Fall 2009

An empirical examination of the effects of ethics, disclosure, and signal theory on disciplinary actions within the accounting profession

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AN EMPIRICAL EXAMINATION OF THE EFFECTS
OF ETHICS, DISCLOSURE, AND SIGNAL THEORY
ON DISCIPLINARY ACTIONS WITHIN THE
ACCOUNTING PROFESSION

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Business Administration

COLLEGE OF BUSINESS
LOUISIANA TECH UNIVERSITY

November, 2009

UMI Number: 3399270

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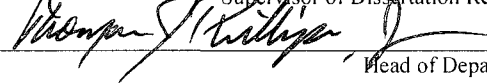
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by _____ Benjamin McMillan _____

entitled "The Public-Private Interest and Regulatory Economics: the Effects of Ethics, ____

Disclosure, and Signal Theory on Disciplinary Actions." _____

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be accepted in partial fulfillment of the requirements for the Degree of

Doctor of Business Administration - Accounting _____

<div align="right">Supervisor of Dissertation Research</div>

<div align="right">Head of Department</div>

School of Accountancy _____

<div align="right">Department</div>

Recommendation concurred in:

Advisory Committee

Approved:

Director of Graduate Studies

Dean of the College

Approved:

Dean of the Graduate School

<div align="right">GS Form 13a
(6/07)</div>

ABSTRACT

There has been extensive research examining the relationship between the public mission of the accounting profession and the private interests of its professionals. All professions have been offered a special place within society due to the importance of the functions they perform as well as their stated public missions. In exchange, society delegates specific rights to the professions such as exclusivity of practice, self-discipline, and self-selection of their membership. Existing research suggests that the accounting profession's private interests have potentially encroached upon its public mission.

By using the Economic Theory of the Self Regulated Profession, Disclosure Theory, and Signal Theory, testable hypotheses are generated that examine the accounting profession's self-disciplinary function. Specifically, disciplinary actions of the accounting, legal, and medical professions are compared scores of the Defining Issues Test – 2 derived from panel data. Next, Signal Theory is employed to determine if an external mitigate potentially influences the disciplinary actions of the accounting profession. Finally, Disclosure Theory is examined in terms of the number and severity of punishments issued by the legal, medical, and accounting professions.

Results of the study find that that the disciplinary actions of the legal, medical, and accounting professions appear benefit their memberships over public mission. However, tests of Signal Theory report increased levels of disciplinary actions during periods of potential external regulation to the profession.

Finally, tests of Disclosure Theory suggest that increased transparency of disciplinary actions increase their number and severity.

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DEDICATION

In loving memory of my father,

Allen Gray McMillan, Jr. (1923 – 2007)

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CHAPTER 1

INTRODUCTION

Purpose of Study

The intention of this research is to examine the potential conflict between the stated public mission of the accounting profession and the private interests of its practitioners. Accounting, as with most professions, has been offered a specific place within society to perform services that are of such importance that they are allowed the capacity to self-regulate their membership. These self-regulatory rights include establishing membership requirements, self-selection, and self-discipline. In exchange for these rights, professions are required to establish a code of conduct that will be used as the disciplinary measure for self-regulation as well as support its "public service" mission (Puxty et al. 1997). The private interests of the profession are motivations by membership to protect the social position, political power, capacity to generate wealth, and influence over business and economic policy. The cornerstone of this interest has been the membership's ability to serve their own self-interest through the manipulation of the professions ethical codes and its delegated capacity of self-regulation (Parker 1994).

The American Accounting Association promotes the public interest through "knowledge and responsible action with respect to the role and effects of accounting

information and social and ethical responsibilities of accounting professionals in areas including social and environmental accounting, public interest issues, government/profession regulation, professional and business ethics, direct assistance programs, and, in general, contributing to the quality of our common life" (American Accounting Association 2008). The profession is dependent on its ability to provide financial information that is sufficiently reliably and timely. Failure to produce information that is sufficiently timely and reliable has potentially lead to a series of audit and accounting failures in recent history such as the accounting frauds of Enron and Worldcom.

The private interest of accounting has been defined as the "latent motivation of ethical codes to protect the interests of the professional accounting body corporate and its individual members over the interest of its public mission" (Puxty et al. 1997). The private interests include expanding the profession's social status, political power, and influence over economic status (Parker 1994). One of the significant means of protecting the private interest is through the use of the profession's ethics codes and the related disciplinary actions. Accounting, as a profession, is given the capacity for self-regulation. A poor disciplinary process infringes on the public interest by allowing members of the profession to extend their influence beyond the scope of the profession. Also, and more importantly, practitioners whose actions are deemed to damage the public interest and are not removed from the profession or at least sufficiently disciplined to deter the behavior from reoccurring.

Existing research examining the Public/Private interest has focused on areas of political influence, claims of professionalism, and examination of disciplinary actions of

accounting societies and boards. The primary analysis has been based on historical reviews of documents, structured interviews, and examination of disciplinary actions by regulatory bodies. This study expands this research stream that examines the disciplinary actions of regulatory bodies to include the Economic Theory of Self-Regulation (ETSR), Positive Accounting Theory, and Signal Theory. The majority of accounting research that examines the public/private interest has focused numerous phenomena that shed light on the existence of the private interest overshadowing the public interest. However, to date, no theory has been employed that allows a side-by-side comparison of multiple professions and their disciplinary processes. By using ETSR, a unifying testable hypothesis can be made that compares the behavior of the accounting profession to other professions. This process allows the accounting profession to have specific control groups that can be used to benchmark behaviors.

ETSR also offers two predictive behaviors that can be hypothesis tested. First, self-regulatory schemes for professions will increase disciplinary actions against memberships as a means to stave off a direct regulatory scheme (DeMarzo et al. 2005). In effect, the profession is signaling to its public interests that its code of ethics and disciplinary processes are sufficient to protect the public interest. In a parallel stream of literature, accounting research has employed Signal Theory as a means of examining communications of positive information by a firm market participants. This research is applicable to this study because of the nature of information communicated. Specifically, the profession is attempting to communicate positive information to its stakeholders.

The second predictive behavior is the impact of disclosure on the behavior of the self-regulated profession. ESTR postulates that the profession will behave as a monopoly

due to the delegated powers of self-selection, authority of the function of the profession within society, and self-disciplinary processes (Shaked and Sutton 1981). Accordingly, an agency problem develops between the profession and the public interests where the profession is the agent and the public interest is the principal. To mitigate the information asymmetry caused by the agency problem, disclosure forced upon a profession will mitigate the agency problem (Border and Sobel 1987).

Study Operationalized

In order to operationalize this research, tests of the public/private interest are conducted through a comparison of an ethics survey and disciplinary actions of the accounting, legal, and medical professions. The DIT2 test is employed as a benchmark for establishing the ethical standards of the profession. Disciplinary actions are obtained and compared with DIT2 scores to establish a rank order of disciplinary actions to ethics levels. Next, signal theory, as predicted by ETSR, will be tested using inflection points of 1992 and 2002. The 1992 inflection point represents the professions reaction to the accounting failures related to the savings and loan industry. The 2002 inflection point represents the implementation of the Sarbanes Oxley Act and the creation of the Public Company Accounting Oversight Board. Each point represents periods of time when the accounting profession was threatened with external direct regulation. Last, disclosure theory of accounting and ETSR will be examined by reviewing the types of disclosure made by the legal, medical, and accounting professions and its relationship between disciplinary actions and their severity.

Contributions

This research inquiry potentially adds four contributions to the accounting literature. First, the hypothesis and methods used within this study offer a means to operationalize ESRT and provide validation of its theorems. Next, the accounting literature that examines the public/private interest can be expanded to include ESRT. Also, a significant amount of accounting research that analyzes the private interests of accounting has not been performed with empirical data and testable hypothesis. Finally, this study employs Signal Theory and Positive Accounting Theory to generate hypothesizes to test mitigating factors to the private interest of the profession. Signal Theory and Positive Accounting Theory have been used extensively within accounting research to assess the characteristics of the firm. However, this research is potentially the first time that they have been employed to examine the characteristics of the accounting profession.

Organization of the Study

The remainder of this proposal consists of five additional chapters. Chapter 2 provides a selective literature review that include: the definition of a profession, a review of public/private interest research in accounting, an examination of Economic Theory of Self-Regulation, an overview of Positive Accounting Theory with a specific focus on Disclosure research, an examination of Signal Theory, the cognitive development theories of Kohlberg and Rest, and existing research examining disciplinary actions of the accounting and medical professions. Chapter 3 develops the theoretical basis for the three hypothesizes tested by this research. Chapter 4 establishes the methodology that is used to test the established hypothesis. Chapter 5 provides the results of the study as well

as its analysis. Finally, Chapter 6 offers conclusions of the study, its limitations and directions for future research.

CHAPTER 2

SELECTED LITERATURE REVIEW

This chapter presents prior empirical research and its accompanying theory that are relevant to this study. First, an overview of the definition of a profession is provided with supporting literature to identify accounting as a self-regulated profession. Next, the public/private interests of the accounting profession are defined and identified in conjunction with Interest Group Theory of Accounting Regulation. The parallel research stream of Economic Theory of Self-Regulation is examined as an extension of existing accounting theory. Next, Positive Accounting Theory is briefly defined and a selective literature review of Disclosure research is provided. In addition, Signal Theory is defined with a selective review of accounting related articles. Positive Accounting Theory, Disclosure Theory, and Signal Theory are included as extensions of untested theory postulated by the Economic Theory of Self Regulation. Finally, the cognitive development theories of Kohlberg and Rest (Kohlberg 1986; Rest 1979) as well as empirical studies using disciplinary actions of self-regulatory authorities of accounting and the medical professions are examined. These final two topics are provided as a basis for the operationalized methods of this research inquiry.

Accounting as a Profession

Definition of a Profession

This research is based on the assumption that accounting is a self-regulated profession. To support this conclusion, it is important to establish the definition of a self-regulated profession and that the accounting profession meets this definition. Several definitions of a profession have been established in the literature. These definitions are based in examinations of the profession's powers, professionalism, and attributes. Freidson (1986) scrutinizes professions in terms of the powers that they hold. Specifically, Freidson (1986) notes:

> "Professional groups representing disciplines or bodies of knowledge that claim the right to control particular areas of social policy that affect particular areas of human life are professions. Professional groups are often represented as creators and proponents of particular bodies of knowledge that play important roles in shaping both social policy and the institutions of everyday life."

By using a definition based on powers, the author permits a profession to be based on social policy and fabric. This definition is sufficiently broad to address the profession's influence on society. However, the definition of powers does not address the potential for self-regulation and self-selection.

Larson (1977) focused on the profession in terms of developing professionalism. This definition is based on the social status of the profession in terms of the service they provide and the resulting guarantee of social status. Specifically, Larson (1977) describes professions as:

> "Those occupations in which caveat emptor cannot be allowed to prevail and which, while they are not pursued for gain, must bring to their practitioner income to such a level that they will be respected and such a manner of living that they may pursue the life of the mind. Moreover, professions are and were a means to earning an income on the basis of transacted services."

Additionally, Freidson (1973) defines a profession as the process where an occupation makes a claim that its specific skill sets are of such importance to society that it must obtain the control over its work product to fully benefit society. Once control has been established, the occupation becomes a profession within the context of society and an external party cannot exert influence over the type of work performed. The definition expands the role of professionalism to include the profession's right to control its actions based on its control of its work product.

Attribute definitions are used to expand the definition of a profession beyond its social contract and control of its work product. Downie (1990) articulates four attributes that separate occupations from professions. They include a required degree of substantive theory and technique, a monopoly over claimed professionals or semi-professionals, external recognition from clients and other associations, and a degree of organization where members are bound by a sense of identity, share common values, and exert power over its members including self-selection. Last, Pavalko (1971) developed an eight-attribute model based on specific characteristics. First, the profession is based on a body of theoretical, abstract, or esoteric knowledge. Next, the work of professions is seen as strongly related to the realization of specific societal value functions. Examples

include the relationship between the legal profession and justice or the medical profession and health. Professions are required to have a length of training for entrance due to the complexity of the knowledge base. Ethical codes are established to emphasize the ideal of service to clients and society as their primary objective. Professions are self-regulated and self-controlled for matters of general interest to its members. Self-regulation is specifically limited to the profession's ability to self-select, discipline, and expel members for actions detrimental to the profession and the public interest it serves. This is offered to the profession by society in exchange for a detailed code of ethics and the requirement to discipline its members. Membership in a profession is taken seriously and the commitment to the profession is assumed to be life long. Members hold a common identity with a shared norm of value and control of behavior. Last, adherence to a code of ethics is required for membership within the profession. Codes are written to control member behavior, client relationships, relationships with the public, and practitioner to practitioner relationships. Codes are offered to society as a means of self-regulation and self-disciplinary capacities.

Freidson (1973) identified five professions that are included in modern society. They include engineering, public accounting, medicine, legal, and clergy. Engineering meets the requirements of a profession because it is treated as the technology elite. It is further broken into market segments by the specialization of skills. While engineers meet the definition, they lack power within the market place. Public accounting is defined as a profession because it rationalized its body of knowledge while standardizing practices. In addition, it is a knowledge oriented profession that has gained societal recognition as well as a degree of self-regulation. The medical profession is licensed with a mandate

from society, is independent in practice, and has a social responsibility. Clergy is allowed professional status due to its laity and the priest/minister acting as a representative of it. Lawyers are defined as a profession due to its client centered services, control of recruitment, and training with an internal sanctions system through self-regulation. Last, it confers prestige in the market with promises for a higher than average wage rate.

<div align="center">Accounting as a Profession</div>

The Pavalko (1971) attribute definition of profession is used as the basis for defining accounting as a profession. This model includes the following eight factors: a knowledge base, value functions, required training, service to society as the primary function, self-regulation, life-long membership, common identity, and ethical codes. The accounting profession's primary base of knowledge is Generally Accepted Accounting Practices (GAAP). GAAP is a "widely accepted set of rules, conventions, standards, and procedures for reporting financial information, as promulgated by multiple authoritative sources" (West 1998). Accounting's value function to society was formalized in the passage of the Securities Act of 1933 and the Securities and Exchange Act of 1934. These acts required all firms registering to be publically traded companies have financial statements audited by certified public accountants. Prior to these acts, companies were not required to have their financial statements audited. However, prior to the establishment of the two securities acts, governmental bodies consulted with accounting firms due to their "growing reputation" (Zeff 2003).

The next attribute of a profession is a lengthy required training period due to the complexity of its knowledge base. The profession currently requires most new members

to have 150 semester hours of accounting and business related courses prior to sitting for the certified public accountant examination. The current education requirements are an accumulation of several efforts to improve the educational requirements of the profession. As early as 1959, the profession advocated training and education beyond the standard 120 hour undergraduate requirement. Currently, 45 of 50 states have adopted the 150-hour requirement. Five states have not approved the 150 education requirement (New Hampshire, Vermont, Georgia, Arizona, and California). New York will phase out the 120 hour requirement in August of 2009. Colorado approved the 150 hour requirement but repealed the requirement in 2002 (Boone and Coe 2002). Service to society is defined as the function to "promote the reliability of information that is used for guidance in financial transactions or for accounting or assessing the financial status or performance of commercial, noncommercial, and governmental enterprises" (AICPA/NASBA 1994). In addition, the Financial Accounting Standards Board (FASB) defines the public interest as "serving the investing public through transparent information resulting from high-quality financial reporting standards developed in an independent, open, public sector due process" (Baker 2005).

Several accounting studies have examined the attributes of life-long service and common identity within the accounting profession. Bline et al. (1991) examined the accounting profession using two different measures of organizational commitment. The author used organizational commitment as a proxy for commitment to the profession. Results showed that accountants reported more commitment to the profession than their current employer. Gregson (1992) examined job satisfaction and organizational commitment. The author found that job satisfaction and turnover were causal factors in

their equation. In addition, the authors found that the majority of accountants do not leave the profession despite job turnover. Finally, Padgett et al. (2005) examined job turnover in the context of expectations and experiences within the accounting profession. The authors found that work schedule, mentors, gender, and children in households were the primary indicators of turnover in the accounting profession. In addition, it is worth noting that the author reported that 59% of the new hires within public accounting were female.

Ethical codes within accounting were initially developed through the founding of the American Association of Accountants in 1886. In 1907, an initial ethics code was established within the association's bylaws that were formalized in 1917. Moderate changes to the existing code until the American Institute of Certified Public Accountants provided a newly expanded ethics code in 1960. In 1973, the ethics code was expanded based on three principles: independence, integrity, and objectivity (Casler 1964). The Code of Ethics was modified again in 1988 in response to external pressures due to audit failures during the savings and loan crisis (Backof and Martin 1991).

<center>Law as a Profession</center>

The knowledge base of the legal profession is based on the specialization of the legal code within the practicing state as well as federal statue. The body of knowledge is acquired through state recognized institutions through formal training programs (Constantinides 1990). The legal profession has a direct relationship with the notion of justice within the social fabric of society as its value function as well as its dedicated service to society (Bilodeau 2004). The legal profession's regulatory process has developed in a similar manner as the accounting and medical professions. Each state

offers the status to practice law with the associated benefits subject to the completion of educational requirements and the passage of a comprehensive examination. Individual states establish associations that are appointed by each governor subject to approval by legislative bodies. Composition of the bar associations vary by state but each require that the majority of members be from the legal profession. The process of acceptance into the profession as well as all disciplinary processes are made through the state bar associations (Thakor and Kumar 2000). To facilitate self regulation and self-attraction, each state bar maintains a code of conduct that can be used to discipline membership (Bilodeau 2004). Common identity and life-long membership within the profession has been established through longitudinal studies (Boylan 2004).

Medicine as a Profession

The medical profession's knowledge base is codified through the Current Procedural Terminology as well as accepted protocols of the profession. Education is provided through licenses within the United States which are subject to comprehensive examinations to begin practice and ongoing educational requirements to maintain practice (Bilodeau 2004). Service to society as well as value functions are based in the profession's ability to provide medical services. Accordingly, the medical profession, as accounting and legal, has been offered the rights for self-regulation in attracting, selecting, and disciplining membership. These rights are delegated to a medical board/board of medical examiners for each state. The boards are comprised exclusively of medical professionals appointed by state governors with varying levels of approval by state legislature (Thakor and Kumar 2000). Marchiori and Henkin (2004) examined the

commitment and turnover of practitioners. Results show a strong life-long commitment to the practice of medicine.

Accounting Profession and Self-Regulation

Self-regulation of accounting is a key assumption of this research. Therefore, it has been afforded additional space within the review of accounting as a profession to examine the development of the regulatory process of accounting. In order to be a profession as defined by the attribute definition of Pavalko (1971), an occupation must be self-regulating. Self-regulation is specifically limited to self-selection of membership and the disciplining of members for actions that are detrimental to the profession and the public interest. In the current regulatory scheme of the accounting profession, individual states have the right to certify accountants as well as provide for their disciplinary actions (Lawrence and Grambo 2007). In addition, the Public Company Accounting Oversight Board (PCAOB) has the authority to sanction or suspend individuals from association with public accounting firms that are registered to perform public company audits (Boster 2007).

State certification boards were established by lobbying efforts of the Institute of Accountants and the American Association of Public Accountants. The Institute of Accountants was founded to provide education for the profession and membership was open to individuals subject to the passage of an exam. The American Association of Public Accountants was primarily focused as a lobby for the interest of the profession (Lee 1995). In 1896, due to the lobbying efforts of these two organizations, the first state sponsored licensing law was passed in New York. The law reserved the right to the title of "certified public accountant" for those who were capable of passing the examination.

As part of the statute, New York established a board of accountancy to administer the examination. By 1922, all 48 states had passed similar statutes. Currently, similar formats are now in effect for all 50 states (Mills and Young 1999).

Recent lobbying efforts to affect changes to state board of accountancy regulations have been pursued by the National Association of State Boards of Accountancy (NASBA) and the American Institute of Certified Public Accountants (AICPA). NASBA and the AICPA have pursued a regulatory framework called the Uniform Accountancy Act (UAA) to create uniformity across state boards of accountancy. The UAA has been the platform for implementing educational requirements, interstate reciprocity, experience requirements, and limits to non-attestation services. No state has passed the entire proposed legislation without tailoring changes to meet their specific needs (Colbert and Murray 1999). Versions of the UAA have been promulgated in 1992, 1998, and 2007. The 1992 version focused on improving educational requirements and introducing the 150 hour requirement. The 1998 version focused on experience requirements, interstate reciprocity of licenses, offering non-attestation services, and changes to the composition of state boards of accountancy. In addition, the 1998 UAA made attempts to change license mobility and the disciplinary process for each state (Lawrence and Grambo 2007). Within the 1998 proposed UAA legislation, the act offered changes to the composition of the board of accountancy members. Specifically, the state board of accountancy will be comprised of seven members of whom five will be from the accounting profession. Two members will be at-large appointments outside the profession. Currently, all fifty states have approved some

version of this legislation with at least five members derived from the profession (Colbert et al. 2008).

PCAOB was created by the Sarbanes-Oxley Act of 2002 (SARBOX) in response to several accounting scandals to restore public confidence. PCAOB is a government sponsored non-profit corporation that has the regulatory power over accounting firms that perform public company audits. Its charter gives PCAOB the responsibility for setting audit standards, inspecting firms performing public company audits, and enforcing violations of its established audit standards for accounting firms performing public company audits (Boster 2007). As part of its investigating and enforcing authority, PCAOB may suspend or revoke the registration of firms or individuals that perform public company audits, limit the activities of firms or individuals, issue monetary penalties, require additional professional education, require reviews of operations, and require policy changes. However, it does not have the capacity revoke a license of an individual or firm (Public Company Accounting Oversight Board 2003).

Definition of Public-Private Interests and Interest Group Theory of Accounting Regulation

Definition of Public and Private Interests

To examine the public/private interest in accounting, it is important to establish definitions of each. Within the accounting literature, public interest is, at best, loosely defined. The American Institute of Certified Public Accountants (AICPA) defines the public interest as the "collective well being of the community and institutions that the profession serves" (Baker 2005). The Financial Accounting Standards Board (FASB) defines the public interest as "serving the investing public through transparent

information resulting from high-quality financial reporting standards developed in an independent, open, public sector due process" (Baker 2005). Additionally, the American Accounting Association promotes the public interest through "knowledge and responsible action with respect to the role and effects of accounting information and social and ethical responsibilities of accounting professionals in areas including social and environmental accounting, public interest issues, government/profession regulation, professional and business ethics, direct assistance programs, and, in general, contributing to the quality of our common life" (American Accounting Association 2008).

A definition of public interest has been open to debate within the accounting literature. A succinct definition has been defined as "the production of impartial accounting and auditing knowledge" (Sikka et al. 1989). However, a significant amount of accounting literature has been dedicated to not identifying a specific definition of the public interest due to the nature of its definition. A definition would simply be too vague to generate values to be used in formal analysis (Sikka and Willmott 1995b; Nicola and Dimitri 1999). In effect, the accounting literature has taken the view of Supreme Court Justice Potter Stewart in his 1964 ruling in *Jacobellis v. Ohio*. "I can't define pornography, but I know it when I see it" (Gewirtz 1996).

Private interest, in contrast, has been defined with more clarity within accounting literature. Parker (1994) defined the private interest as "the latent motivation of ethical codes to protect the interests of the professional accounting body corporate and its individual members. Interests include the body's social status, political power, and influence over economic and business activity". Sikka and Willmott (1995) expanded this definition by including the disciplinary process of accounting societies as a "proven

mechanism for diffusing criticisms, restoring the aura of independence and professionalism and protecting the profession's jurisdiction." Preston et al. (1995) added to this definition the dimension of morality and ethical codes by stating that "the scope of the accountant's morality is now limited to the profession's ethics rules and their increasingly precise interpretations." Finally, Canning and O'Dwyer (2001) furthered the Parker (1994) definition to include the private interest as unstated "yet powerful, as demonstrated of an effective and accountable disciplinary may reduce the chances of a profession losing its self-regulated status. The disciplinary processes can be also recognized as part of the territorial battles which enable professional bodies to ward off challengers and retain their ascendancy."

Interest Group Theory of Accounting

Interest Group Theory of Accounting Regulation (IGTAR) views the development and management of regulation within accounting as a "product of relationships between different stakeholders and the state." Regulation of accounting becomes more of a competition of power that is solely based in the public interest" (Gaffikin 2005). Within this context, it is the political struggle between stakeholders that shapes accounting policy and forms the direction of accounting regulation. This struggle, in turn, delineates the boundaries of the interests of the public and private stakeholders of accounting regulation as well as the regulatory strategy taken by governmental regulatory agencies (Parker 1994).

Within IGTAR literature, four separate streams of literature have developed that examine specific aspects of the conflicts between the public and private interest. These included the Parker model, public space, political theory, and professionalism. Each of

these methods and theories examines how the private interest of the accounting profession uses its ethical codes and self-regulation to promote its self interests.

Parker (1994) developed a model to describe five interrelated constructs that examine the private interest's influence within the accounting profession. This model, known as the Parker Model, includes insulation of the profession from external parties, minimization of interference, self control, professional authority, and socio-economic status preservation. The Parker (1994) model is graphed below:
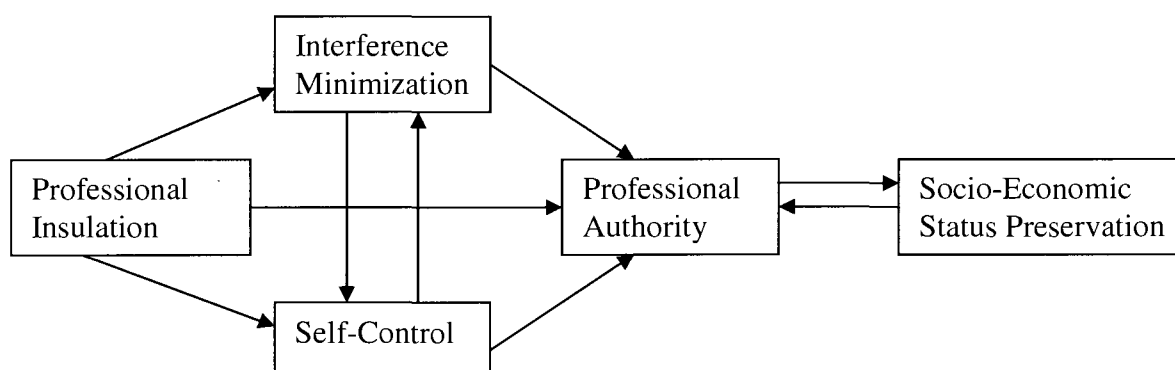
Figure 2.1 Parker Private Interest Model

Within this model, the basis of protection of self interest is held within the profession's ethical codes. By providing insulation from direct government regulation of licensing and disciplining accounting professionals, the profession can maintain self control, limit external interference, and exert professional authority over the regulatory space of accountant licensing. Through these four cornerstones, the profession's socio-economic status is preserved. Parker (1994) tested his model through an examination of the Australian Societies of Accountants disciplinary files. Results showed that the profession was limited in its disciplinary actions towards members. The model was explored again by O'Dwyer (2003) in an examination of the disciplinary process of the

Institute of Chartered Accountants in Ireland. Fisher et al. (2001) also used a modified version of this model to examine disciplinary actions across cultural boundaries. In this research, the author used the United Kingdom and the Pacific Basin as control groups. Results showed that cultural differences potentially played a role the number and type of disciplinary actions.

The question of the appropriateness of public space (or regulatory space) has also provided a view of the private interest of the accounting profession. In this research stream, the conflict between regulatory regimes of the state is examined in terms of the allowance of self-regulation for the profession in exchange for the development and policing of its ethical codes. Sikka and Willmott (1995) examined the relationship of the profession, self-regulation, and independence in terms of a "system of professionals" and its jurisdiction. Through an historical topology of events, the authors argue that the profession has employed differing efforts to protect its "aura" of independence. Baker (1993) broached a similar topic of regulatory space through the efforts of large international public accounting firms to defend against external threats to self-regulation. The author suggests that the complexities of the operating environments of these firms limit the ability of researchers to understand the impact and effectiveness of these firms efforts to protect their regulatory space. MacDonald and Richardson (2004) examined the development of the regulatory space that governs Ontario, Canada's Public Accountants' Council. Through an historical review of correspondence and public records, the authors found that the profession was capable of establishing a specific regulatory space that allowed for self-regulation through the implementation of a code of ethics. Through an examination of public statements and correspondence from the

AICPA, Rogers et al. (2005) examined the first public statements after the audit failure of Enron Corporation. The author found that the profession dealt with the public crisis through a series of "image management techniques" designed to protect its self-interests instead of developing a specific "cultural changes" for the profession. Finally, Neu (2006) offered a different perspective of the public space by defining it as "the portion of the institutional field where there is more open debate through the participation of the media." The author, through an historical typology, offers that the profession changed its practices within its educational efforts due to the impact of additional disclosure and scrutiny.

Several authors have examined the impact of politics within the context of the behavior of the profession to address threats of potential external regulation. Young (1986) through an empirical study of the licensing regimes examined the political influence of Certified Public Accountant Societies within the United States. The author found that states with higher concentrations of CPAs to non-CPAs (construed as political strength by the author) developed higher licensing standards that those with lower concentration levels. The author concluded that the higher licensing standards proved a measure of strength of interest group politics. Luehlfling (1995) examined the political necessity of self-imposed regulations through an examination of five historical cases of potential governmental control over the profession. Findings suggest that the profession acted through a political necessity to prevent external regulation. In an examination of the influences of historical external events and responses, Neu and Saleem (1996) viewed the actions of the Institute of Chartered Accountants of Ontario's actions through political necessity to protect its rights to self-regulation through a code of conduct. The study's

findings suggest that the institute changed its code of conduct to meet external threats to maintain self-regulation. Finally, Canning and O'Dwyer (2006) examined "political causation" within the disciplinary process of the Institute of Chartered Accountants in Ireland. Through structured interviews, the author's findings suggest that internal strife within the organization caused the disciplinary process to be driven by a "lack of precision or logic."

The process of professionalization within the accounting profession has been examined in terms of IGTAR by several studies. Lee (1995) performed an historical review of the invocation of professionalism as a means for protecting the public interest. The author theorizes that the industry uses the promise of professionalism as a means of self-interest. In another study, Mitchell et al. (1994) examined professionalism in terms of audit failures. The article suggests that the profession has used its professional status as a means of expanding and legitimizing its activities through its ethical codes and enforcement. However, the profession has failed to take any actions against the firms that suffered an extensive number of audit failures. Preston et al. (1995) viewed the use of the codes of ethics in the United States as a claim for professionalization due to moral status. The authors performed an historical analysis of the establishment of the codes of ethics in the 1980's. The findings suggest that the establishment of the code of ethics as well as its alterations is a response to political challenges to the legitimization of the profession. Finally, Puxty et al. (1997) examined a single event and the profession's response. The findings suggest that claims of the "public interest" have been historically used to claim accountancy as a profession. In a response to the *Future Development of Auditing: A Paper to Promote Public Debate* (Auditing Practices Board 1992), the major

accounting bodies of the United Kingdom responded by making claims of private interest instead of concern for the public interest.

Economic Theory of the Self-Regulated Profession

Stigler (1971) provided one of the first theories of economic regulation and the self-regulated occupation with the establishment of two alternative views of industry regulation. First, regulation is a political process that defies logic and at worst is a drain on the economy through political "featherbedding." The second view of regulation is that it is desired or "acquired" by the industry and operated as a benefit. Stigler (1971) offers four direct benefits from regulation to the profession: government subsidy, increased barrier to market entry, control over "substitutes and compliments", and direct price fixing. With the acceptance of regulation, an industry loses control of its price and output, increases costs, and outsiders are allowed to participate in the decision making process. Within these constraints, the industry players maximize their profitability and utilization of the benefit of regulation.

The author expands the article by examining occupational licensing as a political process used to "improve the economic circumstance of the participating group." Four external characteristics are offered as potential influencing characteristics of the occupation. They include the size of the occupation, per capita income, large city concentration, and the presence of a cohesive opposition to licensing. As part of their study, a regression analysis was performed comparing regulated and non-regulated professions. The author found that licensed professions had higher income, more stable employment, and were more likely to be self-employed.

Shaked and Sutton (1981) expanded the work of Stigler (1971) by extrapolating the self-regulating profession as monopolistic enterprise. This work is based in the assumption that the profession can admit as many or as few members as it deems desirable. In effect, they control the supply of professionals within the market. This authority is based in the profession's capacity to maintain quality of service because the consumer alone cannot measure the quality of services. A profession can increase price without increasing the quality of services provided. Specifically, the increased price that the profession can obtain verses the increased quality offered by self-regulation. The author develops this assumption through a proof of two equations. Three assumptions are made for simplification: quality is uniform, no profession to profession services are provided, and no consumer preferences. The author first develops the following equilibrium equation:

$$nt = LM + l, \tag{1}$$

where n = units purchased
      t = labour services
      L = size of profession
      M = Demand
      L = entry requirements.

From this equation, the author introduces quality as an additional variable:

$$M_l = M_x t_l + M\alpha Q\alpha, \tag{2}$$

where M_l = Demand given entry requirements to profession
      $M_x t_l$ = Demand given the size of the labour market subject to entry
             requirements
      $M\alpha Q\alpha$ =Demand subject to quality of services provided.

The author notes that "as the profession shrinks below the maximum value size, the relative income increases when $t_l \geq 0$, $M_l \geq M\alpha Q\alpha \geq 0$. Hence M will increase with l with reduction or forced shrinkage in the size of the profession."

Shaked and Sutton (1981) also examine the impact of outside forces that could shape the potentially monopolistic nature of the self-regulated profession. They expand their theorem to include potential threats to a single self regulated profession by a complementary service (in this case lawyers and para-lawyers). This example is expanded by the introduction of new services within the equilibrium equation listed below:

$$nt = LM_\beta + PM_\gamma + l ,\qquad(3)$$

where n = units purchased
       t = labour services
       L_β = size of profession β
       M_β = demand β
       L = entry requirements
       $P\gamma$ = size of profession γ
       $M\gamma$ = demand γ .

From this basis, the authors develop the following equation that develops the possibility that a profession of quality γ can co-exist and potentially threaten a similar profession of β :

$$t_1 = \frac{PM_{\gamma\alpha}Q_{\gamma\alpha-(M_\gamma-1)}}{n-LM_{\beta\chi}-PM_{\beta\chi}},\qquad(4)$$

where n = units purchased
       t = labour services
       L_β = size of profession β
       M_β = demand β
       L = entry requirements
       $P\gamma$ = size of profession γ
       $M\gamma$ = demand γ .

In this case the author proposes that a secondary profession can gain market share if $M\gamma \geq 1$. This equation makes the assumption that quality of services provided by the

secondary provider $(M\gamma)$ within the market is at least marginally acceptable. Given this case, the authors suggest that the primary profession (M_β) can be threatened.

Border and Sobel (1987) examine agency theory specifically with a focus of information asymmetry and the use penalty and auditor discovery. The authors develop the following equation:

$$\sum_{i=1}^{n}[(1-p_i)t_i + p_i f_i]h_i , \tag{5}$$

where p_l = Probability of audit function
t_l = Submission of payment to principal
f_l = Penalty
h_l = Probability of wealth.

From this model, the author theorizes that any solution that mitigates the information asymmetry within the relationship must "force the agent to tell the truth". The article offers two methods: punishment or payment. Punishment would include high audit probabilities as well as large penalty payments. Payment would include large reward payments that minimized audit payments. In either method, the principal must engage in audits at some probability level with penalty payments for actions taken outside the agent-principal agreement.

In another attempt to model self-regulation, Donabedian (1993) examines the enforcement of professional codes of conduct in terms of "exit costs". The author theorizes that the enforcement of professional codes is based in losses that a member would face if they were removed from the profession. The authors offer that trust is the basic element to the profession services (from repeated exchanges, family ties, or formal institutions). The author provides the following equation to help explain the role of monopoly and enforcement of professional codes:

$$h_m m_c n + b(k)gV_e(rs + m_c) = R_v V_E rs + R_v V_E m_c,\qquad(6)$$

where H_m = Political costs of monopoly
M_c = Professions control over monopoly
$b(k)$ = Political costs of government imposed punishment
g = Probability of detection and conviction by government
V_e = Number of offenses committed
r = Return to human capital investment in competitive market
s = Ratio of human capital investment to the profession
R_v = Political revenue gained from the reduction of offenses.

The authors conclude from their theorem that the left hand side of the equation represents the marginal costs of the self regulated profession that exerts control over its members while mitigating government costs by limiting the number of offenses that are identified and fined. The right hand side of the equation examines the exit costs to member of the profession through control of human capital and through professional costs. Simply stated, the costs of the enforcement of codes and maintenance of monopoly over the profession are equal to the costs of exiting the profession.

Stefanadis (2003) examined the benefits to the financial industry of self regulation by the introduction of innovation. The author develops his theorem through the use of the National Association of Securities Dealers (NASD) status as a self government organization within the eyes of the Securities and Exchange Commission. Within this relationship, the NASD has a delegated power to discipline its membership as well as to provide some of the regulations governing the industry. As an example, the author uses a comparison of the London Stock Exchange (LSO) forced separation of investment and commercial banking operations and the lifting of the *Glass-Steagall Act of 1933*. Each format imposed some form of separation between ownership of the different types of entities. However, the United Kingdom was able to pursue the abolishment of arbitrary function sooner that the United States because the LSO was a self-regulating body.

Ashby et al. (2004) examined a similar function through game theory to establish the possibility of successful self regulation with interactions between government and industry. In this game scenario, the authors establish that government's responsibility is to initiate and then delegate the management of the regulatory process to industry. The alternative to self-regulation is a statutory scheme where regulation is generated and administered by governmental bodies. The authors propose that self regulation has administrative and design advantages over statutory schemes. However, with its advantages, risk is also introduced into the market. In order to mitigate this risk, self-regulated industries have the explicit threat of intervention within by government authorities. From this, the authors have developed a gaming topology for two firms that comply and violate self-regulation. Using the topology, the author's role played four scenarios: zero tolerance, partial tolerance, chicken game, and prisoner's dilemma. Results show that government should generate an expectation of a zero tolerance regime despite the true intentions of its regulatory intentions.

Finally, DeMarzo et al. (2005) examines self regulation in terms of government oversight. While not directly quoting Ashby et al. (2004), this work examines the conflict of self regulated professions and governmental oversight. However, Demarzo et al. (2005) uses agency theory as a basis for examination with the profession acting as the agent and government as the principal. A theorem is generated based on an agents expected utility. The following equations are developed that are used to develop and provide proof of the theorem:

- Agent's expected utility: $p(r)u(\max[w - z(r) - x(w,r),o] + (1 - p(r))u(w - z(r))$

- Agent's maximum penalty payment: $w - z(r)$

- Feasibility constraint (AF): $z(w) \leq w$ for all w

- Incentive compatalibility constraint (AIC):

$$u(w_2 - z(w_2)) \geq p(w1)u(\max[w2 - z(w_1) - x(w2,w_1),0] + (1 - p(w_1))u(w_2 - z(w_1))$$

- Self reporting payment (SRP):

$$\max\nolimits_{z,p,x,t} E[p(W)u(\max[W - z(W) - x(W,W),0]) + (1 - p(W))u(W - z(W))]$$

- Customer incentive compatibility constraint (CIC): *z solves CP(p,x)*

- Customer individual-rationality constraint (CIR): $E[z(W)] - t \geq \alpha$

- Budget Constraint (RB): $t \geq E[p(W)(c - \min[x(W,W,W - z(W)])]$

- Feasibility constraint (FB): $z(w) \leq w$ for all w,
  where W   = Realized Cash Flow
          P   = Policy Enforcement
          C   = Reported Cash flow
          X   = Transaction Fee and Fine
          P(r)   = Probability of R
          R   = Report to Principal
          Z (r)   = Contract enforcement Probability
          U   = Utility
          T   = Transaction fee
          α = Reservation pay-off SRO
          α^C = Reservation pay-off customer.

Once the authors established their theorem, a graphical representation is made to describe three "states of nature" within the relationships. They include a self regulated monopoly, a self regulated organization with government oversight, and a competitive verses self regulation. Figure 2.2 is a representation of a competitive solution verses self-regulation.
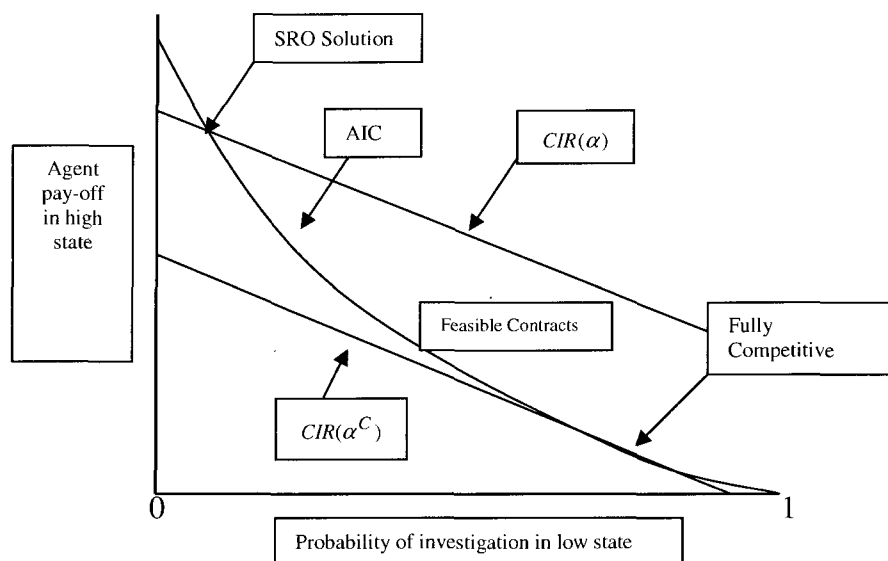
Figure 2.2 SRO Verses a Competitive Marketplace

In comparison of self regulation and competitive markets, the competitive environment gives authority to the customer or the agent over contract terms and enforcement. In self regulation, the agents have monopoly power over enforcement and complete power over negotiating contracts. Within this comparison, the self regulated organization chooses a lower probability of investigation with a higher payoff to members of the organization than the competitive contract. This is seen by the differences between individual-rationality constraints (CIR) for the profession and the customer. The incentive compatibility restraint (AIC) examines the truthfulness of reporting based in incentive payment. The higher the incentive payment, the more truthful reporting will be made. The AIC is bracketed by the rational constraints of the profession and the customer.

Next, the author provides a view of the self regulated organization as compared to a monopoly solution with associated external regulation. This is provided in Figure 2.3.
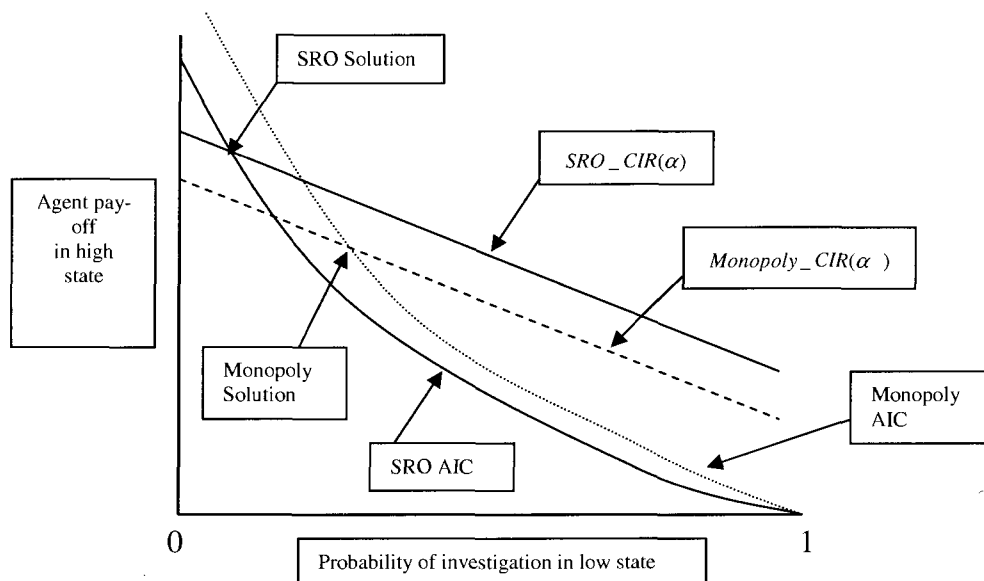
Figure 2.3 Self-Regulated Organization Verses Monopoly

In the monopoly solution, the agent chooses both the contract terms and enforcement. However, the agent may choose a feasibility constraint of $z(w_1) \leq w_1$. This constraint allows for cash flow to be equal or less than the probability of punishment and an associated payment. This may be allowed to encourage positive consumption. When this occurs, the reporting truthfulness is more desirable but payment must be used to induce consumption of the services. The monopoly individual-rationality constraints are shifted upward to provide an incentive for the profession to participate due to the fact that the cash flow from participation may be equal to the punishment of false reporting.

Finally, a model of self regulation and government oversight is modeled and is shown in Figure 2.4.

AIC

SRO Solution

$CIR(\alpha)$

Agent pay-
off
in high state

SRO with
government

Fully
Competitive

Customer
indifference
curve with cost
c_g

$CIR(\alpha^C)$

0

1

Probability of investigation in low state
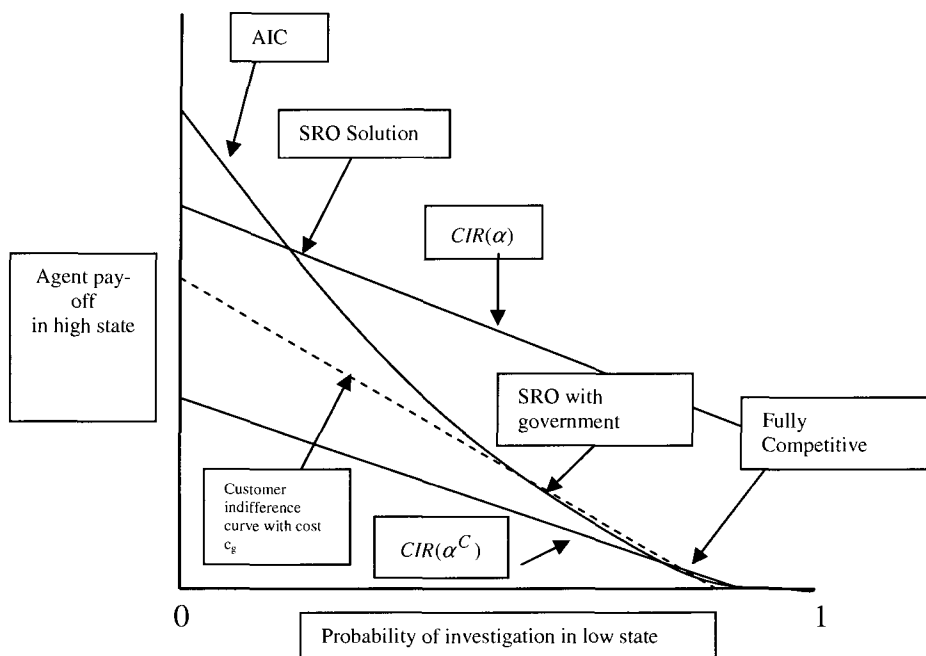
Figure 2.4 SRO with Government Oversight

This model acknowledges that the government assumes the contract provision provided by the SRO for enforcement and payment. Maximum penalties are levied to ensure accurate reporting. In this model, the self reporting organization chooses a maximum payment that provides the lowest percentage of investigation for fear of penalty. This theorem allows the self reporting agency to regulate first with the government reserving the right to enforce regulations if the existing enforcement is lax. It is this threat of regulation that will ensure that the self regulating organization has sufficiently regulated its members. Within this scheme, it may prove more important to have structure of oversight that the actual processes to enact the scheme. This "hollow structure" allows for the threat of regulation that to influence professions to act on their own to issue punishment to its members as well as enforce its contracts to delay direct

government invention. This is can be extrapolated because the government can still act after the fact to issue greater punishment than the self regulation of the body itself.

Positive Accounting Theory, Disclosure, Market Response, and Firm Response

Research examining firm disclosure and market responses is based in Positive Accounting Theory derived by (Watts and Supreme 1986; Watts and Zimmerman 1978, 1990). Positive accounting views the firm as a "nexus of contracts" with accounting serving as a tool to facilitate the formation and performance of contracts as well as mitigation of potential agency concerns. Accordingly, accounting practices develop to mitigate agency costs associated with contracting by establishing agreements with parties prior to executing contracts. Two types of contracts are included in this theory: debt contracts and management contracts with shareholders. Debt contracts are explicit contracts and management contracts can be explicit or implicit.

Positive Accounting Theory expanded into firm disclosure through its basis in the "nexus of contracts" view of the firm. Specifically, the firm acts, in relationship to the market, to mitigate potential information asymmetry problems that managers hold. By disclosing information through accounting, the potential agency problem is mitigated. In examination of this problem, three research streams have developed: disclosure and market responses, changes in accounting treatments, and voluntary disclosure (Healy and Palepu 2001).

Firm disclosure and market responses research has developed three models to examine the phenomenon. Holthausen and Verrecchia (1988) developed a two-period, multi-asset model that examines stock price and sequential disclosure. This model

reported that increasing the variance of disclosure results in no increases to variance of equity returns. Kim and Verrecchia (1994) established a single stock non-time dependent model that examines market responses to financial accounting disclosure which carry unique information that cannot be easily interpreted. The authors found that market participants report variances in trading volume and returns due to the information asymmetry suffered by market participants. Holthausen and Verrecchia (1990) examine a non-time dependent model of informative disclosures and rational equity trader responses. This model reported increasing trader information precision and trader belief correlation that result in similar trader valuations.

Research examining market responses to accounting treatment changes has focused on the economic consequences of the change and shareholder wealth changes (Healy and Palepu 2001). Dyckman (1979) examined the impact of the elimination of full cost accounting in the oil and gas industry. The authors performed a two stage analysis due to limited sample size. The authors concluded that the elimination of full cost accounting procedures had no significant impact on the marketability of related equity securities. Collins et al. (1981) also examined the elimination of cost accounting for the oil and gas industry. However, the authors expanded this research to four constructs: naive investor theory, modified naive investor theory, contracting cost theory, and estimation risk theory. The authors found that the new standard had a significantly negative effect on equity values of impacted firms. Leftwich (1981) examined the application of new merger accounting standards to debt structure and firm value. The authors reported that the costs of the mandatory accounting changes were an influential variable to the amount of debt outstanding. Holthausen and Leftwich (1983) review the

economic consequences of mandatory and voluntary changes in accounting treatments. Specifically, the authors examine contracting costs, monitoring costs, bond covenants, regulation, and political visibility. The authors found that firm size and leverage were significant. These factors serve as proxies for political visibility and contracting and monitoring costs. Finally, Healy et al. (1987) examine the impact of accounting treatment changes and financial compensation to chief executive officers. The authors examine two accounting method changes: FIFO/LIFO change and accelerated depreciation to straight-line depreciation. The authors found that compensation was based on reported earnings based on the new accounting treatment but the potential compensation effect was not significant.

Voluntary disclosure research examines the impact of non-required disclosure on firm financial characteristics. Two specific measures have been included in the literature: improved stock liquidity and reduced cost of capital. Kim and Verrecchia (1994) established a theoretical model to attempt to explain the relationship between increased disclosure, lowered information asymmetry, and liquidity. The authors suggest that the bid-ask spread which is used as a proxy for liquidity will decrease. Welker (1995) performed an empirical study to examine the relationship between the increased disclosure and stock liquidity. The authors report that the bid-ask spreads for firms with the lowest levels of disclosure are 50% higher. Also, Healy et al. (1999) performed a similar study as Welker (1995). However, the authors limited their control group to 97 observations and used stock returns, institutional ownership, and analyst following as proxies for stock liquidity. The article reported that using the author's self-developed ranking system that firm liquidity improved as disclosure increased.

Barry and Brown (1984, 1985, 1986) established the theoretical grounding for the relationship between the cost of capital and the level of disclosure. Specifically, they allow that imperfect information offers risk in forecasting future payoffs. If the risk cannot be mitigated, market participants will require an additional return. The resulting increased return, whether through equity or debt markets, increases the cost of capital for the firm. Botosan (1997) performed an empirical study to examine the relationship of cost of capital and disclosure rates. The authors performed a regression analysis based on a cost of capital measure, beta, firm size, and disclosure level. To facilitate the research, the author creates a disclosure ranking system based in actual non-required disclosure and analyst following. Results of the study show a higher level of cost of capital for firms with lower disclosure rates for firms with low analyst coverage. For firms with high analyst coverage, the author found no effect.

Signal Theory

Signal theory is based in establishing an equilibrium between high and low information types Riley (1979). In order to be an effective signal, Riley (1979) offers the following four criteria: exit mechanisms, accounting choice as high quality information, high and low quality information firms must have a concaved distribution, and firm type and accounting choice are correlated. Some exit mechanism must exist to prevent a lower quality information firm (low) to mimic the higher quality information firm (high) by sending false signals. Generally this implies that high firms find it cheaper to use a market signal than other methods. Next, the high firms see their choice of accounting as a signal to market participants. The market, in turn, sees the use of choice of accounting to assess the valuation of the firm. Third, the distribution for high and low firms must be

sufficiently concaved which insures that there are fewer higher firms. More specifically, higher quality firms are expected to increase at a decreasing rate with higher quality of accounting information. Finally, quality and accounting choices are correlated.

Within accounting specializations, financial accounting has utilized signal theory. Generally, financial accounting research has focused on the signaling of positive private information by management to market agents. Financial accounting research has utilized signal theory in three areas: accrual, dividends, and stock splits. Subramanyam (1996) examined discretionary accruals and stock price changes. In this study, the signal given to market participants was the quality of accruals made by the firm. The author found that discretionary accruals were found to be valuable provided that it improves earnings that reflected an economic value and that the markets were inefficient. Guay et al. (1996) performed an evaluation of discretionary accrual models and price valuation. The article found that discretionary accruals signaled more reliable firm performance in its stock price and that opportunistic accruals signal poor performance. Specifically the authors reported that discretionary accruals help managers produce a reliable measure of firm performance, opportunistic accrual management is used to hide poor performance or postpone disclosure of unusually positive earnings, and discretionary accruals serve as noise in earnings.

Dividend research examines the signals to market participants that dividend payments (or lack thereof) equates to changes in stock price and trading volume. Miller and Rock (1985) examined both trading activities and dividend declaration as signals to market participants to mitigate information asymmetry. The authors examine price change as well as trading volume of shares to examine information equilibrium in the

market. The authors found that consistent signaling equilibrium exists under asymmetric information due to the volume of trading. Healy and Palepu (1988) performed an analysis of announcements for the establishment, cancellation, or changes of dividends. The authors found that earnings changed significantly for the year prior to dividend announcements; earnings increase in year of dividends as well as the following year of the announcement; abnormal stock price changes to dividend announcements are correlated to the firms earnings in the year of announcement; and the market reaction to announcements are less than one year.

Stock split signal research examines the use of splits to as a method to signal private information. Ikenberry et al. (1996) examined the stock performance for firms post stock splits. The authors found excessive returns in three years following the announced split. The evidence suggests that managers of firms are using stock splits to signal future performance. Louis and Robinson (2005) furthered Ikenberry et al. (1996) findings by examining stock splits in conjunction with accruals. The authors postulate that the combination of a stock split with accrual signals reinforce the signals sent to market participants.

Cognitive Developmental Theories of Kohlberg and Rest

Moral reasoning has been developed by several researchers as a "reference to the assumption that individuals acquire and utilize cognitive structures at developmental milestones in order to develop and organize cognitive abilities" such as moral reasoning . This area of research was initially developed by Piaget (1931) through the study of children's "conceptions of justice and attitudes about rules and transgressions". Through

his research, Piaget developed a two-stage model: heteronymous morality and autonomous morality. Heteronymous describes the period of childhood where the subject is egocentric where rules are "sacred and unbreakable" because they are derived from "adult authority". Autonomous morality is the period where cognition becomes more sophisticated and children learn to develop and follow rules in an environment of mutual respect for others. In addition, they recognize that cooperation can offer mutual benefits for participants (Griggs 1990).

<div align="center">

Kohlberg's Theory of Moral
Development

</div>

Kohlberg (1958) expanded Piaget's theory of cognitional development by focusing moral reasoning as the main component of moral development. Specifically, the author expanded Piaget's concentration on the adherence and development of rules by children. Kohlberg focused on the concept of justice and universal moral principals that are learned through human development. In order to develop these concepts, individuals progress from lower stages to higher stages. Kohlberg (1981) established three levels of human moral development: pre-conventional, conventional, and post-conventional. In addition, each level is further subdivided into two stages.

The pre-conventional level is generally found in children from the ages of six to eleven years old. In this stage, individuals act in a manner that is perceived to be in their best interests (Griggs 1990). This level's two stages are: heterogeneous morality, obedience and individualism, instrumental purpose, exchange. Heterogeneous morality, obedience establishes that it is right to avoid breaking punishable rules, to be obedient for its own stake, and to avoid physical damage to persons and property. In this stage, persons are egocentric point of view in which the views of others are simply not

considered. Also, individuals are not capable of considering two points of view. The second stage, individualism, instrumental purpose, and exchange develop the right to obey rules that are in one's immediate interest. It is right to do an equal exchange in the form of an agreement or deal (Kohlberg 1981).

The conventional stage is primarily focused on maintaining social order and is seen in individuals from the age of 12 to 17. This level's stages are mutual interpersonal expectations, relationships, interpersonal conformity and social systems, conscience. Mutual interpersonal expectations, relationships, interpersonal conformity is based in the right to meet the expectations of people that are closest to you. Proper behavior is important which involves having good motives and concern for others. Finally, individuals are capable of sharing feelings, agreements and expectations that take precedence over their own interests. Social systems, conscience focuses on fulfilling duties that have been agreed and following laws except in extreme cases. Contributions to society or to a group are seen as right because the individual seeks to avoid a breakdown of the system due to failures to meet individual obligations (Kohlberg 1981).

The post-conventional level is governed by the concern of principals and justice and is initially developed in individuals at about 18 years old. Judgments are made according to over-reaching concepts of human rights, morality, and universal justice. It is divided into the social contract and individual rights and the universal ethical principal stages. The social contract and individual rights stage allows that individuals hold a variety of values and opinions. In addition, others may not hold most values that are relative to your peer group. This impartiality to others interests is established through the social contract where individuals agree to obey the rules and meet the obligations of

society as the price of admission. However, there is a concern for laws that are not passed for the concern of the greater good. Universal ethical principal stage postulates that people will behave ethically if they follow self-chosen ethical principals. As such ethical principals, laws are valid because they rest on moral principals. Individuals believe that equality of human rights because they are based in universal moral principles that serve as a foundation for society (Kohlberg 1984).

Kohlberg theorized about the experiences that promote development in moral judgment (Rest 1979). Existing cognitive structures are transformed when new experiences cannot be assimilated into the existing moral structure. The resulting conflict between the new experience and the existing framework causes the structure to be altered or an entirely new system to be adopted. As changes occur, the old structure serves as a foundation for the new structure. Some experiences that might facilitate change include exposure to an individual's higher moral reasoning or an experience of personal tragedy that shocks individuals into re-examination of their moral system.

<center>Rest's Six Component Model</center>

Rest (1979) expanded the work of Kohlberg by developing a similar six-stage model to operationalize moral development in individuals. His theoretical groundings are similar to the work of Kohlberg with the exception of the sequence of stages used in moral development. Rest theorized that individuals used simultaneous reasoning of many types. All of these types of reasoning are viewed in aggregate rather than the use of a specific stage. In effect, each stage of Rest's model is used in some proportion to resolve ethical quandaries. Rests six stages are obedience, instrumental egoism, interpersonal concordance, law and duty, societal consensus, and no arbitrary social cooperation.

The obedience stage's morality is based on obedient behavior to caregivers and authority figures. In this stage, children cannot partake of a negotiated agreement for mutual benefit. Rules are established with morality based in the adherence to the established order. There is no distinction between the purpose for the rules or the relationship between rules. They are simply unchangeable with punishment following for disobedience. A specific child's rules are extended to other children as the basis for the concept of the generality of rules.

Instrumental egoism and simple exchange represents the individual's rights to their specific motive or point of view. Morality serves the purpose of self-interest to the individual. Specifically, individuals are independent agents that are motivated to pursue their own interests. However, co-operation is considered when it is in both parties interest to participate. If the two parties cannot reach agreement, one party will not interfere with the other due to each other's individual rights. This stage assumes that the parties have the capacity and willingness to negotiate.

The third stage of interpersonal concordance is based in the belief that considerate behavior will increase societal good. Individuals are aware that others are aware of their behavior and thoughts and vice versa. The awareness that others having thoughts of the individual offers the opportunities of mutual friendship. People can now anticipate and understand each other's goals and general dispositions. This insight assumes that an individual can establish a "balance of interests" where each party is considerate of the other's interests and offers support.

Law and duty social order allows the concept of shared expectations and how they can be established. Expectations are formalized and coordinated through laws that

control two party's expectations without the direct knowledge of each other. Morality is defined through categorical rules that are binding to all individuals of society and provide a basis for social order. Deviations from the law threaten the social order. Roles within society are formalized with specific rights and responsibilities.

Societal consensus addresses the concern of choosing different social orders as their associated system of law. Law and duty order offers a reason to follow established laws. Societal consensus offers a method for following specific laws chosen by a society. Individuals can reach an agreement for a social order and a legal system by acting rationally to minimize the inequities and maximize the stake each individual has within the society. A definition of basic human rights is offered as the minimum guarantees that any social system must make to the participants in order for the commitment to be worthwhile. Basic human rights are a precondition to accepting the social order. Social cooperation is established by rational individuals based on the balancing of the interests of the participants.

Finally, no arbitrary social cooperation stage attempts to proxy for what the rational person would accept as the procedure for making and policing laws. In addition, the stage anticipates what individuals of society would desire for its system of governing cooperation. In this stage, moral judgments are ultimately justified by principles of ideal cooperation with individuals having an equal claim.

Rest's Six Component Model Operationalized:
The DIT and DIT2

The Defining Issues Test (DIT) is an objective test that operationalizes the moral judgment and reasoning theories of (Rest 1979). Scores are based on stages of Rest's Six Component Model that have been named Stage Two, Stage Three, Stage Four, Stage Five

A, Stage Five B, and Stage Six. Stage two focuses on the direct advantages to the actor and fairness of simple exchanges. Stage three represents the consideration that focuses on the good or bad intentions of two parties, a concern for maintaining friendships, and maintaining approval. Stage four examines the need for maintaining the existing legal system and maintaining existing roles within the social order. Stage Five A represents considerations that focus on organizing a society based on consensus, insistence on due process, and safeguarding minimal basic human rights. Stage Five B examines the organization of society in terms of ideals that appeal to rationale for eliminating arbitrary factors and optimizing mutual human welfare. Stage Six focuses on the organization of society in terms of ideals that appeal to a rationale for eliminating arbitrary factors that are designed to optimize human welfare (Rest 1986).

The DIT was initially developed by Rest (1986) as a paper and pencil objective test. The test is based on six hypothetical dilemmas followed by twelve statements. Subjects are asked to rank the four most important issues with the most important receiving a four points, the second ranked item receives a three, the third ranked item receives a two, and the fourth ranked item receives a one. The test has no correct or incorrect answers and has a reading requirement of a 12 year old. Rest et al. (1999a) updated the DIT (DIT2) by reducing the number of dilemmas to five (from six), updating the existing dilemmas, and providing new instructions.

The DIT2 is scored on two moral judgment scores. The "P" score refers to the extent to which a subject prefers post-conventional moral reasoning (Bebeau 2003). Post-conventional thinking matches the fifth and sixth stages of Rest (1986) Six Component Model. A total of ten points is available for each dilemma for a total of 50

points that is divided by .50 to yield a percent score. The scores are indexed across the preference for Stages Five A, Five C and Six with a weighted average. The P-score can range from 0 to 95.

The second score is the N-score (Rest et al. 1997). The N-score has two components: the degree to which the subject prefers post conventional moral reasoning and the degree to which lower stage items (Personal Interest Items or stages two and three) receive lower ratings. Participants are scored in the same manner for both components (most important item gets 4 points, next 3, third 2, final 1). Next, the higher stages (5 and 6) are subtracted from the lower stages (2 and 3) and divided by the standard deviation of stages 2, 3, 5 and 6. Missing ratings are replaced with the average of the entire dilemma. The two parts of the N2 are combined (the old P-score and the new lower stage weighted average) by weighting the lower stages by 1/3 and the upper stages by 2/3. The P-score and the N-score are correlated because each measures the same components.

Rest et al. (1999b) cited over 400 published articles that have employed the DIT test examining its construct validity. The author found six potential validity concerns of the DIT test. They include: education bias, longitudinal gains, cognitive capacity, moral education, and political bias. Studies have found that up to 30% to 50% of the variance of the DIT is based in education. Cognitive capacity and DIT scores are also closely correlated (r = 0.60s). Moral education interventions (ethics programs of professions) reported moderate gains in DIT scores (r = 0.41). Finally, the DIT appears to be significantly linked to political choices with scores correlating in the range of r=0.40 to 0.65. If DIT scores are included in an ordinary least squares regression, up to two-thirds

of the variances in controversial public policy issues (abortion, gay rights, etc) is explained Rest et al. (2000). The DIT2 instrument as well as the N-score index has not been subjected to the extensive usage as the DIT. Therefore, the tests construct validity has not been as thoroughly tested. However, two studies have specifically focused on the potential political bias of the DIT2. Crowson and DeBacker (2008) examined the potential bias of the DIT2 through a regression analysis of political identity. Result found that the DIT2 remained subject to political bias. Bailey et al. (2005) also examined political bias of the DIT2 within the context of accounting studies. The authors found that while still biased the DIT2 performed better than the DIT.

Empirical Studies of Disciplinary Actions of Professions

Accounting

Studies examining disciplinary actions have historically been divided into three research streams: examinations of the disciplinary actions of licensing boards and accounting societies, reviews of the peer review processes of the AICPA, and, as an extension of peer review, examination of Public Company Accounting Oversight Board findings. Loeb (1972) performed one of the first examinations of disciplinary actions taken by a state licensing board. The author examined cases brought to the board of accountancy of a major Midwestern state from 1913 to 1969 and the state accounting society from 1905 to 1969. The analysis of cases was divided into three factors: obligations to clients, obligations to colleagues, and obligations to the public. In addition, the author also compared complaints filled with the New York state bar association where sanctions were imposed. The findings of this early work reported that 65% of all actions were taken due to violations to colleagues, 27% to the public, and 8%

to the client for the accounting licensing board. Attorneys of the New York Bar association reported 7% of violations to colleagues, 28% to the public, 28% to the client, and 37% where the charges were not noted. The author theorized that the difference of the distribution of violations was based in the fact that accountants provided "reoccurring" services and attorney's typically provided single use services.

Parker (1994) examined the disciplinary actions of the Australian Society of Accountants for years 1961 to 1987 and the Chartered Accountants in Australia from 1974 to 1987. The Australian Society of Accountants and the Chartered Accountants in Australia operate with a "delegated" authority to license and self-regulate the accounting profession within the country. Therefore, the disciplinary actions taken by each of these organizations are indirectly governmental actions. This study was conducted as a validation of the Parker (1994) model of public/private interest. The combined bodies review found that 307 violations were made of the "private interest" and 211 actions were taken in defense of the "public interest".

Fisher et al. (2001) and Higgs-Kleyn and Kapelianis (1999) performed a similar studies as Parker (1994) but included comparison groups to gauge differences in disciplinary actions. Fisher et al. (2001) used the dimension of culture across the Association Chartered Certified Accountants (ACCA) over three groups: the United Kingdom, Asian countries territories of Hong Kong, Singapore, Malaysia, and other countries that were members of the association. Disciplinary actions were totaled a compared using paired t-tests. 1989 was used as an inflection point (the passage of the Companies Act of 1989 that began regulation of the ACCA). Results showed significance between countries as well as the 1989 inflection points. Higgs-Kleyn and

Kapelianis (1999) examined the ethical perceptions of the codes of conduct for three professional groups: Chartered Accountants, engineers, and lawyers within South Africa. This study did not use disciplinary actions but engaged a survey instrument to gauged the perceptions of the profession's use of codes of conduct. The authors found that the three professions had differing perceptions about the acceptability of the use of disciplinary actions within a code of conduct. In addition, when faced with a conflict between corporate and professional codes of conduct, participants would adhere to the professional codes.

Moriarity (2000) performed an event study using the implementation of the Code of Professional Conduct in 1988 of the AICPA. The longitudinal study reviewed sanctions of the AICPA from 1980 to 1998 with 1988 as an inflection point. The study found that in the years after 1988, disciplinary actions made by the AICPA increased despite an increase in the number of accountants working in public practice. The author inferred from this finding that the newly implemented ethical standards were effective in providing self-discipline to the profession. Canning and O'Dwyer (2001) performed a similar study using the Institute of Chartered Financial Accountants in Ireland (ICAI). The ICAI manages the regulation and disciplinary actions of accountants through delegated authority provided by the state. The authors of this study attempted to expand the public/private interest concept promulgated by Parker (1994). Disciplinary actions taken by the ICAI (suspension, fine, etc) were compared to the offense. The authors found that violations of auditing standards and independence were the primary causes of loss of licensure.

In a more encompassing research, Bédard (2001) examined the disciplinary process of the Quebec Chartered Accountants Professional Association's disciplinary process. As with Australia and Ireland, the Quebec Chartered Accountants Professional Association acts with delegated authority to license and discipline members on behalf of the state. This research examined the specific disciplinary process as well as its results for the years 1974 to 1995. Sanctions given, violations of the society, notoriety of the case, subjective factors, and objective factors were coded and analyzed through a logistic regression. Findings showed that the specific rule violation, objective factors, and subjective factors were found to be significant. However, notoriety of the case was not significant. Finally, Colbert et al. (2008) examined the disciplinary actions of the Securities and Exchange Commission from 1996 to 1998 in comparison to actions taken by state boards of accountancy. The authors identified 73 CPAs who were disciplined by the Securities and Exchange Commission. Of these, 59 received some disciplinary action by the state boards of accountancy.

The next type of analysis of performed on disciplinary actions is from the examination of the AICPA SEC Practice Section (SECPS) peer review function. (Brown 2000) examined the effectiveness of the SECPS program through a longitudinal survey from 1992 to 1994. 703 review reports were examined with mixed findings. The author coded disciplinary actions and findings and analyzed the results through a logistic regression equation. Findings were mixed with the author's perception that the overall function of the program was effective. However, the author recommended that the program needed improvements for the treatment of reoccurring findings. Hilary and Lennox (2005) examined the peer review process for its information quality and

effectiveness for end-users. A longitudinal study was performed from 1997 to 2003 with the exclusion of Arthur Anderson due to its potential external validity concerns (the Enron scandal had begun during the time of the study). 1,001 peer review reports were examined with 41 reported adverse or modified findings. Authors found that firms gained clients with clean opinions and lost clients with poor opinions. The authors, however, did not examine the quality of the peer review process or question specific findings.

The Public Company Accounting Oversight Board through the passage of the Sarbanes-Oxley Act of 2002, superseded the SEPCS Peer review program in 2003 (Public Company Accounting Oversight Board 2003). Two studies have been performed to examine the disciplinary actions of their inspection process. Hermanson et al. (2007) performed an analysis of all inspection reports for firms with fewer than 100 issuers. The longitudinal study reported 316 reviews from 2003 to 2006. Results showed 190 of the firms reviewed reported some type of audit deficiencies. Lastly, Abbott et al. (2008) performed an analysis of change of auditors and auditor deficiencies for the period 1/21/05 to 7/13/06. For firms with GAAP deficient auditors, insider ownership, firm size, financial activities (amount of borrowing and stock issuances), and outside ownership were significant in a logistic regression. For clients with a GAAS deficient auditor, only a reduction in fees charged to the client was significant. An interesting finding of the authors stated that 3% of all SECPS peer reviews were found to be adverse or required modification. However, PCAOB findings reported over 17% of auditors to report GAAS or GAAP deficient audits.

Medical

Academic studies examining the disciplinary actions of state medical boards within the United States can be broadly grouped into three areas of study: medical specialty specific, behavior modeling, and geographic areas. Morrison and Morrison (2001) examined the disciplinary characteristics of Psychiatrists within the state of California during an undisclosed 30 month period. The authors found that 42 psychiatrists were disciplined from a total of 584 physicians. During this period, 104,000 physicians were licensed by the state of California. The author's found that within seven areas of disciplinary actions (selling drugs, drug use, mental impairment, fraud, incompetence, and sexual harassment), psychiatrists were more likely to be disciplined for sexual harassment.

The next type of medical disciplinary studies models the behavior of physicians that have been disciplined by state medical boards. Morrison and Wickersham (1998) examine the state of California's medical board for an undisclosed thirty month period. The authors found that 375 physicians were disciplined over the observation period within a total of 104,000 practicing physicians (0.36%). Of the physicians disciplined, 130 had their licenses revoked or suspended. Clay and Conatser (2003) reviewed the state of Ohio's disciplinary files from January of 1997 to June of 1999. Results of the study showed 340 physicians were disciplined with 26,818 practicing during the period of the study. 7,500 complaints were received during the period of the study. The most common disciplinary forms were drug use (21%), inappropriate drug possession (10%), previous actions by out of state medical boards (7%), and incompetence (7%).

In an expanded analysis, Cardarelli and Licciardone (2006) analyzed the state of Texas' disciplinary files from 1989 to 1998. The authors employed a logistic regression to identify the specific physicians most likely to suffer some form of disciplinary action. Over the period of the study, 1,129 physicians were disciplined. Disciplinary actions were regressed on primary medical specialty, years in practice, and history of disciplinary actions. Results showed that anesthesiologists, psychiatrists, and general practitioners were most likely to be susceptible to license revocation as well as physicians with prior disciplinary actions. Finally Khaliq et al. (2005) examined the disciplinary actions taken by the Oklahoma medical board. The authors found that of the 14,316 practicing physicians at the time of the study, 396 (2.8%) had disciplinary action taken against them. Of these physicians, psychiatry, family practice, and obstetrics-gynecology were the most likely to be disciplined.

In a nationwide survey, Grant and Alfred (2007) performed a longitudinal study that examined State Medical Boards from 1994 to 2002. The authors used the Federation of State Medical Boards sanctions database which reported roughly 50,000 physicians incurring some form of disciplinary action. The authors reported three significant findings. First, the total number of sanctions has increased from 3,370 in 1992 to 6,265 in 2004 (an 86% increase over twelve years). Severe sanctions, defined as a temporary or permanent loss of license, increased from 1,091 in 1992 to 2,116 in 2004 (a 94% increase). Next, unprofessional conduct was the single largest defined sanction (33.4%) with chemical dependency and substance abuse second (16%). Lastly, and most significantly, the authors found an increase in the recidivism rate among subjects. The authors divided their study into two paired groups: years 1994 to 1998 and years 1999 to

2002. 10.8% of those who had suffered some disciplinary action in the first period received a severe sanction in the second period.

The second tract of research used to examine disciplinary actions by the medical profession involved modeling previous behaviors to identify at risk physicians. Katsavdakis et al. (2004) used a unique approach by identifying 334 health professionals that sought mental health treatment between 1985 and 2000 at a specific mental health center. The authors postulated that the most common problems leading to their seeking medical attention were marital and emotion problems not alcohol and drug abuse. In a similar study Papadakis et al. (2005), examined 235 physicians who were disciplined by 40 different medical boards from 1990 to 2003. The authors compared behaviors in medical school with the types and severity of disciplinary actions. Results showed that unprofessional behavior, low Medical College Admission Test scores, and unprofessional behavior in medical school were the best predictors for disciplinary actions.

CHAPTER 3

HYPOTHESIS DEVELOPMENT

Interest Group Theory of Accounting Regulation
Economic Theory of Self-Regulation

Interest Group Theory of Accounting Regulation views the regulation of

accounting as a method for the profession to obtain and maintain power. Regulation is

used to establish a line between the public and private interests of stakeholders within and

outside the profession (Gaffikin 2005). In research that examines the use of the private

interest of the profession to maintain socio-economic status, authors have focused on

employing the Parker Model (Fisher et al. 2001; O'Dwyer 2003; Parker 1994), public

space (Baker 2005; MacDonald and Richardson 2004; Neu and Graham 2005; Rogers et

al. 2005; Sikka and Willmott 1995), politics (Luehlfling 1995; Neu and Saleem 1996;

Young and October 1991), and professionalism (Lee 1995; Mitchell et al. 1994; Preston

et al. 1995; Puxty et al. 1997).

The Parker Private Interest Model (Parker 1994) focuses on the processes that the

profession employs to maintain its socio economic status. Central to self interest in this

model is the role of self-regulation and ethics. Regulatory space research examines the

processes of establishing a regulatory boundary to insulate the profession from external

direct regulation through the appropriateness of the boundary between self-regulation and

the public interest. Politics examines the influence of the profession in external political

processes and the use of politics by the profession to maintain self-regulation (Canning and O'Dwyer 2006; Luehlfling 1995; Neu and Saleem 1996). Finally, professionalization of accounting has been examined as a means to protect both the public and private interest through the development of professional codes of ethics and self-regulation (Lee 1995; Mitchell et al. 1994; Preston et al. 1995; Puxty et al. 1997).

Excluded from the existing literature is an examination of Economic Theory of Self-Regulation in terms of the accounting profession. Economic Theory of Self-Regulatory (ETSR) parallels similar constructs within the existing IGTAR research. ETSR postulates that the profession will benefit from regulation by increasing barriers to entry, price fixing, and decreasing viable substitutes (Stigler 1971). In effect, professions will use these factors to behave as monopolies to control their existing socio-economic power (Shaked and Sutton 1981). With the expansion of monopoly powers, self-regulated professions can generate information asymmetry by establishing an agency relationship with their public interest mission as well as potential regulatory authorities. By holding the abilities to control price, supply, as well as information, the profession will act in a manner that it most economically beneficial (Border and Sobel 1987). The ability of a profession to gain powers is based in its self-regulated status. Professions with no direct external regulatory regime will choose to enforce its ethics codes at a more lax pace verses direct regulatory oversight (DeMarzo et al. 2005).

Accounting, Medical, and Legal Professions as Control Groups

IGTAR, by its nature as an accounting specific theory, examines the roles that the accounting code of ethics and self-regulation plays in preserving the status of the accounting profession. ETSR expands this research into the areas of monopolistic

behavior, pricing, product substitutes, and disciplinary actions. Also, importantly for this research, ETSR offers the ability to provide comparisons between self-regulated professions with a universal theory. This capacity has limited existing IGTAR research due to the lack of available control groups to make comparative research. Freidson (1986), Larson (1977), Pavalko (1971), and Freidson (1973) have classified physicians, attorneys, and accountants as professionals. Also, as established within the selective literature review section, accounting, law, and medicine meet the Pavalko (1971) attribute definition of a profession. Accordingly, each profession could be used as a control group to examine ETSR in the context of IGTAR research.

<div align="center">

Disciplinary Actions and the Defining
Issues Test

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Studies using disciplinary actions in accounting literature have made an attempt to examine the public-private interest through the effectiveness of ethical codes (Bédard 2001; Brown 2000; Canning and O'Dwyer 2001; Fisher et al. 2001; Hermanson et al. 2007; Higgs-Kleyn and Kapelianis 1999; Loeb 1972; Moriarity 2000; Parker 1994). Within medical literature, disciplinary action studies have been performed to examine specific disciplinary actions of a medical specialty (McErlean et al. 2006; Morrison and Morrison 2001), behavior modeling (Cardarelli and Licciardone 2006; Khaliq et al. 2005; Morrison and Wickersham 1998), and geographic areas (Aranya and Ferris 1984; Katsavdakis et al. 2004; Papadakis et al. 2005). With the exception of Loeb (1972), none of these studies were completed using other professions as control groups. Fisher et al. (2001) used geographic boundaries to provide a control group between different groups of Chartered Professional Accountants. Further, only Abbott et al. (2008b), Bédard

(2001), Brown (2000), Fisher et al. (2001), Hilary and Lennox (2005) developed hypothesizes that were empirically tested.

The Defining Issues Test has been used in over 450 academic studies including accounting, medical, and legal research. The instrument has been consistently used as a treatment for comparison of two different groups (Rest et al. 1999b). However, it has not been examined in the literature in terms of disciplinary actions of professional bodies. In a similar research area, three existing studies have examined the relationship between scores on the DIT and risk taking personalities.

Priest and Kordinak (1991) examined the relationship between non-violent offenders, violent offenders, a general population control group, and scores on the DIT. For this research, non-violent offenders were defined as an offense that does not involve harm to individuals or property. The authors found that DIT scores were significantly lower for non-violent criminals that the general population. Specifically, the cognitive functions used for moral decision making were from lower level functions of the DIT test. Levenson (1990) reviewed the moral cognitive functions of risk taking personalities by comparing residents of drug treatment programs, rock climbers, and policemen. The author found that those in drug treatment programs suffered from lower scores on the DIT instrument than other risk taking personalities. Last, Fabian (1999) performed an examination of cognitive moral reasoning for criminals and non-criminals. Criminals were subdivided into non-violent and violent classifications. The authors reported that criminals, regardless of the nature of their crimes, suffered from lower cognitive reasoning than their control group.

By drawing conclusions from Fabian (1999), Levenson (1990), and Priest and Kordinak (1991) scores of DIT instruments should report an inverse relationship to disciplinary actions. This assumption is drawn by substituting non-violent crimes to disciplinary actions within this existing research. Levenson (1990) and Priest and Kordinak (1991) establish a relationship between a lower cognitive reasoning capacity and risk taking activity. Fabian (1999) and Priest and Kordinak (1991) found that non-violent criminals report lower DIT scores. In the absence of ESTR or IGTAR, a lower cognitive development level within a profession should generate more risk taking and, as a corollary, more disciplinary actions. If the profession is properly self-regulated, it should identify the violations of ethical codes at a level that is in relationship with its moral cognitive capacity. Rates of disciplinary actions that do not follow this relationship should support both IGTAR and ETSR.

H1: DIT Scores from the Medical, Legal, and Accounting Professions Will Not Report an Inverse Relationship to their Levels of Disciplinary Actions

There are several factors that might prove to mitigate this hypothesis. First, the DIT test reports two significant biases that might impact findings. The instrument consistently reports a bias towards political affiliation and ethics training. A control variable is used to help mitigate the potential political bias during analysis but might not fully negate it. Next, individuals who have received ethical training also report a bias within the instrument. No control variable has been used to mitigate this potential concern. The last concern is the regulatory role of PCAOB and its impact on the accounting profession. ETSR requires that profession be self-regulatory but the PCAOB is a regulatory body of the accounting profession that can discipline membership.

ETSR and Signal Theory

Ashby et al. (2004) and DeMarzo et al. (2005) have established through ETSR that the most efficient regulatory regime for professions is a self-regulatory model with government oversight. Specifically, the governmental oversight component acts as a potential threat of a direct regulatory environment. This threat of regulatory oversight ensures that the profession polices itself. Under the direct threat of external regulation, a profession will discipline its membership to excess as a means to stave off regulation. In effect, the profession is applying Signal Theory to potential regulatory agencies that it has the capacity to govern its own practices. Signal Theory, as currently applied in accounting research, is the process of signaling mostly positive information to market agents. Signals examined in existing literature have included dividend payments, changes in accruals, or stock splits (Crowson and DeBacker 2008; Guay et al. 1996; Healy and Palepu 1988; Ikenberry et al. 1996; Louis and Robinson 2005; Miller and Rock 1985; Subramanyam 1996).

Accounting Signal Theory and ETSR communicate positive information to secondary parties. However, accounting theory attempts to communicate to market participants and ETSR communicates to regulatory bodies. Also, ETSR assumes a direct threat of regulation exists before a signal is made and that the signal will specifically be increased enforcement actions upon its membership. Signal Theory makes the expectation that some form of positive information is available and should be transmitted to market participants. This information signal is at the discretion of the firm and can be made without external pressures. Despite differences within each theory, it is reasonable to make the assumption that the profession will behave in a similar manner as the firm.

H2: The Accounting Profession Will Increase Disciplinary Actions toward Its Membership during Periods of Threats of External Regulation

A potential weakness within this hypothesis is the necessity of an external event to trigger a signal from professional organizations. Signal Theory is based in the ability of the firm to make discretionary signals without external pressures. It is reasonable to assume that this may not be a significant factor due to the basis of Signal Theory. Riley (1979) formulated the theory as a basis for establishing information equilibrium. High quality and low quality information firms make sufficient signals to the market to reach equilibrium. Lower quality firms are required to make greater signals for the market to receive information. By substituting the profession for the firm and regulatory bodies for market participants, information quality is assumed to be the number and severity of disciplinary actions despite the influence of external factors.

Positive Accounting Theory, Disclosure, and ETSR

Disclosure Theory within accounting research is based on the capacity of accounting information to mitigate information asymmetry that managers of firms hold. Firm disclosure has examined market responses, changes in required accounting treatments, and voluntary firm disclosure (Healy and Palepu 2001). Market response literature has examined stock price response, trader information asymmetries, and information precision (Holthausen and Verrecchia 1990, 1988; Kim and Verrecchia 1994). Firm impacts of accounting treatment changes have examined required full cost accounting, merger accounting, and voluntary changes in accounting treatment (Collins et al. 1981; Dyckman 1979; Healy et al. 1987; Holthausen and Leftwich 1983; Leftwich 1981). Voluntary disclosure research has examined the impact of additional disclosure

on firm liquidity and cost of capital (Barry and Brown 1985, 1984, 1986; Healy et al. 1999; Kim and Verrecchia 1994; Welker 1995).

ETSR has examined the impact of disclosure through the principle of forced disclosure and penalty (Border and Sobel 1987; Donabedian 1993). This extension of ETSR is based in agency theory where the profession acts as the agent and potential regulatory agencies as the principal. Information asymmetry is mitigated by forced disclosure by the profession through mandatory audits and availability of information to the principal. Punishment of disciplinary actions must be made through additional audit as well as payment of fines. The DeMarzo et al. (2005) model of self regulating organizations with government oversight (Figure 2.4) makes reporting requirements to principals one of the primary factors to mitigate the agent's utility. Failure to make reporting requirements to the principal increases the profession's incentives for lower disciplinary actions as well as increases the cost of services.

Disclosure Theory examines the characteristics of firms through the disclosure of accounting information. Existing research has found that a firm's disclosure quality and quantity impacts market responses and firm characteristics. Higher quality information disclosure decreases information asymmetry within the marketplace (Holthausen and Verrecchia 1990). As expected, lower quality of disclosed information increases marketplace information asymmetry (Kim and Verrecchia 1994). Required changes in accounting treatments and related disclosure can negatively impact firm valuation (Collins et al. 1981) as well as the composition of capital (Leftwich 1981). Finally, voluntary disclosure of high quality can improve a firm's liquidity (Kim and Verrecchia 1994) and lower cost of capital (Botosan 1997).

The consolidation of Disclosure Theory of Accounting and ESRT offers an extension to existing accounting research. By postulating that the profession has similar characteristics of a firm, it should have the capacity to reduce information asymmetry for potential regulatory bodies as well as the public interest. Characteristics of the profession can be changed by increasing the quality and quantity of disclosure. Also, professional behaviors can be altered with increased disclosure. ETSR postulates that information asymmetry surrounding the profession is mitigated by forced disclosure and that failure to require disclosure will offer an incentive to decrease disciplinary actions.

H3: The Type of Disclosure of Disciplinary Actions Made by State Boards of Accounting, State Bar Associations, and State Medical Boards Will Impact the Number and Severity of Disciplinary Actions

The assumption of similarities between firm and profession characteristics could provide a potential weakness for this hypothesis. Firms are felt to be homogeneous by industry within existing accounting research. Therefore, their behavior can be tested based through the application of theory. Accounting, legal, and medical professions are not homogeneous within or across professions. The composition of professions include individual as well as collective practitioners. Accordingly, uniform adherence to any specific theory may have mixed results.

CHAPTER 4

METHODOLOGY

This chapter examines the data collection and analytical methodologies used to test the three hypothesis generated in the previous chapter. The participant selection for the DIT2 instrument as well as the data collection and scoring process for the survey is described. Sources for the secondary data used in the study are established as well as the specific data that is used to test the three hypotheses. Next, the data coding method is established for the parameters that are used in the model. Last, the models employed to test the hypothesis are described as well as their associated statistical tests.

DIT2 Participant Selection and Validation, Instrument Delivery Method, and Checks of Reliability

The theoretical constructs as well as the design of the DIT2 instrument have been described in the literature review section of this research. The survey instrument will be administered using an Internet delivery. The selection of this method is supported by Yuejin et al. (2007) who tested the delivery of the survey through mailed paper and internet delivery. The authors found that each method maintained the validity of the constructs of the survey. Zoomerang, a third party vendor, is used to generate a representative sample of the legal, accounting, and medical profession. The company employs panel data through an incentive payment program to obtain subjects for the

study (Zoomerang 2008). In order to verify the accuracy of each panel of data,demographic information is obtained from the survey participants and compared to the general demographics of the industry using means testing. Demographic information is obtained using the following sources shown in Table 4.1 and Table 4.2.

Table 4.1 Sources of Demographic Information

Profession	Source
Medical	Physicians Characteristics and Distribution in the U.S. 2008 Edition; AMA, Chicago, Il.
Legal	The Lawyer Statistical Report, 2007 Edition; American Bar Foundation, 2007 edition. Chicago, Il.
Accounting	The CCH Accounting Trends Survey; Commerce Clearing House, Inc., 2008 edition. Chicago, Il

Table 4.2 Demographic Information

Legal Profession	Accounting Profession	Medical Profession
Gender	Gender	Gender
Age	Age	Age
Political Orientation	Political Orientation	Political Orientation
State	State	State
Area of Employment: Private Practice Government Industry Judiciary Education Other	Area of Specialization: Tax Audit Consulting Other	Area of Specialization: Internal Medicine Anesthesiology Pediatrics Psychology General Practice Radiology Surgery Other
	Area of Employment: Private Practice Business & Industry Education Other	

Scoring of the DIT2 instruments will be performed by the Center for the Study of Ethical Development at the Universities of Alabama and Minnesota. Use of this third party for scoring is beneficial because the DIT2 instrument can be scored and averaged for comparison with other studies that have employed the original DIT test.

Secondary Data Collection

Disciplinary Actions of State
Bar Associations

The American Bar Association established the National Lawyer Regulatory Data Bank as a repository of sanctions imposed against practicing lawyers in the United States. It was established in 1968 and has maintained records of specific disciplinary actions against individuals as well as professional corporations. Data is collected through the voluntary cooperation of state bar associations. The database includes the name of the disciplined party, details of infraction, potential fines, specific disciplinary action taken, and the date of the infraction. Digitalized data is available dating to 1980.

Disciplinary Actions Taken by
Medical Associations

Federation Physician Data Center is sponsored by the Federation of State Medical Boards to house disciplinary actions taken against members of the medical profession. Participation is voluntary with individual state medical boards. Since 1960, Federation Physician Data Center has obtained voluntary participation from all fifty states. The database includes the name of the disciplined party, details of infraction, potential fines, specific disciplinary action taken, and the date of the infraction. Digitalized data is available from 1985.

Disciplinary Actions from State
Boards of Accountancy

The American Institute of Public Accountants generates a disciplinary action database that is based in the voluntary submission from state boards of accounting. The database maintains similar records as the Federation Physician Data Center and the National Lawyer Regulatory Data Bank. However, records are only maintained within a seven year data retention window. To maintain consistency with disciplinary actions of the medical and legal professions, disciplinary actions are obtained directly from the individual state boards of accountancy.

Data Coding

Disciplinary actions from the National Lawyer Regulatory Data Bank, Federation Physician Data Center, and the individual state boards of accountancy will be reviewed and coded for consistency.

Sanctions

For each case where the regulatory body of the profession issues a formal sanction, the individual action will be coded into one of five categories. Each of the categories represents a broad grouping of actions that could have been taken by the societies. The four categorical levels are:

1. Censure: no formal restriction of license to practice the profession is taken. However, a formal admonishment of the behavior is made to the practitioner.

2. Probation: A formal reprimand is made to the practioner with specific corrective actions. If the corrective actions are not made, further restrictions to the practioner's license will be made.

3. <u>Suspension:</u> A formal reprimand is issued, a fine is levied, and the practitioner is restricted in their practice or not allowed to practice for a specified amount of time.

4. <u>Revocation:</u> A formal reprimand is issued and the individual is no longer able to practice within the jurisdiction.

Each regulatory body discloses the disciplinary actions of its members in differing levels. However, throughout each profession and their associated governing bodies, the types of disclosure will be categorized in the following classes:

1. <u>None:</u> No disclosure is made in regards to specific disciplinary actions

2. <u>Profession:</u> Disclosure is been made to the professional body through publications that specifically target the profession.

3. <u>Other:</u> Disclosure is made to the public through a regional newspaper or searchable internet database.

4. <u>Internet:</u> Disclosure is made through the Internet.

Tests of Hypothesis

Hypothesis 1: Public/Private Interest

Scores from the DIT2 and data collected from the National Lawyer Regulatory Data Bank, Federation Physician Data Center, and the individual state boards of accountancy are used to test this hypothesis. Stated symbolically, the hypothesis is:

$$
\begin{aligned}
DITRank1 &\neq DISCRank3; \\
DITRank2 &\neq DISCRank2; \, , \\
DITRank3 &\neq DISCRank1
\end{aligned}
\tag{7}
$$

where DITRank1 = Profession with the highest average score on the DIT2 Instrument

as ranked by post-hoc ANOVA Tukey Kramer Test,

DITRank2 = Profession with the second highest average score on the DIT2

Instrument ranked by post-hoc ANOVA Tukey-Kramer Test,

DITRank3 = Profession with the third highest average score on the DIT2

Instrument ranked by post-hoc ANOVA Tukey-Kramer Test,

DISCRank1 = Profession with the highest rate of disciplinary actions per

practitioner as averaged annually by state for the years 1987 to

2007 as ranked by post-hoc ANOVA Tukey-Kramer Test,

DISCRank2 = Profession with the second highest rate of disciplinary actions per

practitioner as averaged annually by state for the years 1987 to

2007 as ranked by post-hoc ANOVA Tukey-Kramer Test

DISCRank3 = Profession with the third highest rate of disciplinary actions per

practitioner as averaged annually by state for the years 1987 to

2007 as ranked by post-hoc ANOVA Tukey-Kramer Test.

This hypothesis pertains to the relationship between the DIT2 test score and the rate of disciplinary actions by professions. As previously established, scores of the DIT2 should be inversely related to risk taking behaviors. In order to test this hypothesis, an ANOVA is performed to determine if the average DIT2 scores are statistically different by profession. Next, a post hoc ANOVA Tukey-Kramer Test is performed to provide an ordered rank from the highest score to lowest. The same procedure is performed for each profession's average of disciplinary actions. In order to increase observation points, disciplinary actions are segmented by state and averaged by the number of practitioners

licensed. By ranking scores of the DIT2 as well as an average of disciplinary actions, a relationship is established between each profession's DIT2 score and its associated disciplinary actions. Rejection of the hypothesis would report a rate of disciplinary actions that match the ranked scores of DIT2 tests.

Hypothesis 2: Signal Theory

Disciplinary action scores of the accounting profession are used to examine the hypothesis based on signal theory and ETSR. This hypothesis examines the potential relationship between threatened regulatory actions and the behavior of a profession. Specifically, a profession will act to discipline its own members at a higher rate to prevent external direct regulation. In order to examine this hypothesis, inflection points of potential regulation are identified. Two specific points are used to examine this hypothesis: the issuance of the McFarland Report and the passage of SARBOX. The McFarland Report, also known as the *Future Development of Auditing: A Paper to Promote Public Debate* (Auditing Practices Board 1992), examined the state of the accounting profession in the wake of audit failures associated with the savings and loan failures in the late 1980's. The report was published in 1992 and was critical of the failures of the profession to address systemic failures. SARBOX resulted in the formation of the Public Company Accounting Oversight Board (PCAOB) due to a series of audit failures in the late 1990's (Abbott et al. 2008). This legislation began a partial external regulation of the accounting profession by examining and disciplining individual practitioners and firms that conducted public company audits.

In order to operationalize this hypothesis, a statistical representation of the hypothesis is listed in equation (8).

$$DiscAct_{premc} < DiscAct_{postme}; \text{ and} \qquad (8)$$

$$DiscAct_{presox} < DiscAct_{poztsox},$$

where $DiscAct_{premc}$ = The accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to 1991 as ranked by post-hoc ANOVA Tukey Kramer Test,

$DiscAct_{postme}$ = The accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1992 to 1996 as ranked by post-hoc ANOVA Tukey Kramer Test,

$DiscAct_{presox}$ = The accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1997 to 2001 as ranked by post-hoc ANOVA Tukey Kramer Test,

$DiscAct_{poztsox}$ = The accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 2002 to 2006 as ranked by post-hoc ANOVA Tukey Kramer Test.

A ranking order is established by performing an ANOVA with post-hoc test of the Tukey-Kramer Test. This is chosen due to the probability of unequal sizes within samples as well as the lack of assumption for homogeneity of variance. This should allow for comparison between time periods of that offer the greatest rate of disciplinary action. If the hypothesis holds, post inflection point periods should experience a statistically significant greater rate of disciplinary actions.

The first test of this hypothesis examines a statistical difference between periods before and after inflection points. However, it does not address potential significance of

external factors that may impact the issuance of sanctions. Therefore a secondary test is used based on equation (9).

$$DisAct = \beta_0 + \beta_1 Fine + \beta_2 Nodisc + \beta_3 \Pr ofession + \beta_4 Internet + \beta_5 Midatl + \beta_6 Midwest + \beta_7 NE + \beta_8 SE + \beta_9 SW + \beta_{10} Population + \varepsilon,$$

(9)

where *DisAct* = The accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to 2006,

Fine = Summary total of the number of fines issued by each licensing board on an annual basis,

Nodisc = Dummy variable representing licensing boards that did not make public disclosure for disciplinary actions. Coding is: 1 – No disclosure made; 0 – Disclosure made in different format,

Profession = Dummy variable representing licensing boards that made public disclosure to the profession of disciplinary actions. Coding is: 1 – Disclosure to the Profession; 0 – Other means of disclosure or no disclosure made.

Internet = Dummy variable representing licensing boards that made public disclosure through internet postings. Coding is:1 – Disclosure through internet postings; 0 – Other means of disclosure or no disclosure made,

Midatl = Dummy variable representing disciplinary actions made in the States of Delaware, Maryland, New Jersey, Pennsylvania, and West Virginia. Coding is: 1 – Disciplinary action made by licensing board in region; 0 – Disciplinary action made by other licensing board in other region

Midwest = Dummy variable representing disciplinary actions made in the States of Indiana, Michigan, Wisconsin, Illinois, Missouri, Iowa, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, and Ohio. Coding is: 1 – Disciplinary action made by licensing board in region; 0 – Disciplinary action made by other licensing board in other region,

NE = Dummy variable representing disciplinary actions made in the States of Connecticut, Massachusetts, Maine, New Hampshire, New York, Rhode Island, Vermont. Coding is: 1 – Disciplinary action made by licensing board in region; 0 – Disciplinary action made by other licensing board in other region,

SE = Dummy variable representing disciplinary actions made in the States of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky. Coding is: 1 – Disciplinary action made by licensing board in region; 0 – Disciplinary action made by other licensing board in other region,

SW = Dummy variable representing disciplinary actions made in the States of New Mexico, Texas, Oklahoma, Arkansas, and Louisiana. Coding is: 1 – Disciplinary action made by licensing board in region; 0 – Disciplinary action made by other licensing board in other region,

Population = Log transformation of the number of accounting practitioners in the state where the disciplinary act was issued.

Statistical analysis of this test is performed by using an auto-regressive moving average (ARIMA) regression with Chow Tests made at the inflection points of 1992 and 2002. The hypothesis will be substantiated if the Chow Test is significant for the two periods. An ARIMA regression is chosen due to the time series nature of the data and the hypothesis.

Hypothesis 3: Disclosure Theory

The final hypothesis is based in the analysis of the types of disclosure made by the regulatory bodies of the medical, accounting, and legal professions. In this case, disciplinary actions are segmented by the disclosure made by the professional bodies. The hypothesis is statistically represented in equation (10).

$$DiscAct_I > DiscAct_N > DiscAct_P > DiscAct_0, \qquad (10)$$

where: $DiscAct_I$ = The legal, medical and accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to 2007 and segmented by actions disclosed through the internet,

$DiscAct_N$ = The legal, medical and accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to 2007 and segmented by actions disclosed through public newspaper and Internet searchable database,

$DiscAct_P$ = The legal, medical and accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to

2007 and segmented by actions disclosed publications to the profession,

$DiscAct_0$ = The legal, medical and accounting profession's disciplinary actions as averaged per practitioner annually by state for the years 1987 to 2007 and segmented by actions that are not disclosed to the public.

An ANOVA test with the use of a Tukey-Kramer post-hoc test is performed to establish a ranking order by disclosure type. If the hypothesis holds, the order of disciplinary actions by magnitude will be Internet, other, professional publication and no disclosure.

A secondary analysis will also be performed using a multinomial logistic regression. This additional analysis is used in an attempt to gain direction and significance of the potential affect of disclosure in conjunction with control variables. The equation to be employed is:

$$DisAct = \beta_0 + \beta_2 Disclosure + \beta_3 Area + \beta_4 Profession + \beta 5 Population + \varepsilon , \quad (11)$$

where $DisAct$ = Dummy variable of each disciplinary action made by each board. Coding is: 1 – Censure; 2 – Probation; 3 – Suspension; 4 – Revocation,

$Disclosure$ = Dummy variable that represents the level of disclosure made by the professional body for the disciplinary action. Coding is: 1 – No disclosure; 2 – Disclosure to professional journal; 3 – Disclosure to newspaper or searchable internet database; 4 – Disclosure through Internet,

Area =   Dummy variable that represents the area of the disciplinary action.

Sanctions are coded using the American Accounting Association

Regions. Coding is: 1 – Mid-Atlantic (DE, MD, NJ, PA, WV,

DC); 2 – Midwest (IN, MI, WI, IL, MO, IA, MN, ND, SD, NE,

KS, OH); 3 – Northeast (CT, MA, MN, NH, NY, RI, VT);

4 – Southeast (VA, NC, SC, GA, FL, AL, MS, TN, KY);

5 – Southwest (NM, TX, OK, AR, LA); 6 – West (AK, HI, AZ,

CO, WY, MT, ID, UT, NV, CA, OR, WA)

Profession =   Dummy variable that represents the profession. Coding is:

1 – Accounting; 2 – Legal; 3 – Medical,

Population =   Dummy variable of the number of accounting practitioners in each

state by year segmented by quartile. Coding is: 1 – First Quartile;

2 – Second Quartile; 3 – Third Quartile; 4 – Fourth Quartile.

The hypothesis will be validated if the profession variable is found to be significant. A multinomial logistic regression is chosen due to the number of limited dependent variables that are included in the equation. Also, by using a logistic regression, magnitude and direction of the influence of each parameter of the independent variables is determined.

CHAPTER 5

INTRODUCTION

Chapter 5 presents the results of the data analysis of the three hypothesizes developed in Chapter 4. This Chapter is divided into three sections. The first section reports the findings of the DIT2 survey with associated internal validity tests. In addition, results of an ANOVA with a Tukey-Kramer Ranking Order test is reported comparing results of the DIT2 and disciplinary actions which is used to examine the Economic Theory of the Self-Regulated Profession Hypothesis. The second section examines the Hypothesis of Signal Theory and includes the results of an ANOVA with a Tukey-Kramer Ranking Order test as well as a Chow Structural Integrity Test that compares two potential inflection points in the disciplinary actions of the accounting profession. The final section reviews the results of an ANOVA with a Tukey-Kramer Ranking Order test and a Multinomial Logistic Regression that examines the Disclosure Theory Hypothesis.

Economic Theory of the Self-Regulated Profession

Types of Analysis Employed

Two ANOVA tests with Tukey-Kramer post hoc tests are performed to establish the ranking order of average disciplinary actions by profession as well as the order of the

scores of the DIT2 test that is fielded. The DIT2 test was fielded via an Internet survey employing a third party vendor for data collection. Scoring of the survey was performed by the Center for the Study of Ethical Development at the Universities of Minnesota and Alabama. Internal validity of the study was analyzed using SPSS statistical software. The ANOVA analysis was performed using SAS Statistical Software. Codes for all procedures are found in Exhibit "A".

Summary of Input Data

Two data sets are used in the examination of the ETSR Profession: disciplinary actions of the accounting, legal, and medical professions and the results of the DIT Survey. Disciplinary actions for the years 1987 to 2007, controlled by profession, are used to rank the number of actions taken by licensing board. Observations are an annual average of disciplinary actions by total number of practitioners for each regulatory board. The time period under analysis, 1987 to 2007, offers 3,150 potential observations. However, only 2,506 annual observations are available. 63 potential observations from the state of Kentucky (21 observations for each of the three professions) are not available for study due to the state board restrictions of disclosure of information. The remaining 581 missing observations are comprised of boards that did not generate a disciplinary action during a single year over the period of the study. Disciplinary actions were totaled by each state board and averaged by the number of practitioners.

Disciplinary actions exclude administrative proceedings that were specific to the profession as well as common to all three professions. Actions were removed from the study that are not a violation of a profession's ethics codes or its standards of practice. Common actions include failure to make timely payment of dues, failure to properly

record transfer of license from one regulatory region to another, or incomplete record reporting. Profession specific administrative actions include lack of administrative oversight for chemical dependency for medical professionals, failure to file timely motions before court jurisdictions for attorneys, and failure to register with a state board that the individual was conducting public company audits despite their registration with the PCAOB. Total number of violations by Profession is listed in Table 5.1.

Table 5.1 Total Annual Disciplinary Actions and Number of Practitioners of Licensing Boards Reporting Disciplinary Actions by Profession from 1987 to 2007

Year	Accounting		Legal		Medical	
	Population	Action	Population	Action	Population	Actions
1987	187,087	28	2,811,849	2,995	3,029,430	2,518
1988	160,891	15	2,878,611	3,085	3,087,867	2,564
1989	259,557	33	3,009,157	3,105	3,121,979	2,718
1990	236,513	50	3,222,906	3,513	3,112,452	3,218
1991	228,959	38	3,070,918	3,478	3,126,716	3,028
1992	225,881	103	3,186,858	4,044	3,343,504	3,252
1993	255,549	30	3,137,827	3,197	3,215,172	3,542
1994	381,004	75	3,239,542	3,411	3,314,897	4,024
1995	367,646	81	3,297,913	3,936	3,369,450	4,271
1996	308,277	43	3,265,170	3,312	3,387,565	4,233
1997	426,311	72	3,381,270	2,395	3,532,311	4,315
1998	452,378	42	3,695,455	3,286	3,583,507	4,352
1999	420,325	50	3,882,478	3,018	3,563,939	4,425
2000	472,157	56	4,160,152	3,359	3,651,075	4,456
2001	306,952	48	4,037,867	3,566	3,800,966	4,434
2002	325,849	55	4,251,011	3,385	3,862,210	4,660
2003	301,091	43	4,268,288	4,085	3,827,287	5,033
2004	321,004	42	4,533,207	3,952	3,919,895	6,192
2005	255,942	88	4,521,468	4,997	3,943,898	6,011
2006	379,397	88	4,703,987	3,652	4,083,485	5,321
2007	355,205	44	4,887,131	3,260	4,237,967	5,082

The second data set used in the analysis of the ETSR is derived from a field survey of the DIT2. Zoomerang, a third party vendor, is employed to use their existing panel data as subjects for the instrument. Completed usable surveys included 86 attorneys, 109 certified public accountants, and 117 medical professionals. Demographic

questionnaires were included in the instruments that garnered profession specific information about the demographics of the participants. The demographics of the professions and the sample are listed in Tables 5.2, 5.3, and 5.4.

Table 5.2 Comparison of Physician Characteristics Verses Sample

Area of Specialization			Age			Gender		
	Sample	Population		Sample	Population		Sample	Population
Anesthesiologist	1%	4%	25 to 35	20%	17%	Male	50%	57%
General Practice	18%	22%	36 to 45	18%	23%	Female	50%	43%
Internal Medicine	8%	15%	46 to 55	26%	31%			
Pediatrics	13%	12%	56 to 65	21%	23%			
Psychology	4%	3%	+ 65	16%	6%			
Radiology	4%	2%						
Surgery	5%	14%						
OB/GYN	4%	7%						
Opthemologist	6%	3%						
Other	37%	18%						

Table 5.3 Comparison of Attorney Characteristics Verses Sample

Area of Practice			Age			Gender		
	Sample	Population		Sample	Population		Sample	Population
Private Practice	64%	74%	25 to 35	20%	19%	Male	58%	66%
Government	17%	8%	36 to 45	27%	14%	Female	42%	34%
Industry	8%	8%	46 to 55	20%	28%			
Judiciary	4%	3%	56 to 65	25%	13%			
Education	4%	1%	+ 65	8%	12%			
Other	3%	6%						

Table 5.4 Comparison of Certified Public Accountants Verses Sample

Area of Practice			Age			Gender		
	Sample	Population		Sample	Population		Sample	Population
Tax	29%	38%	25 to 35	14%	16%	Male	47%	56%
Audit	7%	36%	36 to 45	24%	20%	Female	53%	44%
Consulting	9%	4%	46 to 55	25%	35%			
Corporate	41%	16%	56 to 65	30%	27%			
Other	14%	6%	+ 65	7%	2%			

Response Rate, Validity Tests, and Results for DIT2: Survey of Accountants, Attorneys, and Physicians

The response rate for the survey instrument for each target population is listed below in Table 5.5.

Table 5.5 Response Rate for DIT2 Survey

	Accountants	Attorneys	Physicians
Contacts	739	701	698
Partial completions	33	16	26
Surveys removed	49	26	50
Usable surveys	109	86	117
Response rate	14.75%	12.27%	16.67%

In an effort to prevent participants from completing the survey without effort, four dummy questions are included in each of the four scenario responses. These survey questions inquired about a topic that was not relevant to the overall ethical dilemma presented. An example stated that the height of a protagonist in a scenario was the most significant component of the overall ethical concern. Participants, who responded to one of these answers as significant, were removed from the overall sample.

A Cronbach's alpha is computed for each profession surveyed using SPSS Statistical Software. Cronbach's alpha reports how well a set of variables measure a single dimension construct and increases with correlations between items. Because of

this, the coefficient is used as a measure of internal reliability of the test. It is important to note that Cronbach's alpha is not a statistical test but it is a measure of consistency. A general score of 0.70 or higher is felt to provide sufficient reliability of the survey instrument (Cronbach and Shavelson 2004). Results of the Cronbach's alpha scores are reported in Table 5.6.

Table 5.6 Cronbach's Alpha Scores for Accountants, Attorneys, and Physicians

	Accountant	**Attorney**	**Physicians**
Alpha Score	0.697	0.741	0.778

Findings from the Cronbach's alpha tests report only one survey instrument that reports borderline reliability. Accountants surveyed reported a score of 0.697 which is marginally sufficient to prove reliability. The two other test groups reported sufficient reliability. It is worth noting that the internal validity of the DIT2 is subject to "external influences" such as starts and stops, interruptions, noise which can impact reliability. Finally, results of the DIT2 scores for the three survey groups are found in Table 5.7.

Table 5.7 Mean Scores and Standard Deviations of DIT2 Instrument

	N	**Mean**	**Std. Deviation**
Accountant	110	34.12	6.732
Attorney	86	49.95	5.237
Physicians	117	42.75	6.455

Three recent studies have separately examined each profession using the DIT2 and offer comparison results for the survey performed in this research. In each of these studies, traditional paper surveys were employed. Results are listed in Table 5.8.

Table 5.8 Mean Scores and Standard Deviation for Similar Studies

Author	Profession	N	Mean	Std. Deviation
Bailey et al (2005)	Accounting	253	36.66	13.74
Landman and McNeel (2000)	Legal	170	49.60	14.86
Bebeau et al. (2002)	Medical	140	45.85	9.85

Results from other academic studies examining the three profession report comparable DIT2 findings as the results of this research's Internet Delivery. However, two exceptions are noted. The accounting and medical professionals report lower DIT2 scores than the current study and the standard deviations are smaller for each population group. Potentially reducing the standard deviations for the three surveys of this research are the removal of participants through screening questions. As a result, smaller variance could be derived from each study.

Methodological and Analytical Assumptions
of Tests of ANOVA for Disciplinary Actions
by Profession and DIT2 Test Scores

The analysis of Analysis of Variance assumes its error term has a normal distribution, is independence, and is not heteroscedastic. Normality of the error term allows the analysis to follow the properties of a normal distribution. Numerical methodology is chosen for this analysis due to the size of the sample for disciplinary actions (2,506) and number of observations for the survey instrument (313). The Cramer-Von Mises and Anderson-Darling tests are employed with each assuming that the null hypothesis is a normal distribution (Kutner 2005). Tests of normality are reported in Tables 5.9 and Table 5.10 for average disciplinary actions and results of the DIT2 test.

Table 5.9 Tests of Normality – Disciplinary Actions

Test	W-Squared Statistic/ A-Squared Statistic	Pr> 0
Cramer-Von Mises	0.167672	0.0100
Anderson-Darling	97.35941	0.0050

Table 5.10 Tests of Normality – DIT2 Score Results

Test	W-Squared Statistic/ A-Squared Statistic	Pr> 0
Cramer-Von Mises	0.458048	0.0050
Anderson-Darling	3.028583	0.0050

Results of each test of normality report significant at the 0.05 level which suggests that the distributions are normal. Independence of the error term is examined next. Analysis of variance assumes that each error term is independent of other observations. If the terms are related, the standard error could be inflated and the portability of the model as well as its consistency would be questionable. Concerns of independence of the error terms are not as significant for the survey instrument due to the random selection process for each population sample. The secondary data is a concern due to its time series nature. Accordingly, there is a higher possibility that the error terms are correlated. To examine this assumption, a Durbin Watson Test is performed on both data sets. This test assumes that the error terms are normally distributed, does not drift, and has a mean of zero. A score of four would indicate a significant level of correlation with a score of two as a signal of no autocorrelation (Kutner 2005). The results for the DIT2 survey results and the average disciplinary action data are listed in Table 5.11.

Table 5.11 Durbin-Watson Test for DIT2 Survey and Disciplinary Actions

Data Set	N	Durbin-Watson Score	1st Order Auto-Correlation
DIT2 Survey	313	0.447	0.773
Disciplinary Actions	2,506	1.442	0.279

Results for the Durbin-Watson test suggest that the data for disciplinary actions report a level of autocorrelation within its data sample. However, no data correction is undertaken. For the DIT2 survey, the entire survey sample was used in this analysis. A secondary analysis is performed evaluating the independence of the error term of each classification due to the low score Durbin-Watson Score (0.447). Table 5.12 reports the results of the Durbin-Watson Test for each classification of professionals for the DIT2 survey results.

Table 5.12 Durbin-Watson Test for DIT2 Results by Profession

Profession	N	Durbin-Watson Score	1st Order Auto-Correlation
Medical	117	0.826	0.583
Accounting	110	0.684	0.652
Attorneys	85	1.321	0.378

Results of the second series of tests are improved from the first data set but still report some level of lack of independence of the error terms. However, no corrective actions are taken.

Finally, the assumption of homogeneity of variance is tested to validate that the error terms are random. If the assumption is not met, the model has the potential to overestimate the goodness of fit. Tests examining homogeneity of variance assume that the null hypothesis is an error term is random with no finite variance. The Levene's test is

used because it is robust to potential departures of normality and is felt to be conservative

(Kutner 2005). Results of the test for both data sets are listed in Table 5.13.

Table 5.13 Results of Levene's Test for Homogeneity of Variance

Data Source	F-Value	Pr > F
Disciplinary Actions	1.88	0.1522
DIT2 Survey	2.09	0.1243

Each data set reports no significance for the Levene's Test therefore it is assumed

that the data set's error term is random and has constant variance.

Results of ANOVA – Disciplinary Actions
and DIT2

Two one-way ANOVA tests are performed using the DIT2 and Disciplinary

Action data sets. Each ANOVA is performed using profession as the classification

variable. Results of the One-Way ANOVA of the DIT2 survey data is provided in Table

5.14.

Table 5.14 Results of One-Way ANOVA of DIT2 Survey Results by Profession

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F Value
Profession	2	12295.92	6147.96	157.02	<0.0001
Error	310	12137.84	39.15		
Corrected Total	312	24433.76			
R-Squared	0.503235	**Coefficient Variance**	15.00573		
Root MSE	6.257343	**DIT Mean**	41.69968		

The one-way ANOVA model with the dummy variable for profession as the

treatment with DIT2 scores report a significance of 0.0001. In addition, the model has

moderate explanatory powers of with an R-Squared of 0.5023. The Tukey's post hoc test with the Tukey-Kramer adjustment for unequal samples is performed to rank the average observations from each survey group. The procedure is performed at the 0.05 level of significance. Results are provided in Tables 5.15.

Table 5.15 Results of Tukey-Kramer Ranked Means – DIT Survey Results

Ranking	Mean	N	Profession
First	49.95	86	Legal*
Second	42.72	117	Medical*
Third	34.12	110	Accounting*

* Findings significant at the 0.05.

The results of the second ANOVA using average disciplinary actions of the three professions is provided in Table 5.16. This ANOVA is performed using profession as a control variable.

Table 5.16 Results of One-Way ANOVA of Average Disciplinary Actions by Profession

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F Value
Profession	2	0.00571534	0.00285767	264.60	<0.0001
Error	2510	0.02710782	0.00001080		
Corrected Total	2512	0.03282316			
R-Squared	0.174125	**Coefficient Variance**	94.12396		
Root MSE	0.003286	**Sanction Mean**	0.003491		

The one-way ANOVA model with the dummy variable for profession as the treatment with DIT2 scores report a significance of 0.0001. In addition, the model has moderate explanatory powers of with an R-Squared of 0.1741. The Tukey's post hoc test with the Tukey-Kramer adjustment for unequal samples is performed to rank the average

observations from each survey group. The procedure is performed at the 0.05 level of significance. Results are provided in Tables 5.17.

Table 5.17 Results of Tukey-Kramer Ranked Means – DIT Survey Results

Ranking	Mean	N	Profession
First	0.0046549	1,048	Medical*
Second	0.0036799	1,000	Legal*
Third	0.0004643	465	Accounting*

* Findings significant at the 0.05.

A comparison table of the results of the DIT2 survey and disciplinary actions is provided in Table 5.18.

Table 5.18 Comparison Table for DIT2 Survey Ranking Order and
Disciplinary Actions Ranking Order

Order	DIT2 Survey	Average Disciplinary Actions
First	Medical	Legal
Second	Legal	Medical
Third	Accounting	Accounting

Examining and Interpreting the Models --
ANOVA and Tukey-Kramer
Ranking Order Tests

The two one-way ANOVA models examining DIT2 Survey results as well as disciplinary actions were significant at the .05 level. The tests supporting the Economic Theory of the Self-Regulated Profession hypothesis, however, are based in the results of the Tukey-Kramer Ranked Order of average disciplinary actions. This hypothesis supported the conclusion that the order of average disciplinary actions should report an inverse relationship to the average scores of the DIT2 instrument. Results of the ranking order support the hypothesis.

Signal Theory

Types of Analysis Employed

Two separate statistical analyses are performed to examine the hypothesis of

Signal Theory. The first method is an ANOVA of the average annual disciplinary actions

of each state board of accounting that compare infractions before and after threats of

external regulation to the profession. Two instances of external threat to regulation are

examined. The first is the issuance of the McFarland Report in 1992 and the second is

the passage of SARBOX in 2002. An additional test, a Chow Test for Structural

Stability, is performed to identify structural changes in a data set. This procedure is

based on an ARIMA Regression with its related assumptions and diagnostic tests. The

Chow Tests allow for additional control variables in addition to a secondary test of the

hypothesis. SAS Statistical Software was employed in the analysis of the data. The

specific code is attached to this document as Exhibit "A".

Introduction – ANOVA

An ANOVA is employed for the analysis of the second hypothesis due to its

ability to generate a ranking order of average disciplinary actions segmented by a class

control variable that represents the proposed inflection points. The ranked order of

disciplinary actions is an important test of the second hypothesis because it gives a

method to statistically compare the average number of disciplinary actions before and

after the inflection point. An increasing level that is statistically different from the

previous level supports the hypothesis that the profession is signaling to potential

regulatory agencies. The Tukey's post hoc test is used because is has the capacity to

inspect sample sizes that are unequal through the Tukey-Kramer method (Kuehl 2000).

Summary of Input Data – ANOVA

Disciplinary actions for the Accounting Profession from the years 1987 to 2006 are used in this examination. This time period offers a five year period before and after the inflection points of 1992 and 2002. Individual observations are comprised of the annual disciplinary actions of individual state boards of accounting averaged by the number of practitioners. For the time period of the study, there are 1,000 potential observations (20 years of disciplinary actions for 50 states). However, only 441 observations were available for use in the study. The Kentucky's 20 observations were excluded due to their disclosure regulations. The remaining 539 observations are not available due to the lack of disciplinary actions taken by a board of accountancy in a single year.

Disciplinary actions for the accounting profession were included in the study if they were specifically a violation of an ethics code or failure of professional standards. Excluded observations include the administrative actions taken during the transfer of licenses from state to state, failure to pay membership fees because of transfer of license, failure to register with the state board of accountancy of performance of public company audits despite registration with PCAOB, failure to pay membership fees due to retirement, slow payment of membership fees, failure to pay personal income taxes in a timely manner, and any other action that was did not involve an ethics or professional standard violation. A total of 2,798 individual actions are reported by the boards of accountancy for the period of analysis. However, only 1,090 were directly attributed to ethics and professional standard violations. Total observations by state are provided in Table 5.19.

Table 5.19 Disciplinary Actions by Region and State from 1987 to 2006

Mid-Atlantic		Mid-West		Northeast		Southeast		Southwest		West	
State	Actions	State	Actions	State	Actions	State	Actions	State	Actions	State	Actions
DE	1	IA	10	CT	30	AL	8	AR	13	AK	1
MD	26	IL	51	MA	17	FL	43	LA	11	AZ	28
NJ	73	IN	11	ME	1	GA	26	OK	15	CA	100
PA	58	KS	8	NH	4	MS	10	NM	1	CO	21
WV	10	MI	31	NY	110	NC	18	TX	132	HI	5
		MN	24	RI	3	SC	9			ID	3
		MO	36	VT	1	TN	12			MT	3
		ND	7			KY*	0			NV	11
		NE	2			VA	20			OR	5
		OH	27							UT	12
		SD	3							WA	20
		WI	14							WY	5
Total	168	Total	224	Total	166	Total	146	Total	172	Total	214

* Not available for sample

Methodological and Analytical
Assumptions – ANOVA

Analysis of Variance makes assumptions for the error term of a normal distribution, independence, and homogeneity of variance. The first assumption examined is the assumption that the error term is normally distributed. A normal distribution allows the investigation to assume the properties of a normal distribution. Numerical methodology is chosen for this analysis due to the size of the sample (441). The Cramer-Von Mises and Anderson-Darling tests assume that the null hypothesis is a normal distribution. Findings of non-significance at the 0.10 level could report a distribution that is not normally distributed (Kutner 2005). Two tests of normality are reported in Table 5.20.

Table 5.20 Tests of Normality

Test	W-Squared Statistic/ A-Squared Statistic	Pr> 0
Cramer-Von Mises	0.879832	0.0001
Anderson-Darling	0.096267	0.0100

Independence of the error term is the next assumption that is examined. It is assumed that the error terms are independent of other observations. If the terms are related, the standard error could be inflated and the portability of the model as well as its consistency would be questionable. If primary data is collected, the risk of lack of independence can be mitigated because the experiment can have a random design. However, the data used in the analysis is secondary data that is time series. Accordingly, there is a higher possibility that the error terms are correlated. To examine this assumption, a Durbin Watson Test is performed on the data set. This test assumes that the error terms are normally distributed, does not drift, and has a mean of zero. A score of four would indicate a significant level of correlation with a score of two as a signal of no autocorrelation (Kutner 2005). The results of the Durbin Watson test are 1.404 with a first order autocorrelation of 0.298. Findings suggest that, while not significant, the data reports a level of correlation. No attempts to correct for correlation are made.

Finally, homogeneity of variance is examined. This assumption dictates that the error terms of the ANOVA are random. If the assumption is not met, the model has the potential to overestimate the goodness of fit. Tests examining homogeneity of variance assume that the null hypothesis is an error term that is random with no finite variance. The Levene's test is used because it is robust to potential departures of normality and is

felt to be conservative (Kutner 2005). Results of the test have an F value of 1.46 and a Pr>F of 0.2254. Findings suggest that the sample contains a normal distribution.

<div align="center">Results of Analysis – ANOVA</div>

A one-way ANOVA is performed with a classification variable of chow that is used to denote the periods of pre-McFarland Report, post-McFarland Report, post-ethics code change, pre-SARBOX, and post-SARBOX. Results of the model are in Table 5.21.

Table 5.21 Results of One-Way ANOVA by Control Variables for Inflection Points

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F Value
Chow	3	0.00000350	0.00000117	4.68	0.0031
Error	437	0.00010877	0.00000025		
Corrected Total	440	0.00011227			
R-Squared	0.031149	**Coefficient Variance**	73.300092		
Root MSE	0.000499	**Sanction Mean**	0.003298		

The one-way ANOVA model with the dummy variable for inflection points as the treatment with average disciplinary action as the dependent variable report a significance of 0.0031. However, as expected, a low R-squared (0.031149) is generated by the test results.

The Tukey's post hoc test with the Tukey-Kramer adjustment for unequal samples is performed to rank the observations. The procedure is performed at the 0.05 level of significance. Results of each inflection point, McFarland Report and SARBOX, are provided in Tables 5.22 and 5.23.

Table 5.22 Results of Tukey-Kramer Ranked Means – McFarland Report

Ranking	Mean	N	Time Period
First	0.00055592	110	Post-AICPA**
Second	0.00046130	87	Pre-AICPA**

** Findings not significant at the 0.05 or 0.10 levels.

Table 5.23 Results of Tukey-Kramer Ranked Means – Sarbanes Oxley Act of 2002

Ranking	Mean	N	Time Period
First	0.00053732	124	Post-Sox**
Second	0.0003371	120	Pre-Sox**

** Findings are significant at the 0.05 level

Examining and Interpreting the
Model – ANOVA

The one-way ANOVA model with its single treatment was significant at the 0.05 level. The results are interpreted that the structural breaks within the data are significant influences on the level of disciplinary actions. However, the model, as expected with only one treatment level, reported an R-squared of 0.031149. This is interpreted that the classification variable of the proposed inflection points aid in the explanation of only 3.11% of the variance in the mean of the average disciplinary actions. The Tukey's Kramer post hoc test reported significance only between the means of the Pre-SARBOX and Post-SARBOX inflection points. The Pre-McFarland Report and Post-McFarland Report inflection points, while larger after the inflection point, was not significantly different.

Introduction – Ordinary Least Squares
Regression with Chow Tests

A Chow Test for structural breaks using an OLS Regression is also used to examine the signal theory hypothesis. Initial methodology of an Auto-regressive

Integrated Moving Average (ARIMA) regression was described to mitigate potential correlation within the error terms due to the time series nature of the data. However, tests of the data reported no correlation within the data set (see Methodological and Analytical Assumptions – OLS Regression below for diagnostic results). The Chow Test is used to expand the analysis of the Tukey's Kramer ranked order ANOVA post hoc test to include control variables that are examined for a structural break. This is a test of the coefficients of two linear regressions examining two different data sets. The coefficients of the two regressions are statistically similar if the two data sets do not have a structural break. If the coefficients are statistically different, a structural break has occurred within the data set. The Sum of Squared Residuals (SSR) from the equation is fitted to the data before the identified break. A second SSR is fitted to the model after the proposed structural break. A test using the F-Statistic is made comparing the two periods SSR. Significance is noted at the 0.05 level (Dougherty 2007). The ANOVA tests performed as part of empirical testing of this hypothesis reported only the Sarbanes-Oxley Act of 2002 as significant. Therefore, only this structural break is significant. The OLS regression was performed using equation number (9).

<div align="center">Summary of Input Data – OLS
Regression with Chow Tests</div>

Disciplinary actions for the years 1997 to 2006 for the Accounting Profession are used in the analysis of a structural break for the enactment of the Sarbanes Oxley Act of 2002. Average disciplinary actions by state are employed with identical coding and exclusions as in the ANOVA previously performed. 243 observations are available for this analysis of a potential 500 (50 states for ten years of observations). As previously stated, the state of Kentucky has been excluded from analysis due to their regulatory

statues that limit disclosure of disciplinary actions. The remaining 247 missing

observations result from a state board of accountancy non-issuance of a censure,

probation, suspension, or revocation in a single year. Disciplinary actions by state and by

year are provided in Tables 5.24 and 5.25 below.

Table 5.24 Disciplinary Actions by State from 1997 to 2006
for the Accounting Profession

Mid-Atlantic		Mid-West		Northeast		Southeast		Southwest		West	
State	Actions	State	Actions	State	Actions	Stat	Actions	State	Actions	State	Actions
DE	1	IA	3	CT	15	AL	5	AR	11	AK	1
MD	12	IL	30	MA	12	FL	26	LA	6	AZ	13
NJ	41	IN	5	ME	1	GA	15	OK	10	CA	43
PA	25	KS	7	NH	4	MS	6	NM	1	CO	8
WV	4	MI	19	NY	48	NC	14	TX	81	HI	3
		MN	17	RI	1	SC	6			ID	2
		MO	18	VT	1	TN	6			MT	3
		ND	3			KY*	0			NV	4
		NE	2			VA	12			OR	4
		OH	14							UT	8
		SD	2							WA	11
		WI	8							WY	2
Total	83	Total	128	Total	82	Total	90	Total	109	Total	102

Table 5.25 Disciplinary Actions by Year from 1997 to 2006 for
the Accounting Profession

Year	Disciplinary Actions
1997	72
1998	42
1999	50
2000	56
2001	48
2002	55
2003	43
2004	52
2005	88
2006	88
Total	594

Methodological and Analytical Assumptions –
OLS Regression

OLS regression makes several assumptions of the error term that require diagnostic testing. These include a normal distribution, hetroscedasticity, and independence. In addition to these assumptions, the regressor variables are assumed to have a linear relationship with the dependent variable and that they are not co-linear. Normality of the error terms assumes a normal distribution. The Cramer-Von Mises and Anderson-Darling tests are used due to the size of the sample (243 observations). Results of each test are reported in Table 5.26.

Table 5.26 Tests of Normality for Error Terms for OLS Regression

Test	W-Squared Statistic/ A-Squared Statistic	Pr > 0
Cramer Von Mises	0.890456	0.005
Anderson Darling	5.823873	0.005

The null hypotheses for these tests are assumed to be a normal distribution. Findings of significance at the 0.05 level would report a potential departure from normality. Results from the two tests suggests that the sample has a normal distribution (Kutner 2005).

OLS regression makes the assumption that the standard deviations of the error terms for the fitted model are constant and not dependent on the independent regressors. This assumption, homoscedasticity, assures that the least square estimates are the best linear unbiased estimator. The probability distribution for dependent variable has the same standard deviation regardless of the independent variable. Violations of homoscedasticity can result in an overestimation of the goodness of fit of the model

(Vogt 1999). The White test is chosen because it can accommodate the possibility that jointly more than one variable can cause hetroscedasticity. The test makes the assumption of no hetroscedasticity for the null hypothesis with any findings of significance as a potential sign of lack of independence in the error term (White 1980). Results of the test are reported in Table 5.27.

Table 5.27 White's Test for OLS Regression for Accounting
Profession for Years 1997 to 2006

Degrees of Freedom	Chi-Squared Critical Value	Pr > Chi-squared
44	55.46	0.1153

Results of the White's test performed on the data set report no significance at the 0.05 or 0.10 levels therefore no hetroscedasticity is assumed.

The next assumption of OLS Regression is the independence of the error term. If an error term of one observation is correlated to another, the standard error can be inflated and the goodness of fit of the model is questionable. The problem of autocorrelation (correlated error terms) is a common concern within time series data where observations are more likely to be dependent on each other. The Durbin-Watson Test is a common diagnostic to examine the potential for autocorrelation. The test assumes that the error terms are stationary and normally distributed with a mean of zero. A score of close to two is generally accepted as a sign that no autocorrelation exists. The Durbin-Watson test for the 1997 to 2006 data for the proposed model gives a score of 2.007 with a first order autocorrelation of -0.006. No significant autocorrelation is interpreted within the results.

The next level of diagnostics examines the potential influence of a single observation on the entire data set. For this analysis, DFFITS is employed to examine the data for potential outliers as well as data entry errors. DFFITS is defined as the change in the predicted value for a point when it is left out of the OLS Regression. It is studentized by dividing the estimated standard deviation of the fit at the point. Values that could be potentially influential are greater than $2\sqrt{p/n}$. For the data set, 14 observations were noted as potential outliers that could influence the regression model. Each point was verified for data entry accuracy (Belsley et al. 1980).

The final diagnostic examines the potential that the independent variables within the model are correlated. Multicollinearity allows that the estimates of one independent regressor's influence on the dependent variable are less precise if the predictor variables are correlated. A Variance Inflation Factor Test was performed as a diagnostic for this concern. The Variance Inflation Factor Test (VIF) is calculated by comparing the standard error of the coefficient of an independent variable when other predictor variables are excluded from the analysis. As a general rule, a VIF of five indicates a concern of multicollinearity within an independent variable (O'Brien 2007). VIF values for each independent variable are listed below in Table 5.28.

Table 5.28 VIF Scores for Independent Variables of OLS Regression

Variable	VIF	Variable	VIF
Fine	1.16751	Midwest	1.86268
No Disclosure	1.42466	Northeast	1.67269
Profession	1.28803	Southeast	1.70485
Internet	1.34674	Southwest	1.51575
Mid-Atlantic	1.29420	Population	1.34118

Results of the VIF for the independent regressors report no score that is greater than 5. Therefore, no multicollinearity is assumed.

Structural Changes and the Chow
Test for Stability

Results from the Chow test assume that the null hypothesis is no structural break within the data. If significance is found that the 0.10 or the 0.05 level, a break within the data set is assumed. Specifically, the coefficients before and after the break, are statistically different. Results from the Chow Test for Stability are reported below in Table 5.29.

Table 5.29 Results of Chow Test for Accounting Disciplinary Action from
1997 to 2006 with 2002 Structural Break

Number Degrees of Freedom	Dependent Degrees of Freedom	F Value	Pr > F
11	222	2.08	0.023

The results of the test report a significance of 0.023 that is significant at the 0.05 level. This indicates that the coefficients before and after the inflection points failed the stability test and that a structural break exists.

Conclusion – Signal Theory
Hypothesis

Results from the tests of Signal Theory report only one of the two proposed periods as significant. The debate and ultimate passage of the Sarbanes-Oxley Act of 2002 was significant using both the ANOVA tests with Tukey-Kramer Ranking order method and the Chow Test for Structural Stability. The 1992 inflection point reported an increasing number of average disciplinary actions. However, the increase was not significant at the 0.01 or 0.05 level. Findings suggest that the profession was, in effect,

signaling to a proposed legislative regime through increased disciplinary actions for the implementation and passage of the Sarbanes-Oxley Act of 2002. No statistical support is found that the structural break for the 1992 McFarland Report was a signaling effort by the profession.

Disclosure Theory

Types of Analysis Employed

Two separate statistical analyses are performed to examine the hypothesis of disclosure theory. The first is an ANOVA of the average annual disciplinary actions by type of disclosure with a Tukey's post-hoc test to establish their ranked order. The second analysis uses a multinomial logistic regression that includes control variables. The use of multinomial logistic regression offers the additional benefits of gaining the significance, magnitude, and direction of the effects of the disclosure variable in comparison with control variables in an effort to increase explanatory power. SAS Statistical Software was employed in the analysis of the data. The specific code employed is listed in Exhibit "A."

Introduction – ANOVA

An ANOVA is used for analysis of the third hypothesis because of its capacity to generate a ranking order of disciplinary actions segmented by a class or control variable. The ability to generate a ranked order by level of disclosure is a direct test of the third hypothesis of disclosure. Tukey's post hoc test is employed due to its ability to examine unequal sample sizes through the Tukey-Kramer method (Kuehl 2000).

Summary of Input Data - ANOVA

Disciplinary actions for the years 1987 to 2007 are included in the analysis of disciplinary actions segmented by disclosure type. Observations are an annual average of disciplinary actions by total number of practitioners for each regulatory board. The time period under analysis, 1987 to 2007, offers 3,150 potential observations. However, only 2,506 annual observations were available for analysis. 63 potential observations from the state of Kentucky (21 observations for each of the three professions) were removed from analysis due to the state board restrictions of disclosure of information. The remaining 581 missing observations are comprised of boards that did not generate a disciplinary action during a single year over the period of the study. Disciplinary actions were totaled by each state board and averaged by the number of practitioners.

Specific disciplinary actions excluded administrative proceedings that were specific to the profession as well as common to all three professions. These actions were not a violation of the profession's ethics codes or its standards of practice. Common actions include failure to make timely payment of dues, failure to properly record transfer of license from one regulatory region to another, or incomplete record reporting. Profession specific administrative actions include lack of administrative oversight for chemical dependency for medical professionals, failure to file timely motions before court jurisdictions for attorneys, and failure to register with a state board that the firm was conducting public company audits despite their registration with the Public Company Accounting Oversight Board.

The remaining disciplinary actions are segmented into four specific actions: censure, probation, suspension, and revocation. Censured professionals have committed

a specific violation of the professional ethics codes or a professional standard that required a written admonishment that is attached to their licensing records. No limitation to their capacity to practice is made by their licensing board. Individuals that have been placed on probation by their licensing boards are subject to written admonishment by their licensing board. In addition, their ability to continue in their practice is restricted by threat of suspension or revocation of their license if specific actions cited by their regulatory boards are continued. Suspended licensees are not allowed to practice their profession through a specific period of time. In addition, corrective actions are often required of the professions to return to practice. Corrective actions include the completion of additional continuing education requirements or the requirement of monitoring by secondary sources for quality of work product. Despite the corrective actions as well as suspension, the professional has not lost the ability to practice permanently. Revocation of license removes the ability to practice the profession of the individual permanently.

Finally, violations are classified by the type of disclosure made by the regulatory board at the time of the infraction. Four levels of disclosure have been examined in this study: no disclosure, disclosure to profession, internet disclosure, and other. Observations from regulatory boards that did not make any form of public disclosure are coded as no disclosure. Disclosure to profession are violations that were limited to practitioner journals distributed by the profession. Internet disclosure allows for actions to be made available to the public through posting on the individual board's website. Finally, other forms of disclosure include searchable databases with listings of active

practitioners only or public newspaper publishing. Summary statistics for each method of disclosure are made below in Table 5.30.

Table 5.30 Summary Statistics of Average Annual Disciplinary Action
by Disclosure Type

Disclosure Type	# of Observations	Mean	Standard Deviation
None	262	0.002373	0.002237
Other	551	0.00293	0.002126
Profession	1,393	0.003451	0.002482
Internet	299	0.004059	0.002746

Methodological and Analytical
Assumptions – ANOVA

Analysis of Variance makes several assumptions that require some form of diagnostic testing. First, the normality assumption is tested. Normality assumes that the error term is and, by default, the entire sample, normally distributed. Numerical methodology is chosen for this analysis due to the size of the sample (2,506). Two tests are chosen due to the size of the sample: Cramer-Von Mises and Anderson-Darling. Results are reported in Table 5.31.

Table 5.31 Tests of Normality

Test	W-Squared Statistic/ A-Squared Statistic	Pr > 0
Cramer-Von Mises	4.75922	>0.0050
Anderson-Darling	97.35941	>0.0050

Results of these tests are interpreted as the null hypothesis where the normality is assumed. Findings of significance at the 0.10 or 0.05 levels would report the potential for a distribution that is not normal. Reported results suggest that the distribution of the sample is normal (Kutner 2005).

Next, the assumption of the independence of the error terms is examined. It is assumed that one observation is independent of the error of another observation. If the error term of one observation is correlated to another observation, the standard error of the data is inflated and the consistency of the ANOVA is questioned. Generally, an experiment with random observations would not potentially suffer from correlation within its error term. However, the secondary data used within this analysis may be subject the error terms to correlation due to the time-series nature of the observations. Correlation between error terms is tested using the Durbin-Watson Test. The test assumes that the error terms are stationary and normally distributed with a mean of zero. Using this assumption as the null hypothesis, the Durbin-Watson Test would be significant if the error terms were not stationary and are not normally distributed. A finding of significance would report a level of lack of independence of the error term. Results of the test report first order of autocorrelation of 0.00479 and a Durbin-Watson Test score of 1.96904. A score of roughly two states that there is no auto-correlation (Kutner 2005).

Finally, the assumption of homogeneity of variance is tested. Homogeneity of variance assumes that the error terms of the ANOVA are random. Violations of this assumption mean that the variance is not random and has the same finite variance. Serious violations of homogeneity of variance result in overestimating the goodness of fit of the model including its classifications. Tests for homogeneity of variance assume that the error terms are random and not the same finite variance. The Levene's test is used due to its robustness to departures of normality as well as is conservative characteristics. Results report an F value of 0.60 and a Pr> F of 0.4389 (Kutner 2005).

Results of Analysis - ANOVA

A one-way ANOVA was performed with disclosure as the classification variable and average disciplinary sanctions as the continuous variable. Results of the limited model reported in Table 5.32.

Table 5.32 ANOVA with Disclosure as Classification Variable

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F Value
Disclosure	3	0.0050136	0.00016712	28.59	<0.0001
Error	2501	0.01461982	0.00000585		
Corrected Total	2504	0.01512119			
R-Squared	0.033159	**Coefficient Variance**	73.30092		
Root MSE	0.002418	**Sanction Mean**	0.003298		

Results of the one-way ANOVA with disclosure as the sole treatment and average sanction as the dependent variable report significance at the 0.0001 level. As expected, with only one treatment within the analysis, the model reported an r-squared of 0.033 giving the model a low predictive power.

Next, the Tukey's post hoc test is performed that ranked the average observations by sanction type. This procedure is performed with a level of significance of 0.05. Results are reported in Table 5.33.

Table 5.33 Tukey-Kramer Post Hoc Test of Levels of Disclosure

Tukey Group Ranking	Mean	N	Disclosure Level
First	0.0040590	299	Internet Disclosure
Second	0.0034517	1393	Disclosure to Profession
Third	0.0029380	551	Other Disclosure
Fourth	0.0023736	262	No Disclosure

Examining and Interpreting the
Model – ANOVA

The one-way ANOVA model with one level of treatment reported significance at the 0.0001 level. This can be interpreted that the level of disclosure is significant in influences the level of average disciplinary action. The overall model reports an expected low r-squared due to the single treatment included in the analysis. The Tukey's Kramer post hoc test reported a ranking of the average disciplinary action by categories of disclosure meets the expectation of the disclosure hypothesis.

Introduction – Multinomial
Logistic Regression

Multinomial logistic regression is employed for the analysis of the disclosure hypothesis due to the use of a categorical dependent variable. Unlike ordinary least square regression, multinomial logistic regression is an appropriate technique when relating a number of independent variables with two or more categories within a dependent variable. For this hypothesis, the outcome variable has four categories: no disclosure, disclosure to the profession, internet disclosure, and other disclosure formats (Wright 1995).

Summary of Input Data – Multinomial
Logistic Regression

For the years 1987 to 2007, the legal, medical, and accounting professions reported 163,661 disciplinary actions that resulted in the revocation, suspension, probation, or censure of the practitioner. These totals exclude the state of Kentucky which, due to state law, does not allow the disclosure of disciplinary actions of its professions. Classification of these actions is identical to those made with the ANOVA analysis. Also, administrative actions, as described in the Summary of Input Data –

ANOVA, are excluded from this analysis. The disciplinary actions, classified by type, serve as the dependent variable for the Multinomial Logistic Regression. Independent variables used in this analysis are the profession of the practitioner, the level of public disclosure of the regulating authority, the geographic area, and the number of practitioners by population quartile. The profession of the practitioner is a categorical dependent variable representing the three professions. Table 5.34 reports a cross-tabulated breakdown of disciplinary actions by type for each the licensing board of the three professions from 1987 to 2007.

Table 5.34 Disciplinary Actions by Type

Action	Frequency	Percent
Censured	36,079	22.04%
Probation	34,594	21.14%
Suspension	50,914	31.11%
Revocation	42,081	25.71%
Totals	163,661	100.00%

Independent variables used in this analysis are the profession of the practitioner, the level of public disclosure of the regulating authority, the geographic area, and the number of practitioners by quartile. The profession of the practitioner is a categorical dependent variable representing the accounting, legal, and medical professions. Next, public disclosure is also a categorical variable that represents the types of public disclosure made by each profession for the four disciplinary actions taken by the licensing boards of each profession. These variables represent no disclosure, disclosure to members of the profession, internet disclosure to the public, and other means of disclosure. Other means of disclosure include searchable databases of active and inactive practitioners with disciplinary action information available. Telephone surveys and email

communication were made to each licensing board to verify the types of disclosure made over the twenty year period of data collection. Tables 5.35 through 5.38 report cross tabulated summaries of disciplinary actions by profession, geographic area, number of practitioners by quartile, and type of disclosure.

Table 5.35 Disciplinary Actions by Type and Profession

Action	Accounting	Legal	Medical	Total
Censured	55	22,433	13,584	36,072
Probation	39	13,289	21,266	34,594
Revocation	749	11,386	29,946	42,081
Suspension	291	27,862	22,761	50,914
Total	1,134	74,970	· 87,557	163,661

Table 5.36 Disciplinary Actions by Type and Geographic Area

Action	Mid-Atlantic	Midwest	NE	SE	SW	West	Total
Censured	2,584	6,967	5,565	9,792	3,870	7,294	36,072
Probation	1,288	4,850	3,068	8,493	2,654	14,241	34,594
Revocation	3,310	9,043	9,350	8,281	3,653	8,444	42,081
Suspension	3,585	10,134	6,807	9,721	6,505	14,162	50,914
Total	10,767	30,994	24,790	36,287	16,682	44,141	163,661

Table 5.37 Disciplinary Actions by Practitioner Population Quartiles

Action	First Quartile	Second Quartile	Third Quartile	Fourth Quartile	Total
Censured	1,838	6,318	8,207	19,709	36,072
Probation	1,274	2,953	5,807	24,560	34,594
Revocation	2,635	4,971	8,863	25,612	42,01
Suspension	2,194	5,943	10,186	32,591	50,914
Total	7,941	20,185	33,063	102,472	163,661

Table 5.38 Disciplinary Actions by Disclosure Type

Action	No Disclosure	Profession	Internet	Other	Total
Censure	8,244	18,867	7,059	1,902	36,072
Probation	3,078	19,223	8,507	3,786	34,594
Revocation	8,782	20,176	10,674	2,449	42,081
Suspension	10,168	27,824	10,883	2,039	50,914
Total	30,272	86,090	37,123	10,176	163,661

Methodological and Analytical Assumptions –
Multinomial Logistic Regression

Multinomial logistic regression makes a number of assumptions that require some form of diagnostic tests to consider. The first assumption made is that the model has sufficient observations to provide enough degrees of freedom for analysis. Wright (1995) provides that there should be at a minimum 10 observations per independent variables to support a multinomial regression analysis. This analysis includes each category of independent variable to be assumed to be a stand alone variable. For analysis of this hypothesis, 13 separate categories of variables are used which would require 130 observations. The existing data set has 163,661 observations are sufficient to support the methodology. Table 5.39 below lists the total number of categories for each independent variable.

Table 5.39 Independent Variables with Associated Categories

Area	Population	Profession	Disclosure
MidAtlantic	First Quartile	Accounting	None
Midwest	Second Quartile	Legal	Profession
Northeast	Third Quartile	Medical	Internet
Southeast	Fourth Quartile		Other
Southwest			
West			

Next, Hosmer and Lemeshow (2000) establish that a secondary measure of sufficiency of observations or numerical problems is a large standard error. This measure reports that the number of predictor variables is too large in comparison to the number of available observations. Multinomial logistic regression calculates standard error terms for each item of the independent categorical variables as a model for each of the dependent categorical terms. The range of the standard errors for each of these models are from a low of 0.0187 (internet disclosure as the independent regressor and suspension as the dependent regressor) to 0.2124 (legal profession as the independent regressor and probation as the dependent regressor). These sufficiently small standard errors provide no evidence of numerical problems with using the methodology.

Multinomial logistic regression (MLR) does not recognize cells with zero frequencies. The action of the analysis is to remove the entire observation (predictor and dependent variables) from the data set. The recommended correction for this concern is to collapse common variables into single observations or delete the entire observation with zero cell frequencies (Hosmer and Lemeshow 2000). The action taken to correct this concern is to remove the specific observations with cell frequencies of zero from the data set. The data is organized with groupings by year for the time period of 1987 to 1997 for three professions for 50 licensing boards. The total available annual grouped data observations are 3,150 for all three licensing boards. After removing the zero cell observations as well as the loss of the state of Kentucky in this analysis, the remaining data set includes 2,506 annual grouped data sets.

Next, MLR analysis makes the assumption of no multicollinearity among the predictor variables. Multicollinearity exists when two or more predictor variables are

highly correlated. The appropriate test for examining multicollinearity is a variance inflation factor test (VIF) (Meyers and Gamst 2006). A VIF test can be performed using an ordinary least square regression (OLS) with a non-conforming dependent variable because the test examines the impact of the dependent variable only (Hosmer and Lemeshow 2000). An OLS variance inflation factor tests were performed using an ordinary least squares regression. Tabachnick and Fidell (2001) allow that a measure of four or greater in the VIF scores suggest multicollinearity among the independent regresssors. No variable reported a VIF of greater than 4. A secondary measure of examining multicollinearity is to examine standard errors for high values. Specifically, a value of greater than two could signal a potential variable with multicollinearity. A value of 2.0 or higher can report a potential concern (Tabachnick and Fidell 2001). No individual predictor variable reported a value of greater than 0.2124. Therefore, no multicollinearity was noted in the analysis.

<div align="center">Model Fit – Multinomial Regression</div>

One method of examining the fit of a MLR initially involves testing the full saturated model verses a constant only model. This methodology compares whether the predictor variables improves the model by a possibility that is better than just chance. This test is determined by a model that compares a chi-squared test of the log likelihood ratio of the saturated model with the constant only model or the null hypothesis (Meyers and Gamst 2006). The Wald Statistic and the Likelihood Ratio are provided to examine the relationship between the null hypothesis and the full model. Tabachnick and Fidell (2001) report that the Wald Statistic could be influenced by large coefficients of the regresssors which potentially inflate the standard error and lower the Wald statistic. The

Likelihood Ratio is potentially less likely to be influenced by larger coefficients examine the fit of the model. Each model is significant at the $p < .05$ level which can be interpreted that the additional predictor variables are potentially better at predicting the disciplinary actions. Results of the each test are reported in Table 5.40.

Table 5.40 Wald and Likelihood Tests of the Null Hypothesis

Test	Chi-Squared	Pr > Chi-Squared
Wald Test	25604.3496	<.0001
Likelihood Ratio Test	28342.8131	<.0001

The next measure of fit is a pseudo r-squared Statistic that is used to examine the proportion of variance explained in the dependent variable. Specifically, this measures the change in the likelihood function between an intercept only model and the additional independent predictor variables specified within the equation. An r-squared statistic generated by an OLS regression is a comparison of the variance of the dependent variables that has been predicted by the independent regresssors. Pseudo r-squared and max-rescaled r-squared are generated to examine fit. The two r-squared statistics differ due to the introduction of the individual categorical variables into the max-rescaled r-squared statistic (Vogt 1999). The max-rescaled r-squared and pseudo r-squared statistics for the full model are 0.1699 and 0.1590 respectively. The two statistics are interpreted as the proportion of variance explained in the dependent variable by the predictor variables. The max-rescaled r-squared is expected to be larger than the pseudo r-squared due to the introduction of the total number of categorical variables as independent regressors.

Finally, the assumption of binomial variability is examined that could produce over-dispersion within the data sample. A Pearson chi-squared statistic and the deviance, divided by their degrees of freedom should be roughly equal to one. Failure to meet the assumption reports potential over-dispersion within the dataset. The null hypothesis for this test is that the Pearson statistic and the deviance, divided by their degrees of freedom are equal to one. Over-dispersion can result in large data sets with a limited number of predictor variables. The impacts of over-dispersion include impacts to fit of the model as well as inflated values of significance. Corrective models can be taken where the covariance matrix is rescaled by dividing by the Pearson coefficient (Mebane and Sekhon 2004). Results from the Pearson test are reported in Table 5.41.

Table 5.41 Results of Pearson Test for Over-Dispersion

Value	Degrees of Freedom	Value/DF	Pr> Chi-Square
33060.38	483	68.44	<.0001

Due to the findings of the Pearson test, the model has been rescaled by the Pearson coefficient to correct for over-dispersion.

Examination and Interpreting the Model

A likelihood-ratio test was conducted to evaluate the degree to which each individual predictor contributes to the model. Specifically, a comparison of models is performed with and without each independent regressor (Tabachnick and Fidell 2001). All four independent variables are significant in predicting the four reference categories of disciplinary actions for the four professions. Specifically, profession, disclosure, area, and population reported < 0.0001 significance (Mebane and Sekhon 2004). Table 5.42 reports the results of the analysis.

Table 5.42 Likelihood Ratio Tests Evaluating the Contribution of Each
Independent Variable to the Model

Independent Variable	Degrees of Freedom	Chi-Square	Pr > Chi-Square
Profession	6	12290.65	<.0001
Disclosure	9	2049.09	<.0001
Area	15	7150.11	<.0001
Population	9	3535.02	<.0001

Within the model, the following parameter estimates are provided with the use of a reference category of censured licenses. The use of a reference category gives log odds as estimated parameters for censured licenses verses revoked, censured, or placed on probation. In effect, the multinomial regression develops separate logistic regressions for each of the dependent categorical variables. The use of a base reference category places the dependent categorical variable as well as a base of independent reference categories into the intercept by coding the variables as zero. The intercepts are interpreted as the log-odds for the base category including the independent base reference categories as compared to the other dependent regressor categories. The remaining parameters are the individual categories for each independent and dependent regressor compared to the base reference category. Estimates are generated for each independent variable regressor category that are log-odds ratios which reports the level of influence, direction, and significance of the independent predictor variable category on the comparison between the base reference category and another reference category of the dependent variable. (Hosmer and Lemeshow 2000).

The parameter log-odds model chosen for this analysis uses censured licenses as the dependent reference category with independent variables of the no public disclosure, the legal profession, third quartile of the population of the profession, and the mid-

Atlantic region for geography. The reference categories of censured licenses and no-disclosure are chosen because they are the lowest level of disclosure. Comparisons between disciplinary actions and levels of disclosure can be made from the lowest level to the highest level. Table 5.43 reports the 42 intercepts and independent variable categories comparison relationships, estimates with direction, wald chi-squared values, and their level of significance.

Analysis of the parameter estimates reports four terms that are not significant: the suspended/intercept, suspended/disclosure: profession, revoked/area:Midwest, and suspended/population: first quartile. The area and population variables are used for controls to increase the predictive and explanatory powers of the model. Their lack of significance may not be potentially significant in interpreting the results of the model. The lack of significance of the suspended verses censured intercept is an unexpected outcome. Finally, the suspended verses censured parameter for disclosure to the profession is also an unexpected outcome. Based on expected theory, an increase in the level of disclosure, in this case from no disclosure to the profession, should be statistically significant.

More important to analysis of this model is the expected signs of the regression model within the disclosure parameter estimates. Theory expects that the levels of increasing disclosure would report a positive sign as the level of disclosure is increased. Signs for log-odds estimates are interpreted as increasing probabilities for positive estimates and decreasing probabilities for negative estimates. For three of the nine disclosure parameters, the signs are negative with increasing levels of disclosure.

Table 5.43 Non-Significant Parameter Maximum Likelihood Estimates –
Censure Reference Base

Parameter	Action	Estimate	Wald Chi-Squared	Pr > Chi Squared
Intercept	Probation	-2.0752	2573.9512	<.0001
Intercept	Revoked	-0.7601	517.6209	<.0001
Intercept	Suspended	-0.0528	2.8654	*0.0905**
Profession: Accounting	Probation	0.5571	6.8766	0.0087
Profession: Accounting	Revoked	3.5607	635.6125	<.0001
Profession: Accounting	Suspended	1.8164	149.9582	<.0001
Profession: Medical	Probation	1.2049	5079.26	<.0001
Profession: Medical	Revoked	1.5674	9113.1602	<.0001
Profession: Medical	Suspended	0.4164	786.7387	<.0001
Disclosure: Other	Probation	1.0742	784.3835	<.0001
Disclosure: Other	Revoked	*-0.2938***	63.4117	<.0001
Disclosure: Other	Suspended	*-0.2993***	64.7757	<.0001
Disclosure: Profession	Probation	0.4338	252.2090	<.0001
Disclosure: Profession	Revoked	*-0.1752***	64.5142	<.0001
Disclosure: Profession	Suspended	*-0.0129***	0.3751	*0.5402**
Disclosure: Internet	Probation	0.3829	163.4344	<.0001
Disclosure: Internet	Revoked	*-0.1054***	17.8554	<.0001
Disclosure: Internet	Suspended	*-0.0873***	13.1074	0.0003
Area: Midwest	Probation	0.1853	19.8161	<.0001
Area: Midwest	Revoked	-0.00966	0.0847	*0.7711**
Area: Midwest	Suspended	0.1198	14.0971	0.0002
Area: Northeast	Probation	-0.2775	42.0798	<.0001
Area: Northeast	Revoked	0.1473	20.0112	<.0001
Area: Northeast	Suspended	-0.2013	39.7032	<.0001
Area: Southeast	Probation	0.3673	81.4441	<.0001
Area: Southeast	Revoked	-0.2833	72.9632	<.0001
Area: Southeast	Suspended	-0.2075	41.6009	<.0001
Area: West	Probation	1.413	1046.4193	<.0001
Area: West	Revoked	0.2057	35.1966	<.0001
Area: West	Suspended	0.4601	194.4550	<.0001
Area: Southwest	Probation	0.1062	5.2421	0.0220
Area: Southwest	Revoked	-0.2237	33.6372	<.0001
Area: Southwest	Suspended	0.2472	47.4423	<.0001
Population: Fourth	Probation	0.8689	1683.7591	<.0001
Population: Fourth	Revoked	0.3301	276.3762	<.0001
Population: Fourth	Suspended	0.3593	378.9164	<.0001
Population: First	Probation	0.2904	45.2487	<.0001
Population: First	Revoked	0.3483	88.4158	<.0001
Population: First	Suspended	0.00712	0.0383	*0.8448**

Table 5.43 (Continued)

Population: Second	Probation	-0.3776	166.8759	<.0001
Population: Second	Revoked	-0.2672	108.4474	<.0001
Population: Second	Suspended	-0.2869	146.1739	<.0001

* Not significant at the 0.05 level
* * Unexpected signs
Note: Base reference category for dependent regressor: Censure
Note: Base reference categories for independent regresssors: no disclosure, legal profession, mid-Atlantic region, and third quartile of population

The base category for disclosure is no disclosure and with censure. As the categories increase in level of disclosure, the signs should be positive. Table 5.44 reports the significance for signs within the parameter estimates for the disclosure variable.

Table 5.44 Parameter Estimates for Disclosure Variable Categories with
Base Reference of Censure and No Disclosure

Parameter	Action	Estimate	Wald Chi-Squared	Pr > Chi Squared
Disclosure: Other	Probation	1.0742	784.3835	<.0001
Disclosure: Other	Revoked	*-0.2938***	63.4117	<.0001
Disclosure: Other	Suspended	*-0.2993***	64.7757	<.0001
Disclosure: Profession	Probation	0.4338	252.2090	<.0001
Disclosure: Profession	Revoked	*-0.1752***	64.5142	<.0001
Disclosure: Profession	Suspended	*-0.0129***	0.3751	*0.5402**
Disclosure: Internet	Probation	0.3829	163.4344	<.0001
Disclosure: Internet	Revoked	*-0.1054***	17.8554	<.0001
Disclosure: Internet	Suspended	*-0.0873***	13.1074	0.0003

As reported in Table 5.44, the parameter estimates for the disclosure reference categories have negative signs as they increase in level of disclosure for comparisons of censure verses revocation and/or suspension. Probation, regardless of level of disclosure, reports a positive sign. By examining the signs of the additional control variables, an explanation may be available. Within regional and population estimates, Table 5.45 reports the parameters with a negative sign.

Table 5.45 Parameter Estimates for Area and Population Categories
with Base Reference of Censure and No Disclosure

Parameter	Action	Estimate	Wald Chi-Squared	Pr > Chi Squared
Area: Midwest	Revoked	*-0.00966*	0.0847	*0.7711**
Area: Northeast	Probation	*-0.2775*	42.0798	<.0001
Area: Northeast	Suspended	*-0.2013*	39.7032	<.0001
Area: Southeast	Revoked	*-0.2833*	72.9632	<.0001
Area: Southeast	Suspended	*-0.2075*	41.6009	<.0001
Area: Southwest	Revoked	*-0.2237*	33.6372	<.0001
Population: Second	Probation	*-0.3776*	166.8759	<.0001
Population: Second	Revoked	*-0.2672*	108.4474	<.0001
Population: Second	Suspended	*-0.2869*	146.1739	<.0001

It appears that there is a potential interaction between the control variables of region for the Midwest, Northeast, Southeast, and Southwest are the level of disciplinary action increases from the base reference category of censure. In addition, the second quartile of population reports negative signs as the level of disciplinary action increases. It is important to establish that the variable of disclosure is significant in the overall model. However, when additional explanatory variables are included in a model, the expected signs of the variable are mixed.

Conclusion – Disclosure Hypothesis

Statistical findings tests of the disclosure hypothesis reported mixed results. With one exception, the ranked order of average sanctions by classifications increased with the higher levels of disclosure. The expected order of disclosure is no disclosure, disclosure to profession, other disclosure (newspaper and internet searchable databases), and internet disclosure. This order meets expectations of no disclosure, disclosure to profession, and internet disclosure. However, other disclosure reports the lowest levels of average sanctions per practitioner.

Next, the MLR reported significance for the categorical variable of disclosure with the four separate levels with the types of sanctions controlled by population, geographic area, and profession. Within this analysis, all independent regressors were significant. Within the individual parameter estimates, the disclosure variable reported signs that did not support the hypothesis. Specifically, disciplinary actions of revoked and suspended were negative in relationship to the base category of no disclosure. In effect, the probability odds of increasing disclosure were negative for half of the levels of disciplinary actions. The expected signs were positive in comparison to the lowest levels of disclosure. Finally, one of the parameter estimates of disclosure, to the profession, was not significant at the 0.05 level due for suspension. Again, based on the expected hypothesis, all disclosure estimates should have been positive.

CHAPTER 6

SUMMARY AND CONCLUSIONS

This chapter summarizes the study, provides an overview of its results, reviews the implications of the study's findings, offers its potential contributions, limitations of the study, and possible extensions of the study.

Summary of the Study

The conflict between the public mission of the accounting profession and the private interests of its membership has a developed literature steam within accounting research. This study expands this research by employing ETSR and its capacity to employ side-by-side comparisons with other profession as a bench mark for behavior. ETSR predicts that a profession will use its delegated self-regulatory function to the benefit of its membership due to potential agency problems that generate information asymmetry. This theory also predicts that two behaviors may mitigate the potential for information asymmetry. Specifically, the disclosure of disciplinary actions and profession's desire to prevent external regulation by signaling a zealous disciplinary function may serve to mitigate the agency concerns. Existing accounting research examining this phenomenon focuses on the specific behaviors of the accounting profession. Four distinct areas of research have developed that include professionalism, politics, the Parker model, and the public space.

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By expanding this research into ETSR, this study offers an extension of existing studies by testing new theory within the accounting profession.

This research employs an empirical test of the accounting profession's disciplinary function by reviewing actions taken by licensing boards to restrict the practice of its membership due to violations of its ethics codes and practice standards. In addition, the legal and medical professions are used as comparison benchmarks for evaluation. To gauge membership's capacity to self-discipline, a field study is deployed that uses the DIT2 as a level of moral ethical cognition. The DIT2 has established traits that gauge the behavior of risk taking personalities as well as criminal behavior. Based on existing research, the DIT2 should have an inverse relationship with disciplinary actions of each of the three professions examined in this study. Next, ETSR postulates that the threat of external regulation will result in an increase in disciplinary actions within a profession. This hypothesis is tested using inflection points within the accounting profession where the profession was under the threat of external regulation due to its actions. Finally, ETSR theorizes that increased disclosure will cause a higher level of disciplinary actions to be taken by self-regulated licensing boards due to the mitigation of information asymmetry. This theory is tested by evaluating the levels of disclosure of disciplinary actions within the accounting, legal, medical professions.

Summary of Research Findings

The following three hypothesizes are tested in this study:

1. DIT2 scores from the Medical, Legal, and Accounting professions will note report an inverse relationship to their levels of disciplinary actions.

2. The accounting profession will increase disciplinary actions towards its membership during periods of threats of external regulation

3. The type of disclosure of disciplinary actions made by state boards of accounting, state bar associations, and state medical boards will impact the number and severity of disciplinary actions

The DIT2 scores are ranked using a Tukey-Kramer post hoc test and report, in order, the following rankings: legal profession, medical profession, and accounting profession. The same test was performed using the average disciplinary actions from 1987 to 2006 for the three professions. The ranking orders of disciplinary actions were the medical, legal, and accounting professions. For this test to be invalidated based on DIT2 scores, the order of disciplinary actions should have shown a ranked order of accounting, medical, and legal professions. Accordingly, this hypothesis was supported.

Next, another Tukey-Kramer post hoc test is performed using average disciplinary actions from 1987 to 1991 and 1992 to 1996. The break in this test reflected the issuance of the McFarland Report in 1992 citing weaknesses within the accounting profession in the aftermath of the savings and loan failures in the 1980's. While the post McFarland Report data showed a higher average disciplinary action, it was not statistically significant. A second Tukey-Kramer post hoc test is performed for the time periods of 1997 to 2001 and 2002 to 2006 using average disciplinary actions in the accounting profession. The inflection point in this data represents the debate and ultimate passage of SARBOX that created the PCAOB. Data from this test showed a significant difference between the two inflection points. A secondary test was performed using a Chow Test for Structural Integrity using control variables of geography, population, fines, and

disclosure level for average disciplinary actions from 1997 to 2006. Results showed significance at the 0.05 level. Findings suggest that the accounting profession was signaling to attempt to prevent external regulation for the implementation of SARBOX.

Finally, the disclosure hypothesis is tested using the Tukey-Kramer post hoc test to compare the levels of disclosure for the three profession's average disciplinary actions from 1987 to 2007. Results showed that each defined level of disclosure by this research were significantly different at the 0.05 level. A secondary test was performed using MLR with control variables of disclosure, geographic area, profession, and population. In this analysis, the total number of individual disciplinary actions is analyzed. Disclosure was again significant within this test. However, the direction of types of disclosure within the parameter estimates reported signs that were negative verses the expected positive direction. Further examination reported that the findings may have a geographic and population interaction that impacted findings. However, overall findings support the hypothesis of increased disclosure.

Implications of Findings

Results of this study support ETSR and its predictive behaviors of Signal Theory and Disclosure Theory. Licensing boards of the accounting profession engage in the fewest disciplinary actions of the three profession and also report the lowest level of ethical scores on the DIT2 exam. These findings suggest that an agency problem exists within the profession's self-disciplinary processes. A more stark comparison is the sheer volume of disciplinary actions of the medical and legal professions to the accounting profession. While the three professions differ in function and ethical standards, the scale

of difference between the accounting and its counter parts is of extreme difference. This suggests that the profession should examine its disciplinary action functions.

Next, increasing the level of disclosure of sanctions within the licensing boards mitigates the agency concern. Specifically, infractions are issued a greater rate and at higher level as disclosure increases. Most importantly, the highest level of disclosure, internet publishing, reports the highest average disciplinary actions. This suggest that the licensing boards of the accounting profession increase their level of disclosure in an effort to mitigate potential agency problems.

Finally, the accounting profession has attempted to signal that its disciplinary function was sufficient allow continued delegation of duties. However, the threat of external regulation is of such significance that it was a direct threat to the profession. Specifically, SARBOX removed the capacity of the profession to regulate firms and individuals that perform audits of publically traded companies. In addition, the capacity to generate auditing standards is lost the profession for audits of public companies. This suggests that the professions private interests held significant influence despite continued threats of external regulation.

Potential Contributions

This research hopefully makes two contributions to the existing literature. First, IGTAR is expanded to include ETSR. As part of this expansion, empirical testing of the three profession's self-regulatory processes is made. To date, the literature reports studies of the accounting and medical profession's disciplinary actions. However, only one study of comparisons between the functions of the regulatory agencies is noted (Loeb 1972). The second contribution is the use of Signal and Disclosure Theory to examine behaviors

of the accounting profession. Signal and Disclosure Theory have been used extensively within accounting research to examine the behaviors of markets and participating companies. However, after literature review, it appears that these theories have not been used to examine the profession itself.

Limitations of the Study

In employing ETSR, Disclosure Theory, and Signal Theory, this research makes the assumption that the professions will act in a similar manner to the firm. Firm characteristics in studies employing Disclosure and Signal Theory are generally homogenous with regulated firms such as public utilities removed from sample. The characteristics within profession differ from large firms to sole practitioners. In addition, behavior across professions is not homogeneous.

Next, this study is dependent on the record keeping functions of the three professions. Within the medical and legal profession, disciplinary actions were gathered from a voluntary submission process. While no empirical evidence suggests that the data is flawed, the data was still collected on a voluntary basis by third parties and may be subject to error. Disciplinary actions for the accounting profession were collected individually and coded by the author. While checks were made for potential outliers within the data and care was taken in data processing, errors may have been made in coding and collection of the data.

Finally, this study is reliant on the DIT2 test for comparison of the first hypothesis. The DIT2 is the most widely used moral cognition test within the business disciplines. However, it reports two significant biases. First, it reports a political bias with those of conservative beliefs reporting lower scores than those of liberal beliefs.

This potential bias may be represented within the differences of the three professions. A control was placed within the survey instrument for self-identified political beliefs. However, this control may not be sufficient to mitigate the bias. The second bias results from individuals who participate in ethics courses as part of continuing education requirements. These professionals may have the capacity to "game" the test due to experience associated with ethics training. Ethics training for all three professions is generally required by most licensing boards. However, it is not consistent.

Possible Extensions of Research

In a secondary examination of the public/private interest of the accounting profession, the Parker (1994) and the Bedard (2001) models have not been applied to the disciplinary processes of the United States. While the scope of a study using these models may not be national, an examination of the types of disciplined practicioners, severity of fine, level of disclosure, evidentiary proof requirements, and control variables may provide additional incite into the accounting profession's disciplinary processes. To further the examination of the potential biases of the DIT2 examine, a continuation of the Bailey et al. (2005) article that examines political bias within the accounting profession could be expanded to review ethical training bias within the three professions.

APPENDIX A

SAS SOFTWARE CODE

Hypothesis 1 – Economic Theory of the Profession

```
Proc import out= work.dit
        datafile= "E:\dissert\data\total\sas_h1.xls"
        dbms=excel replace;
    sheet="DIT";
    getnames=YES;
    mixed=YES;
    usedate=YES;
    scantime=YES;
run;
proc sort data=DIT;
        by profession;
proc means data=DIT maxdec=10 n mean sum std;
        title2 'Simple Summary Statistics';
        by Profession;
        var DIT;
Proc plot data=DIT;
        title2 'Plot of the Raw Data';
        plot profession*DIT;
        plot DIT*profession;
Proc anova data=DIT;
        Title2 'Tukeys Test';
        class profession;
        model DIT=profession;
        means profession / tukey cldiff;
        means profession / tukey lines;
Proc GLM  data=DIT;
        Title2 'Levene Test';
        class profession;
        model DIT=profession;
        means profession / hovtest=levene hovtest=bf;
        output out=sanfit p=yhat r=resid;
Proc Univariate data=DIT normal plot;
        Title2 'Normal Test';
        var sanction;
Proc reg data=DIT;
        Title2 'Durbin Watson';
        model DIT = /dw;
Proc reg data=sanfit;
        model resid = /dw;
Proc Plot;
        plot resid*profession;
        plot resid*yhat;
run;
```

```
Proc import out= work.discipline
        datafile= "E:\dissert\data\total\sas_h1.xls"
        dbms=excel replace;
    sheet="discipline";
    getnames=YES;
    mixed=YES;
    usedate=YES;
    scantime=YES;
run;
proc sort data=discipline;
        by profession;
proc means data=discipline maxdec=10 n mean sum std;
        title2 'Simple Summary Statistics';
        by Profession;
        var sanction;
Proc plot data=discipline;
        title2 'Plot of the Raw Data';
        plot profession*sanction;
        plot sanction*profession;
Proc anova data=discipline;
        Title2 'Tukeys Test';
        class profession;
        model sanction=profession;
        means profession / tukey cldiff;
        means profession / tukey lines;
Proc GLM  data=discipline;
        Title2 'Levene Test';
        class profession;
        model sanction=profession;
        means profession / hovtest=levene hovtest=bf;
        output out=sanfit p=yhat r=resid;
Proc Univariate data=discipline normal plot;
        Title2 'Normal Test';
        var sanction;
Proc reg data=discipline;
        Title2 'Durbin Watson';
        model sanction = /dw;
Proc reg data=sanfit;
        model resid = /dw;
Proc Plot;
        plot resid*profession;
        plot resid*yhat;
run;
```

Hypothesis 2 – Signal Theory

```
Proc import out=work.chow
        datafile= "E:\dissert\data\total\sas_h2.xls"
        dbms=excel replace;
    sheet="h2";
    getnames=yes;
    mixed=yes;
    usedate=yes;
    scantime=yes;
run;
proc sort data=chow;
by chow;
run;
proc means data=chow maxdec=10 n mean clm css cv lclm uclm std min max;
        title2 'Simple Summary Statistics';
        class chow;
        by chow;
run;
proc sort data=chow;
        by state;
run;
proc means data=chow maxdec=10 n mean clm css cv lclm uclm std min max;
        title2 'Simple Summary Statistics';
        class state;
        by state;
run;
proc sort data=chow;
        by area;
run;
proc means data=chow maxdec=10 n mean clm css cv lclm uclm std min max;
        title2 'Simple Summary Statistics';
        class area;
        by area;
Run;
proc sort data=chow;
        by chow;
run;
Proc GLM  data=chow;
        class chow;
        model sanction=chow;
        means chow / hovtest=levene hovtest=bf;
        output out=sanfit p=yhat r=resid;
Proc Univariate data=chow normal plot;
        var sanction;
```

```
Proc reg data=chow;
        model sanction = /dw;
Proc reg data=sanfit;
        model resid = /dw;
Proc Plot;
        plot resid*disclosure;
        plot resid*yhat;
run;
Proc anova data=chow;
        class chow;
        model sanction=chow;
        means chow / tukey cldiff alpha=.05;
        means chow / tukey lines alpha=.05;
run;
Proc import out=work.chow
        datafile= "E:\dissert\data\total\sas_h2.xls"
        dbms=excel replace;
    Sheet="aicpa"
    Getnames=yes;
    Mixed=yes;
    Usedata=yes;
    Scantime=yes;
Run;
Proc Sort data=chow;
        by year;
Run;
Proc freq data=chow;
        tables year;
Run;
Proc print data=chow;
Run;
Proc autoreg data=chow;
        Title2 "Chow Test";
        model DiscAct = Fine NoDisc Profession Internet  Midatl Midwest NE SE SW
        Population /Chow = 121;
Run;
Proc reg data=chow;
        Title2 "Collinearity and Autocorrelation Tests";
        model DiscAct = Fine NoDisc Profession Internet  Midatl Midwest NE SE SW
        Population / VIF TOL DW;
        output out=sinfit (keep=state fine nodisc profession internet midatl midwest ne se
        sw population r lev cd dffit) rstudent=r h=lev cookd=cd dffits=dffit;
Run;
```

```
proc print data=sinfit;
        Title2 "Outliers Influence - Dffits";
        where abs(dffit)> (2*sqrt(10/240));
        var state fine nodisc profession internet midatl midwest ne se sw population dffit;
Run;
goptions reset=all;
Proc reg data=chow;
        Title2 "White's Test and Residual Plot - Normality";
        model DiscAct = Fine NoDisc Profession Internet  Midatl Midwest NE SE SW
Population / spec;
        output out=sinfit (keep= state fine nodisc profession internet midatl midwest ne se
sw population r fv) residual=r predicted=fv;
plot r. *p.;
Run;
proc univariate data=sinfit normal;
 Title2 "Tests of Normality & QQPlot";
 var r;
 qqplot r / normal(mu=est sigma=est);
run;
Proc import out= work.chow
        Datafile= "E:\dissert\data\total\sas_h2.xls"
        Dbms=excel replace;
    Sheet="state";
    Getnames=yes;
    Mixed=yes;
    Usedate=yes;
    Scantime=yes;
Proc Sort data=chow;
        by state;
Run;
proc means data=chow maxdec=10 n mean std sum;
        title2 'Simple Summary Statistics by Year';
        by state;
        var total;
Proc import out= work.chow
        Datafile= "E:\dissert\data\total\sas_h2.xls"
        Dbms=excel replace;
        Sheet="sox";
    Getnames=Yes;
    Mixed=yes;
    Usedata=yes;
    Scantime=yes;
Run;
Proc Sort data=chow;
        by year;
Run;
```

```
Proc freq data=chow;
        tables year;
Run;
Proc means data=chow mean sum n std;
        class year;
        by year;
run;
Proc autoreg data=chow;
        Title2 "Chow Test";
        model DiscAct = Fine NoDisc Profession Internet Midatl Midwest NE SE SW
        Population /Chow = 124;
Run;
Proc autoreg data=chow;
        Title2 "Chow Test - Reduced Model";
        model DiscAct = Fine Population /Chow = 124;
Run;
Proc reg data=chow;
        Title2 "Autocorrelation, Collinarity Tests";
        model DiscAct = Fine NoDisc Profession Internet  Midatl Midwest NE SE SW
        Population / VIF TOL DW;
        output out=sinfit      (keep=state fine nodisc profession internet midatl midwest
        ne se sw population r lev cd dffit) rstudent=r h=lev cookd=cd dffits=dffit;
Run;
Proc print data=sinfit;
        Title2 "Outliers Influential Observations";
        where abs(dffit)> (2*sqrt(10/244));
        var state fine nodisc profession internet midatl midwest ne se sw population dffit;
Run;
Goptions reset=all;
Proc reg data=chow;
        Title2 "Heteroscedasticity - Residual Plot - White's Test";
        model DiscAct = Fine NoDisc Profession Internet  Midatl Midwest NE SE SW
Population / spec;
        output out=sinfit (keep= state fine nodisc profession internet midatl midwest ne se
        sw population r fv) residual=r predicted=fv;
        plot r. *p.;
Run;
proc univariate data=sinfit normal;
        Title2 "Tests of Normality - QQPlot";
        var r;
         qqplot r / normal(mu=est sigma=est);
Run;
```

Hypothesis 3 – Disclosure Theory

```
Proc import out= work.disc
        Datafile= "E:\dissert\data\total\sas_h3.xls"
        Dbms=excel replace;
        Sheet="sas_h3_class";
        Getnames=yes;
        Mixed=yes;
        Usedate=yes;
        Scantime=yes;
Run;
Proc Reg data=disc;
        model count = disclosure area population / VIF;
run;
Proc freq data = disc;
        tables action * profession / out=freqcount outexpect sparse;
        weight Count;
run;
Proc freq data = disc;
        table action / out=freqcount outexpect sparse;
        weight Count;
run;
Proc freq data = disc;
        tables action * area / out=freqcount1 outexpect sparse;
        weight Count;
run;
Proc freq data = disc;
        tables action * population / out=freqcount2 outexpect sparse;
        weight Count;
Run;
Proc freq data = disc;
        tables action * disclosure / out=freqcount3 outexpect sparse;
        weight Count;
Run;
Proc logistic data=disc;
        freq count;
        class action profession disclosure area population /
                                        order=data
                                        param=ref
                                        ref=first;
```

```
        model action = profession disclosure area population /
                            link=glogit
                            aggregate
                            scale=williams
                            rsquare
                            covb
                            rb;

        output out=predict predicted=predicted predprobs = i;
Run;
        .
```

APPENDIX B

SURVEY INSTRUMENT

DIT Survey with Demographic Questionnaire for Accounting

Page 1 - Question 1 - Yes or No

Acknowledgement:
Thank you for participating in this survey. Your participation is vital to the success of this research. This study is concerned with how ACCOUNTING professionals define issues of a social problem.
Participation in this study is strictly voluntary. Results will be completely confidential and only viewed by researchers. The survey should take between 15 and 20 minutes to complete.
The survey is divided into several stories about specific social problems. After each story, there will be a list of questions. The questions that follow each story represent different issues that might be raised by the problem. In other words, the questions/issues raise different ways of judging what is important in making a decision about the social problem. You will be asked to rate and rank the questions in terms of how important each one seems to you.
PLEASE TRY TO FINISH THE QUESTIONNAIRE IN ONE SITTING.
I acknowledge below that my participation in this research is strictly voluntary. I also understand that the results of my survey will be confidential, accessible only to the researchers conducting the survey.

Acknowledgement:

    ○ Yes
    ○ No

Page 2 - Heading

Example of the task:
Imagine you are about to vote for a candidate for the Presidency of the United States. Before you vote, you are asked to rate the importance of five issues you could consider in deciding who to vote for. Rate the importance of each item (issue) by checking the appropriate box.

Page 2 - Question 2 - Rating Scale - Matrix

Rate the following issues in terms of importance:

	Great	Much	Some	Little	None
1. Financially are you personally better off now than you were four years ago?	☐	☐	☐	☐	☐
2. Does one candidate have a superior moral character?	☐	☐	☐	☐	☐
3. Which candidate stands the tallest?	☐	☐	☐	☐	☐
4. Which candidate would make the best world leader?	☐	☐	☐	☐	☐
5. Which candidate has the best ideas for our country's internal problems, like crime and health care?	☐	☐	☐	☐	☐

Page 2 - Heading

Note. Some items may seem irrelevant or do not make sense (as in item #3). In that case, rate the item as "NO".
After you rate all of the items you will be asked to RANK the TOP FOUR ITEMS in terms of importance. Note that it makes sense that the items you rate as most important should be RANKED as well. So if you only rated Item 1 as having great importance, you should rank it as most important.

Page 2 - Heading

Consider the 5 issues above and rank the FOUR ISSUES that are most important:

Page 2 - Question 3 - Choice - One Answer (Drop Down)

What is the most important issue from above?

- ◯ 1. Financially are you personally better off now than you were four years ago?
- ◯ 2. Does one candidate have a superior moral character?
- ◯ 3. Which candidate stands the tallest?
- ◯ 4. Which candidate would make the best world leader?
- ◯ 5. Which candidate has the best ideas for our country's internal problems, like crime and health care?

Page 2 - Question 4 - Choice - One Answer (Drop Down)

What is the second most important issue from above?

- ◯ 1. Financially are you personally better off now than you were four years ago?
- ◯ 2. Does one candidate have a superior moral character?
- ◯ 3. Which candidate stands the tallest?
- ◯ 4. Which candidate would make the best world leader?
- ◯ 5. Which candidate has the best ideas for our country's internal problems, like crime and health care?

Page 2 - Question 5 - Choice - One Answer (Drop Down)

What is the third most important issue from above?

- ◯ 1. Financially are you personally better off now than you were four years ago?
- ◯ 2. Does one candidate have a superior moral character?
- ◯ 3. Which candidate stands the tallest?
- ◯ 4. Which candidate would make the best world leader?
- ◯ 5. Which candidate has the best ideas for our country's internal problems, like crime and health care?

Page 2 - Question 6 - Choice - One Answer (Drop Down)

What is the fourth most important issue from above?

- ◯ 1. Financially are you personally better off now than you were four years ago?
- ◯ 2. Does one candidate have a superior moral character?
- ◯ 3. Which candidate stands the tallest?
- ◯ 4. Which candidate would make the best world leader?
- ◯ 5. Which candidate has the best ideas for our country's internal problems, like crime and health care?

Page 2 - Heading

Again, remember to consider all of the items before you rank the four most important items and be sure that you only rank items that you found important.
Note also that before you begin to rate and rank items you will be asked to state your preference for what action to take in the story.
Thank you and you may begin the questionnaire!

Page 3 - Heading

Story 1
Famine
The small village in Northern India has experienced shortages of food before, but this year's famine is worse than ever. Some families are even trying to feed themselves by making soup from tree bark. Mustaq Singh's family is near starvation. He has heard that a rich man in his village has supplies of food stored away and is hoarding food while its price goes higher so that he can sell the food later at a huge profit. Mustaq is desperate and thinks about stealing some food from the rich man's warehouse. The small amount of food that he needs for his family probably would not even be missed.

Page 3 - Question 7 - Choice - One Answer (Bullets)

What should Mustaq Singh do? Do you favor the action of taking food?

- ○ Should take the food
- ○ Cannot decide
- ○ Should not take the food

Page 3 - Question 8 - Rating Scale - Matrix

Rate the following issues in terms of importance:

	Great	Much	Some	Little	None
1. Is Mustaq Singh courageous enough to risk getting caught for stealing?	☐	☐	☐	☐	☐
2. Is it not only natural for a loving father to care so much for his family that he would steal?	☐	☐	☐	☐	☐
3. Should not the community's laws be upheld?	☐	☐	☐	☐	☐
4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?	☐	☐	☐	☐	☐
5. Does the rich man have any legal right to store food when other people are starving?	☐	☐	☐	☐	☐
6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?	☐	☐	☐	☐	☐
7. What values are going to be the basis for social cooperation?	☐	☐	☐	☐	☐
8. Is the epitome of eating reconcilable with the culpability of stealing?	☐	☐	☐	☐	☐
9. Does the rich man deserve to be robbed for being so greedy?	☐	☐	☐	☐	☐
10. Is not private property an institution to enable the rich to steal from the poor?	☐	☐	☐	☐	☐
11. Would stealing bring about more total good for everybody concerned or wouldn't it?	☐	☐	☐	☐	☐
12. Are laws getting in the way of the most basic claim of any member of a society?	☐	☐	☐	☐	☐

Page 3 - Heading

Consider the 12 issues above and rank the FOUR ISSUES that are most important:

Page 3 - Question 9 - Choice - One Answer (Drop Down)

What is the most important issue from above?

- ○ 1. Is Mustaq Singh courageous enough to risk getting caught for stealing?
- ○ 2. Is it not only natural for a loving father to care so much for his family that he would steal?
- ○ 3. Should not the community's laws be upheld?
- ○ 4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?
- ○ 5. Does the rich man have any legal right to store food when other people are starving?
- ○ 6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?
- ○ 7. What values are going to be the basis for social cooperation?
- ○ 8. Is the epitome of eating reconcilable with the culpability of stealing?
- ○ 9. Does the rich man deserve to be robbed for being so greedy?
- ○ 10. Is not private property an institution to enable the rich to steal from the poor?
- ○ 11. Would stealing bring about more total good for everybody concerned or wouldn't it?
- ○ 12. Are laws getting in the way of the most basic claim of any member of a society?

Page 3 - Question 10 - Choice - One Answer (Drop Down)

What is the second most important issue from above?

◯ 1. Is Mustaq Singh courageous enough to risk getting caught for stealing?
◯ 2. Is it not only natural for a loving father to care so much for his family that he would steal?
◯ 3. Should not the community's laws be upheld?
◯ 4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?
◯ 5. Does the rich man have any legal right to store food when other people are starving?
◯ 6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?
◯ 7. What values are going to be the basis for social cooperation?
◯ 8. Is the epitome of eating reconcilable with the culpability of stealing?
◯ 9. Does the rich man deserve to be robbed for being so greedy?
◯ 10. Is not private property an institution to enable the rich to steal from the poor?
◯ 11. Would stealing bring about more total good for everybody concerned or wouldn't it?
◯ 12. Are laws getting in the way of the most basic claim of any member of a society?

Page 3 - Question 11 - Choice - One Answer (Drop Down)

What is the third most important issue from above?

◯ 1. Is Mustaq Singh courageous enough to risk getting caught for stealing?
◯ 2. Is it not only natural for a loving father to care so much for his family that he would steal?
◯ 3. Should not the community's laws be upheld?
◯ 4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?
◯ 5. Does the rich man have any legal right to store food when other people are starving?
◯ 6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?
◯ 7. What values are going to be the basis for social cooperation?
◯ 8. Is the epitome of eating reconcilable with the culpability of stealing?
◯ 9. Does the rich man deserve to be robbed for being so greedy?
◯ 10. Is not private property an institution to enable the rich to steal from the poor?
◯ 11. Would stealing bring about more total good for everybody concerned or wouldn't it?
◯ 12. Are laws getting in the way of the most basic claim of any member of a society?

Page 3 - Question 12 - Choice - One Answer (Drop Down)

What is the fourth most important issue from above?

◯ 1. Is Mustaq Singh courageous enough to risk getting caught for stealing?
◯ 2. Is it not only natural for a loving father to care so much for his family that he would steal?
◯ 3. Should not the community's laws be upheld?
◯ 4. Does Mustaq Singh know a good recipe for preparing soup from tree bark?
◯ 5. Does the rich man have any legal right to store food when other people are starving?
◯ 6. Is the motive of Mustaq Singh to steal for himself or to steal for his family?
◯ 7. What values are going to be the basis for social cooperation?
◯ 8. Is the epitome of eating reconcilable with the culpability of stealing?
◯ 9. Does the rich man deserve to be robbed for being so greedy?
◯ 10. Is not private property an institution to enable the rich to steal from the poor?
◯ 11. Would stealing bring about more total good for everybody concerned or wouldn't it?
◯ 12. Are laws getting in the way of the most basic claim of any member of a society?

Page 4 - Heading

> Story 2
> Reporter
> Molly Dayton has been a news reporter for the Gazette newspaper for over a decade. Almost by accident, she learned that one of the candidates for Lieutenant Governor for her state, Grover Thompson, had been arrested for shop-lifting 20 years earlier. Reporter Dayton found out that early in his life, Candidate Thompson has undergone a confused period and done things he later regretted, actions which would be very out of character now. His shoplifting had been a minor offense and charges had been dropped by the department store. Thomson has not only straightened himself out since then, but built a distinguished record in helping many people and in leading constructive community projects. Now, Reporter Dayton regards Thompson as the best candidate in the field and likely to go on to important leadership positions in the state. Reporter Dayton wonders whether or not she should write the story about Thompson's earlier troubles because in the upcoming close and heated election, she fears that such a news story could wreck Thompson's chance to win.

Page 4 - Question 13 - Choice - One Answer (Bullets)

> Do you favor the action of reporting the story?

- ○ Should report the story
- ○ Cannot decide
- ○ Should not report the story

Page 4 - Question 14 - Rating Scale - Matrix

> Rate the following issues in terms of importance.

	Great	Much	Some	Little	None
1. Doesn't the public have a right to know all the facts about all the candidates for office?	☐	☐	☐	☐	☐
2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?	☐	☐	☐	☐	☐
3. If Dayton does not publish the story, wouldn't another reporter get the story anyway and get the credit for investigative reporting?	☐	☐	☐	☐	☐
4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?	☐	☐	☐	☐	☐
5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shoplifter?	☐	☐	☐	☐	☐
6. What would best service society?	☐	☐	☐	☐	☐
7. If the story is true, how can it be wrong to report it?	☐	☐	☐	☐	☐
8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?	☐	☐	☐	☐	☐
9. Does the right of "habeaus corpus" apply in this case?	☐	☐	☐	☐	☐
10. Would the election process be more fair with or without reporting the story?	☐	☐	☐	☐	☐
11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them good or bad?	☐	☐	☐	☐	☐
12. Isn't it a reporter's duty to report all the news regardless of the circumstances?	☐	☐	☐	☐	☐

Page 4 - Heading

> Consider the 12 Issues above and rank the FOUR ISSUES that are most important:

Page 4 - Question 15 - Choice - One Answer (Drop Down)

> What is the most important item from the issues above?

- ○ 1. Doesn't the public have a right to know all the facts about all the candidates for office?
- ○ 2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?
- ○ 3. If Dayton does not publish the story, wouldn't another reporter get the story anyway and get the credit for investigative reporting?
- ○ 4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?
- ○ 5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shoplifter?

○ 6. What would best service society?

○ 7. If the story is true, how can it be wrong to report it?

○ 8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?

○ 9. Does the right of "habeaus corpus" apply in this case?

○ 10. Would the election process be more fair with or without reporting the story?

○ 11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them good or bad?

○ 12. Isn't it a reporter's duty to report all the news regardless of the circumstances?

Page 4 - Question 16 - Choice - One Answer (Drop Down)

What is the second most important issue from above?

○ 1. Doesn't the public have a right to know all the facts about all the candidates for office?

○ 2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?

○ 3. If Dayton does not publish the story, wouldn't another reporter get the story anyway and get the credit for investigative reporting?

○ 4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?

○ 5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shoplifter?

○ 6. What would best service society?

○ 7. If the story is true, how can it be wrong to report it?

○ 8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?

○ 9. Does the right of "habeaus corpus" apply in this case?

○ 10. Would the election process be more fair with or without reporting the story?

○ 11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them good or bad?

○ 12. Isn't it a reporter's duty to report all the news regardless of the circumstances?

Page 4 - Question 17 - Choice - One Answer (Drop Down)

What is the third most important issue from above?

○ 1. Doesn't the public have a right to know all the facts about all the candidates for office?

○ 2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?

○ 3. If Dayton does not publish the story, wouldn't another reporter get the story anyway and get the credit for investigative reporting?

○ 4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?

○ 5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shoplifter?

○ 6. What would best service society?

○ 7. If the story is true, how can it be wrong to report it?

○ 8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?

○ 9. Does the right of "habeaus corpus" apply in this case?

○ 10. Would the election process be more fair with or without reporting the story?

○ 11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them good or bad?

○ 12. Isn't it a reporter's duty to report all the news regardless of the circumstances?

Page 4 - Question 18 - Choice - One Answer (Drop Down)

What is the fourth most important Issue from above?

- ○ 1. Doesn't the public have a right to know all the facts about all the candidates for office?
- ○ 2. Would publishing the story help Reporter Dayton's reputation for investigative reporting?
- ○ 3. If Dayton does not publish the story, wouldn't another reporter get the story anyway and get the credit for investigative reporting?
- ○ 4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does?
- ○ 5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shoplifter?
- ○ 6. What would best service society?
- ○ 7. If the story is true, how can it be wrong to report it?
- ○ 8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson?
- ○ 9. Does the right of "habeaus corpus" apply in this case?
- ○ 10. Would the election process be more fair with or without reporting the story?
- ○ 11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them good or bad?
- ○ 12. Isn't it a reporter's duty to report all the news regardless of the circumstances?

Page 5 - Heading

Story 3
School Board
Mr. Grant has been elected to the School Board District 190 and was chosen to be chairman. The district is bitterly divided over the closing of one of the high schools. One of the high schools has to be closed for financial reasons, but there is no agreement over which school to close. During his election to the School Board, Mr. Grant had proposed a series of "Open Meetings" in which members of the community could voice their opinions. He hoped that dialogue would make the community realize the necessity of closing one high school. Also, he hoped that through open discussions, the difficulty of the decision would be appreciated, and that the community would ultimately support the school board decision. The first "Open Meeting" was a disaster. Passionate speeches dominated the microphones and threatened violence. The meeting barely closed without fist-fights. Later in the week, school board members received threatening phone calls. Mr. Grant wonders if he ought to call off the next "Open Meeting".

Page 5 - Question 19 - Choice - One Answer (Bullets)

Do you favor calling off the next "Open Meeting"?

- ○ Should call off the next meeting
- ○ Cannot decide
- ○ Should have the next open meeting

Page 5 - Question 20 - Rating Scale - Matrix

Rate the following issues in terms of importance:

	Great	Much	Some	Little	None
1. Is Mr. Grant required by law to have "Open Meetings" on major school board decisions?	☐	☐	☐	☐	☐
2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the "Open Meetings"?	☐	☐	☐	☐	☐
3. Would the community be even angrier with Mr. Grand if he stopped the "Open Meetings"	☐	☐	☐	☐	☐
4. Would the change in plans prevent scientific assessment?	☐	☐	☐	☐	☐
5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?	☐	☐	☐	☐	☐
6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?	☐	☐	☐	☐	☐
7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?	☐	☐	☐	☐	☐
8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?	☐	☐	☐	☐	☐
9. Are some people deliberately undermining the shcool board process by playing some sort of power game?	☐	☐	☐	☐	☐
10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?	☐	☐	☐	☐	☐
11. Is the trouble coming from only a few hotheads and is the community in general really fair-minded and democratic?	☐	☐	☐	☐	☐
12. What is the liklihood that a good decision could be made without open discussion from the community?	☐	☐	☐	☐	☐

Page 5 - Heading

Consider the 12 issues you rated above and rank only the FOUR issues which are the most important:

Page 5 - Question 21 - Choice - One Answer (Drop Down)

What is the most important item from the issues above?

○ 1. Is Mr. Grant required by law to have "Open Meetings" on major school board decisions?
○ 2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the "Open Meetings"?
○ 3. Would the community be even angrier with Mr. Grand if he stopped the "Open Meetings"
○ 4. Would the change in plans prevent scientific assessment?
○ 5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?
○ 6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?
○ 7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?
○ 8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?
○ 9. Are some people deliberately undermining the shcool board process by playing some sort of power game?
○ 10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?
○ 11. Is the trouble coming from only a few hotheads and is the community in general really fair-minded and democratic?
○ 12. What is the liklihood that a good decision could be made without open discussion from the community?

Page 5 - Question 22 - Choice - One Answer (Drop Down)

What is the second important item from the issues above?

○ 1. Is Mr. Grant required by law to have "Open Meetings" on major school board decisions?
○ 2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the "Open Meetings"?
○ 3. Would the community be even angrier with Mr. Grand if he stopped the "Open Meetings"
○ 4. Would the change in plans prevent scientific assessment?

○ 5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?

○ 6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?

○ 7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?

○ 8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?

○ 9. Are some people deliberately undermining the shcool board process by playing some sort of power game?

○ 10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?

○ 11. Is the trouble coming from only a few hotheads and is the community in general really fair-minded and democratic?

○ 12. What is the liklihood that a good decision could be made without open discussion from the community?

Page 5 - Question 23 - Choice - One Answer (Drop Down)

What is the third important item from the issues above?

○ 1. Is Mr. Grant required by law to have "Open Meetings" on major school board decisions?

○ 2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the "Open Meetings"?

○ 3. Would the community be even angrier with Mr. Grand if he stopped the "Open Meetings"

○ 4. Would the change in plans prevent scientific assessment?

○ 5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?

○ 6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?

○ 7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?

○ 8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?

○ 9. Are some people deliberately undermining the shcool board process by playing some sort of power game?

○ 10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?

○ 11. Is the trouble coming from only a few hotheads and is the community in general really fair-minded and democratic?

○ 12. What is the liklihood that a good decision could be made without open discussion from the community?

Page 5 - Question 24 - Choice - One Answer (Drop Down)

What is the fourth important item from the issues above?

○ 1. Is Mr. Grant required by law to have "Open Meetings" on major school board decisions?

○ 2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the "Open Meetings"?

○ 3. Would the community be even angrier with Mr. Grand if he stopped the "Open Meetings"

○ 4. Would the change in plans prevent scientific assessment?

○ 5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings?

○ 6. Would the community regard Mr. Grant as a coward if he stopped the open meetings?

○ 7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard?

○ 8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches?

○ 9. Are some people deliberately undermining the shcool board process by playing some sort of power game?

○ 10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future?

○ 11. Is the trouble coming from only a few hotheads and is the community in general really fair-minded and democratic?

○ 12. What is the liklihood that a good decision could be made without open discussion from the community?

Page 6 - Heading

Story 4
Cancer
Mrs. Bennett is 62 years old, and in the last phases of colon cancer. She is in terrible pain and asks the doctor to give her more pain-killer medicine. The doctor has given her the maximum safe dose already and is reluctant to increase the dosage because it would probably hasten her death. In a clear and rational mental state, Mrs. Bennett says that she realizes this; but she wants to end her suffering even if it means ending her life. Should the doctor give her an increased dosage?

Page 6 - Question 25 - Choice - One Answer (Bullets)

Do you favor the action of giving more medicine?

○ Should give Mrs. Bennett an increased dosage to make her die
○ Cannot decide
○ Should not give her an increased dosage

Page 6 - Question 26 - Rating Scale - Matrix

Rate the following issues in terms of importance:

	Great	Much	Some	Little	None
1. Isn't the doctor obligated by the same laws as everyone else if giving an overdose would be the same as killing her?	☐	☐	☐	☐	☐
2. Wouldn't society be better off without so many laws about what doctors can and cannot do?	☐	☐	☐	☐	☐
3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?	☐	☐	☐	☐	☐
4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?	☐	☐	☐	☐	☐
5. Is the painkiller medicine an active heliotropic drug?	☐	☐	☐	☐	☐
6. Does the state have the right to force continued existence of those who do not want to live?	☐	☐	☐	☐	☐
7. Is helping end another's life ever a responsible act of cooperation?	☐	☐	☐	☐	☐
8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?	☐	☐	☐	☐	☐
9. Would not the doctor feel guilty from giving Mrs. Bennett so much drug that she died?	☐	☐	☐	☐	☐
10. Should only God decide when a person's life should end?	☐	☐	☐	☐	☐
11. Shouldn't society protect everyone against being killed?	☐	☐	☐	☐	☐
12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?	☐	☐	☐	☐	☐

Page 6 - Heading

Consider the 12 issues above and rank the FOUR ISSUES that are most important:

Page 6 - Question 27 - Choice - One Answer (Drop Down)

What is the most important item from the issues above?

○ 1. Isn't the doctor obligated by the same laws as everyone else if giving an overdose would be the same as killing her?
○ 2. Wouldn't society be better off without so many laws about what doctors can and cannot do?
○ 3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?
○ 4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?
○ 5. Is the painkiller medicine an active heliotropic drug?
○ 6. Does the state have the right to force continued existence of those who do not want to live?
○ 7. Is helping end another's life ever a responsible act of cooperation?
○ 8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?
○ 9. Would not the doctor feel guilty from giving Mrs. Bennett so much drug that she died?
○ 10. Should only God decide when a person's life should end?
○ 11. Shouldn't society protect everyone against being killed?
○ 12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?

Page 6 - Question 28 - Choice - One Answer (Drop Down)

What is the second most important issue from above?

○ 1. Isn't the doctor obligated by the same laws as everyone else if giving an overdose would be the same as killing her?
○ 2. Wouldn't society be better off without so many laws about what doctors can and cannot do?
○ 3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?
○ 4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?
○ 5. Is the painkiller medicine an active heliotropic drug?
○ 6. Does the state have the right to force continued existence of those who do not want to live?
○ 7. Is helping end another's life ever a responsible act of cooperation?
○ 8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?
○ 9. Would not the doctor feel guilty from giving Mrs. Bennett so much drug that she died?
○ 10. Should only God decide when a person's life should end?
○ 11. Shouldn't society protect everyone against being killed?
○ 12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?

Page 6 - Question 29 - Choice - One Answer (Drop Down)

What is the third most important issue from above?

○ 1. Isn't the doctor obligated by the same laws as everyone else if giving an overdose would be the same as killing her?
○ 2. Wouldn't society be better off without so many laws about what doctors can and cannot do?
○ 3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?
○ 4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?
○ 5. Is the painkiller medicine an active heliotropic drug?
○ 6. Does the state have the right to force continued existence of those who do not want to live?
○ 7. Is helping end another's life ever a responsible act of cooperation?
○ 8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?
○ 9. Would not the doctor feel guilty from giving Mrs. Bennett so much drug that she died?

○ 10. Should only God decide when a person's life should end?
○ 11. Shouldn't society protect everyone against being killed?
○ 12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?

Page 6 - Question 30 - Choice - One Answer (Drop Down)

What is the fourth most important issue from above?

○ 1. Isn't the doctor obligated by the same laws as everyone else if giving an overdose would be the same as killing her?
○ 2. Wouldn't society be better off without so many laws about what doctors can and cannot do?
○ 3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice?
○ 4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?
○ 5. Is the painkiller medicine an active heliotropic drug?
○ 6. Does the state have the right to force continued existence of those who do not want to live?
○ 7. Is helping end another's life ever a responsible act of cooperation?
○ 8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not?
○ 9. Would not the doctor feel guilty from giving Mrs. Bennett so much drug that she died?
○ 10. Should only God decide when a person's life should end?
○ 11. Shouldn't society protect everyone against being killed?
○ 12. Where should society draw the line between protecting life and allowing someone to die if the person wants to?

Page 7 - Heading

Story 5
Demonstration
Political and economic instability in a South American country prompted the President of the United States to send troops to "police" the area. Students at many campuses in the U.S.A. have protested that the United States is using its military might for economic advantage. There is widespread suspicion that big oil multinational companies are pressuring the President to safeguard a cheap oil supply even if it means loss of life. Students at one campus took to the streets in demonstrations, tying up traffic and stopping regular business in town. The president of the university demanded that the students stop their illegal demonstrations. Students then took over the college's administration building, completely paralyzing the college. Are the student's right to demonstrate in these ways?

Page 7 - Question 31 - Choice - One Answer (Bullets)

Do you favor the action of demonstrating in this way?

○ Should continue demonstrating in these ways
○ Cannot decide
○ Should not continue demonstrating in these ways

Page 7 - Question 32 - Rating Scale - Matrix

Rate the following issues in terms of importance:

	Great	Much	Some	Little	None
1. Do the students have any right to take over property that does not belong to them?	☐	☐	☐	☐	☐
2. Do the students realize that they might be arrested and fined, and even expelled from school?	☐	☐	☐	☐	☐
3. Are the students serious about their cause or are they just doing it just for fun?	☐	☐	☐	☐	☐
4. If the university president is soft on students this time, will it lead to more disorder?	☐	☐	☐	☐	☐
5. Will the public blame all students for the actions of a few students demonstrators?	☐	☐	☐	☐	☐
6. Are the authorities to blame by giving in to the greed of the multinational oil companies?	☐	☐	☐	☐	☐
7. Why should a few people like Presidents and business leaders have more power than ordinary people?	☐	☐	☐	☐	☐
8. Does this student demonstration bring about more or less good in the long run to all people?	☐	☐	☐	☐	☐
9. Can the students justify their civil disobedience?	☐	☐	☐	☐	☐
10. Shouldn't the authorities be respected by students?	☐	☐	☐	☐	☐
11. Is taking over a building consistent with principles of justice?	☐	☐	☐	☐	☐
12. Isn't it everyone's duty to obey the law whether one likes it or not?	☐	☐	☐	☐	☐

Page 7 - Heading

Consider the 12 issues above and rank the FOUR ISSUES that are most important:

Page 7 - Question 33 - Choice - One Answer (Drop Down)

What is the most important issue from above?

- ○ 1. Do the students have any right to take over property that does not belong to them?
- ○ 2. Do the students realize that they might be arrested and fined, and even expelled from school?
- ○ 3. Are the students serious about their cause or are they just doing it just for fun?
- ○ 4. If the university president is soft on students this time, will it lead to more disorder?
- ○ 5. Will the public blame all students for the actions of a few students demonstrators?
- ○ 6. Are the authorities to blame by giving in to the greed of the multinational oil companies?
- ○ 7. Why should a few people like Presidents and business leaders have more power than ordinary people?
- ○ 8. Does this student demonstration bring about more or less good in the long run to all people?
- ○ 9. Can the students justify their civil disobedience?
- ○ 10. Shouldn't the authorities be respected by students?
- ○ 11. Is taking over a building consistent with principles of justice?
- ○ 12. Isn't it everyone's duty to obey the law whether one likes it or not?

Page 7 - Question 34 - Choice - One Answer (Drop Down)

What is the second most important issue from above?

- ○ 1. Do the students have any right to take over property that does not belong to them?
- ○ 2. Do the students realize that they might be arrested and fined, and even expelled from school?
- ○ 3. Are the students serious about their cause or are they just doing it just for fun?
- ○ 4. If the university president is soft on students this time, will it lead to more disorder?
- ○ 5. Will the public blame all students for the actions of a few students demonstrators?
- ○ 6. Are the authorities to blame by giving in to the greed of the multinational oil companies?
- ○ 7. Why should a few people like Presidents and business leaders have more power than ordinary people?
- ○ 8. Does this student demonstration bring about more or less good in the long run to all people?
- ○ 9. Can the students justify their civil disobedience?
- ○ 10. Shouldn't the authorities be respected by students?

○ 11. Is taking over a building consistent with principles of justice?
○ 12. Isn't it everyone's duty to obey the law whether one likes it or not?

Page 7 - Question 35 - Choice - One Answer (Drop Down)

What is the third most important issue from above?

○ 1. Do the students have any right to take over property that does not belong to them?
○ 2. Do the students realize that they might be arrested and fined, and even expelled from school?
○ 3. Are the students serious about their cause or are they just doing it just for fun?
○ 4. If the university president is soft on students this time, will it lead to more disorder?
○ 5. Will the public blame all students for the actions of a few students demonstrators?
○ 6. Are the authorities to blame by giving in to the greed of the multinational oil companies?
○ 7. Why should a few people like Presidents and business leaders have more power than ordinary people?
○ 8. Does this student demonstration bring about more or less good in the long run to all people?
○ 9. Can the students justify their civil disobedience?
○ 10. Shouldn't the authorities be respected by students?
○ 11. Is taking over a building consistent with principles of justice?
○ 12. Isn't it everyone's duty to obey the law whether one likes it or not?

Page 7 - Question 36 - Choice - One Answer (Drop Down)

What is the fourth most important issue from above?

○ 1. Do the students have any right to take over property that does not belong to them?
○ 2. Do the students realize that they might be arrested and fined, and even expelled from school?
○ 3. Are the students serious about their cause or are they just doing it just for fun?
○ 4. If the university president is soft on students this time, will it lead to more disorder?
○ 5. Will the public blame all students for the actions of a few students demonstrators?
○ 6. Are the authorities to blame by giving in to the greed of the multinational oil companies?
○ 7. Why should a few people like Presidents and business leaders have more power than ordinary people?
○ 8. Does this student demonstration bring about more or less good in the long run to all people?
○ 9. Can the students justify their civil disobedience?
○ 10. Shouldn't the authorities be respected by students?
○ 11. Is taking over a building consistent with principles of justice?
○ 12. Isn't it everyone's duty to obey the law whether one likes it or not?

Page 8 - Heading

Please provide the following information about yourself:

Page 8 - Question 37 - Choice - One Answer (Bullets)

In terms of political views, how would you characterize yourself?

○ Very Liberal
○ Somewhat Liberal
○ Neither Liberal nor Conservative
○ Somewhat Conservative
○ Very Conservative

Page 8 - Question 38 - Choice - One Answer (Bullets)

Are you a citizen of the U.S.A.?

    ○ Yes
    ○ No

Page 8 - Question 39 - Choice - One Answer (Bullets)

Is English your primary language?

    ○ Yes
    ○ No

Page 8 - Question 40 - Choice - One Answer (Bullets)

What is your gender?

    ○ Male
    ○ Female

Page 8 - Question 41 - Choice - One Answer (Bullets)

What is the closest approximation for your age?

    ○ 25 to 35 Years Old
    ○ 36 to 45 Years Old
    ○ 46 to 55 Years Old
    ○ 56 to 65 Years Old
    ○ Older than 65 Years

Page 8 - Question 42 - Choice - One Answer (Drop Down)

In what state do you reside?

    ○ AK
    ○ AL
    ○ AR
    ○ AS
    ○ AZ
    ○ CA
    ○ CO
    ○ CT
    ○ DC
    ○ DE
    ○ FL
    ○ FM
    ○ GA
    ○ GU
    ○ HI
    ○ IA
    ○ ID
    ○ IL
    ○ IN

○ KS
○ KY
○ LA
○ MA
○ MD
○ ME
○ MH
○ MI
○ MN
○ MO
○ MP
○ MS
○ MT
○ NC
○ ND
○ NE
○ NH
○ NJ
○ NM
○ NV
○ NY
○ OH
○ OK
○ OR
○ PA
○ PR
○ PW
○ RI
○ SC
○ SD
○ TN
○ TX
○ UT
○ VA
○ VI
○ VT
○ WA
○ WI
○ WV
○ WY

Page 8 - Question 43 - Choice - Multiple Answers (Bullets)

What is your area of specialization?

❑ Audit
❑ Consulting
❑ Corporate Accountant
❑ Tax
❑ Other, please specify

Page 8 - Question 44 - Choice - One Answer (Bullets)

Area of Employment:

- ○ Private Practice
- ○ Business or Industry
- ○ Government
- ○ Education
- ○ Other, please specify

Page 8 - Question 45 - Choice - Multiple Answers (Bullets)

What type of certification or license do you hold?

- ☐ Certified Fraud Examiner
- ☐ Certified Internal Auditor
- ☐ Certified Managerial Accountant
- ☐ Certified Public Accountant
- ☐ Chartered Accountant
- ☐ None
- ☐ Other, please specify

Page 9 - Heading

Test Taking Environment
We would like to know something about how you completed this questionnaire. Your answers will not affect the results of the test.

Page 9 - Question 46 - Choice - One Answer (Bullets)

I completed the questionnaire in one sitting.

- ○ Yes
- ○ No

Page 9 - Question 47 - Choice - One Answer (Bullets)

Music was playing when I completed the questionnaire.

- ○ Yes
- ○ No

Page 9 - Question 48 - Choice - One Answer (Bullets)

I received phone calls while completing the questionnaire.

- ○ Yes - more than one
- ○ Yes - just one
- ○ No

Page 9 - Question 49 - Choice - One Answer (Bullets)

The TV was on while I completed the questionnaire.

    ○ Yes
    ○ No

Page 9 - Question 50 - Choice - One Answer (Bullets)

I made a phone call while completing the questionnaire.

    ○ Yes - more than one
    ○ Yes - just one
    ○ No

Page 9 - Question 51 - Choice - One Answer (Bullets)

I received emails/text messages while completing the questionnaire.

    ○ Yes - more than one
    ○ Yes - just one
    ○ No

Page 9 - Question 52 - Choice - One Answer (Bullets)

I responded to emails/text messages while completing the questionnaire.

    ○ Yes - more than one
    ○ Yes - just one
    ○ No

Page 9 - Question 53 - Choice - One Answer (Bullets)

I stopped and talked to friends while completing the questionnaire.

    ○ Yes - more than once
    ○ Yes - just one
    ○ No

Demographic Information – Legal Profession

Page 8 - Question 40 - Choice - One Answer (Bullets)

What is your gender?

    ◯ Male
    ◯ Female

Page 8 - Question 41 - Choice - One Answer (Bullets)

What is the closest approximation for your age?

    ◯ 25 to 35 Years Old
    ◯ 36 to 45 Years Old
    ◯ 46 to 55 Years Old
    ◯ 56 to 65 Years Old
    ◯ Older than 65 Years

Page 8 - Question 42 - Choice - One Answer (Drop Down)

In what state do you reside?

    ◯ AK
    ◯ AL
    ◯ AR
    ◯ AS
    ◯ AZ
    ◯ CA
    ◯ CO
    ◯ CT
    ◯ DC
    ◯ DE
    ◯ FL
    ◯ FM
    ◯ GA
    ◯ GU
    ◯ HI
    ◯ IA
    ◯ ID
    ◯ IL
    ◯ IN
    ◯ KS
    ◯ KY
    ◯ LA
    ◯ MA
    ◯ MD
    ◯ ME
    ◯ MH
    ◯ MI
    ◯ MN
    ◯ MO

- ○ MP
- ○ MS
- ○ MT
- ○ NC
- ○ ND
- ○ NE
- ○ NH
- ○ NJ
- ○ NM
- ○ NV
- ○ NY
- ○ OH
- ○ OK
- ○ OR
- ○ PA
- ○ PR
- ○ PW
- ○ RI
- ○ SC
- ○ SD
- ○ TN
- ○ TX
- ○ UT
- ○ VA
- ○ VI
- ○ VT
- ○ WA
- ○ WI
- ○ WV
- ○ WY

Page 8 - Question 43 - Choice - One Answer (Bullets)

Area of Employment:

- ○ Private Practice
- ○ Government
- ○ Industry
- ○ Judiciary
- ○ Education
- ○ Other, please specify

Demographic Information – Medical Profession

What is your gender?

    ○ Male
    ○ Female

What is the closest approximation for your age?

    ○ 25 to 35 Years Old
    ○ 36 to 45 Years Old
    ○ 46 to 55 Years Old
    ○ 56 to 65 Years Old
    ○ Older than 65 Years

In what state do you reside?

    ○ AK
    ○ AL
    ○ AR
    ○ AS
    ○ AZ
    ○ CA
    ○ CO
    ○ CT
    ○ DC
    ○ DE
    ○ FL
    ○ FM
    ○ GA
    ○ GU
    ○ HI
    ○ IA
    ○ ID
    ○ IL
    ○ IN
    ○ KS
    ○ KY
    ○ LA
    ○ MA
    ○ MD
    ○ ME
    ○ MH
    ○ MI
    ○ MN
    ○ MO

○ MP
○ MS
○ MT
○ NC
○ ND
○ NE
○ NH
○ NJ
○ NM
○ NV
○ NY
○ OH
○ OK
○ OR
○ PA
○ PR
○ PW
○ RI
○ SC
○ SD
○ TN
○ TX
○ UT
○ VA
○ VI
○ VT
○ WA
○ WI
○ WV
○ WY

Page 8 - Question 43 - Choice - One Answer (Bullets)

Area of Specialization:

○ Internal Medicine
○ Anesthesiology
○ Pediatrics
○ Psychology
○ General Practice
○ Radiology
○ Surgery
○ Other, please specify

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