue was expected to increase by 10% a year, an external stakeholder could visualize

the plant and product and how that capital investment could lead to the expected revenue increase (Elliott et al., 2014). On the other hand, management using abstract language might suggest that unspecified capital investments were expected to lead to revenue growth, which would decrease the external stakeholders' ability to visualize exactly how management expected to achieve the stated growth rate. The lack of concrete language has the effect of increasing the psychological distance the external stakeholder feels toward the firm, which may create a negative impression of the firm that leads to a lower likelihood of the external stakeholder continuing to invest in the company (Elliott et al., 2014).

Further textual analysis on the prospectuses of initial public offerings measured the effect of conservative language in relation to initial and future stock performance and found an inverse relationship with higher levels of conservatism related to lower stock performance in the three-year period following the issuance of stock (Ferris et al., 2013). In the case of initial public offerings conservative language is interpreted as a lower growth signal by external investors, which leads to lower levels of IPO participation that is persistent over time (Ferris et al., 2013). In other words, it is beneficial from the perspective of the company to create a tone of excitement from an explicitly stated expectation of rapid growth to attract outside investors (Ferris et al., 2013). Both studies suggest that management obfuscation theory may allow management to manipulate market participant reactions through changes of tone and contextual complexity in prospectuses (Elliott et al., 2014; Ferris et al., 2013).

## Indicators of Fraud

While the objective of financial reporting may be the communication of information to external stakeholders, management continues to be found trading shares based on privileged insider information that has not been communicated to external stakeholders prior to the occurrence of the sale (Cohen, Malloy, & Pomorski, 2012). Cohen et al. (2012) looked for patterns in insider selling by management and found that insider selling did not necessarily suggest a negative future share price for the firm. Future share price was particularly unaffected when insider selling occurred periodically, and the selling occurred irrespective of earnings results or share price (Cohen et al., 2012). On the other hand, when insider selling occurs ahead of negative news events, or occurs infrequently without a discernable pattern, this selling is often done opportunistically to profit from information asymmetry (Cohen et al., 2012). The SEC continues to prosecute insider trading and expends considerable agency resources seeking to penalize management found to trade opportunistically (Cohen et al., 2012). The focus on insider trading activity may suggest one motivation for management to obfuscate negative earnings prospects for as long as possible (Cohen et al., 2012). By delaying negative information from reaching market participants, management may have additional time to sell shares, and this orderly selling may be less likely to illicit SEC enforcement action (Cohen et al., 2012).

One benefit to management of delaying the corporate security sell decisions of market participants through obfuscation is the ability of management to sell shares at a higher price than would be possible if outside market participants were selling shares based on the true operating performance of the company (Cohen et al., 2012).

Management has insider information on the current and operating condition of the company as well as information that may allow for the better estimation of future earnings prospects (Cohen et al., 2012). Management who invested heavily in a project that they later discovered would have lower earnings potential than originally anticipated might use language designed to conceal the extent of troubles with the project (Cohen et al., 2012). Management holding numerous shares of the company could slowly sell their holdings of company stock to avoid the losses that will inevitably occur when the decreased earnings power of the company is adequately disclosed in a future financial statement filing. The slow distribution of shares might avoid the red flag that investors perceive from high levels of insider selling allowing for the orderly distribution of shares at advantageous prices for the sellers (Cohen et al., 2012).

Massa, Qian, Xu, and Zhang (2015) found evidence that management engages in strategic distributions of shares based on their insider knowledge of company operations through a study that examined the relationship of short sellers to insider selling. Short sellers seek to profit from shares they perceive as overvalued by temporarily borrowing shares to sell at the overvalued current price with the objective of buying the shares back at a lower price in the future when the overvaluation is corrected by the actions of market participants (Massa et al., 2015). Massa et al. (2015) found that firms with a greater proportion of short sellers had levels of insider selling that were more rapid than firms without short sellers. This result suggests that management may seek to sell shares more rapidly when the threat that short sellers will actively expose negative information to the broader market to begin the process of share price declines that will allow them to profit (Massa et al., 2015). In addition to selling shares more rapidly, insiders were found to

sell more of their existing stake when short sellers were present (Massa et al., 2015). The additional shares sold suggest that management views the potential immediate decrease in share value more heavily than the potential their management actions could mitigate or reverse the negative condition of future earnings prospects (Massa et al., 2015).

Brazel, Jones, Thayer, & Warne (2015) found that unsophisticated investors rely on regulators, auditors, and analysts to uncover and report when fraud occurs in the companies in which they invest. Brazel et al., also found that unsophisticated investors tend to rely more on late-stage fraud indicators, rather than subtler early-stage indications that other groups, such as professional short-sellers can detect and profit from. An overreliance on groups who are generally the last to discover fraud, after the economic damage may be complete, may put unsophisticated investors at further disadvantage, and suggests that additional protections, such as quantifying and listing any potential fraud red-flags, may be needed (Brazel et al., 2015).

### **Measurement of Contextual Complexity**

Any study that seeks to measure the effects of management language choices must have a methodology for the measurement of language within the communication medium under study (Kearney & Liu, 2014). The primary means of study has been regression analysis on subsequent stock performance when compared to the measure of positive versus negative language contained in the communication medium under study (Berger, 2011; Henry & Leone, 2016; Kearney & Liu, 2014). The tone of language has been measured using multiple methods including (a) word lists designed for use in the social sciences, (b) word lists developed with the nuances of financial reporting, and (c)



dynamic word lists developed through machine learning techniques (Berger, 2011; Henry & Leone, 2016; Kearney & Liu, 2014).

SEC regulators suggested that contextual complexity is an area of concern with the release of financial reporting language guidance (SEC, 1998). However, the difficulty of measuring contextual complexity and the effects of contextual complexity has made enforcement difficult (SEC, 2013). While social sciences research has numerous word lists designed to measure psychological phenomena, for example, no specific word lists that considered the nuances and unique language choices of financial reporting existed for researchers to use in financial reporting research (Loughran & McDonald, 2011). To measure the contextual complexity of 10-K and 10-Q financial reports, Loughran and McDonald (2011) created a word list specifically designed to measure financial reporting language. This word list was subsequently used in numerous research studies in financial statement complexity (Huang et al., 2014; Loughran & McDonald, 2011, 2014). Alternative methods utilized by researchers include the Gunning FOG Index and the Flesch–Kincaid Grade Level, which are widely used social science word lists (Hales et al., 2011; Lee, 2012, Lehavy et al., 2011; Li, 2008, 2010; Libby & Rennekamp, 2012).

In addition to these broad measures of complexity, Brochet, Loumiotis, and Serafeim (2012) demonstrated that methods of measuring language may be catered to the topic under study with the creation of a word ranking system based on time horizons. Brochet et al. examined how time based language in conference call transcripts was correlated with indicators of management short-termism. Management short-termism is related to the agency problem in that management incentives are based on the short-term

performance of the company. Brochet et al. found that higher usage of words related to shorter time horizons were informative of management bias toward short-term performance at the expense of the long-term performance of the companies. This short-term bias may be indicative of companies with lower long-term stockholder returns (Brochet et al., 2012).

### **Ethical Considerations of Management Obfuscation**

Management obfuscation theory suggests that management does not act in the best interest of shareholders when preparing financial statements because of pecuniary incentives that may encourage presentation of company results as better than they are (Humpherys et al., 2011). The intentional increase of information asymmetry by management raises ethical questions regarding management behavior, and additional questions regarding whether managements' attempts are successful in misleading investors (Bertomeu & Cheynel, 2013; Rennekamp, 2012). As a field dedicated to the advancement of the public trust in financial markets, ethical conduct is essential to the profession of accounting (Bampton & Cowton, 2013). High profile ethical failures such as those underlying the Enron scandal demonstrate a need for additional research in accounting ethics (Bampton & Cowton, 2013). Despite the importance of ethics in the field of accounting, the ethics based accounting literature remains underrepresented when compared to other areas of business (Bampton & Cowton, 2013). Wong-On-Wing and Lui (2013) explored some of the difficulties of accounting research in ethical conduct with an experimental study that sought to measure cross-cultural differences regarding ethical inferences of participants. Wong-On-Wing and Lui found that cultural differences between participants explained differences in how accounting fraud was perceived,

suggesting that the measurement of ethical conduct is complicated by innate factors that may lead one reasonable person to view behavior as unethical while another reasonable person may view the same circumstance as acceptable. Elias and Farag (2011) examined accounting students' ethical perceptions and found that personality traits such as opportunism were predictive of accounting students cheating on tests. With opportunism viewed as a desirable trait in business management, this result suggests that opportunism may result in management exploitation of accounting rules for personal advancement at the expense of other corporate stakeholders (Elias & Farag, 2011). Huhn (2014) suggested that the structure of business education leads students to become less ethical managers by program design. The design of MBA programs suggests that shareholder interests take precedence over those of all other internal and external stakeholders, leading management to circumvent laws designed to protect employees, the public, and the environment, when these rules do not provide advantages to shareholders (Huhn, 2014). In response to criticisms of a shareholder focus, school administrators have increasingly added ethics classes, though Rasche, Gilbert, and Schedel (2013) argued that these additions are marketing-based gestures instead of genuine efforts to improve the ethics of students in finance or accounting. In accounting, ethics are built into the accounting codification, with specific rules that must be followed in the preparation of financial statements as a matter of law (Bertomeu & Cheynel, 2013). By following a codification, behaviors that one manager may find unethical while another might consider reasonable, are moderated by both managers following the guidance provided by regulators (Bertomeu & Cheynel, 2013). When considered in the context of management obfuscation evidence from previous studies suggests that management obfuscation does

occur, particularly when earnings are lower than anticipated (Lee, 2012; Li, 2008). The intentional obfuscation of the operating performance of the company is not only in opposition to the foundational objectives of the accounting codification, but also management behavior that could be considered unethical. Additional evidence demonstrating that management obfuscation harms the least sophisticated of investors may suggest that additional regulation is needed to moderate management narrative in financial statement disclosures (Rennekamp, 2012).

### **Management Obfuscation Theory and Practice**

While public interest theory, agency theory, and disclosure theory are broad in scope, researchers seeking direct application might explore what types of disclosure are most effective in decreasing information asymmetry (Lee, 2012; Rennekamp, 2012). Gelso (2006) suggested that examining larger theories by separating their component parts leads to practical results. Theory might inform practice in disclosure research because market regulators might use research findings to implement reporting requirements that accomplish the goal of decreasing information asymmetry to fulfil the market regulators mandate of enforcing policy that furthers financial reporting as a public good (Bens et al., 2012). In financial reporting, practical application of theory is essential because the result of the practice of accounting is the production of financial statements that communicate relevant information to company stakeholders who use this information for decision making (McLellan, 2014). One application of theory in financial statement language manipulation relates to ensuring free and open capital markets. If a correlational study demonstrated that capital market participants were influenced to continue to hold an investment they otherwise would have sold because of management

reporting choices designed to obfuscate financial results using contextual complexity, this result would suggest to regulators that additional regulation may be needed to protect capital market participants (Rennekamp, 2012). Theory would guide practice in this instance because a formulated theory would lead to empirical research to provide support for the theory, which would then result in positive change in the field of accounting (Wacker, 1998). In this example, practical application of accounting theory occurs when researchers conduct studies that confirm that accounting regulation accomplishes the proscribed regulation mandate (McLellan, 2014). Alternatively, researchers might suggest that current regulation is ineffective, leading to improved regulations (McLellan, 2014).

McLellan (2014) suggested that the field of accounting has a significant gap between academic theory and actual practice. For example, research suggests that activity-based management increases operational efficiencies and may provide a competitive advantage for organizations when the system is implemented (McLellan, 2014). However, while the theory that activity-based management provides benefits was validated through empirical testing, and management understands the benefits, few managers surveyed have implemented or plan to implement the system (McLellan, 2014). The researcher's validated theory regarding activity-based management should inform practice by suggesting an optimal means of managing limited resources (McLellan, 2014). However, some other phenomenon is stopping management from implementing the system (McLellan, 2014). This phenomenon suggests that practice may also inform theory; because a relevant question exists regarding why management does not implement activity-based management despite knowing the benefits the system provides

(McLellan, 2014). A study in contextual complexity could suggest a correlation exists between language complexity and management performance, suggesting that the theory, once tested and validated, could inform practice, but only if regulators act to apply the findings by expanding existing regulations (Rennekamp, 2012). One difficulty of translating theory into practice then is the difficulty of acceptance by the regulators who must act to apply the theory in a way that benefits corporate stakeholders. Additional difficulties of translating theory to practice include the difficulty of suggesting that empirical results apply to potentially moral questions (Sinnicks, 2014). In the case of the management obfuscation hypothesis, for example, a researcher may demonstrate that management decisions influence investor behavior, but the more qualitative moral question of whether managements' actions are wrong remains unanswered by the empirical inquiry (Sinnicks, 2014). With moral questions unanswered, the application of theory to practice may remain problematic from the perspective of regulators who must justify why regulatory action is taken (Sinnicks, 2014). An additional difficulty of applying theory to practice may include the difficulty regulators might encounter in trying to understand complex empirical data. For example, a researcher may suggest that action is needed through statistical tests, but if regulators do not understand how to read and interpret statistical data, it is less likely they will act by creating regulation from that data (Sinnicks, 2014).

### **Contradictions and Inconsistencies in Existing Theory**

The largest contradiction in existing theory includes the incongruence between the efficient market theory and management obfuscation theory. Efficient market theory is one of the foundational theories of capital markets (Fama, 1970; Gandhi et al., 2013;

Murthy et al., 2011). If company management can delay the negative reaction of market participants, then efficient market theory is not operating as theorized. For company management to be able to delay investor reactions requires a violation of efficient market theory, which states that investors incorporate all available information into the price of securities (Fama, 1970; Gandhi et al., 2013; Murthy et al., 2011). This violation occurs because while management does release all available information under the rules of reporting regulations, researchers suggest that investors do not incorporate this information when presented in ways that decrease processing fluency such as by presenting the information with: (a) a more positive tone than would be expected by the results (Hales et al., 2011), (b) by presenting information in a more abstract presentation format as opposed to concrete language when earnings are poor (Riley, Semin, & Yen, 2014), or (c) by presenting information with a more complicated presentation when results are poor (Rennekamp, 2012).

### **Future Research in Financial Statement Complexity**

While the focus of most existing research involves regression analysis that compares previously reported financial information with future securities valuations, these studies only indirectly infer investor sentiment through overall stock performance (Henry & Leone, 2016; Kearney & Liu, 2014). However, the types of unsophisticated investors who might be most influenced by management obfuscation are unlikely to move securities prices in a significant and measurable way. Thus, a correlational study that specifically measures unsophisticated investors' valuation judgments while controlling for education level, investing experience, and financial risk tolerance was needed. Few studies exist that explore investor reactions to information intentionally

obfuscated using language designed to challenge the processing fluency of unsophisticated investors (Rennekamp, 2012). An ambiguity in the existing literature then, was whether management obfuscation influences unsophisticated investors. While researchers have examined unsophisticated investor reactions to corporate press releases (Rennekamp, 2012), no prior studies examined the securities valuation judgments of unsophisticated investors reviewing 10-K or 10-Q financial reports.

### **Summary**

The examination of the major theories underlying management financial statement manipulations suggests that efficient market theory, agency theory, processing fluency, and management obfuscation theory are interrelated, though contradictory in the sense that the management obfuscation theory cannot be true if efficient market theory is also true. Highly readable financial statement disclosures have continued to be of interest to market regulators seeking to ensure fair capital markets as demonstrated by mandates that company management provide clear and readable disclosures of all information relevant to market participants (SEC, 1998, 2013). While market participants have a high demand for financial information, management has pecuniary and ego-based incentives to increase information asymmetry between themselves and market participants (Libby & Rennekamp, 2012). Additional research was needed in management obfuscation theory to determine whether management can influence the securities valuation decisions of unsophisticated investors (Lee, 2012; Rennekamp, 2012). Archival studies suggested management may increase information asymmetry by overwhelming the cognitive load and processing fluency of market participants through manipulations to financial statement contextual complexity (Davis et al., 2012; Lee, 2012). Experimental studies



suggested that management may vary language style based on company performance (Hales et al., 2012). For example, using vivid language when company performance is strong, and pallid language when company performance is poor (Hales et al., 2011). Alternately, management may use language designed to decrease financial statement reader participant processing fluency when earnings are poor (Rennekamp, 2012). However, none of the archival and experimental studies examining the effects of contextual complexity questioned whether management obfuscation through financial statement contextual complexity could alter unsophisticated investor securities valuation judgments regarding a poorly performing company. Researchers suggested substantial opportunities exist for correlational studies in contextual complexity on market participant judgments (Lee, 2012; Rennekamp, 2012). The gap in the literature addressed in this study was whether management can manipulate financial reporting contextual complexity through language choices designed to alter the corporate securities valuation judgments of unsophisticated investors. The result of this study may be of interest to market regulators including the SEC, as they seek to protect unsophisticated market participants and ensure fair and efficient securities markets. Additionally, this study provides a theoretical contribution to the accounting literature by providing additional evidence supporting the existence of management obfuscation theory.

### Chapter 3: Research Method

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance, to provide correlational evidence supporting or discrediting the existence of management obfuscation theory. Despite recommendations from the SEC to use plain language in all financial reporting, company management continues to release financial statements that contain high contextual complexity during periods of decreased earnings (Lee, 2012). Plain language reporting benefits unsophisticated financial statement users by keeping financial statement content assessable to those market participants who do not have professional investing experience (Hales et al., 2011; Libby & Rennekamp, 2012; SEC, 2013). Lee (2012) examined the relationship between decreased earnings and financial statement complexity. Rennekamp (2012) explored processing fluency of unsophisticated investors when reading contextually complex news releases. However, no researchers examined the management obfuscation theory effects of financial statement contextual complexity on the decision-making processes of unsophisticated investors (Rennekamp, 2012).

The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment. Correlations found between management financial statement manipulation and valuation judgments regarding related securities, while controlling for

education, investing experience, and risk tolerance, suggest that additional regulation is needed regarding the presentation of financial statements to protect unsophisticated investors (Kannadhasan, 2015; Rennekamp, 2012; Victoravich, 2010). A set of quantitative research questions and related research hypotheses were examined with the aim of suggesting or discrediting that a significant correlation exists between management financial statement manipulations and unsophisticated investors' reactions to those manipulations.

**Q1.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors?

**H1<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the investment experience of unsophisticated investors.

**H1<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors.

**Q2.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the education level of unsophisticated investors?

**H2<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the education level of unsophisticated investors.

**H2<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for education level of unsophisticated investors.

**Q3.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors?

**H3<sub>0</sub>.** There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the risk tolerance of unsophisticated investors.

**H3<sub>a</sub>.** There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors.

### **Research Method and Design**

A quantitative study was chosen because the primary objective of the study was to measure the effect of management financial statement manipulation on participant valuation judgments and quantitative studies are the most efficient means of statistically measuring cause and effect relationships between variables (Cozby & Bates, 2012). An additional benefit of the quantitative method was the control over variables, which may have increased the internal validity of the results (Venkatesh et al., 2013).

The advantage of a correlational design is that it may help the researcher to elucidate whether a relationship exists between the management financial statement manipulation and unsophisticated investor valuation judgments (Younhee & Mi Jung, 2016). An additional benefit of this correlational design, which was central to the

research questions, was the measurement of the extent of any manipulation related effects on investors of differing levels of education, investment experience, and risk tolerance (Younhee & Mi Jung, 2016). The manipulation of financial statements was the independent (e.g., predictor) variable. The investor valuation judgment was the dependent (e.g., outcome) variable (Field, 2013). Investment experience, educational level, and financial risk tolerance were control variables (Field, 2013).

Hierarchical multiple regression was utilized to measure the relationships that between the predictor and outcome variables, while controlling for the control variables (Younhee & Mi Jung, 2016). Utilizing hierarchical multiple regression allowed for the measurement of the extent and significance of the relationships between the predictor and outcome variables. The strength of the correlations between variables suggested which segments of the investing public are most at risk from management obfuscation effects (Younhee & Mi Jung, 2016).

Data was collected through an online survey administered on the Survey Monkey® online survey tool. Participants were recruited using the Amazon Mechanical Turk (AMT) platform, where a nominal monetary incentive facilitated the quick recruitment of participants (Rennekamp, 2012). Hierarchical multiple regression analysis was used to test the hypotheses and answer the research questions (Younhee & Mi Jung, 2016).

### **Population**

Following previous market based research, which used participants from the market under examination (Davis & Tama-Sweet, 2012; Feldman et al., 2010; Iatridis, 2016), the population of this study was U.S. based unsophisticated investors. U.S. based

unsophisticated investors were an appropriate population for this study because the simulated financial statement disclosures are based on U.S. GAAP reporting rules. Additionally, the study questioned whether U.S. financial reporting regulations were sufficient to protect unsophisticated market participants from potential management obfuscation of financial statement disclosures. By utilizing the population that forms the basis of the primary purpose of the study, external validity was increased (Venkatesh et al., 2013). No participants in the study self-identified as professional investors.

### **Sample**

A minimum sample of 85 U.S. based unsophisticated investors was needed for this study. This sample was determined using G\*Power 3.1 with an alpha level of .05, medium effect size of 0.15, and power level of .80 for *F* test of multiple regression analysis with four predictors (see Appendix A; Cohen, 1992; Faul et al., 2009). Data was collected through an online survey administered on the SurveyMonkey® online survey tool. Participants were recruited using the AMT platform, where a nominal monetary incentive of \$1.25 per participant allowed for the quick recruitment of participants. A total of 100 participants completed the survey.

### **Materials/Instruments**

Instrumentation designed to measure participants perceived levels of difficulty in reading and understanding the financial statement disclosure were adapted from previous experimental research on contextual complexity of financial information (Rennekamp, 2012; see Appendix B Table B1). Participants' valuation judgments were measured through questions adapted from previous research on contextual complexity and asked participants to assign a valuation to securities of the hypothetical company as well as the

likelihood of the user maintaining an investment in the company after reviewing the financial performance of the company (see Appendix B Table B2). Additional control variable questions designed to measure investment experience (see Appendix B Table B3), education level (see Appendix B Table B4), and investment risk tolerance (see Appendix B Table B5) were included from prior research on unsophisticated investors (Kannadhasan, 2015; Rennekamp, 2012; Victoravich, 2010). The primary question of the completed study was how contextual complexity influences unsophisticated investor valuation judgments, and thus instrumentation that measured both participants' perceived difficulty in reading and understanding the material, as well as participants' subsequent valuation and investment decision making regarding the investment increased the reliability and validity of the resultant data.

A hypothetical financial statement disclosure was prepared following elements previously validated in contextual complexity studies (Lee, 2012; Rennekamp, 2012). The elements included were described as stylistic choices to be avoided by the SEC in their guidance regarding financial statement presentation (Rennekamp, 2012; SEC, 2013). Design elements included (a) clear headings and data hierarchy, (b) use of tables, (c) bullet points, (d) short-sentences, (e) active voice, and no (f) hidden verbs, (g) use of pronouns, (h) abstract versus concrete language, (i) superfluous language, (j) positive writing, (k) jargon and legalese, and (l) typography (Rennekamp, 2012; SEC, 1998). Readable and less readable language examples for each design element are detailed in Appendix B (see Appendix B Table B6). An example disclosure using less readable design elements is also included (see Appendix B Table B7). By preparing the financial statement excerpt in a format similar to actual company prepared statements, the external

validity of the study results was increased. Using language specifically recommended against by the SEC further increased the external validity of the study results by measuring the effects of contextual manipulations on financial statement users of varying education, investing experience, and risk tolerance.

### **Operational Definition of Variables**

Management obfuscation theory research explores how manipulations to the non-numeric content of financial statements influences unsophisticated investor perceptions. To complete correlational analysis, the non-numeric content must be operationalized in such a way that allows measurement and analysis. The following variables provide a means of quantifying the concepts of management obfuscation theory, as well as the valuation judgments of unsophisticated investors to allow for subsequent correlational analysis.

**Education level.** Participants' education level is a control variable. Education level is a nominal variable with the values from 1 (*Less than high school*) to 5 (*Graduate degree*). This variable was measured using a demographic question asking the education level of the investor (see Appendix B Table B4). Education level was selected as a control variable because research suggests that participants with higher levels of education are better able to parse obfuscated messages owing to a greater exposure to complicated texts than participants with lower levels of education (Victoravich, 2010). Additional research suggests education level may be a factor in financial risk tolerance (Kannadhasan, 2015). Selecting education as a control variable allowed for the isolation of education-based effects on valuation judgments of study participants.



**Financial risk tolerance.** Participants' financial risk tolerance is a control variable. Financial risk tolerance level was assigned as an ordinal variable measured using a 5-point Likert-type scale with questions ranging from 1 (*low risk tolerance*) to 5 (*high risk tolerance*). This is an ordinal variable that was treated as an interval variable for this study (see Appendix B Table B5). Financial risk tolerance was selected as a control variable because research suggests that differing levels of financial risk tolerance may cause an investor to assign differing valuation levels to securities (Kannadhasan, 2015). Investors with a high-risk tolerance, for example, may be less likely to assign a lower valuation to a security even though they may understand that current earnings are poor. The isolation of financial risk tolerance effects provided useful information regarding potential confounding effects from participant risk tolerance.

**Investment experience.** Participants' investment experience is a control variable. Investment experience was assigned as ordinal variable measured using a 5-point Likert-type scale with questions ranging from 1 (*No investing experience*) to 5 (*Professional investment experience*; see Appendix B Table B3). This is an ordinal variable that was treated as an interval variable for this study. Investment experience was selected as a control variable because previous research suggested that higher levels of investor sophistication may allow financial statement users to parse the obfuscated message of company management, and thus, be more likely to assign a lower valuation to the obfuscating company than financial statement users with less investment experience (Victoravich, 2010). Additionally, investors with less investment experience were found to be more optimistic than investors with more experience, and thus were more likely to

assign higher valuations to the hypothetical poorly performing company (Victoravich, 2010).

**Management financial statement manipulations.** Management financial statement manipulations is the predictor variable of this study. This variable was measured using two questions. In the first question, a 5-point Likert-type scale was utilized to ask participants how difficult it was to understand the disclosure with a scale ranging from 1 (*easy*) to 5 (*difficult*; see Appendix B Table B1). Following previous research, a second question related to processing fluency was utilized that asked participants how difficult it felt to read the disclosures with a range of 1 (*easy*) to 5 (*difficult*; Rennekamp, 2012). Complexity is an ordinal variable that was treated as an interval variable for this study (see Appendix B). Unsophisticated investors perceived difficulty in reading and understanding the manipulated financial statement excerpt provided a measure of the effectiveness of management's attempted obfuscation (Rennekamp, 2012, Lee, 2012).

The SEC provided guidance on language usage in financial statements that will provide the basis for determining the level of management financial statement manipulation (SEC, 1998). Participants received information with high contextual complexity that did not comply with the SEC *Plain English Handbook* (SEC, 1998). Farrell et al. (2010) suggested that accountants are expected to have a 14th grade level understanding of accounting texts, and further found that the FASB's own codification has numerous passages with a 20 or greater Flesch-Kinkaid score in the most difficult sections of the codification. Thus, to simulate management obfuscation type language,

the hypothetical financial statement excerpt was measured using the Flesh-Kinkaid Grade Level Readability Score to ensure that the readability score was greater than grade 14.

**Securities valuation judgment.** The securities valuation judgment is the outcome variable of this study. The first securities valuation judgment was operationalized by asking participants how likely they would be to sell the hypothetical security. This variable was measured using a 5-point Likert-type scale ranging from 1 (*certainly do not sell*) to 5 (*certainly sell*) to directly assess the likelihood of the participant selling the security (see Appendix B Table B2). A second, valuation related question was taken from Rennekamp (2012), that asked participants to assign a valuation to the company using a 5-point Likert-type scale with valuation assessments ranging from 1 (*low*) to 5 (*high*). The decision to sell securities is an ordinal variable that was treated as an interval variable for this study. Unsophisticated investors who provided a higher than expected valuation for a poorly performing company suggested that management financial statement manipulation does harm unsophisticated investors (Rennekamp, 2012).

### **Data Collection, Processing, and Analysis**

**Data collection.** Following the approval of the Northcentral IRB application, a job was placed on the AMT platform to encourage potential participants to inquire about the study. Participants were recruited using the AMT platform, where a nominal monetary incentive of \$1.25 facilitated the quick recruitment of participants (Rennekamp, 2012). Users meeting the population criteria were solicited to complete the study on AMT using a brief description of the study, as well as the nominal amount of remuneration they could receive by completing the study. The AMT platform does not

allow any users under the age of 18 to participate. An additional criterion of U.S. based participants was manually added to ensure that only U.S. based investors participated in the study. Further, the study used only AMT users who achieved master's status on the AMT platform. Master's status is granted only to users who consistently complete work at a higher level of excellence than the general population of AMT users. Utilizing the best AMT users available may increase the internal validity of the study. AMT users who wished to complete the study were presented with additional details regarding the study, as well as the informed consent disclosures (see Appendix D), prior to seeing any study materials. Participants acknowledged the informed consent disclosures by clicking on a link that provided a link to Survey Monkey®. Participants who followed the link were presented the hypothetical financial statement disclosure, and all data was collected through a survey (see Appendix C) administered on the Survey Monkey® online survey tool. A minimum of eighty-five participants were required based on the calculation in G\*Power 3.1 to meet the required alpha level of .05, medium effect size of 0.15, and power level of .80 for *F* test of multiple regression analysis with four predictors (Cohen, 1992; Faul et al., 2009). 100 users completed the study.

The participants were presented with a hypothetical financial statement disclosure excerpt from a poorly performing hypothetical company (see Appendix E). The participant read a scenario that suggested they currently owned shares in the hypothetical company as part of a long-term investment portfolio (see Appendix F). After reviewing the disclosure and scenario the participants were asked questions designed to assess their perceptions of the difficulty of understanding the financial statement excerpt (see Appendix B Table B1).

AMT users who continued participating after reviewing the hypothetical financial statement disclosure first answered a series of demographic questions designed to categorize the users level of (a) investing experience, (b) financial risk tolerance, and (c) education level presented on the SurveyMonkey® online survey tool (see Appendix B Tables B3, B4, & B5). Using SurveyMonkey® further allowed for the data to be de-identified from the user profile of the AMT user.

Next, the participants were asked questions designed to elicit valuation judgments regarding the company including an assignment of relative value to the corporation, as well as their likelihood of continuing to hold or sell the hypothetical investment (see Appendix B Table B2). De-identified data was transmitted from Survey Monkey® in an encrypted file for testing in the SPSS statistical analysis software after 100 users completed the study. The AMT job was closed, and the Survey Monkey® survey was closed to new responses.

**Data processing.** Once 100 participants completed the study with all data reported, data collection ceased, and the data was downloaded with de-identified data. The data was structured in SPSS such that each row represented a unique participant and his or her answers. Columns in the data represented the data, with the first column representing a unique identifier for each participant, and succeeding columns for values for the control variables (education level, financial risk tolerance, and investment experience), followed by the predictor variable values, management financial statement manipulation, and then the values for the outcome variable, securities valuation judgment. Two additional column values were calculated in SPSS for assumption testing and regression analysis. The first of these was the average score of the two-predictor

variable questions, and the second was the average score of the two outcome variable questions. Additional columns were added by SPSS when assumption testing is conducted.

To verify that hierarchical regression could be conducted on the data, several assumptions were met. These assumptions were that (a) the values between rows were from different people (independence of observations), (b) there as a linear relationship between predictor and outcome variable, and between control and outcome variables, (c) the variance was approximately equal for every value of the outcome variable (homoscedasticity), (d) no multicollinearity between the predictor and control variables, (e) no outliers, and (f) residual values were normally distributed (Younhee & Mi Jung, 2016). It was expected that different individuals would participate in the survey, and duplicate individuals would be prevented from participating through the AMT, meeting the first assumption. Scatterplots were visually inspected to ensure that the variables were appropriately linear. Homoscedasticity was determined through the creation of a scatterplot showing both studentized residuals and unstandardized predicted values and visual inspection of the spread. Tolerance values and correlation coefficients were calculated to check for multicollinearity. To ensure no outliers, case wise diagnostics and leverage values were calculated to make sure all residuals were within  $\pm 3$ . Finally, normality of the residuals was determined through visual inspection of a histogram and P-P Plot (Younhee & Mi Jung, 2016).

**Data analysis.** Analysis was begun with descriptive data analysis to gain an idea of the values of the demographic (control) variables, which are reported in the results section of chapter 4. The data assumptions were met, or could be met through

transformation, thus a hierarchical regression analysis was conducted. To control for the control variables (e.g., education level, financial risk tolerance, and investment experience) each was entered singly into the first step of the analysis. This provided a method for eliminating all variance in the outcome variable that was explained by these variables, creating a zeroed floor to determine the effect of the predictor variable (Younhee & Mi Jung, 2016). The predictor variable, financial statement manipulation, was entered during the second step.

To test hypothesis one, the analysis was conducted. The change in  $R^2$  between model 1 (investment experience) and model 2 (financial statement manipulations) indicated the amount of variance explained by the predictor variable alone. The difference in the value of  $R$  between model 1 and model 2 indicated the effect size of the relationship between financial statement manipulation and valuation judgments of the company. The significance determined whether the difference was statistically significant (Younhee & Mi Jung, 2016). Since there were three tests being conducted, a Bonferroni adjustment was made (Younhee & Mi Jung, 2016). The significance value was less than .017, suggesting any significance found in the multiple hierarchical regression test could be relied upon (Younhee & Mi Jung, 2016).

To test hypothesis two, the analysis was conducted. The change in  $R^2$  between model 1 (education level) and model 2 (financial statement manipulations) indicated the amount of variance explained by the predictor variable alone. The difference in the value of  $R$  between model 1 and model 2 indicated the effect size of the relationship between financial statement manipulation and valuation judgments of the company. The significance determined whether the difference was statistically significant. Since there

were three tests being conducted, a Bonferroni adjustment was made. The significance value was less than .017, suggesting any significance found in the multiple hierarchical regression test could be relied upon (Younhee & Mi Jung, 2016).

To test hypothesis three, the analysis was conducted. The change in  $R^2$  between model 1 (risk tolerance) and model 2 (financial statement manipulations) indicated the amount of variance explained by the predictor variable alone. The difference in the value of  $R$  between model 1 and model 2 will indicate the effect size of the relationship between financial statement manipulation and valuation judgments of the company. The significance determined whether the difference was statistically significant. Since there were three tests being conducted, a Bonferroni adjustment was made. The significance value was less than .017, suggesting any significance found in the multiple hierarchical regression test could be relied upon (Younhee & Mi Jung, 2016).

### **Assumptions**

It was assumed that the instrumentation accurately measured the operational variables as defined in the study. It was also assumed that potential relationships between the operational variables were accurately measured. Participants were required to affirmatively answer that they are a U.S. based unsophisticated investor to participate and thus, it is assumed that all participants are members of the target population of the study. Participants were assumed to complete a thoughtful analysis of the data to the best of their abilities and provide honest answers to all survey questions based on their analysis. Further, participants were assumed to make honest assessments of the suitability of the hypothetical investments based only on the materials provided.



## Limitations

One limitation of the completed study was the potential for the study description and content to influence or sensitize participants to the study purpose (Venkatesh et al., 2013). In the case of the completed study, participants may have surmised the hypothesis that financial statement users are influenced by management financial statement manipulations to the complexity of presentation and language in financial statements, which may have influenced how they answered survey questions (Venkatesh et al., 2013). Quantitative designs are the weakest in terms of external validity (Cozby & Bates, 2012). External validity allows the researcher to extrapolate results outside of the confines of the controlled environment of the study (Cozby & Bates, 2012).

Correlational methods may be more intrusive to study participants because of the need for control (Venkatesh et al., 2013). Thus, participants are less likely to complete the study, or react in ways that differ from how they might react in a more natural setting (Venkatesh et al., 2013). For example, when considering whether to sell a security, under study conditions, the participants may have chosen to sell the investment because they could see that the results were negative and thus, may have believed they were supposed to sell investments when financial results appear negative (Venkatesh et al., 2013).

However, the same participant under a qualitative observational study might have chosen not to sell the security owing to the financial statement complexity induced decrease in processing fluency (Venkatesh et al., 2013). The correlational study then may suggest that participants were unaffected by financial statement language complexity, though the low external validity of the study would cause the researcher to draw this conclusion in error (Venkatesh et al., 2013).

### **Delimitations**

U.S. based investors were a primary delimitation of the study because the simulated financial statement disclosures are based on U.S. GAAP reporting rules. The use of unsophisticated investors was another delimitation of the study because they are the group of users the FASB expressed a mandate as needing protection in U.S. capital markets (SEC, 2013). A further delimitation was including users over the age of 18, as these are the financial statement user population capable of opening and managing their own investment accounts.

### **Ethical Assurances**

Benevolence requires that researchers maximize societal benefits of research while simultaneously minimizing potential harm to study participants (APA, 2012; CSEPP, 2009). Risk to participants includes potential physical or psychological harm as well as harm from breaches of confidentiality or privacy (CSEPP, 2009). Levels of risk include minimal risk studies to studies with more than minimal risk where additional considerations for the safety of participants are required (NCU, n.d.). The design of the completed study was meant to achieve a minimal risk categorization. An online survey based format avoided any potential physical harm to participants. Participants answered questions regarding the valuation of a hypothetical investment in a corporate security. While monetary decisions often involve an emotional component, the potential for lasting psychological harm over a decision of whether to sell a hypothetical investment was low. While psychological harm was unlikely, potential harm to participants may also occur through a loss of confidentiality as participants who answer honestly may have personal or career reasons they would not want their responses disclosed (CSEPP, 2009). An

anonymous online survey was utilized to maintain participant confidentiality and only questions germane to the study were asked to maintain participant privacy (NCU, n.d.).

An analysis of beneficence includes an assessment of both the risks and the benefits of the completed study (APA, 2012; CSEPP, 2009). Benefits of the completed study regarding financial statement disclosure language included providing insights to regulators regarding whether management can obfuscate poor earnings results to the detriment of investors (Rennekamp, 2012). The potential benefit to investors of the completed research study is the creation of new regulations designed to protect the interest of corporate stakeholders (Rennekamp, 2012). New regulations may increase the confidence of corporate stakeholders who then may be more likely to invest in U.S. capital markets (Rennekamp, 2012). While the beneficence exercise may suggest to the researcher that the benefits outweigh the risk, even the potential mild psychological distress requires additional consideration and disclosure by the researcher to any potential participants (CSEPP, 2009). To avoid this potential psychological harm in the completed study, and other possible unanticipated harms, a process of informing participants of exactly how they would participate in the study was completed (CSEPP, 2009).

**Informed consent.** Informed consent is the process of fully disclosing any potential relevant information to study participants before collecting data from those participants (CSEPP, 2009). Additionally, informed consent maintains the autonomy of participants by explicitly stating that participation is voluntary at all stages of the study (CSEPP, 2009). When participants are fully informed of all relevant information a researcher can justify the use of data collected because the participants agreed to participate in the study knowing all the risks and benefits (CSEPP, 2009). Informed

consent requires the use of participants who can make rational decisions (CSEPP, 2009). Thus, special consideration must be made for at-risk populations such as the cognitively disabled, children, pregnant women, prisoners, and the elderly (CSEPP, 2009). The completed study of the effects of financial statement language on decision-making utilized informed consent notifications that all participants were required to acknowledge reading in full. These consent forms explained that participation was voluntary at all stages and that participants could withdraw from the study at any time for any reason. Additionally, survey questions sought to ensure that only adults from populations that are not at risk and who can make rational decisions were participating. Informed consent information was communicated using a jargon-free format, which was presented in regular sized font and requires acknowledgment by the participant before any data was collected (CSEPP, 2009). Additionally, informed consent required detailed explanations of procedures and study purpose so that study participants understood what they would be doing and why (NCU, n.d.). Informed consent disclosures further included information regarding who to contact with questions or concerns regarding the study (NCU, n.d.). Finally, informed consent disclosures included information regarding how the privacy of participants and confidentiality of collected information will be maintained (NCU, n.d.).

**Privacy and confidentiality.** With numerous participants, the myriad of possible interactions between the data and the participants' personal or professional lives was impossible to fully quantify (CSEPP, 2009, Novak, 2014). Participants have a right to privacy and confidentiality because stigmatization and shame may occur in participants who are identified by their families or communities (CSEPP, 2009; Novak, 2014).

Confidentiality requires that participant responses be kept in confidence by a researcher, while privacy requires that access to participants, and potential identification of participants is prevented (NCU, n.d.; Novak, 2014). While a study of whether buying or selling a security is not controversial in nature, the same best-practice procedures to ensure confidentiality of participants was followed. To avoid any potential negative implications for participants' privacy, no user identifiable data was collected. Each participant was provided a unique code that is assigned to their responses to allow the participant to withdraw their data from the study if requested. Collecting no user identifiable data allows participants to maintain control over who may contact them in the future because of their participation in the study, which is essential for the maintenance of participant privacy (NCU, n.d.; Novak, 2014). Further, with the nature of the completed study, all data collection occurred in one setting, preventing the need to assign codes to participants to come back for future rounds of the study. With no private data collected, the risk of user confidentiality or privacy breaches is minimal (CSEPP, 2009; Novak, 2014). The types of data and retention of data were fully disclosed to participants as part of the informed consent process so that participants could weigh their need for confidentiality against the data being collected (CSEPP, 2009; Novak, 2014).

**Data handling and reporting.** In the completed research study, data handling began with the design of measurement instruments. Measurement via online survey allowed for data integrity to remain intact with no potential for manipulation or alteration after collection. By recording data in a database with a read-only format, the data remained true to the responses of participants with less chance of inadvertent mistakes that could have changed the data during the study. An online survey allowed for

reporting of data in an unadulterated format as well with actual recorded responses recorded in tables in the dissertation manuscript and calculations made directly from the source data (CSEPP, 2009). Data will continue to be stored in an encrypted format and disposed of when no longer needed to support current and future research. Participants were informed of data handling policies as part of the informed consent process. Careful handling of data decreased the risk of mistakes and negligence in the completed research study.

**Northcentral University requirements for IRB approval.** The completed study focused on financial statement disclosure language met the requirements of the IRB review by following the best practices including comprehensive risk assessment with an explanation of all relevant risks and benefits of the study (NCU, n.d.). An additional step included a careful consideration of due care in the context of minimizing risk while maximizing potential benefits (NCU, n.d.). Additionally, by submitting a comprehensive dissertation proposal that described all populations and procedures, the IRB review procedure resulted in the issue of an approval to complete the study based on a complete understanding of the study (NCU, n.d.). Considering the safeguards of informed consent with a study designed with minimal participant risk, IRB review and approval was not anticipated to be a challenge. All recommendations of the IRB were fully incorporated to the study design. An important consideration that was rigorously followed was ensuring that data was not collected by the researcher before formal IRB approval was received (NCU, n.d.).

## Summary

A non-experimental correlational design was completed to measure the effects of management financial statement manipulation on unsophisticated investor valuation judgments. Participants' reviewed financial information prepared with high contextual complexity designed to obfuscate the financial results. Participants then answered survey questions regarding the valuation of the hypothetical security as well how likely they were to continue to hold the investment. Multiple hierarchical regression analysis was performed to determine whether correlations existed between management financial statement manipulation and participant valuation judgments regarding the securities, while controlling for investment experience, education, and financial risk tolerance. No significant correlations were found between investment experience, education, and financial statement risk tolerance, and participants' valuation and investment decisions making. However, 75% of participants of all backgrounds tended to overvalue the security, suggesting that company management successfully obfuscated financial results through intentional manipulation of financial statements, thus providing evidence supporting the existence of management obfuscation theory.

## Chapter 4: Findings

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance, to provide correlational evidence supporting or discrediting the existence of management obfuscation theory. The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment.

The financial statement manipulation is the independent (predictor) variable. The investor valuation judgment is the dependent (outcome) variable. Investment experience, education level, and risk tolerance are control variables. The target population of this study was U.S. based investors. The minimum sample size was 85 based on G\*Power 3.1 with alpha level of .05, medium effect size of .15, and power level of .80 for F test of multiple regression analysis with four predictors (Cohen, 1992; Faul, Erdfelder, Buchner, & Lang, 2009). 100 participants completed the survey. Data was collected using the Survey Monkey® online survey tool. Hierarchical multiple regression analysis was performed to test the relationship between the complexity of financial statements and the investors valuation judgments of the hypothetical securities, controlling for investment experience, education level, and risk tolerance (Younhee & Mi Jung, 2016).

Chapter 4 contains three sections: (a) results, (b) evaluation of findings, and (c) summary. The results section begins with an overview of the data collection process



followed by a description of the sample characteristics. Results of exploratory data analysis including data assumptions and data validation follow. Next, results of the hierarchical regression testing and hypothesis testing are explored. In the evaluation of findings section, a detailed analysis of the hypothesis testing is completed. Lastly, the chapter summary provides a synopsis of the detail provided in the results and evaluation of findings sections.

### **Reliability and Validity of the Data**

**Data assumptions.** To verify that hierarchical regression could be conducted on the data, six assumptions were met. These assumptions were that (a) the values between rows were from different people (independence of observations), (b) there was a linear relationship between the predictor and outcome variable, (c) the variance was approximately equal for every value of the outcome variable (homoscedasticity), (d) no multicollinearity between the predictor and control variables, (e) no outliers, and (f) residual values were normally distributed (Cohen, Cohen, West, & Aiken, 2003; Younhee & Mi Jung, 2016). It was expected that different individuals would participate in the survey, and duplicate individuals would be prevented from participating through the AMT, meeting the first assumption. Scatterplots were visually inspected to ensure that the variables were appropriately linear (see Appendix E, Figure E1). Homoscedasticity was determined through the creation of a scatterplot showing both studentized residuals and unstandardized predicted values and visual inspection of the spread (see Appendix E, Figure E2). Tolerance values and correlation coefficients were calculated to check for multicollinearity (see Appendix E, Table E1). To ensure no outliers, case wise diagnostics and leverage values were calculated to make sure all

residuals were within  $\pm 3$  (see Appendix E). No cases exceeded 3 standard deviations and this assumption was met. Finally, normality of the residuals was determined through visual inspection of a histogram and P-P Plot (see Appendix E, Figures E3 & E4). With the assumptions for regression testing met, hierarchical multiple regression was completed.

**Reliability.** Study instrumentation was measured using Cronbach's alpha to test the reliability of the measurement scales for both participants perceived difficulty in understanding the financial statement excerpt, and participants perceived valuation of the underlying security (Younhee & Mi Jung, 2016). The difficulty measurement questions achieved reliability of .90, while the valuation measurement questions achieved reliability of .79. These values suggest that study instrumentation was internally consistent.

## Results

Results were based on a sample of 100 investors recruited on the Amazon Mechanical Turk (AMT) platform. The AMT platform allowed for recruitment of all participants and the completion of data collection over the course of approximately 24 hours after posting the initial job. AMT additionally only presented the study to AMT users located in the U.S. and who were age 18 or older. AMT allows job posters to either use a general pool of AMT users, or to specify users who have proven themselves as top tier respondents with work that is consistently of high quality. These top tier workers are known as Masters on AMT. The study utilized Masters users to increase the likelihood that responses would be completed thoughtfully and completely. A nominal monetary incentive of \$1.00 per respondent was used to attract Masters workers quickly. One

hundred percent of study participants who accepted the job after reading the informed consent disclosures completed all study related materials.

**Demographics.** The demographic information collected in this study included (a) level of education, (b) level of investing risk tolerance, and (c) level of investing experience. The average participant had a college degree (60%), had a moderately low level of risk tolerance (42%), and a beginner level of investing experience (36%). See Appendix F for demographic frequency comparison tables. In addition, the means, standard deviations, and Pearson correlations of each and between each of the variables are represented in Appendix F.

**Hypothesis testing.** Hypothesis testing was completed using hierarchical multiple regression analysis, while controlling for participant education level, risk tolerance, and investment experience (Younhee & Mi Jung, 2016).

***Hypothesis 1.***

*Q1.* Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors?

*H1<sub>0</sub>.* There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the investment experience of unsophisticated investors.

*H1<sub>a</sub>.* There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors.

Hierarchical multiple regression was calculated to measure the effect of investment experience on the valuation judgments of investors. Hierarchical multiple regression established no statistically significant predictive relationship between either model 1, which held the control variables of education level, investment experience, and financial risk tolerance, and or model 2, which held the predictor variable, management financial statement manipulation, and securities valuation judgment, as shown in Table 1,  $F(1,95) = 1.377, p = .248, \text{adjusted } R^2 = .015$ . Therefore, alternate hypothesis one is not supported and null hypothesis one is not rejected.

Table 1

*Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis One*

Steps and predictor variables	$R^2$	$\Delta R^2$	$sr$	$\beta$
Model 1	.035	.035		
Education Level			-.045	-.048
Investment Experience			-.129	-.177
Financial Risk Tolerance			.186	.244
Model 2	.055	.020		
Management Financial Statement Manipulation			-.140	-.145

Note. \*  $p < .017$ ;  $sr$  = semi partial correlation coefficient

***Hypothesis 2.***

Q2. Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the education level of unsophisticated investors?

$H2_0$ . There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the education level of unsophisticated investors.

$H2_a$ . There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for education level of unsophisticated investors.

Hierarchical multiple regression was calculated to measure the effect of education level on the valuation judgments of investors. Hierarchical multiple regression established no statistically significant predictive relationship between either model 1, which held the control variable of education level, and or model 2, which held the predictor variable, management financial statement manipulation, and securities valuation judgment, as shown in Table 2,  $F(1,97) = 1.040$ ,  $p = .357$ , adjusted  $R^2 = .001$ . Therefore, alternate hypothesis two is not supported and null hypothesis two is not rejected.

Table 2

*Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis Two*

Steps and predictor variables	$R^2$	$\Delta R^2$	$sr$	$\beta$
Model 1	.003	.003		
Education Level			-.083	-.084
Model 2	.021	.018		
Management Financial Statement Manipulation			-.133	-.135

Note. \*  $p < .017$ ;  $sr$  = semi partial correlation coefficient

**Hypothesis 3.**

*Q3.* Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors?

*H3<sub>0</sub>.* There is not a statistically significant relationship between management's financial statement manipulation and investors' valuation judgements of the company, controlling for the risk tolerance of unsophisticated investors.

*H3<sub>a</sub>.* There is a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors

Hierarchical multiple regression was calculated to measure the effect of risk tolerance on the valuation judgments of investors. Hierarchical multiple regression established no statistically significant predictive relationship between either model 1, which held the control variable of financial risk tolerance, and or model 2, which held the predictor variable, management financial statement manipulation, and securities valuation judgment, as shown in Table 3,  $F(1,97) = 1.557, p = .216, \text{adjusted } R^2 = .011$ . Therefore, alternate hypothesis three is not supported and null hypothesis three is not rejected.

Table 3

*Hierarchical Regression Analysis Predicting Securities Valuation—Hypothesis Three*

Steps and predictor variables	$R^2$	$\Delta R^2$	$sr$	$\beta$
Model 1	.020	.020		
Financial Risk Tolerance			.131	.131
Model 2	.031	.012		
Management Financial Statement Manipulation			-.108	-.108

*Note.* \*  $p < .017$ ;  $sr$  = semi partial correlation coefficient

## Evaluation of Findings

The theoretical foundations of management obfuscation theory include the financial theories of the efficient market theory and agency theory, as well as theories from the social sciences including cognitive load theory and processing fluency theory (Bens et al., 2012; Hales et al., 2011; Huang et al., 2014; Lee, 2012; Lehavy et al., 2011; Lo et al., 2017; Mostyn, 2012; Rennekamp, 2012). Management obfuscation theory suggests that company management may seek to delay investor reactions by disguising negative results using contextual complexity (Bloomfield, 2002; Elliott et al., 2014; Feldman et al., 2010; Ferris et al., 2013; Huang et al., 2014; Lee, 2012; Li, 2008; Libby & Rennekamp, 2012; Lo et al., 2017; Rennekamp, 2012). Rennekamp (2012) found that if management increased the difficulty a financial statement reader encounters when reading earnings press releases, management may decrease the likelihood that the investor will react to that information. If an investor does not react to negative information by selling a security they otherwise might have sold if they understood the magnitude of the context, management will have effectively obfuscated information to the benefit of management and the detriment of the investor (Rennekamp, 2012). The results of this study were consistent with Rennekamp's findings in that investors did not react to the negative performance of the company by selling their security, with 75% of investors electing to maintain their investment in the company. This result suggests the hypothetical financial statement disclosure simulated a successful management obfuscation of company negative operating results (Rennekamp, 2012; Lee, 2012).

This study provided more direct evidence regarding the mechanism by which post-earnings drift functions as described by Lee (2012). Post earnings drift occurs when negative earnings results are released, but share price equilibrium is delayed in direct proportion to the length and complexity of the company financial statements (Lee, 2012). The results of this study are consistent with the initial stages of a post-earnings drift scenario where investors overvalue the security and continue to hold the investment (Lee, 2012).

The study findings are also consistent with Tan et al., (2014) who found that less readable disclosures resulted in decreased understanding by investors for both well performing and poorly performing companies. Tan et al., found that management may alter the sections of financial disclosures with negative future implications to distort readers' perceptions of the company. This study was consistent with Tan et al., in that the disclosure was successfully altered to selectively to obfuscate areas where performance was poor, but to clearly highlight areas of company strength.

The study results are additionally consistent with management obfuscation studies that examined the effects of tone on investor behavior. The tone of the hypothetical financial statement disclosure was overly positive when compared to the operating results of the company. This positive tone may have contributed to the overvaluation of the security by participants as found in previous studies (Davis et al., 2012; Hales et al., 2011; Huang, 2014; Libby & Rennekamp, 2012). The results of the study are consistent with the idea that management obfuscation theory acts contrary to efficient market theory because management obfuscation does delay or prevent shares from reaching price



equilibrium. This study suggests that management obfuscation theory does have a strong enough effect to override efficient market theory effects.

The study findings are also consistent with the idea that company management may exploit market participants processing fluency limitations or cognitive load limitations to misrepresent financial results (Lee, 2012; Libby & Rennekamp, 2012; Miller, 2010). Processing fluency theory suggests that the perception of information contained within financial statements will vary from market participant to market participant because each financial statement reader will encounter a varying level of difficulty in perceiving the message (Jiang & Hong, 2015). Decreases in processing fluency caused by contextual complexity have been found to decrease investor reactivity, which is consistent with the study findings. One area where the results potentially vary from previous findings is the area of processing fluency includes Rennekamp's (2012) finding that participants dislike content that is difficult to process. A question remained as to whether this dislike would manifest in a sell decision. The results suggest any potential investor dislike of high context information does not appear to lead to a sell decision. Alternately, perhaps following Jiang & Hong (2015), investors preferred the easy to understand positive content and ignored the negative content that was more difficult to understand. These findings suggest that a clear and concise presentation is essential to the understanding of financial information for all classes of financial statement users.

### **Summary**

This quantitative correlational study examined the relationship between management financial statement manipulations and the valuation judgments of

unsophisticated investors, controlling for investment experience, education level, and risk tolerance. The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment.

Hypothesis testing was completed through hierarchical multiple regression testing. The results of hypothesis testing on hypothesis 1 did not provide sufficient evidence to reject null hypothesis, and thus it was found that there is not a statistically significant relationship between investor's valuation judgments when controlling for the investment experience of unsophisticated investors. The results of hypothesis testing on hypothesis 2 similarly found there was not a statistically significant relationship between investor's valuation judgments when controlling for the education level of unsophisticated investors. The results of hypothesis testing on hypothesis 3 also found that there was not a significant relationship between investor's valuation judgments when controlling for the risk tolerance of unsophisticated investors. These results suggest that education, risk tolerance, and investment experience are not good predictors of how unsophisticated investors will value securities when presented with financial statements manipulated through management obfuscation. 75% of investors continued to hold the poorly performing investment, and thus were negatively impacted by management financial statement manipulations. The results of the study were consistent with previous studies in management obfuscation theory in that management appears able to

successfully obfuscate results to the detriment of investors. These implications of this result will be discussed in greater detail in Chapter 5.

## **Chapter 5: Implications, Recommendations, and Conclusions**

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance, to provide evidence supporting or discrediting the existence of management obfuscation theory. The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment.

After approval of the study design and all study related materials was received from the IRB committee of Northcentral University data collection began. The sample of the study was 100 U.S. based investors. The demographic responses of participants revealed that no professional investors participated in the study. All participants reviewed and acknowledged receipt of the informed consent disclosures on the AMT platform prior to seeing any study materials on the Survey Monkey® survey tool. Participants reviewed financial information prepared with high contextual complexity designed to obfuscate the financial results. Participants then answered survey questions regarding the valuation of the hypothetical security as well how likely they were to continue to hold the investment. Multiple hierarchical regression analysis was performed to determine whether correlations existed between management financial statement manipulation and participant valuation judgments regarding the securities, while controlling for investment experience, education, and financial risk tolerance. The AMT

platform allowed for the quick recruitment of participants as well as the fast completion of all survey materials by participants. Limitations of this survey method include the potential for self-selection bias, where only participants who are interested in the topic decide to participate. Additionally, the AMT platform may encourage users to rapidly review and respond to survey questions to receive their monetary incentive and move on to the next paying task. This study required thorough and thoughtful analysis of the financial statement disclosure by participants to ensure accurate results. AMT Masters users were recruited to increase the likelihood that users would provide thoughtful analysis. An additional limitation of this study is that only non-professional investors participated. Unsophisticated investors may possess a lower level of processing fluency and be more prone to over optimistically assign values to poorly performing companies (Victoravich, 2010). This finding is consistent with the study results of 75% of participants continuing to hold their investment in the poorly performing company.

Chapter 5 contains three sections. The first section discusses the implications of the results of multiple regression testing on each study hypothesis. The results of this testing are discussed in the context of extant literature on management obfuscation theory and logical conclusions supported by study data are explored. Next, recommendations are made regarding the application of the study results to financial statement regulation, and additional recommendations are made regarding potential future studies in management obfuscation theory. Lastly, a summary of the study and its implications are discussed.

## Implications

The theoretical foundations of management obfuscation theory include the financial theories of the efficient market theory and agency theory, as well as theories from the social sciences including cognitive load theory and processing fluency theory (Bens et al., 2012; Hales et al., 2011; Huang et al., 2014; Lee, 2012; Lehavy et al., 2011; Mostyn, 2012; Rennekamp, 2012). Management obfuscation theory depends on unsophisticated investors misinterpreting the financial results of a company due to management financial statement manipulations (Lee, 2012). However, efficient market theory suggests that all available information is quickly incorporated in the pricing of securities (Gandhi et al., 2013; Murthy et al., 2011). The findings of this study contradict this central tenant of efficient market theory in that the information available in the disclosure was not accurately reflected in the investment valuation decision of participants. Despite the difficult wording, formatting, and content of the financial statement disclosure, 53% of investors perceived the financial statement disclosure as being either easy, or moderately easy to understand, and 46% of investors felt the disclosure was either easy, or moderately easy to read. However, based on their reading and understanding of the financial statement disclosure, 75% of investors decided to continue to hold an investment that in purely numerical terms is an investment in a poorly performing company. This result suggests that investors perception of the content and ease in reading the disclosure did not match the objective performance of the company. The results of the hierarchical regressions suggest that investors are negatively affected by management manipulation of financial statement language without regard for the investors level of education, risk tolerance, or investment experience. Investors appear to

have understood the portions of the disclosure that were written in clear, positive language. These sections of the disclosure were designed to present the company as favorably as possible. On the other hand, the sections of the disclosure that presented the true negative operating condition of the company that were written in dense, difficult to understand language, were not processed accurately by the investors. This result suggests the incongruence between efficient market theory and management obfuscation theory described by Lee (2012) may resolve in favor of management obfuscation theory. This result matches the findings of Lee (2012) that suggested that contextual complexity stressed the processing fluency of financial statement readers who required more time to process and incorporate the information. This decrease in financial statement users' level of processing fluency was found to decrease market efficiency (Lee, 2012). Processing fluency theory suggests that individuals experience greater or lesser ease in processing information (Jiang & Hong, 2015). The subjective feeling of greater difficulty in processing a message generally causes individuals to perceive messages less favorably than more easily understood messages (Jiang & Hong, 2015). The results of this study match the findings of Jiang & Hong, 2015, in that users' perception of ease in reading and understanding led investors to hold, instead of sell, the investment. Further, processing fluency theory suggests that when a market participant is presented with multiple items that require a cognitive load to process, market participants will generally prefer the item with a lower level of complexity (Forster et al., 2013; Jiang & Hong, 2015). The mechanism by which management obfuscation theory was most effective in this study then may relate to this aspect of processing fluency, where participants preferred the information that was most easily understood. Participants may have used

this information as the basis for their decision, while discounting the most relevant, though difficult to process, content. An expansion in understanding of management obfuscation theory from this study is that management obfuscation is effective across all levels of unsophisticated investor education, investment experience, and risk tolerance.

**Q1.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the investment experience of unsophisticated investors?

Hierarchical multiple regression established no statistically significant predictive relationship between investors' valuation judgments of the company, controlling for investment experience. 10% of participants self-identified as having advanced investing experience, with no participants self-identifying as professional investors. 68% of participants had either intermediate or beginner investment experience, and 22% had no investing experience. With no professional investors in the population, the population of this study then can be described as 100% unsophisticated investors. A lack of statistically significant difference between classes of unsophisticated investors suggests that unsophisticated investors perceived the difficulty and valuation of the company similarly no matter their level of previous investing experience.

Regulators must consider the needs of all financial statement users and thus, to serve the public good, regulators must ensure that financial statements are complete, accurate, and generally accessible by financial statement users of all skill levels (Bertomeu & Cheynel, 2013). The SEC has stated that unsophisticated financial statement users, meaning those users without advanced financial educations or



professional backgrounds, are a class of financial statement user that requires additional consideration when designing reporting regulations (SEC, 1998, 2013).

Findings of previous studies suggested that unsophisticated investors may possess a lower level of processing fluency and be more prone to over optimistically assign values to poorly performing companies (Victoravich, 2010). Lehavy et al. (2011) found that financial statement users have varying levels of skill in analyzing financial statements (Lehavy et al., 2011). Sophisticated institutional investors may have a higher level of proficiency in analyzing complex language than the least sophisticated individual investors (Lehavy et al., 2011). Per Rennekamp (2012), financial statement complexity may have a stronger negative effect on users with the lowest level of financial sophistication, which is a result consistent with the finding of this research question.

**Q2.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the education level of unsophisticated investors?

Hierarchical multiple regression established no statistically significant predictive relationship between investors' valuation judgments of the company, controlling for education level. Flesch-Kincaid was chosen for this study due to usage in recent accounting research that sought to measure the difficulty of accounting texts (Plucinski & Hall, 2012), as well as research measuring the complexity of measuring other financial information (Franco, Hope, Vyas, & Zhou, 2015). The study used the Flesch-Kincaid grade level of 14 as a benchmark following prior study findings that accountants require an understanding of grade 14 material to understand accounting texts (Farrell, Farrell, & Wells, 2010). A potentially surprising outcome of the study is that users with graduate

degrees did not outperform users with a high school education. One potential explanation for this outcome is that accounting and finance has a language unique to the profession that may not be accessible to participants without a business background (Loughran & McDonald, 2014). Demographic information was not collected regarding participants' area of study. It is possible that the educational background of many participants was not in accounting or finance, thus their advanced education was insufficient to parse the intentionally obfuscated financial statement disclosure that used jargon from an unfamiliar field.

**Q3.** Is there a statistically significant relationship between management's financial statement manipulations and unsophisticated investors' valuation judgments of the company, controlling for the risk tolerance of unsophisticated investors?

Hierarchical multiple regression established no statistically significant predictive relationship between investors' valuation judgments of the company, controlling for risk tolerance. 58% of participants self-identified a moderately low, or low, level of investing risk tolerance. The hypothetical investment could be described as high risk not only because of the poor operating performance, but also because of the aggressive treatment of accruals and cash management described in the disclosure. The disclosure should have raised numerous red flags for investors of all risk tolerances including: (a) a multi-year downward trend in both revenue and earnings; (b) management restructuring due to cash flow issues; (c) management reclassification of deferred revenue to the current period; (d) negotiations with creditors regarding outstanding debt; (e) negotiations for new credit facilities to meet cash flow needs; (f) a doubling of outstanding accounts receivable; (g) a significant increase in unsold inventories; and (g) a decrease in customer demand across

all product lines. It is surprising then that participants with a low level of risk tolerance would not sell the investment based on the content of the disclosure. This result suggests that the effect of the obfuscation using contextual complexity and tone was strong enough to suggest that the company was a lower risk investment than it was, and that the company was performing better than it was. Additionally, it suggests that low risk tolerance investors may be easily manipulated into holding unsuitable investments through management obfuscation techniques. Public interest theory suggests that regulatory oversight is required to protect market participants from adverse selection in financial reporting, as the free flow of accurate and complete information is a public good that protects capital market participants (Bertomeu & Cheynel, 2013). To protect capital market participants, regulators including the SEC proscribe guidance regarding the form and content of financial statements prepared by company management (Lee, 2012). The outcome of this study suggests that additional regulation may be required to protect capital market participants of all educational, investing, and risk tolerance backgrounds.

### **Recommendations**

Additional research is needed to understand the differences between unsophisticated versus professional investors. Future research opportunities include studies that compare the valuation judgments of the types of unsophisticated investors who completed this study, with the valuation judgments of professional investors to determine whether professional investors are more capable of reading beyond the tone and contextual complexity of financial statements prepared using management obfuscation techniques. Additional areas of unsophisticated investor research include

experimental studies that analyze components of management obfuscation techniques to determine the techniques that most effectively mislead unsophisticated investors.

Practical applications of this research study include the need for additional regulatory oversight to protect market participants from the effects of management obfuscation. While regulating abstract contextual content of financial statements may be difficult, the demonstrated ability of management obfuscation to lead unsophisticated investors to hold an investment in a poorly performing company to their detriment suggests the effort is necessary to ensure the stated goal protecting unsophisticated investors continues to be met.

### **Conclusions**

The purpose of this quantitative correlational study was to examine the relationship between management financial statement manipulations and the valuation judgments of unsophisticated investors, controlling for investment experience, education level, and risk tolerance, to provide evidence supporting or discrediting the existence of management obfuscation theory. The specific problem was the need to examine the relationship between the management financial statement manipulations and unsophisticated investors' securities valuation judgments to determine whether company management financial statement manipulations can delay or prevent unsophisticated investors from selling securities to their detriment. The findings suggest that unsophisticated investors of all educational backgrounds, levels of investment experience, and levels of investment risk tolerance, are equally susceptible to the effects of management obfuscation as demonstrated by: (a) no significant differences found between groups of unsophisticated investors when controlling for education, investment

experience, and risk tolerance, and (b) most participants electing to hold a highly risky investment in a poorly performing company. Further research is recommended to elucidate whether professional investors can see through management obfuscation techniques in financial statement disclosures. Recommendations for practice include the need for additional regulation regarding the contextual complexity and tone of financial statements to meet the regulatory mandate of protecting unsophisticated investors in U.S. capital markets.

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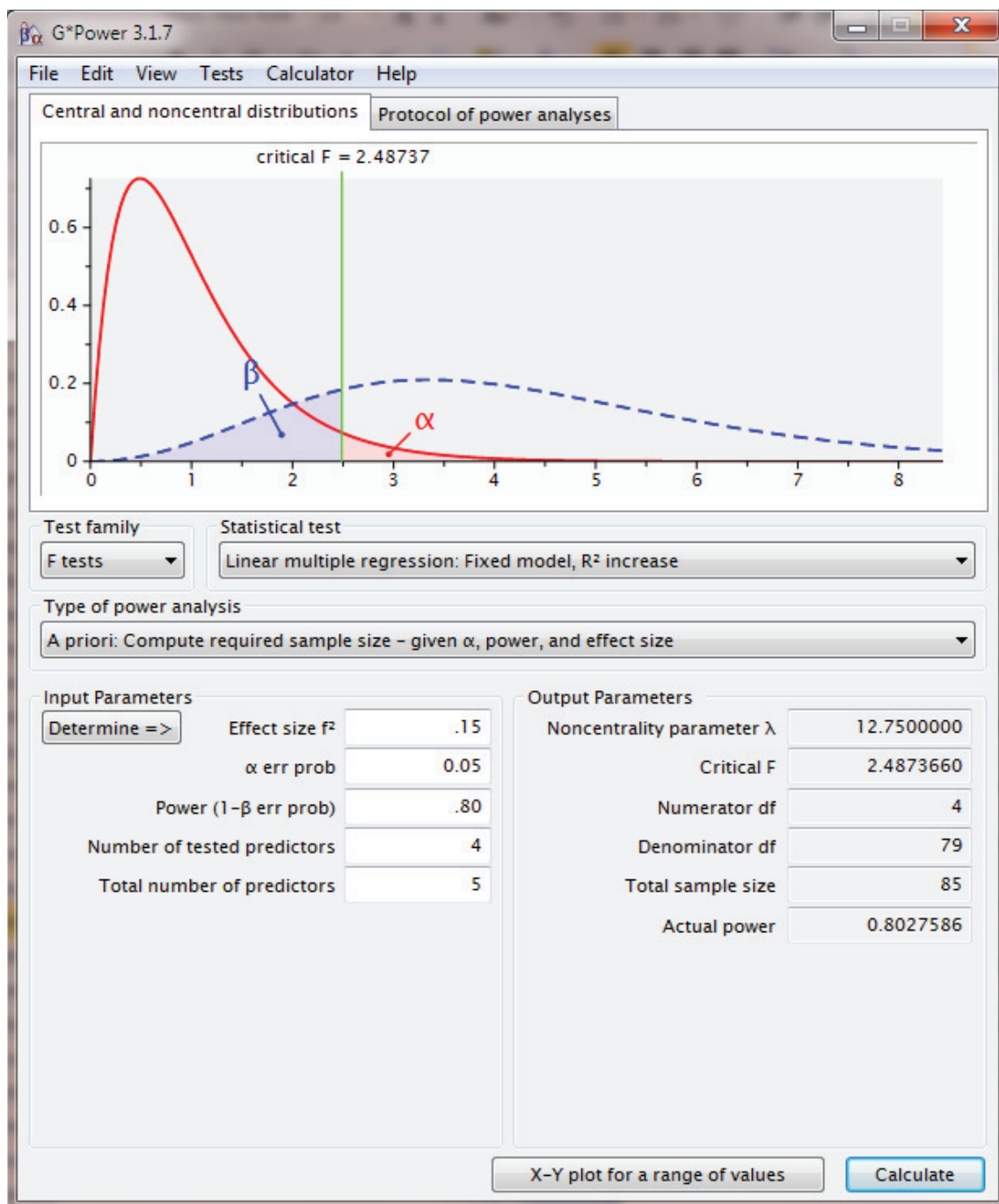
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## Appendix A: A Priori Power Analysis



## Appendix B: Supplemental Materials

Table 1

*Participants' assessment of the difficulty of understanding the financial statement excerpt*

After reviewing the financial statement excerpt of Busy Bee Energy Drink Company, what is your assessment of the difficulty understanding the disclosure?

Easy	Moderately Easy	Neither Easy nor Difficult	Moderately Difficult	Difficult
-2	-1	0	1	2

After reviewing the financial statement excerpt of Busy Bee Energy Drink Company, how difficult did it feel to read the financial statement disclosure?

Easy	Moderately Easy	Neither Easy nor Difficult	Moderately Difficult	Difficult
-2	-1	0	1	2

Table 2

*Participants' valuation decisions regarding the investment*

Assuming the role of a hypothetical investment in Busy Bee Energy Drink Company, after reviewing the financial statements, what is your most likely investment action?

Certainly Sell	Likely Sell	Neutral (Hold)	Likely Hold	Certainly Hold
-2	-1	0	1	2

Assuming the role of a hypothetical financial analyst attempting to assign a relative value to Busy Bee Energy Drink Company, after reviewing the financial statement excerpt, what is your assessment of the value of the company?

Very Low	Low	Neither High nor Low	High	Very High
-2	-1	0	1	2

Table 3

*Participants' level of investment experience*

How would you describe your level of investment experience?

No Experience	Beginner	Intermediate	Advanced	Professional
1	2	3	4	5

Table 4

*Participants' level of education*

What is the highest level of education you completed?

Less than High School	High School	Some College	College Degree	Graduate Degree
1	2	3	4	5

Table 5

*Participants' level of investing risk tolerance*

How would you describe your level of investing risk tolerance?

Low	Moderately Low	Moderate	Moderately High	High
1	2	3	4	5



Table 6

*SEC Elements of more readable financial statement disclosures*

<b>Elements of Readability</b>	<b>Example of Readable Language</b>	<b>Example of Less Readable Language</b>						
Clear heading and hierarchy of data	<p><b>Busy Bee Company</b></p> <p>Busy Bee Company produces carbonated energy drinks...</p>	<p>Busy Bee Company produces carbonated energy drinks... Financial performance for the year ended...</p>						
Use of Tables	<p><b>Financial Performance</b></p> <p>Financial performance for the year ended...</p> <table border="1"> <thead> <tr> <th><b>Year</b></th> <th><b>Earnings</b></th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>\$1.5M</td> </tr> <tr> <td>2015</td> <td>\$1.4M</td> </tr> </tbody> </table>	<b>Year</b>	<b>Earnings</b>	2016	\$1.5M	2015	\$1.4M	<p>In 2015 Busy Bee Energy Drink Company earned \$1.5M, while in 2016 the Company earned \$1.6M.</p>
<b>Year</b>	<b>Earnings</b>							
2016	\$1.5M							
2015	\$1.4M							
Bullet Points	<p><b>Future Growth Plan</b></p> <ul style="list-style-type: none"> <li>• Expansion into Europe</li> <li>• Development of Sugar Free Energy Drinks</li> <li>• Expanded Marketing in Existing Markets</li> </ul>	<p>Busy Bee Energy Drink Company plans to expand in new markets, such as Europe, to fuel future growth. Additionally, the development of sugar free energy drinks options are expected to grab additional market share from competitors. Lastly, expanded marketing spend in existing markets are planned for 2017.</p>						
Short Sentences	<p>2017 modernization efforts include a \$10M investment in new production machinery. This machinery will reduce operating costs by reducing maintenance costs and equipment downtime.</p>	<p>Numerous modernization efforts are planned for 2017 including capital expenditures of approximately \$10M to replace aging and obsolete machinery and equipment that have been in our primary manufacturing facilities for nearly twenty years in some cases and are a drag on profitability due to constant breakdowns and</p>						

Active Voice	Earnings were below management expectations.	planned maintenance. Earnings are expected to be lower than anticipated by management at the start of 2016
No Hidden Verbs	Management <b>determined</b> that the current product mix was inadequate.	Management <b>made a determination</b> that the current product mix was inadequate
Use of Pronouns	This summary may help you determine if this is a suitable investment after considering your level of risk tolerance	This summary may aid in the determination of the overall suitability of the investment for a given level of investor risk tolerance
Abstract versus concrete language	Busy Bee Company management invests in modern production equipment to achieve higher earnings growth. Higher earnings growth may increase the value of your shares in the company	Busy Bee Company management seeks to increase the growth of assets and equity
Superfluous Language	<b>Although</b> the Company invested in new product lines, product acceptance <b>is uncertain</b>	<b>Despite the fact that</b> the Company invested capital in new product lines, <b>there is no guarantee</b> that these products will be accepted by our customers.
Positive Writing	The following summary <b>excludes</b> pro forma data	The following summary <b>does not include</b> pro forma data
Jargon and Legalese	Management renamed the “Buzz” line of caffeine added energy drink “Buzz Extreme” effective Q1 of 2017	Hereinafter the aforementioned Busy Bee “Buzz” line of CAEDP’s is to be renamed “Buzz Extreme”
Typography	Busy Bee Company earned \$1.2M in the previous quarter	<b>Busy Bee Company earned \$1.2M in the previous quarter</b>

Table 7

*Financial statement disclosure for Busy Bee Energy Drink Company*

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS FOR BUSY BEE ENERGY DRINK COMPANY

## OUR BUSINESS

Busy Bee develops, markets, and distributes carbonated “energy” drinks under the Busy Bee®, Energy Buzz®, and Sports Sting® labels. The exponential growth of our flagship products has put us on rocket ship like trajectory to be the largest energy drink company on the planet by 2020. Busy Bee is marketed to the young adult, 18-34 demographic, and is primarily focused on promoting active lifestyles and superior performance in the classroom, the office, and in traditional and “extreme” sports. The Busy Bee “Hive” includes consumers, musicians, athletes, and investors, who demand greatness and are winners in their respective fields.

Strategy

Busy Bee’s strategy is to strengthen and expand our position in the high-end carbonated energy drink market. Key initiatives include the following:

- Continued tremendous growth in the abundant and highly profitable energy drink segment.
- Achieve goal of expanding our innovative production facility in 2017 to produce 5.2 million hectoliters of production capacity to meet expected enthusiastic consumer demand.
- Continued rapid successful releases of superior quality carbonated energy drink products designed to delight our customers.

## RESULTS OF OPERATIONS

Financial Highlights

- Delivery of an exceptional \$112M in earnings in 2016.
- Increased inventories provide increased potential for rapid market expansion.
- Management continues strong shareholder focus by unlocking previously deferred revenues.
- Planned debt restructuring and new credit facilities promise funds will be available to expand operations to meet incredible demand in 2017

### Earnings Discussion

In the year ended December 31, 2016, Busy Bee experienced minor headwinds that overall slightly decreased the impressive rate of earnings growth in what has been a decade long period of rapid expansion. Biennial earnings were \$120M, earnings in 2015 were approximately \$118M, and in the year heretofore ended earnings were \$112M; Biennial net profit was \$2.5M, net profit in the prior year was approximately \$1.5M, while net profit in the year heretofore ended was \$.1M. The dynamics that triggered the mild diminution in earnings growth are considered by management to be driven by temporary transitory macroeconomic factors. To meet cash flow needs in 2017 management is in negotiations to restructure existing debt under more favorable terms, and enter new borrowing facilities needed to fund operations during this temporary softness in distributor requisitions. Current earnings include \$43.3M of previously deferred earnings that were unlocked by management to provide value for our shareholders. These previously deferred earnings were originally set to be recognized ratably between 2017-2022. Inventories increased year-over-year by \$34.3M. These inventories represent a tremendous value through the opportunity to forge new alliances with major distributors in carbonated energy drink segment. Net AR increased from 15.1M in 2015 to 32.9M in 2016. Management is excited to realize these earnings cash to fuel the aforementioned plans for expansion and accelerated growth.

### OUTLOOK

When considering the exponential growth potential of the energy drink segment, Busy Bee management is ecstatic at the potential for share price appreciation and long term company out-performance. Management continues to have extreme confidence in the energy drink segment to deliver explosive growth and incredible wealth to shareholders invested in this exciting line of business.

## Appendix C: Informed Consent Form

### **Introduction:**

My name is Jarad Giese. I am a doctoral student at Northcentral University (NCU). I am conducting a study on how word choice in financial reports may change users' company valuation. I am completing this study as part of my doctoral degree. I invite you to participate.

### **Activities:**

If you participate in this research, you will be asked to:

1. Answer questions related to your education, investing experience, and risk tolerance.
2. Review financial reports.
3. Answer survey questions related to your valuation of the company.

### **Eligibility:**

You are eligible to join this study if you:

1. Are a U.S. resident
2. Over the age of 18

I hope to include 85 people in this research.

### **Risks:**

There are minimal risks in this study. Some possible risks include: You may feel mild stress while valuing the company.

Every attempt will be made to preserve your confidentiality. A loss of confidentiality could occur through a security breach or other unforeseen event.

To decrease the chance of these risks, you can: Not answer questions, skip questions, or leave the study at any time.

### **Benefits:**

If you decide to participate, there may be no direct benefits to you.

The benefits to others are: greater awareness of how word choice may change investor perceptions. These insights may provide insights useful in protecting investors.

### **Compensation:**

To thank you for your participation, you will be given \$1.00.

**Confidentiality:**

The data you provide will be kept confidential to the extent allowable by law. Some steps I will take to keep your identity confidential are: The use of an anonymous online survey. No user identifiable data will be collected. Only questions needed for the study will be asked to maintain your privacy.

The people who will have access to your data are: Myself, my chair, and my dissertation committee. Additionally, The Institutional Review Board (IRB) of NCU may also review my research and view your data.

I will secure your data with these steps: Download only non-user identifiable survey data for analysis. All data will be kept in a password protected format.

I will keep your data for 7 years. Then, I will delete all study data.

**Contact Information:**

If you have questions for me, you can contact me at: [J.Giese5118@email.ncu.edu](mailto:J.Giese5118@email.ncu.edu)

My dissertation chair's name is Dr. Terri Lituchy. She works at NCU and is supervising me on the research. You can contact her at: [tlituchy@ncu.edu](mailto:tlituchy@ncu.edu).

If you have questions about your rights in the research, or if a problem has occurred, please contact the IRB at: [irb@ncu.edu](mailto:irb@ncu.edu) or 1-888-327-2877 ext 8014.

**Voluntary Participation:**

Your participation is voluntary. If you decide not to participate, or if you leave the study after you start, there will be no penalty to you. You will not lose any benefit to which you are entitled.

Clicking on the link to start the survey indicates the participant's acceptance of the consent form and their agreement to participate.

## Appendix D: Demographic Frequency Comparison Tables

Table D1

*Participants' level of education*

	Frequency	Percentage
Less than High School	1	1.0%
High School	9	9.0%
Some College	30	30.0%
College Degree	48	48.0%
Graduate Degree	12	12.0%

*Note. N = 100*

Table D2

*Participants' level of investment experience*

	Frequency	Percentage
No Experience	22	22.0%
Beginner	36	36.0%
Intermediate	32	32.0%
Advanced	10	10.0%
Professional	0	0.0%

*Note. N = 100*

Table D3

*Participants' level of investing risk tolerance*

	Frequency	Percentage
Low	23	22.0%
Moderately Low	42	36.0%
Moderate	22	32.0%
Moderately High	10	10.0%
High	3	0.0%

*Note. N = 100*



Appendix E: Data Assumptions

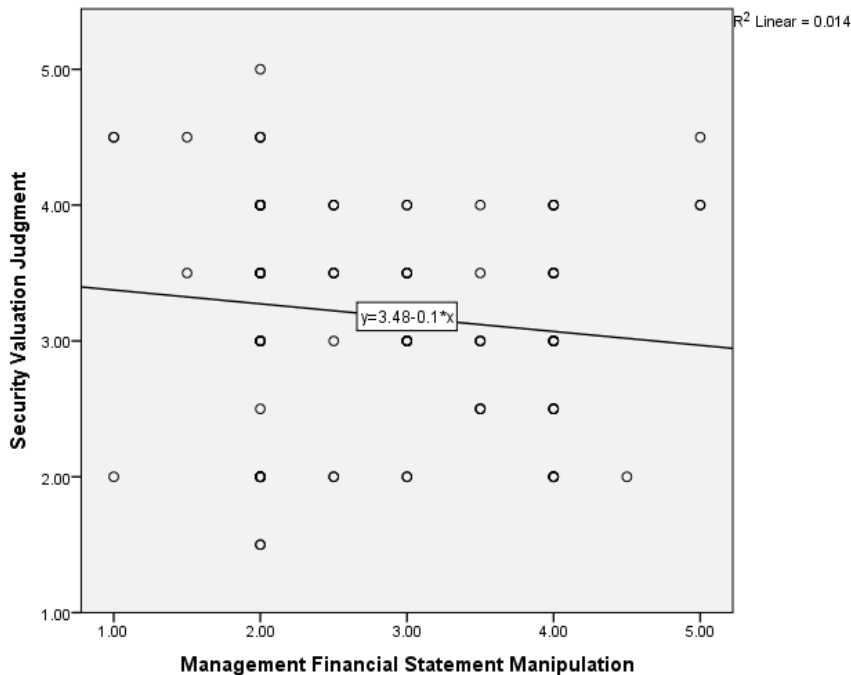


Figure E1. Linear relationship between the predictor and outcome variables.

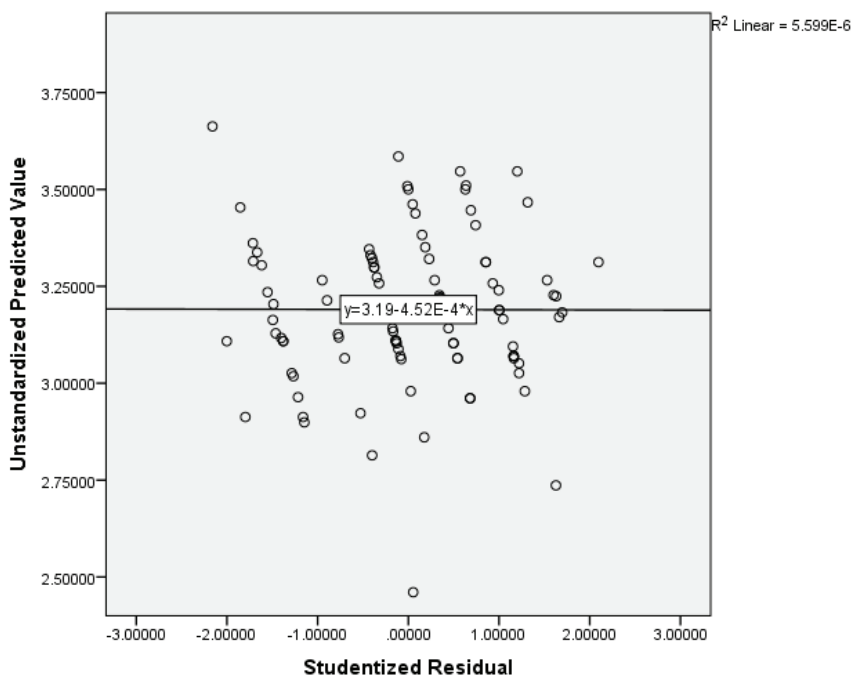
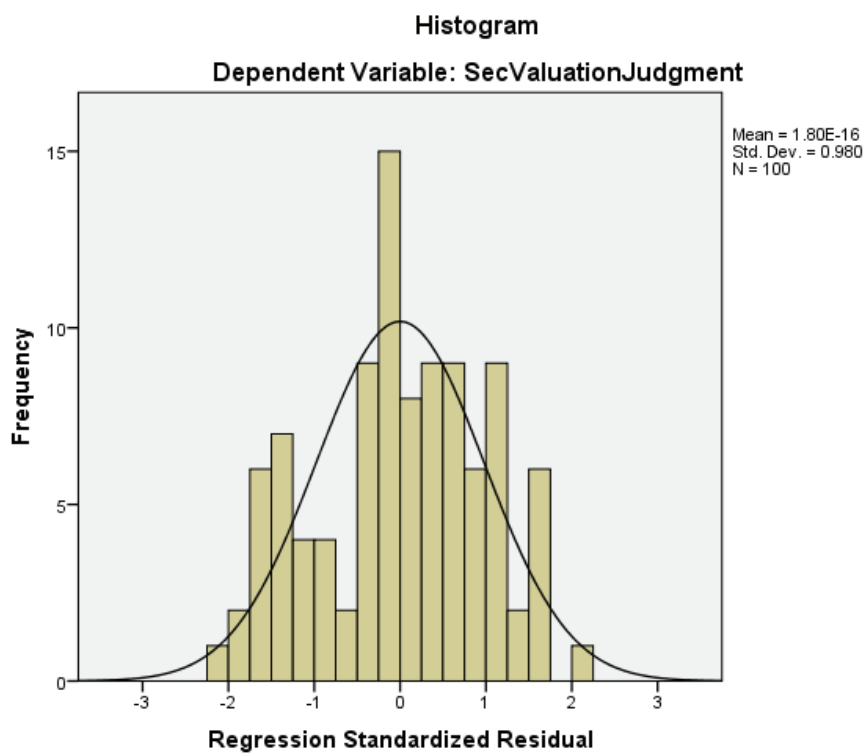


Figure E2. Assumption of Homoscedasticity and Horizontal Fit Line.

Table E1

Collinearity Statistics for Control, Predictor, and Outcome Variables

	Tolerance	Variance Inflation Factor
Education Level	0.874	1.145
Investment Experience	0.507	1.973
Financial Risk Tolerance	0.565	1.769
Management Financial Statement Manipulation	0.935	1.070



*Figure E3.* Histogram of Residuals with Normal Plot

Normal P-P Plot of Regression Standardized Residual

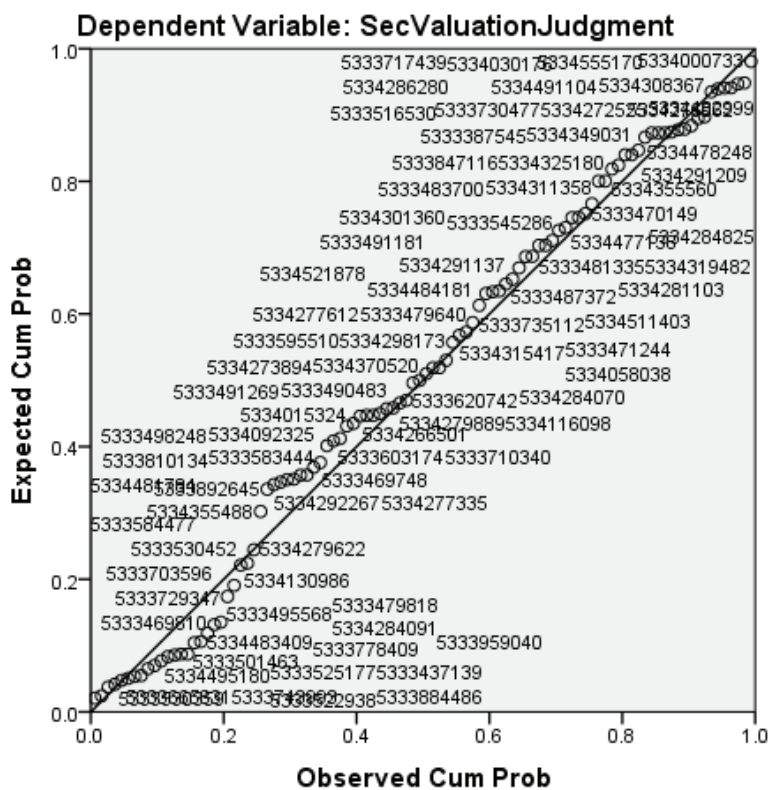


Figure E4. Normal P-P Plot of Regression Standardized Residuals

## Appendix F: Demographics Information

Table F1

<i>Education Level</i>	<i>N</i>	<i>%</i>	<i>Total %</i>
Less than High School	1	1.0%	1.0%
High School	9	9.0%	10.0%
Some College	30	30.0%	40.0%
College Degree	48	48.0%	88.0%
Graduate Degree	12	12.0%	100.0%

Table F2

<i>Investment Experience</i>	<i>N</i>	<i>%</i>	<i>Total %</i>
No Experience	22	22.0%	22.0%
Beginner	36	36.0%	58.0%
Intermediate	32	32.0%	90.0%
Advanced	10	10.0%	100.0%

Table F3

<i>Financial Risk Tolerance</i>	<i>N</i>	<i>%</i>	<i>Total %</i>
Low	23	23.0%	23.0%
Moderately Low	42	42.0%	65.0%
Moderate	22	22.0%	87.0%
Moderately High	10	10.0%	97.0%
High	3	3.0%	100.0%

Table F4

*Descriptive Statistics*

	<i>M</i>	<i>SD</i>	<i>N</i>
Security Valuation Judgment	3.19	0.822	100
Education Level	3.61	0.852	100
Investment Experience	2.30	0.927	100
Financial Risk Tolerance	2.28	1.026	100
Management Financial Statement Manipulation	2.82	0.963	100

Table F5

*Correlations*

		1	2	3	4	5
Pearson Correlation	1. Security Valuation Judgment	—	-.059	-.003	.140	-.119
	2. Education Level		—	.291*	.057	-.185*
	3. Investment Experience			—	.644*	-.216*
	4. Financial Risk Tolerance				—	-.087
	5. Mgt Fin Statement Manipulation					—

**Note.** \*  $p < .05$

## Appendix G: Post Hoc Power Analysis

