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DISSERTATION

THE PERCEPTIONS OF EXPERIENCED CONSTRUCTION PRACTITIONERS REGARDING ETHICAL TRANSGRESSIONS IN THE CONSTRUCTION INDUSTRY

Submitted by

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In partial fulfillment of the requirements

for the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY BARBARA J. JACKSON ENTITLED THE PERCEPTIONS OF EXPERIENCED CONSTRUCTION PRACTITIONERS REGARDING ETHICAL TRANSGRESSIONS IN THE CONSTRUCTION INDUSTRY BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS OF THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work

Co-Adviser

Co-Adviser

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ABSTRACT OF DISSERTATION

THE PERCEPTIONS OF EXPERIENCED CONSTRUCTION PRACTITIONERS REGARDING ETHICAL TRANSGRESSIONS IN THE CONSTRUCTION INDUSTRY

This study discusses the results of a national survey, conducted in 1999, designed to assess the perceptions of experienced construction practitioners regarding the "frequency" and "seriousness" of ethical transgressions within the construction industry. A questionnaire was sent to 1,450 systematically selected members of the Associated General Contractors. A total of 321 useable questionnaires were returned, or 22 percent. These construction practitioners were asked to consider 15 issues that may typically arise for those working in the construction industry in the normal course of operations. Examples of the issues include improper or questionable bidding practices; poor quality of work; misrepresentation of completed work; abuse of client resources; discrimination, harassment, or favoritism; misrepresentation of completed work; and others. Contractors were asked how often they thought each of the issues occurred and, when they did occur, how serious did they consider them to be. In addition, the relationship between construction practitioners' perceptions of ethical behavior and several demographic variables were analyzed. The variables included contractor classification (general contractor or subcontractor), primary market focus (commercial or residential), region of country, gender, age, education, position in company, years of experience, and whether the company had a written ethics policy or not.

The results indicate that the four most frequently occurring ethical transgressions, according to those construction practitioners participating in the study, were Improper or Questionable Bidding Practices, Misrepresentation of Completed Work or Value of Work, Poor Quality Control or Quality of Work, and Technical Incompetence or Misrepresentation of Competence. The four most serious ethical transgressions, according to those construction practitioners participating in the study, were Alcohol or Drug Abuse; Improper or Questionable Bidding Practices; Failure to Protect Public Health, Safety, or Welfare; and Poor Quality Control or Quality of Work. Although several of the demographic variables analyzed were related to several of the individual ethical issues, only three - gender, region of country, and experience - were found to be significant when it came to the summated scores for perceived frequency and/or seriousness of ethical transgressions.

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CHAPTER I

INTRODUCTION

> "Ethics are becoming the defining business issue of our time, affecting corporate profits and credibility, as well as personal security and the sustainability of a global economy. From price-fixing to bribery to toxic waste dumping, companies around the world are engaging in unethical practices and chalking them up to the cost of doing business. But in an increasingly global economy, where companies are being scrutinized by the media, private watch groups, government, competitors, and their own employees, it is just such unethical practices that deplete profits, jeopardize reputations and, in cases like Barings Bank, risk the entire business. By the most conservative estimate, yearly losses due to unethical behavior equal more than the profits of the top forty corporations in North America."
>
> (From the "Ethical Imperative," John Dalla Costa, 1998)

The Problem

Two hundred years ago, Benjamin Franklin insisted that business is the pursuit of virtue. The founding fathers of this country were businessmen, not saints or military heroes. Franklin insisted that business is a way of life that is, at its very foundation, ethical. What is more central to business than taking contracts seriously, or paying your debts on time as agreed, or coming to mutual agreements about what is fair exchange? Ethics are not superimposed on business. Business is itself ethics, defined by ethics, made possible by ethics (Soloman, 1994).

Do the business and ethics perceptions of Benjamin Franklin and Solomon hold even a thread of resemblance to perceptions held today? Or do the concerns of Rushmore M. Kidder, President of the Institute for Global Ethics, hold more validity in today's fast paced, high pressure, high technology society. Kidder (1997) is concerned that we may not survive the twenty-first century with the ethics of the twentieth century, and suggests that we are raising an entire generation of people without their own built-in sense of ethics.

The word ethics comes from the Greek ethos, which means character but has nearly the same meaning as the word morals (Griggs, 1997). In a survey conducted by Badger & Gay (1996), ethical conduct was named to the list of the "Top Ten Lessons Learned" in construction contracting. It was number ten. According to the construction professionals interviewed, the key to being ethical is usually just a matter of treating others with the same degree of honesty with which the interviewee would like to be treated.

Although little has been written on the topic of ethics in construction, they are by no means a new issue. Around the year 2,200 BC, Hammurabi, the ancient king of Babylonia, laid out the first specific rules to govern the ethics of builders (Griggs, 1997). Feld (as cited by Griggs, 1997) quotes Hammurabi as follows:

> "If a builder build a house for a man and do not make its construction firm and the house which he has built collapse and cause death of the owner of the house--that builder should be put to death."
>
> "If it cause the death of the son of the owner of the house--they shall put to death a son of the builder."
>
> "If it cause the death of a slave of the owner of the house--he shall give to the owner of the house a slave of equal value."
>
> "If it destroy property, he shall restore whatever it destroyed, and because he did not make the house which he built firm and it collapsed, he shall rebuild the house which collapsed at his own expense."

"If a builder build a house for a man and do not make its construction meet the requirements and a wall fall in, that builder shall strengthen the wall at his own expense."

Dan Nabholz, the CEO of Nabholz Construction Corporation, suggests that there have always been and always will be unethical general contractors (Nabholz, 1995). He asserts that construction is a people business and attracts a full spectrum of personality types. However, he sees ethical standards on a downward trend. He suggests that society and industry are changing and attributes some of the downturn in ethical conduct to the following:

--Today's constructors represent a different generation. The values they learned are different.

--The industry is seeing more and more absentee owners of construction operations.

--Construction managers appear to have more of a short-term perspective, one tied to bonus compensation. You're paid for bottom line performance, not your code of ethics.

--Purchasing decisions are more likely made in a high-rise office building, far removed from the job site, by people you never see or touch.

With very little research on the subject of ethics in construction, it is difficult to know what does go on in the construction industry, or how the industry itself perceives it's own ethical conduct. There are those who would argue that ethics and business just don't go together. Many think this is especially true for the construction industry as is indicated by the following statement, "The construction industry is associated with

trouble and should not be trusted." This statement is the consensus of the top print and broadcast media executives in the U.S. as reported in a survey commissioned by the Construction Industry President's Forum (Reid, 1995)

According to Nabholz (1995), there is more public cynicism for building contractors. The word "contractors" has a negative spin, due in part to *60 Minutes*-types of broadcasts of military and government purchasing scandals. He further suggests that owners are more likely to perceive general contractors as being untrustworthy and earning obscene profits.

Each year as the spring building season approaches, the usual warning of "buyer beware" is broadcast on the nightly news. Viewers are warned to protect themselves from the local "contractor scam artist." When contractors themselves are asked about ethics in construction, a common response is "what ethics"? Whether this statement is being made in jest or not, ethics are no laughing matter.

In Kidder's (1995) book, "How Good People Make Tough Choices," an incident is described involving fifteen minutes of ethical uncertainty on the part of a well known, highly respected CEO of a major defense contractor. This "momentary" ethical lapse cost him his career. The CEO now refers to this incident as a CEM, or a "career ending moment."

To even discuss ethics in construction is a difficult task. It appears to be easier to ignore the ethical issues of construction than it is to confront them. However, ignoring ethical dilemmas, and failing to make ethical decisions can lead to serious consequences. The need for ethical clarity in business, especially in construction, is vital. The subject of ethics is a tough issue to address, but not addressing it is even tougher. According to Greengard (1997), in the early 1990's, Sears, Roebuck & Company came under intense fire for its automotive repair practices. After an investigation by officials in several states, the

company was charged with systematically overselling parts and services to 933,000 customers. Greengard (1997) goes on to explain that allegations of wrong doing included making false and misleading statements, fraud, failure to state clearly what parts and labor were on repair invoices, and false advertising. By the time Sears agreed to accept responsibility of wrongdoing and settle for more than $40 million, the company was reeling from bad press and dismal public opinion.

The stakes for ethical misconduct are very high in all industries, but, given the scope and magnitude of the construction industry, no other industry should be more concerned or reliant upon ethics. In 1997, the Commerce Department projected that 1998 new construction would edge up to $504 billion (Ichniowski, 1997). According to the National Center for Construction Education Research, the construction industry makes up 8% of the Gross National Product of the U.S.; more than the automotive and steel industries put together. Over 5.4 million people work in the construction industry.

Accomplishing a construction project is no easy task. One must coordinate the resources, time, and communications of all organizations involved. Coordinating the resources includes financing and management from both the contractor and the owner, manpower, and countless suppliers and subcontractors. The construction project is a complicated process involving many variables which must be pulled together to complete the desired work in a given time frame under constantly changing conditions (Diekmann, Girard, & Abdul-Hadi, 1994).

> "It is ironic that the one industry in the country which more than all others depends upon coordination, cooperation, and teamwork among multiple participants, should be the country's most adversarial industry" (Groton, 1991)

Purpose Statement

Given the limited empirical data that exist in the area of construction ethics, this study was exploratory in nature. The purpose of this study was to assess the perceptions of experienced construction practitioners regarding the "frequency" and "seriousness" of ethical transgressions within the construction industry.

The relationship between experienced construction practitioners' perceptions of ethical behavior within the construction industry and the demographic variables of gender, age, education, position in company, experience, contractor classification, primary market focus, size of company, union affiliation, region of country, and the existence of a company code of ethics, was investigated.

Research Questions

1. How frequently do each of the ethical transgressions described in the 15 item questionnaire occur in the construction industry, and when they do, how serious is it considered by experienced construction practitioners?
2. How do the perceptions of *residential* construction practitioners and *commercial* construction practitioners differ regarding the "frequency" and "seriousness" of ethical transgressions within the construction industry?
3. How do the perceptions of *general contractors* differ from *subcontractors* regarding the "frequency" and "seriousness" of ethical transgressions within the construction industry?
4. How do the perceptions of *male* construction practitioners differ from *female* construction practitioners regarding the "frequency" and "seriousness" of ethical transgressions within the construction industry?
5. What relationships exist between experienced construction practitioners' perceptions of the "frequency" and "seriousness" of ethical transgressions

within the construction industry, and the demographic variables of *age, education, position in company, experience, company size, union affiliation, region of country,* and *existence of company code of ethics.*

Definition of Terms and Abbreviations

The following terms were defined as used in this study:

1. Ethics: The study of the general nature of morals and of the specific moral choices to be made by the individual in his relationship to others (American Heritage Dictionary).
2. Morals: Of or concerned with the principles of right and wrong in relation to human action and character (Webster's II New Riverside University Dictionary).
3. Ethical transgression: For the purposes of this study, an ethical transgression was defined as an act or behavior considered to be improper, illegal, or in violation of standard practices, common trusts, boundaries, or limits.
3. Experienced construction practitioner: For the purposes of this study, an experienced construction practitioner was be an individual with at least five years of construction experience in either a management or field position.
4. Residential construction practitioner: For the purposes of this study, a residential construction practitioner was an individual whose primary construction business involves the building, remodeling, or renovating residential properties such as single family and multi-family dwellings.
5. Commercial construction practitioner: For the purposes of this study, a commercial construction practitioner was an individual whose primary construction business involves the building, remodeling, or renovating commercial, industrial, or heavy highway properties such as hospitals, office buildings, schools, industrial plants, roadways, and bridges.

6. General Contractor: One that agrees to furnish materials and/or perform services at a specified price, especially for construction work. The typical contractual relationship is between general contractor and owner.
7. Subcontractor or Specialty Contractor: One who enters into a subcontract and assumes some of the obligations of the general or primary contractor. The typical contractual relationship is between the subcontractor and the general contractor.
8. ABC: Associated Builders and Contractors
9. AGC: Associated General Contractors
10. NAHB: National Association of Home Builders

Delimitations

In order to facilitate the research, the following delimitations were identified:

1. Data were collected from only those construction practitioners who were listed in the most current membership lists of the AGC. Construction practitioners who were not members of this association at the time of the survey were not included in the study.
2. The membership list of the AGC includes contractors/builders, subcontractors, suppliers, and associate members. Only general contractor/builder or subcontractor members were selected from the membership list of the AGC.

Assumptions

The following statements identify the assumptions recognized in relation to this research:

1. The individuals selected to participate in this study were representative of the population being studied.

2. It was assumed that the respondents' answers was accurate, honest, and representative of the current construction environment and of the respondents' actual experiences.
3. The individuals surveyed had a knowledge base sufficient to answer the questions on the survey.

Significance of the Problem

According to USA Today (Jones, 1997), a major study, based in Bryn Mawr, Pennsylvania, found that ethical and legal lapses are common at all levels of the American workforce. Nearly half, 48 percent, of U.S. workers admit to taking unethical or illegal actions in the past year.

Ethics should be an issue of great concern to all business, including construction. An industry that operated on trust and a handshake 30 years ago now experiences an unprecedented degree of legal actions (Diekmann, Girard, & Abdul-Hadi, 1994).

The media has been filled with bad press regarding lapses in ethical behavior by those in the construction industry. With so much of the public perception coming from the media's coverage of the construction industry, it is not surprising that the American public is cynical--and the media finds no shortage of unethical behavior to publicize. For example:

--Pizzagalli Construction Company has agreed to pay $950,000 to settle claims by two former employees who accused the contractor in a lawsuit of defrauding the government by building weak masonry walls on a barracks construction project at Fort Bragg, N.C. (Korman, 1997).

--Five construction firms pleaded guilty to bid-rigging and kickbacks in the interiors market in New York City (Tulacz, 1998).

--Defiant engineer loses $62,000-a-year city engineering job for refusing to

stamp plans for road repairs prepared by others in a way he believed would violate laws and engineering ethics (Korman, 1998).

--North Carolina Governor James Hunt is overhauling the Department of Transportation after months of scandal tarnished the panel of political appointees that oversees the agency's $2-billion construction fund (Buckner-Powers, 1998).

Public attention regarding bid rigging schemes, elaborate kick back operations, fly by night contractor rip-offs, and horror stories about price gouging all add to the concerns regarding ethics in construction. Add on top of these an increased public interest in issues of environmental impact and safety, as well as an increase in stringent regulations imposed by the government, and one can see why construction companies might be interested in focusing their attention on the ethical aspects of both their policies and their personnel.

There was a time not too long ago when business ethics, ethics training, or ethics policies could have been looked at as a novelty, a public relations tactic, or a mere window dressing for those companies who could afford them. This is no longer the case. In November 1991, the U.S. government introduced new federal sentencing guidelines for corporate misbehavior. These guidelines allow for enormous fines and even prison terms for guilty executives. Ethics has now become a major issue for corporate America (Garone, 1994).

However, even in the face of enormous litigation and claims costs and increased government regulation and intervention, the construction industry lags far behind in its efforts to shed some light on the complex issue of ethics.

As stated above, much media attention has been given to the negative ethical behavior that has occurred in the construction industry. However, does this negative

media coverage present a realistic view of the true ethical climate of the industry? Or have a few bad apples spoiled the barrel?

This study provided important information regarding the perceived frequency and seriousness of ethical transgressions within the construction industry by those who have direct, first hand knowledge about such behaviors - experienced construction practitioners themselves. Not only did the study assess the overall perception of the industry held by those who work in it, but it also addressed specific areas of concern. Although most contractors only think of bidding and estimating practices when speaking of construction ethics, this study also shed light on other ethics issues as well, such as safety, harassment, conflicts of interest, drug abuse, etc. This study provided insight into whether the media's perception of the ethical behavior of those who work in construction bears any resemblance to the actual ethical behavior of the industry.

Once there is a better understanding of the basic ethical perceptions that exist within the industry, further efforts can be made to address some of the more complex ethical concerns. With information pertaining to the frequency and seriousness of ethical transgressions within the industry, contractors can better prepare to deal with the issue of construction ethics in a more proactive and direct fashion.

Investigator's Perspective

The researcher is currently an Assistant Professor of construction management at California Polytechnic State University in San Luis Obispo, California. The courses taught by the researcher include Construction Estimating, Team Problem Solving, Leadership, and Communication, Interdisciplinary Functions of Construction Management, Residential and Light Commercial Construction, Concrete Technology, and Principles of Construction Management. The topic of ethics is taught at various degrees in all courses.

Prior to returning to the university, the researcher was directly involved in the construction industry for 20 years. From 1975 to 1984, the researcher was employed as an estimator and project manager for both residential and commercial construction firms in Colorado, Arizona, and Virginia. In 1984 the researcher formed her own design/build construction company in the state of Virginia, primarily involved in residential and light commercial building. She operated this company from 1984 to 1996. Throughout the 20 year span of her career there were many opportunities to witness first hand ethical dilemmas that face those who work in the construction industry. Issues addressed in this study's questionnaire such as technical misconduct or misrepresentation, conflicts of interest, discrimination, misuse of resources, failure to protect public or employee health, improper relations with clients, contractors, or subcontractors, improper political or community involvement, mishandling sensitive information, failure to reconcile employee concerns, alcohol or drug abuse, failure to protect the environment, and poor quality of work are constantly at the forefront of construction decision making.

As in any business, the researcher believes that there are many gray areas regarding ethical conduct within the construction industry. The researcher also believes that the pressures of the industry combined with the lack of clear-cut direction from upper management make it increasingly difficult for employees of the industry to avoid ethical transgressions. Unless a company intentionally defines the parameters of ethical conduct for its employees, there is no assurance of consistent behavior or decision making. In 20 years of working in the construction industry, the researcher rarely saw a contractor get into trouble with building officials, customers, subcontractors, or suppliers because they did not know enough about construction. However, the researcher often saw contractors get into trouble because they did not have "clear-cut ethical standards" by which to operate their businesses.

As a young college graduate, one of the first things the researcher was asked to do as an assistant project manager was to front end load a schedule of values. Front end

loading means that the contractor, instead of pro-rating jobsite overhead costs and its profit in all of the items in the schedule of values, adds these items to a relatively few activities that will be completed early in the project. This allows the contractor to "secretly" bill for all of its overhead and profit early in the project, thereby negating the adverse effects to its cashflow of any stipulated retainage (Kirksey & Maute, 1996). It was told to her, that everyone in the business made this adjustment, and that all the parties involved accepted it as standard practice, including architects who are typically responsible for approving the schedules of value and applications for payment. Many in the industry would argue that this is not an ethical issue. They would simply assert that the practice is just "good business." However, there are also those, who question such behavior, as indeed they should. Such practices open up the potential for a civil fraud claim according to Kirksey & Maute (1996). This is just one example of the confusion and lack of clarity that exists around the issue of ethics in the construction industry.

There are many questionable behaviors that have actually become "standard practice" for some contractors in the industry. They have become "standard" in the sense that even the contractors who do not practice or condone them have come to accept them as simply the nature of the business. Such things as bid shopping, front end loading schedules of value, and using funds from one job to finance another are some of these questionable behaviors. How prevalent some of these questionable practices are is unknown. One of the purposes of this study was to try and find that out.

The researcher believes that the vast majority of contractors conduct their businesses in an ethical fashion. However, it is disturbing that the behavior of those who do not goes undeterred and, therefore, is interpreted as being acceptable. Unfortunately, such questionable behavior tarnishes the reputation of those who conduct themselves ethically, and jeopardizes the industry as whole.

CHAPTER II

REVIEW OF LITERATURE

Very little research exists in the area of ethics as it relates specifically to the construction industry. Ethics, however, is fast becoming a topic of great interest to much of industry and business. Recent surveys suggest that over three-quarters of America's major corporations are actively trying to build ethics into their organizations (Stark, 1993). Although the construction industry is not specifically identified in most of this literature review, the overall impact of ethics can easily be interpreted from industry and business in general. This literature review considers the following general areas:

--Ethics and the law

--Ethics and the media

--The current ethical climate in the American workplace

--Business practitioners perceptions of ethics

--The impact of ethics on performance

--The issue of gender in relation to ethics

--Position, age, and experience as factors influencing ethical perceptions

--Efforts to curb ethical misconduct

--The impact of ethics education

Portions of this literature review are taken directly from Cole's (1993) research regarding the "Perceptions of College Business Students and of Experienced Business Practitioners Regarding the Ethics of Business People, and from the researcher's earlier study (Jackson, 1998).

Ethics and the Law

According to Kidder (1995), John Fletcher Moulton, an early twentieth century English jurist, penned a short piece titled "Law and Manners," published posthumously in The Atlantic Monthly in 1924 and distinguished "the three great domains of human action" as positive law, free choice, and manners. Kidder suggests that what Moulton called "manners" we would call "ethics," and that Moulton's phrase for ethics remains one of the more useful and astute definitions of ethics ever devised: "obedience to the *unenforceable*."

Laws binding upon us which must be obeyed characterize the domain of law according to Moulton, and distinguishes this domain as obedience to the *enforceable*, where punishment--or at least some fear of it--results from disobedience. At the opposite end of the spectrum lies Moulton's third domain, that of free choice. It includes all actions where we claim and enjoy complete freedom. Kidder (1995) explains that while it may be smaller than the domain of law, it is deeply significant, embracing (in many Western cultures) such vital questions as whom you choose to marry and what religion you will follow.

Kidder (1995) summarizes that between the domains of law and free choice lies what Moulton referred to as manners (ethics):

> " A large and important domain in which there rules neither positive law nor absolute freedom. In that domain there is no law which inexorably determines our course of action, and yet we feel that we are not free to choose as we would. It grades from a consciousness of a duty nearly as strong as positive law. It is the domain of obedience to the unenforceable. That obedience is the obedience of a man to that which he cannot be forced to obey. He is the enforcer of the law upon himself."

Kidder (1995) argues, as does Moulton, that because this ethical middle ground lies between the region of absolute choice and the region of absolute law it is constantly at risk of encroachment from both sides.

According to Kidder (1995), Moulton's observations make it clear why the old adage "If it ain't illegal, it must be ethical" is so deeply flawed. Ethics and law are as different as the unenforceable from the enforceable. Kidder likens the law to a kind of condensation of ethics into codification: It reflects areas of moral agreement so broad that a society comes together and says, "This ethical behavior shall be mandated." Kidder further suggests that Moulton's distinctions also make something else clear: When ethics collapses, the law rushes in to fill the void. Many of the laws people take for granted today were nothing more than ethical question marks only a few decades ago (Greengard, 1997). An example given by Kidder (1995) helps explain this shift from ethics to law:

> "As recently as the 1950's, you didn't throw litter from a car window simply because people don't do those things--because it was the wrong thing to do. Now you don't toss litter because there are substantial fines for so doing. What was once (in Moulton's terms) a second-domain issue of ethics has shifted to a first-domain issue of law."

In this regard, Kidder (1995) asserts that a powerful indicator of ethical decay is the glut of new laws, and new lawyers, spilling onto the market year after year. In the

last five years there has been a steady rise in lawsuits against builders and trade contractors for construction defects (Homebase News, 1998). Although this assessment does not indicate an increase in new laws or lawyers, it may be similarly reflective of the ethical climate.

Evidence of an issue of ethics shifting to an issue of law in the construction industry is depicted in an article about a questionable bidding practice known as "bid-shopping." The article, "Shop Til They Drop" (ENR: Engineering News-Record, March 9, 1992), indicates that bid-shopping occurs when a prime contractor or an owner obtains price quotes and other information from suppliers or contractors and then uses the information to induce competitors to submit lower prices. In the article, bid shopping is described as a cutthroat practice that is running rampant in some areas of construction. One contractor is quoted as saying "It's lying, cheating, and stealing." The same contractor goes on to say, "On a major job, you may spend 80 to 100 man-hours estimating that job. If you give the numbers to one person who is not honest, your competition has it in five seconds and you have wasted all your time."

The article points out that some general contractors are outraged and have worked hard to eradicate such practices. Industry sources say the simple solution is to just say no. However, according to the article, not everyone has that kind of fortitude, especially when business is bleak. As a result, bid practice reformers are working on the legislative front, trying to add bid-listing rules to state procurement guidelines. More than two dozen states have laws intended to prevent bid shopping (Katz, 1992). These rules do not outlaw bid shopping per se, but they do make it very difficult for someone to shop a bid. Bid-listing or bid-filing, as it is sometimes called, generally requires general

contractors bidding on state contracts to list those subcontractors and venders that they intend to use with their sealed bid. The toughest law against bid shopping exists in a 1939 Massachusetts statute that requires subcontractors to file their bids (bid filing) prior to bid day. However, in spite of its success, critics claim it bloats the costs of public works. But on the other hand, both Katz (1992) and the ENR (1992) article argue that bid shopping itself cheats owners because it provokes subcontractors and general contractors into making additional change orders and claims, invites cheap substitutions, and possibly jeopardizes quality, safety, and a number of other concerns.

Ironically, one of the biggest obstacles to controlling or eliminating bid shopping is the federal government. The Federal Trade Commission (FTC) sees bid shopping as a form of "auction." Moreover, the Federal Trade Commission warns that trade associations that try to bar their members from bid-shopping--as opposing to trying merely to persuade them not to do it--could be accused of illegal restraint of trade (Katz, 1992).

Referring back to Kidder (1995), the bottom line is that law and ethics are not the same. According to Kidder, it should go without saying that obedience to law, while it is usually a necessary condition for ethical action, is not sufficient to guarantee it. Individuals who merely obey the letter of the law may or may not be ethical.

Ethics and the Media

Cole (1993) suggests that impressions of ethics in business are formed in part by media reports of business practices, and the media finds an abundance of unethical behavior to publicize. For example:

--The president of the $3 billion Phar-Mor discount drug chain is accused of $350 million corporate fraud. He is fired and the company declares bankruptcy (Solomon, Shenitz, & McGinn, 1992)

--Federal agents seize over $2 million in cars, cash, and other assets and arrest 19 managers and salesmen of one of the nation's largest car dealerships. The Washington D.C. dealership, with 1991 sales of almost $600 million, is indicted by a federal grand jury on money-laundering charges ("Giant Car Dealership Indicted," 1993)

--A father and son are convicted on a total of 137 counts in a federal indictment in connection with a savings and loan failure that cost taxpayers $2.6 billion and investors $288.8 million. The charges carry a maximum penalty of 525 years for the father and 475 years for his son (Reckard, 1993)

--Ernst and Young, the giant accounting firm, agrees to pay the government $400 million to settle charges of improper activities in connection with savings and loan failures, and two partners are barred for life from providing audit services to banks or savings and loan associations (Crutsinger, 1992)

--The CEO of the largest charitable organization in the country, United Way of America, resigns in disgrace from his 22-year-long position following allegations of misuse of organization funds for personal benefit (Miller, Wolfberg, & Shenitz, 1992)

--General Motors Corporation files a criminal complaint against a former purchasing chief claiming he stole company secrets before joining a rival automaker (Adler, 1993)

--The dean of a university business college resigns after the faculty ethics committee confirms charges that he misrepresented his credentials (Shively, 1992)

There is no shortage of examples found in the media reflecting the current state of affairs regarding ethical conduct in this country. As previously stated in the introduction chapter, this includes examples specific to the construction industry. They are repeated here for convenience:

--Pizzagalli Construction Company has agreed to pay $950,000 to settle claims by two former employees who accused the contractor in a lawsuit of defrauding the government by building weak masonry walls on a barracks construction project at Fort Bragg, N.C. (Korman, 1997).

--Five construction firms pleaded guilty to bid-rigging and kickbacks in the interiors market in New York City (Tulacz, 1998).

--Defiant engineer loses $62,000-a-year city engineering job for refusing to stamp plans for road repairs prepared by others in a way he believed would violate laws and engineering ethics (Korman, 1998).

--North Carolina Governor James Hunt overhauled the Department of Transportation after months of scandal tarnished the panel of political appointees that oversees the agency's $2-billion construction fund (Buckner-Powers, 1998).

Although, these examples of ethical transgressions seem to focus around issues with legal ramifications such as fraud, bid rigging, and undue influence, little has been publicized regarding less criminal matters such as employee theft, unfair treatment, unfair

treatment of employees or subcontractors, lying to clients, neglect in regard to employee safety, abuse of travel allowances or time records, etc.

According to Greengard (1993) employee crime affects virtually every organization. He reported that the U.S. Chamber of Commerce estimates the cost of employee theft to this country's businesses at $40 billion a year, with unofficial estimates as high as twice that amount. Of course, this cost is passed on to consumers; crime in the workplace causes a 15-30% increase in retail prices. In addition, approximately 20% (16,000 annually) of U.S. businesses fail due to employee theft. . Thomas W. Wathen, CEO of a California-based Pinkerton Security & Investigation Services company suggested that "economic crime is a problem that is ten times greater than street crime (p. 82)"

Kalmer (as cited in Cole, 1993) believes the constant publicity of ethical lapses by business has brought the American public to the saturation point. "We are close to an attitude of total cynicism about business ethics; so close, in fact, that we have become desensitized to the moral dilemmas which arise in our daily life on the job" (p. 54).

Chonko and Hunt's study (as cited by Cole, 1993) provides evidence that the above statement may be true. In the study of 462 marketing managers, 41% of the respondents agreed that managers in their firm faced numerous opportunities for unethical behavior. Only 12% believed that managers in their firm often engaged in unethical behavior. Yet, the responses were somewhat different to questions about specific behavior of a questionable nature. For example, 48% of the respondents believed successful managers in their company take credit for the ideas and accomplishments of others. Further, 43% believed managers withhold information

detrimental to their own self-interest. The authors speculated that this difference could indicate the respondents considered unethical behavior to refer to only such major issues as bribery, conspiracy, etc. and that they did not consider the situations described above to be important ethical issues.

Ethical Climate of the American Workplace

In a *Wall Street Journal Survey* by Ricklets (as cited by Danley, Harrick, Schaefer, Strickland, & Sullivan, 1996) 65% of Americans believed that in the past decade the overall level of ethics in American society has declined.

According to Schwepker, Jr. & Ingram (1996), in today's competitive environment, the pressure to perform is becoming increasingly intense. Labich (as cited in Schwepker, Jr. & Ingram, 1996) suggests that many in today's work force are turning to unethical practices in an attempt to simply keep their jobs, or derive some benefits for their companies.

Likewise, USA Today (Jones, 1997) reports that a major study, based in Bryn Mawr, Pennsylvania, found that ethical and legal lapses are common at all levels of the American workforce. Nearly half, 48 percent, of U.S. workers admit to taking unethical or illegal actions in the past year. The Ethics Officer Association and the American Society of Chartered Life Underwriters & Chartered Financial Consultants sponsored the survey of 1324 randomly selected workers, managers, and executives in multiple industries, including construction.

The study revealed that 56 percent of workers feel some pressure to act unethically or illegally on the job. And the problem seems to be getting worse.

Referencing the same study, Greengard (1997) reported that more than 60 percent of workers feel more pressure than 5 years ago and 40 percent feel greater pressure than a year ago. "Despite more than two decades of intense media scrutiny, public pressure, academic research and corporate ethics programs designed to teach values and integrity, the business world seems unable to curb unethical behavior or improve its own image. Combine this pressure with a workforce full of ethical confusion, mixed messages, razor-thin profit margins, and cutthroat competition and it is not difficult to see why the problem seems so prevalent (Greengard, 1997)."

On the other hand, Danley, Harrick, Schaefer, Strickland, & Sullivan (1996) suggest that there is not an ethical crisis going on in the work place. A list of 37 incidents was included in their questionnaire (incidents such as hiring, training, or promotion based on favoritism, reporting inaccurate information to outside sources, sexual or race harassment, etc.). Participants were asked whether they considered the incidents listed to have ethical considerations and whether the incidents were serious problems within their organizations. Although virtually every incident in their questionnaire was perceived to involve ethical considerations, over two-thirds of the respondents indicated that these issues were not serious problems among HR professionals. Danley, Harrick, Schaefer, Strickland, & Sullivan (1996) concluded that although these results may not be a cause for celebration, that in the absence of stronger evidence there is not an ethical crisis in American organizations. Although they acknowledge that ethical violations exist, their study of 1078 human resource professionals indicates that as few as 13% and no more than 31% reported that any particular violation was serious in their organizations. The

most serious violation related to providing preferential consideration to friends and relatives.

In this same study, 73% of respondents reported that top management was committed to ethical business conduct and 65% reported that their organizations were serious about uncovering and disciplining ethical misconduct. Further, only 1 in 10 respondents reported that they had to compromise their personal principles or that performance pressures lead to unethical conducts. However, in the same study, when participants were asked if they felt that theirs was an organization in which criticism of policies and practices was encouraged, only 28% responded in the affirmative. One would think that an organization whose leadership is committed and cares about ethical conduct would be more likely to encourage ethical criticism.

Sonnenberg and Goldberg (as cited by Cole, 1993) suggested that business integrity may be an oxymoron and that "we no longer trust people to tell the truth, to do what is right rather than what is expedient, to live up to their commitments, to care about adhering to a code of honor" (p. 53).

Tom Peters, a recognized authority on American businesses (as cited by Cole, 1993), observed

> "While one can point to ethically superior (and profitable) firms, most of us will spend most of our working lives in compromised organizations. Dealing with "office politics," "brown-nosing," etc., is a perpetual ethical morass. A "pure" ethical stance in the face of most firms' political behavior will lead you out the door in short order (p. B5)."

Labich (1992) suggested we are no longer dealing with the issue of personal greed that propelled Wall Street swindlers of the eighties into prison. Current ethical deviants

are motivated by the most basic of instincts--fear of losing their jobs or by pressure to do what benefits the company regardless of the ethical ramifications.

This belief is supported by the April 1997 study conducted by the American Society of Chartered Life Underwriters & Chartered Financial Consultants and the Ethics Officers Association previously mentioned, and reported by Greengard (1997) and USA Today (Jones, 1997). The study, entitled "Sources and Consequences of Workplace Pressures: Increasing the Risk of Unethical and Illegal Business Practices," states that American workers feel pressure to consider acting unethically or illegally on the job. The major causes of workplace pressure are balancing work and family, poor internal communications, work hours and work load, and poor leadership. Men and women in roughly equal numbers said they feel that their families have been neglected to some extent because of workplace pressure. Workplace pressure often results in lost sleep, headaches, depression, or weight loss or gain. Common examples of unethical behavior are cutting corners on quality control, covering up incidents, abusing or lying about sick days, and lying or deceiving customers. The industries where illegal or unethical behavior was reported most frequently were the software industry and advertising and marketing.

Nash's study (as cited by Cole, 1993) pointed out that technology and financial complexity of today's business world has created more opportunities to cheat and more ways to hide cheating. In addition, the current "survival" business environment seems to justify exploitation and cheating.

Kidder (1997) takes this concern about technology's impact on ethical behavior a bit further. He suggested that the central ethical issue of our time is the continuity of the

human race. He asserted that technology today enables people to leverage individual decisions in such a way that the consequences can be disastrous. He pointed to incidents such as Chernobyl, Exxon Valdez, and the Barings Bank collapse as examples. He went on to say that technology not only allows you to do the deals but it allows you to manage the backroom process as well, which, unless other action is taken, reduces effective accountability. His concern is that we are raising an entire generation of people without their own in-built sense of ethics and then turning them loose in organizations which are not effectively controlled, and where technology leverages their ethical decisions into massive consequences. Many of these same organizations are pressure cookers that encourage people to cut corners or focus on the short term at the expense of the long term. He asserts that this is a formula for disaster for the twenty-first century.

Labich (1992) noted, however, that the U.S. press, broadcast and print, has become increasingly more adept at uncovering unethical behavior and that such behavior can be costly. Under new federal guidelines, corporations can face fines of hundreds of millions of dollars for the misdeeds of just one employee.

According to Cole (1993) Federal agencies say they are now collecting about $2 billion a year in fines against individuals and private businesses. Both business and consumer groups predict that collections will likely increase under the Clinton administration ("Fines against businesses double," as cited by Cole, 1993).

On the positive side, Cole (1993) reported that nearly 100% of respondents to Inc. magazine's "Scout's Honor" honesty poll disagreed with the idea that it is acceptable to

steal from a company, even if that company is perceived as being unfair. However, according to Spragins (1992) 61% of respondents agreed that it is acceptable to get around the law if you don't actually break it.

Business Practitioners Perceptions Regarding Ethics

Cole (1993) pointed out that, to most people, a definition of the term ethics includes the idea that unethical behavior may be legal, but it is inappropriate for some reason. It might be unfair, socially unacceptable, dishonest, unjust, irresponsible, immoral, dishonorable, unwholesome, etc. According to Gilbert (1992) business ethics, in addition to principles of morally right and wrong behavior, is the application of those principles to business situations.

Toffler (as cited by Cole, 1993) reported from her interviews with business managers that they talked about ethical problems in their work as dilemmas, that is, difficult situations where no "right answers" were apparent. This is in contrast to the way ethical concerns are usually expressed at the organizational level as issues with the right course of action spelled out. In addition, Fraedrich & Guerts (as cited by Cole, 1993) reported that corporate culture often defines what is considered ethical or unethical in a company, and people must be alerted to the fact that behavior that society considers unethical may be considered normal within a particular company.

Nabholz (1995) pointed out that ethics in the construction industry is wrapped around the premise of "your ethics, my money." At various levels, both owners and general contractors hold the "my money" position. On the other end of the food chain, subcontractors and suppliers find themselves in the "your ethics" position. Nabholz

(1995), went on to say that in the construction business, as in many businesses, ethics is personal. He declared that he has yet to meet a contractor who didn't proclaim to be ethical. However, he also asserted that general contractors are quick to point out competitors in their market who lack integrity. He questioned whether it is the ethical contractors who dominate the industry, or are they a dying breed?

Nabholz (1995) continued by suggesting that contractors dealing with the ethics issue often paint themselves into an "either/or" scenario. He suggested that they can choose to be an unethical contractor, get work, and make a profit, or be an ethical contractor who isn't competitive on bid day. He believed that many contractors simply shrug, and quip, "everyone is doing it; you have to play the game or leave the table." However, Nabholz (1995) argued that there are alternatives. His core belief is that good ethics means good business. He suggested that establishing ethical standards requires only a leader, a commitment, and hard work.

Brenner & Molander's study (as cited by Cole, 1993) reported that a survey of 1,227 Harvard Business Review readers found that although the ethics of business organizations may differ from accepted ethics in the family, church, or other sectors of society, four out of five respondents agreed that business people should strive for an absolute ethical standard and not merely conform to the standard of their peer group. Cole (1993) goes on to state that most respondents in the study considered themselves significantly more ethical than their peers. Those surveyed frequently reported that they were subjected to pressure from their superiors to perform a variety of ethically questionable activities. In spite of the fact that fewer than 2% of the respondents disagreed with the statement "in the long run, sound ethics is good business," they

apparently did not believe their associates thought likewise. Close to half of those surveyed voiced the opinion that the typical American business executive was more interested in gain than in applying ethical standards.

The Impact of Ethics on Performance

In a study of 152 sales people from 26 business-to-business companies in a variety of industries, Schwepker, Jr. & Ingram (1996) found moral judgement to be positively related to salesperson performance. Salespeople who make moral judgements with respect to selling practices at a higher level also tend to perform at a higher level.

This study further suggested that the performance of salespeople possessing certain characteristics had a greater chance of being affected by their moral judgement. This study found a significant positive relationship between moral judgement and performance for salespeople who are 40 or more years of age, have a college degree or better, and have 16 or more years of business experience.

The Issue of Gender as it Relates to Ethics

The empirical research regarding ethical differences between men and women is extensive. However, the results have been inconclusive. A summary of some of the findings as cited by Dawson (1997) is listed below:

--Freeman and Giebink found distinct differences in moral reasoning and ethical judgement between the sexes over a wide span of ages and range of issues.

--Ricklets reported that a Gallup poll of ethical attitudes of the general public found that women tend to have higher ethical standards than men do.

--Beltramini, et, al. found that female students are more concerned with ethical issues in business than their male counterparts.

--Betz, et, al. examined male and female undergraduate and graduate students, and found wide differences between the sexes, with males more than two times as likely to engage in actions regarded as unethical.

--Hegarty and Sims performed clinical experiments on men and women and found no significant differences in ethical behavior.

--Dubinsky and Levy concluded that there was no significant difference by gender in the ethical attitudes of salespeople.

--Powell and Butterfield twice examined student samples and found no significant differences between males and females in their conceptions of ethical managerial decision making.

--Singhapakdi and Vitell found no evidence that gender is a determinant in ethical decisions of marketing managers.

Dawson (1997) went on to identify several theories that could partially explain the inconsistencies in the empirical research regarding ethics and gender: the "self-selection" theory, the "structural" theory, and the "situational" theory.

According to Dawson (1997), the "self-selection" theory asserts that women who choose business careers have traits different from those typical of their gender. The "structural" theory holds that differences between the sexes due to early socialization will be overridden in the work environment by the perceived costs and rewards associated with occupational roles. Dawson continued to suggest that under this theory, while

women may enter business careers with values different from men, they will respond similarly to the same training and occupational environment and become more like men in their actions and perceptions. The final theory given by Dawson (1997), "situational" theory, suggested that ethical differences between men and women may be context-specific; this theory stems from scenario-type research that has found the sexes to exhibit differences when confronted with some situations, but not with others.

The key finding of Dawson's 1997 study involving 203 sales personnel, supports the "situational" theory. The study identified 20 scenarios covering a wide range of ethical dilemmas that may be encountered by those in the sales profession. The 20 scenarios were then classified as either being "relational" in nature (clearly involving or affecting the interests of others) or "non-relational" (situations essentially confined to one's own conscience). The study concluded that, although women's mean scores were higher than men's on 13 of the 20 scenarios, the differences are specific to the context of the situation at hand. Women scored higher than men did on scenarios of a relational nature. There were virtually no differences with respect to non-relational scenarios.

In a study conducted by Cole (1993), looking at the perceptions of business students regarding business ethics, female business students were found to score significantly higher than male business students on the "ethical" response to 8 of 10 questions regarding ethical decision making. According to Cole (1993), this may be due to the early conditioning that young girls receive to conform to standards of behavior and to be "good," while bad behavior in young boys may be excused on the basis of "boys will be boys." Cole pointed out that this mentality often continues into the college years,

as male students may be almost expected to break the rules and to engage in questionable behavior and that such behavior may be viewed as a rite of passage into manhood.

Jackson (1998), using the same instrument as Cole, found similar results when assessing the perceptions of college construction students regarding the ethics of the construction industry. However, in this case, females only scored significantly higher than males on 3 out of 10 questions.

Position, Age, and Experience as Factors Influencing Ethical Perceptions

The Chonko and Hunt study (as cited by Cole, 1993) reported that middle and lower-level managers were more likely to see ethical problems in their companies than were presidents and vice-presidents, and those employees of large firms were more likely to see problems than those of smaller firms. The authors suggest that these responses might reflect the greater competitiveness and pressure to perform in larger companies and at lower and middle levels. Their study also found that females saw more ethical problems than did males. Respondents in all categories indicated that they saw themselves as more ethical than others.

In a study of 1078 human resource professionals, (Danley, Harrick, Schaefer, Strickland, & Sullivan ,1996) it was revealed that the higher one's position in the organization, the less likely one is to identify an incident as a serious ethical problem. The researchers found that HR professionals in higher positions are more likely to have more years in the organization, thereby assimilating the norms, values, and ideals of the organization.

Dawson (1997) found that ethical standards do change with age and years of experience, for both men and women. In this study of 206 sales professionals, the direction of change was upward; suggesting that as age and experience progress, ethical levels become higher for both sexes. Further, the study showed that ethical differences between the sexes are highest at younger ages and earlier experience levels, and narrow thereafter.

Conversely, Jackson's study (1998) of 285 college construction students revealed that there was a tendency for younger and less experienced students to score higher on an ethical response than older and more experienced construction students. This finding may support the notion that young people are simply naïve and enter the construction field with higher ideals and ethical standards and over time become disenchanted with the harsh realities of the business.

Efforts to Curb Ethical Misconduct

There is increased evidence that many companies have begun taking action regarding the issue of ethics. According to Labich (1992) some 200 major U.S. corporations have appointed full-time ethics officers or directors and/or established ethics committees of top officers.

Greengard (1997) reported that the number of firms with ethics training programs has increased from 7 percent to 40 percent since 1994. He went on to report that companies with ethics codes have also increased from 13 percent to 73 percent during the same period. However, according to Brenner & Molander (as cited by Cole, 1993), research indicates that codes of ethics not only do not solve all problems, but also may

create a false sense of security and may even lead to the encouragement of violations. Chonko and Hunt's study (as cited by Cole, 1993) found that the existence of corporate or industry codes of ethics appeared to be unrelated to the extent of ethical problems.

According to the Nash study (as cited by Cole, 1993), a prime example of this is the highly regulated securities industry, which was frequently considered the model for encouraging high ethical standards in business. Many securities companies, while emphasizing procedural rules, failed to address the devaluation of personal standards and ended up victimizing both the public and themselves.

Greengard (1993) pointed out that more and more company executives are realizing they must become committed to building and maintaining an honest work force and a corporate culture that won't tolerate white-collar crime. He suggested that a major part of this strategy is to be extremely careful when hiring new employees. An increasing number of personnel executives are doing extensive background checks, administering psychological tests, and studying personality traits. An additional aspect of this strategy is to offer generous employee-benefit packages and to make other efforts to keep employees happy, since frustrated employees are among the biggest threats to a company. Finally, this strategy involves taking a hard-line with employee crime—not only terminating employees but also prosecuting and pursuing restitution even when relatively small sums of money are at stake. Greengard (1993) named Mastercard International, Lotus Development Corporation, and AT&T as companies engaging in this strategy as a way of creating and maintaining a workforce that is committed to honesty. All three of these companies report below-average instances of employee crime.

Again in the Nash study (as cited by Cole, 1993) business leaders at many other companies, such as Johnson & Johnson, IBM, Goldman Sachs, Hewlett-Packard, Ford, 3M, Wal-Mart, and General Mills, emphasize high standards of personal conduct. Likewise, Paul O'Neill, CEO of Aluminum Company of America (Alcoa), has stated that integrity is a non-negotiable element of Alcoa's value system. He believed that no employee, regardless of his or her technical or professional contribution, is so valuable that a lack of integrity could be overlooked (Benson, 1993).

In the construction business, Nabholz (1995) suggested that there is one ultimate test. A contractor must be willing to terminate employment of those who violate the corporate code of ethics. He asserted that construction managers should be responsible for knowing the ethics being practiced by the people who report to them. Nabholtz (1995) argued that contractors should not accept a slow deterioration of ethics in construction as being inevitable. He stated that construction trade groups and industry publications should give ethics more attention and coverage, and that ethics should be an important part of the curriculum at construction schools across the country.

The Impact of Ethics Education

According to Cole (1993), the primary accrediting agency for the schools of business is the American Assembly of Collegiate Schools of Business (AACSM). This organization strongly recommends the inclusion of ethics in the business curriculum. Roderick, Jelley, Cook & Forcht (1991) suggested that most AACSB schools are putting in course modules on ethics. Stark (1993) reported that over 500 business ethics courses are being taught in American colleges, and 90% of business schools now provide training

in ethics, and more than 25 business ethics textbooks have been published and at least three academic journals are devoted to the topic. Stark (1993) claimed that endowed chairs in business ethics have been established at several business schools, and at least 16 business ethics research centers are in operation.

Eubank (as cited by Cole, 1993) also pointed out that the accounting firm Arthur Andersen and Company has spent $5 million since 1987 training the faculty of more than 300 colleges and universities in methods of incorporating ethics into accounting, marketing, economics, and other classes.

Cole (1993) reported that, in 1987, Harvard University's business school received a $20 million pledge to be used to advance the cause of ethics. They have since added ethics teachers and courses, and the school works with faculty to integrate ethics into all core courses (Byrne, as cited by Cole, 1993).

According to Cole (1993), questions frequently arise among educators as to whether college courses can have any significant effect on the ethics of students whose values have been developing for 20 years or more. Carruth and Carruth's study (as cited by Cole, 1993) of junior and senior business students indicated that it can. More than half (56%) believed that their formal education had significantly influenced their system of values, and 68% believed their ethical/moral principles were founded upon an educated and informed basis. In addition, 68% felt their formal education had adequately prepared them to make ethical/moral decisions, and 72% believed their ethical/moral principles had now been established and were not likely to change.

Hulm (as cited by Cole, 1993) reported from his survey of students' views on ethics classes that students believed ethics education could promote individual

development and that it would influence future decisions. The students believed that ethics instruction should be included both as specific ethics classes and as a part of regular classes.

In contrast, in a study of graduate and undergraduate business students by Baron, Hammerbacher, and Paderon (as cited by Cole, 1993), it was found that beliefs held by the students were not significantly influenced by such courses as Business and Society. Factors that explained attitudes toward business behavior appeared to be external to the formal education experience and were not identified.

Cole (1993) pointed out that although the specifics of exactly how the topic of ethics should be taught to business students are subject to differing opinions, widespread agreement exists that it should be taught, because "awareness of and clear practical thinking about moral issues in business does not happen spontaneously" (Gilbert, p. 6, as cited by Cole, 1993).

The Cole (1993) study revealed that most business people would agree that ethics should be taught. Stark (1993) reported that over three-quarters of America's major corporations are actively trying to build ethics into their organizations. He believed, however, that the discipline of business ethics is largely irrelevant to most managers because it fails to provide the kind of concrete help needed; namely, courses of action in difficult "gray-area" situations and in situations where "the right course is clear, but real-world competitive and institutional pressures lead even well-intentioned mangers astray" (p. 38).

In addition to business programs, there is evidence that more and more engineering schools and professionals are seeing the value of including ethics in their core curriculums. Today, most professionals believe that the essence of engineering is not only analysis and design, but also the application of ethics and professional judgment (Koehn, 1991).

Koehn (1991) went on to report that concern has developed involving the exposure of engineering students to the topics of ethics and professionalism. In response to this concern, the Student Activities committee of the ASCE Texas Section polled the contact members assigned to the 12 state ASCE student chapters to determine whether practicing engineers considered the topics important. It is noteworthy that 100% of the respondents indicated that there was a need to include the topics of ethics and professionalism in the engineering curriculum. There also was a unanimous response that the local ASCE branches could assist in these efforts (Koehn & Bourque, 1990).

The aforementioned data indicate strong support among practicing engineers for exposing students, at the university level, to ethics and professionalism. A number of educators have also recently called for increased emphasis in the engineering curriculum on the relationship between technology and professional, ethical, and social concerns (Hauck & Potts, 1990; Miles, 1990).

Although there seems to be a trend toward more ethics education in engineering, it is not without its concerns. In a paper by Vesilind (1991), several obstacles to teaching ethics in an engineering curriculum are pointed out. One problem is that many engineering educators and students believe that "a lecture on morals carries around with

it the odor of a chapel talk on sex hygiene" (Geiger, 1938) and carefully shun such topics, insisting that ethics is not real engineering.

Another problem is that, even if it were possible to convince the faculty that teaching ethics is important, Gorowitz (1982) suggested that most engineering educators are woefully ill prepared to do so. Some professors will try to include ethical matters in their classes, but the rush of time seldom leaves enough room for adequate discussion. As Gorowitz (1982) observed: "What is everyone's responsibility too easily becomes no one's, and the time devoted to ethical issues in the context of technical pursuits is likely to be insignificant."

Vesilind (1991) also suggested that ethics are not taught by some engineering educators because they believe that teaching ethics is in fact indoctrination and is inappropriate in a free society. Unfortunately, nothing can be further from the truth. The teaching of ethics involves the discussion of how decisions can be made, not which decisions are the correct ones. Ethical thinking is simply the organized, reasoned analysis of value-laden problems (Kidder, 1995).

Another reason mentioned by Vesilind (1991) why ethics are so poorly taught in engineering schools is that many engineers believe teaching ethics to be merely a review of the various professional codes of ethics. Actually, these codes are nothing more than a series of commandments, some aspirational and some admonishing engineers to follow rules of professional conduct. Indeed, if following the dictates of the various codes could solve all value-laden problems, there would be no need for teaching ethical decision making.

In contrast to the indications that engineering schools are quite serious about placing more emphasis on ethics education in their curriculums, the construction schools have not yet recognized the importance of such training. In a study conducted by the Construction Industry Institute in 1990 regarding the "Acquisition of Skills and Traits Among Construction Personnel" (Dorsey, 1990), ten skills/traits were recognized as being required, in varying degrees, to perform in eleven identified positions/functions, from senior executive to subjourneyman. The ten skills/traits included written communication, oral communication, graphic communication, financial management, numerical (math), personnel, manual, planning and control, leadership, and ethical decision making. Ethical decision making was ranked 7 out of 10 as a priority skill/trait to be acquired in college programs in construction.

In a follow-up study, the Construction Industry Institute evaluated college curricula which prepare managers for construction (Dorsey, 1992). Only 30 out of 103 construction schools required courses in ethical decision making.

Summary

This literature review discusses the issue of ethics relative to the law, the media, the American workplace, business practitioners, performance, efforts to curb ethical misconduct, gender, position, age, experience, and ethics education. Very little literature was available that specifically addressed the issue of ethics in the construction industry. Therefore, this study, which assesses the perceptions of experienced construction practitioners regarding the frequency and seriousness of ethical transgressions in the industry, makes a valuable contribution to the topic.

CHAPTER III

METHODOLOGY

Research Approach

The purpose of this study was to assess the perceptions held by experienced construction practitioners across various regions of the United States regarding the frequency and seriousness of ethical transgressions in the construction industry. The research study looked for relationships between "frequency" and "seriousness" of ethical transgressions and the following variables: gender, age, education, position in company, experience, contractor classification, primary market focus, size of company, union affiliation, region of country, and company code of ethics.

The general design classifications for this study was between groups, single factor designs with two levels, and between groups, single factor designs with more than two levels. The primary independent variables included market focus (commercial or residential), contractor classification (general contractor or subcontractor), and gender (male or female).

The descriptive approach was used to establish an overall profile of the target population and to ascertain the perceived frequency and seriousness of ethical transgressions within the construction industry (research question 1). The comparative approach was used to answer research questions 2-5.

Subjects

The sample of subjects consisted of experienced construction practitioners from all over the United States. Each participant was identified as coming from one of the following four regions of the United States:

1. Northeast Region - Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware, Maryland, and West Virginia.
2. Southern Region - Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Texas, Oklahoma, Arkansas, and Louisiana.
3. Midwest Region - Michigan, Wisconsin, Illinois, Indiana, Ohio, Minnesota, Kentucky, Kansas, Nebraska, Missouri, Iowa, South Dakota, and North Dakota
4. Western Region - Arizona, New Mexico, Colorado, Wyoming, Montana, Utah, Idaho, Nevada, California, Oregon, and Washington.

For the purposes of this study, an experienced construction practitioner was an individual with at least five years of construction experience in either a management or field position. A residential construction practitioner was classified as an individual whose primary construction business involves the building, remodeling, or renovating of residential properties such as single family and multi-family dwellings. A commercial construction practitioner was an individual whose prime construction business involves the building, remodeling, or renovating of commercial, industrial, or heavy highway properties such as hospitals, office buildings, schools, industrial plants, roadways, and bridges.

For the purposes of this study, a general contractor was classified as one that agrees to furnish materials and/or perform services at a specified price, especially for construction work. The typical contractual relationship is between general contractor and owner. A subcontractor or specialty contractor was one who enters into a subcontract and assumes some of the obligations of the general or primary contractor. The typical contractual relationship is between the subcontractor and the general contractor.

The sample of experienced construction practitioners for this study was obtained from the national membership directory of the Associated General Contractors (AGC) trade association. Although the membership includes general contractors, subcontractors, venders, suppliers, and associates, only *general contractor* and *subcontractor* members were selected for this sample. The AGC of America is a national trade association of more than 32,500 firms including over 7000 of America's leading general contracting companies represented in 101 local chapters across the United States.

Procedure

In the original proposal, the sample for this study was to come from six different trade associations in order to ensure a representative sample across the variables of market focus, contractor classification, and gender. Copies of the questionnaire were to be sent to local chapters of each of the six trade associations and distributed at local dinner/business meetings. Individual members were to return the questionnaires directly to the researcher. Hundreds of questionnaires had been sent to the trade associations over a six-week period with only 18 being returned. This method proved to be very ineffective. Compounding the problem was that there was no opportunity to follow up

with individual members because there was no way of determining to whom the questionnaires had been distributed by the association director.

An attempt then was made to obtain membership lists from each of the six trade associations. Only the Associated General Contractors could supply a national membership list, which was ultimately used as the source for the sample. This list included the names, addresses, and phone numbers of approximately 7,260 company members from coast to coast. The officers for each company also were listed in the directory. Systematic sampling with a random start was used to generate the list of subjects. This sampling method allowed for all members on the list of 7,260 companies an equal chance of being selected.

After approval from the Human Subjects Review Process Committee at Colorado State University (see Appendix A), questionnaires were sent to 1,450 company members of the Associated General Contractors. A cover letter accompanied the questionnaires explaining the purpose of the study and assuring the recipients of anonymity (see Appendix B). A self addressed, postage paid envelope was supplied with each questionnaire. The questionnaires were mailed to the president, vice-president, general manager, or estimating manager for each company. Recipients of the letters were asked to complete the questionnaire themselves or to pass it onto someone else in their companies qualified to respond.

Instrument

The instrument (See Appendix C) used in this study was adapted from a questionnaire utilized in several studies done by the Murdough Center for Engineering

Professionalism at Texas Tech University in Lubbock, Texas. Dr. W. Pennington Vann of Texas Tech University and Dr. P. Aarne Vesilind of Duke University developed the questionnaire.

From 1991 to January 1998, the Murdough Center has distributed the survey on 39 different occasions to four engineering groups. They include engineering students with and without experience, members of the Texas Consulting Engineers Council (CEC), a conference of Texas Registration Board members and Deans, a number of practicing engineers, and a large sample of faculty from Texas engineering colleges.

The original instrument consisted of 12 ethical issues. Although the original instrument was specifically designed to assess the perceptions of engineers, all 12 issues are as likely to arise for those working in construction as they are for engineers. However, three additional items were added to the instrument--Improper or Questionable Bidding / Estimating Practices, Misrepresentation of Completed Work or Value of Work, and Misrepresentation of Financial Records or Status. These three items address issues likely to be encountered in the construction industry. Although improper bidding practices could easily be included under item 10 (Improper Relations with Clients, Contractors, etc.), this particular item is one of the most talked about and discussed ethics issues among contractors. The original questionnaire included "Abuse of Company Resources" and "Abuse of Client Resources" under one category. The researcher felt that employees might be more inclined to act in one context quite differently than the other. Therefore, the original category was divided into two. Similarly, the original questionnaire listed "Conflicts of Interest" and "Improper Political or Community

Involvement" as two separate items. These two items have been combined for the purposes of this survey. No items were eliminated from the original instrument.

Items were screened for clarity and validity by a panel of construction experts and practitioners before being finalized and distributed to participants of the study. All items were approved as presented.

The purpose of the instrument was to assess an individual's perceptions regarding the "frequency" and "seriousness" of inappropriate ethical behavior in the construction industry. The questionnaire consisted of 15 ethical issues that may be encountered by experienced construction practitioners in a typical construction business environment.

The participants were asked to rate each issue according to how frequently they think it occurs in the industry, and how serious they think it is when it does occur. Participants were not asked whether they themselves engage in such activities. Participants were asked to base their responses on their experience as a construction practitioner. Responses to each of the 15 items were rated using a Likert scale. Values of 1 to 5 was assigned to the responses for "frequency," where 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *very frequently*. Values of 1 to 5 was assigned to the responses for "seriousness" with 1 being "*not serious at all*" and 5 being "*extremely serious.*" No intermediate descriptors were used for the seriousness scale. The higher the response to the item, the higher the frequency, or greater the seriousness.

Each questionnaire included a demographic information section in addition to the measurement scale. The demographic information collected on each participant included gender, age, education, position in company, number of years employed in the construction industry, contractor classification , primary market focus, company size,

trade association affiliation, union affiliation, region of country, and whether the company had a written code of ethics or ethics policy in place.

Data Analysis

Data collected from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS). The data were first analyzed (frequency distributions) to check the normal distribution assumption. The dependent variables were approximately normally distributed and, given the Likert scale is approximately interval, parametric tests were used.

This study included two types of research questions--descriptive and comparative- and utilized two types of statistics. Descriptive statistics were used for descriptive question (1), to describe and summarize the data. Difference inferential statistics were used to analyze the comparative questions (2-5), comparing groups or levels of the independent variable on their scores on the dependent variable. Differences between groups were tested at the .05 level of significance.

The descriptive statistics that were used to analyze question 1 were percentages and means. Descriptive statistics were also used to summarize the demographic data collected.

For research questions 2 - 4, which involve the primary independent variables of *market focus, contractor classification*, and *gender*, the statistic that was used was the independent samples t-test. This statistic was chosen because each variable represents one independent variable with only two levels, and the dependent variable is approximately interval. Levene's test for equality of variances was checked in each case. Where

Levene's test was statistically significant, the *t* was adjusted to indicate that "equal variances were not assumed."

For research question 5, two statistics were used. The statistic that was used for the independent variables of *age, education, position in company, experience, company size*, and *region of country* was a one-way ANOVA. This statistic was chosen because each variable represents one independent variable with 3 or more levels and the dependent variable is approximately interval. If the one-way ANOVA indicated significant differences between groups of the independent variable, then the post hoc Tukey HSD test was used as the follow up to determine between which groups a significant difference existed.

Regarding question 5, the statistic that was used for the independent variables of *union affiliation* and *company code of ethics* was an independent samples *t* test. This statistic was chosen because each variable represents one independent variable with only two levels, and the dependent variable is approximately interval.

CHAPTER IV

RESULTS

Introduction

The results presented in this chapter generally are organized as follows:

1. Discussion regarding the sample source, response rate, sample size and contractor profile.
2. Results regarding contractor perceptions relative to the frequency and seriousness of the 15 ethical transgressions.
3. Results regarding the perception of overall ethical behavior of the construction industry, comparing self-view and general public view.
4. Results regarding the demographic factors of gender, age, education, position, experience, contractor classification, company size, union affiliation, region of country, and code of ethics relative to the 15 individual ethical issues.

Subjects

As previously reported in Chapter III, the source of the sample for this study was revised. The original proposal called for representation from six different trade associations. However, the final results represent participants from one trade association. The sample of subjects consisted of experienced construction practitioners who were members of the Associated General Contractors trade association. All participants were actual members of the AGC in 1999.

Response Rates

A total of 1450 questionnaires were sent to individual members of the Associated General Contractors. Of the questionnaires sent out, a total of 321 useable questionnaires were returned, or 22 percent. The response rate was lower than the investigator would have preferred. Although a reminder letter was faxed to approximately fifty percent of the non-respondents 30-45 days after the initial mailing of questionnaires, no additional surveys were returned. Therefore, no comparisons were made between respondents and non-respondents.

Contractor Profile

Demographic characteristics of the contractor sample are presented in Table 1. Of the 321 contractor respondents the ratio of male to female contractors was almost 10 to 1, or 8.4 percent. Although this number is low, it closely replicates the actual true ratios in the industry. Women make up 7 percent of the construction industry as a whole (Touby, 1997).

The majority of the contractors were between the ages of 36 and 50. More than two thirds of all respondents self reported having a bachelor's degree or higher.

Of the 321 contractors surveyed, more than two thirds of the respondents were professionally positioned at the executive level. The number of years the participants were employed in the construction field ranged from 5 to 55, with the average being almost 26 years. Over 50 percent reported having between 21 and 40 years of

Table 1.

Demographic Characteristics of Contractors

Category	n	Percentage
Gender		
Male	293	91.6
Female	27	08.4
Age		
20-35	26	08.2
36-50	157	49.2
51-65	99	31.0
over 65	37	11.6
Education		
High School or Less	22	06.9
Some College, Business School, Or Vocational Training	72	22.5
Bachelor's Degree	187	58.4
Master's or Doctorate Degree	39	12.2
Position in Company		
Executive	225	70.1
Management	63	19.6
Other	33	10.3
Years of Experience		
Under 10 years	22	07.0
10-20 years	91	28.8
21-40 years	168	53.2
Over 40 years	35	11.1
Contractor Classification		
General Contractor	263	83.2
Specialty Contractor	53	16.8
Primary Market Focus		
Residential	13	04.2
Commercial	294	95.8
Company Size		
Up to $5 million	90	28.1
$5 - 50 million	193	60.3
Over $50 million	37	11.6
Union Affiliation		
Primarily Union	117	37.9
Primarily Non-union	192	62.1
Region of County		
Northeast	40	12.5
Southern	106	33.0
Midwest	83	25.9
Western	92	28.7
Written Company Code of Ethics or Ethics Policy		
Yes	98	31.1
No	217	68.9

experience. More than 50 percent of the participants were currently associated with companies with annual revenues between 5 and 50 million dollars.

Over 80 percent of the participants were classified as general contractors with the remaining being classified as specialty contractors. Almost all of the participants operated in the commercial market. Less than 5 percent of the respondents were involved in the residential market. Of the 321 respondents, over two thirds worked for companies who did not have a written "Company Code of Ethics" or "Ethics Policy."

As previously reported all participants were members of the AGC. The contractor respondents were primarily from non-union affiliated companies. The ratio of companies whose labor force is primarily non-union companies to companies whose labor force is primarily union affiliated was almost 2 to 1.

All four regions of the United States as defined in Chapter III were represented in this study. The Northeast region produced the fewest number of responses, comprising only 12.5 percent of the sample, with the Southern region producing the greatest number of responses at 33 percent. The Midwest and Western regions were approximately equal in their participation.

Although an attempt was made by the researcher to ascertain the representativeness of the sample compared to the AGC membership in general, no comparison could be made. The AGC had no profile information available.

Contractor Perceptions of Frequency and Seriousness of Ethical Transgressions

Each questionnaire listed 15 issues that may arise for those working in the construction industry. For the purposes of this study, each issue was viewed as an ethical

transgression. Each participant was asked to rate each issue according to how frequently they thought the issue occurred in the industry and than, how serious they thought the issue was when it did occur. A mean of 1.0 for frequency represents the transgression never happening, and a mean of 5.0 represents the transgression happening very often. A mean of 1.0 for seriousness represents the transgression being perceived as not serious at all, and a mean of 5.0 represents the transgression being perceived as extremely serious.

The mean scores of the 15 issues or ethical transgressions are ranked from most frequently occurring to least frequently occurring, and most serious to the least serious in Table 2. Of the 15 issues surveyed, the four most frequently occurring ethical transgressions according to those contractors who responded are:

1. Improper or Questionable Bidding Practices
2. Misrepresentation of Completed Work or Value of Work
3. Poor Quality Control or Poor Quality of Work
4. Technical Incompetence or Misrepresentation of Competence.

Of the 15 issues surveyed, the four least frequently occurring ethical transgressions according to those contractors responding are:

1. Discrimination, Favoritism, or Harassment
2. Misrepresentation of Financial Status or Records
3. Failure to Protect the Environment
4. Improper Relations with Clients, Contractors, etc.

Of the 15 issues surveyed, the four most serious ethical transgressions according to those contractors who responded are:

Table 2.

Contractor Perceptions of Frequency and Seriousness of Ethical Transgressions

	Frequency Issue	Mean	Seriousness Issue	Mean
1.	Improper or Questionable Bidding	3.3178	Alcohol and Drug Abuse	4.0870
2.	Misrepresentation of Completed Work or Value of Work	3.3031	Improper or Questionable Bidding	3.9437
3.	Poor Quality Control or Quality of Work	3.1063	Failure to Protect Public Health, Safety, or Welfare	3.8750
4.	Technical Incompetence or Misrepresentation of Competence	3.0063	Poor Quality Control or Quality of Work	3.8213
5.	Abuse of Company Resources	2.9969	Abuse of Client Resources	3.6677
6.	Alcohol and Drug Abuse	2.7262	Improper Relations with Clients, Contractors, etc.	3.6270
7.	Failure to Reconcile Employee Or Subcontractor Concerns	2.7081	Conflicts of Interest, Improper Political/Community Involvement	3.5696
8.	Abuse of Client Resources	2.6563	Misrepresentation of Financial Status or Records	3.5688
9.	Conflicts of Interest, Improper Political/Community Involvement	2.6375	Technical Competence or Misrepresentation of Competence	3.5643
10.	Mishandling Sensitive Information	2.4769	Failure to Protect the Environment	3.5497
11.	Failure to Protect Public Health, Safety, or Welfare	2.4594	Failure to Reconcile Employee or Subcontractor Concerns	3.4563
12.	Discrimination, Favoritism, or Harassment	2.4206	Mishandling Sensitive Information	3.4517
13.	Misrepresentation of Financial Status or Records	2.4149	Discrimination, Favoritism, or Harassment	3.4222
14.	Failure to Protect the Environment	2.3673	Abuse Company Resources	3.3836
15.	Improper Relations with Clients, Contractors, etc.	2.3187	Misrepresentation of Completed Work or Value of Work	3.0503
	Average Mean	**2.7277**		**3.6025**

Note: A mean of 1.0 for frequency represents the transgression never happening, and a mean of 5.0 represents the transgression happening very often. A mean of 1.0 for seriousness represents the transgression being perceived as not serious at all, and a mean of 5.0 represents the transgression being perceived as extremely serious.

1. Alcohol or Drug Abuse
2. Improper or Questionable Bidding Practices
3. Failure to Protect Public Health, Safety, or Welfare
4. Poor Quality Control or Poor Quality of Work

Of the 15 issues surveyed, the four least serious ethical transgressions according to those contractors responding are:

1. Mishandling Sensitive Information
2. Discrimination, Favoritism, or Harassment
3. Abuse of Company Resources
4. Misrepresentation of Completed Work or Value of Work

Pearson Correlations were performed on all 15 issues relative to frequency and seriousness. Table 3 shows the correlations between frequency and seriousness of each of the 15 issues presented in the questionnaire. All issues indicate a significant positive correlation (at the 0.01 level, 2-tailed) between frequency of occurrence and seriousness of occurrence with the exception of one, Misrepresentation of Completed Work or Value of Work. These positive correlations simply indicate that contractors who view an issue as occurring relatively frequently also tend to view it as serious. However, this is not the case for Misrepresentation of Completed Work.

Referencing Table 2, the issue of Misrepresentation of Completed Work or Value of Work is almost at opposite ends of the ranking spectrum of occurrence and seriousness. According to the contractors responding to the survey, "Misrepresentation

Table 3.

Correlations Between Frequency and Seriousness of Ethical Transgressions

	Issue	N	Pearson Correlation Between Frequency & Seriousness	Sig. (2-tailed)
1.	Technical Incompetence or Misrepresentation of Competence	315	.159	.005**
2.	Poor Quality Control or Quality of Work	314	.236	<.001**
3.	Improper or Questionable Bidding Practices	315	.312	<.001**
4.	Misrepresentation of Completed Work or Value o Work	314	.050	.377
5.	Conflicts of Interest, Improper Political/Community Involvement	310	.256	<.001**
6.	Discrimination, Favoritism, or Harassment	310	.278	<.001**
7.	Abuse of Company Resources	312	.360	<.001**
8.	Abuse of Client Resources	312	.319	<.001**
9.	Failure to Protect Public Health, Safety, or Welfare	313	.327	<.001**
10.	Improper Relations with Clients, Contractors, etc.	312	.195	.001**
11.	Mishandling Sensitive Information	316	.146	.009**
12.	Failure to Reconcile Employee Or Subcontractor Concerns	314	.346	<.001**
13.	Alcohol and Drug Abuse	316	.165	.003**
14.	Failure to Protect the Environment	316	.298	<.001**
15.	Misrepresentation of Financial Status or Records	314	.203	<.001**

** Correlation is significant at the 0.01 level (2-tailed).

of Completed Work or Value of Work" occurs second most often, and is perceived as the least serious offense.

Perception of Overall Ethical Behavior of the Construction Industry

Self-View and Public View. The demographic portion of the questionnaire asked each participant to rate their perception of the overall ethical behavior of the construction industry (self-view) and also to rate how they thought the general public perceived the overall ethical behavior of the construction industry (public view). A Likert scale with values from 1 to 7 was used, where 1 equals highly "unethical" behavior and 7 equals highly "ethical" behavior. The higher the mean, the higher the perceived ethical behavior of the industry. With 320 of the 321 contractor participants responding, the mean for the perceived self-view of ethical behavior of the industry was 4.78. The mean for the perceived general public view of the industry's ethical behavior was 3.31. There was a significant difference ($t = 19.45$, $df = 319$, $p < .001$) between the perceived self-view and the perceived public view of the overall ethical behavior of the construction industry.

Demographic Factors and Overall Ethical Behavior. Two of the 12 demographic factors, gender and experience, were related to the perceived view of the overall ethical behavior of the construction industry. Females scored the public view significantly higher ($t = -2.16$, $df = 317$, $p = .031$) than that of males. Participants with the least experience (under 10 years) scored the public view significantly higher ($F = 4.00$, $df = 3$, $p = .008$), than 2 of the other 3 experience levels (10-20 years and 21-40 years). None of the other comparisons of experience groups were significantly different.

Demographic Factors and the Fifteen Individual Ethical Issues

Ten of the 11 demographic factors were tested for significant differences among groups. Primary market focus was not measured due to an insufficient response rate from residential contractors. Among contractor demographics, all factors measured had a significant relationship to contractor responses in terms of the 15 ethical transgression issues listed in the questionnaire. Table 4 summarizes the significant demographic variables. Ten percent of frequency tests were significant, and approximately 20 percent of the seriousness tests were significant.

Analysis of Summations. Summated frequency scores and summated seriousness scores were calculated by computing the average frequency and average seriousness scores for all 15 ethical transgression issues listed in the questionnaire. The internal consistency reliability of these scales was tested using Cronbach's coefficient alpha. The alpha for the frequency scale was .78 indicating that the summated scale is internally consistent in measuring the concept of frequency (Gliner & Morgan, 2000). The alpha for the seriousness scale was .93, indicating that the items in the scale are somewhat repetitious or that there are more items in the scale than are really needed for a reliable measure of the concept (Morgan & Griego, 1998). In either case, there is good internal consistency reliability for both scales.

The average summated score for the frequency of issues was 2.73. The average summated score for the seriousness of issues was 3.60. Ten demographic factors were analyzed in regard to the summated scores; gender, age, education, position in company, experience, contractor classification, company size, union affiliation, region of country,

Table 4.
Summary of Significant Demographics

Variable	Responses to the Frequency of Issues	Responses to the Seriousness of Issues
Gender	Males scored higher on question 4.	Females scored higher on questions 2, 3, 4, 5, 6, 11, and on summated score.
Age	Younger contractors scored higher on questions 2 and 14.	Younger contractors scored higher on questions 5, 9, and 13.
Education	Contractors with some college scored lower on question 4. Contractors with the least education scored higher on question 13.	Contractors with the least education scored higher on questions 1, 4, and 7.
Position	Contractors at the executive level scored higher on question 4. Contractors at the management level scored higher on on questions 10 and 13.	No differences.
Experience	Contractors with over 40 years of experience scored lower on questions 1, 2, 8, and on summated score. Contractors with less than 10 years of experience scored higher on question 14.	Contractors with over 40 years of experience scored lower on questions 2, 3, 5, 8, 9, 13, and on summated score.
Contractor Class	Specialty contractors scored higher than general contractors on question 6.	General contractors scored higher than specialty contractors on question 5.
Market Focus	Not evaluated.	Not evaluated.
Company Size	Contractors who work for companies with revenues under $5 million scored lower on question 4.	No differences.
Union Affiliation	No differences.	Contractors who work for companies that are primarily union affiliated scored higher on questions 8 and 9.
Region of Country	No differences.	The Northeast scored higher on question 1. The West scored higher on questions 2, 13, and 14. The Northeast and the West scored higher on questions 8 and 9. The West was higher than the South and Midwest on summated score.
Code of Ethics	Contractors who worked for companies that did not have a written code of ethics scored higher on question 4.	No differences.

The higher the score the more frequently the transgression occurs and the more serious it is when it does occur. Specific differences between groups are detailed in the text.

and presence of code of ethics. Only 3 of the 10 demographic factors showed significant differences among the groups--gender, experience, and region of country.

Females perceived six issues to be more serious than did males. The average summated score for seriousness for females was significantly higher at 3.95 than the average summated score for males at 3.55 ($p = .024$). (See Average Summated Scores at the bottom of Table 6). No significant differences were detected on the frequency of summated issues.

Contractors with over 40 years of experience scored significantly lower ($p = .013$) than either contractors with 10-20 years or 21-40 years of experience on the frequency of summated issues. They also scored lower than those contractors with less than 10 years of experience but not significantly so at the .05 level. (See Average Summated Scores at the bottom of Table 12).

Contractors with more than 40 years of experience scored significantly lower ($p = .006$) than either contractors with 10-20 years or 21-40 years of experience on the seriousness of summated issues. They also scored lower than those contractors with less than 10 years of experience but not significantly so at the .05 level. (See Average Summated Scores at the bottom of Table 13)

The Northeast Region and the Western Region scored highest among the 4 regions on the summated score for seriousness. The Western Region scored significantly higher on the seriousness of issues than the Midwest Region ($p = .028$) or the Southern Region ($p = .040$). (See Average Summated Scores at the bottom of Table18.) No significant differences were detected regarding frequency of summated issues.

Gender. Male contractors rated the frequency of "Misrepresentation of Work Completed or Value of Work" significantly higher ($p < .001$) than did female contractors (See Table 5). This was the only issue indicating a difference regarding frequency.

Table 6 shows female contractors also rated all issues as more serious transgressions--significantly so on 6 out of 15, and on the summated score. This can be seen in Table 6. Significant differences were detected on issues (2) Poor Quality Control or Quality of Work, (3) Improper or Questionable Bidding Practices, (4) Misrepresentation of Completed Work or Value of Completed Work, (5) Conflicts of Interest, Improper Political/Community Involvement, (6) Discrimination, Favoritism, or Harassment, (11) Mishandling Sensitive Information and on the summated score.

Age of Contractors. The One-Way ANOVA analysis of variance was used to compare the responses of contractors in the four categories of age listed in Table 1. Two out of 15 issues were found to be significant regarding differences between certain age groups. The Tukey HSD post hoc test was used to determine between which age groups a significant difference occurred.

As can be seen in Table 7, significant differences were detected regarding frequency of transgression issues (2) Poor Quality Control or Quality of Work and (14) Failure to Protect the Environment. Regarding quality, contractors over the age of 65 perceived less frequent occurrence of poor quality than that of younger contractors.

However, the youngest contractors (age 20-35) perceived a significantly higher frequency of ethical transgressions regarding protection of the environment than all other older age groups. Age was not a factor for summated scores for frequency.

Table 5.

Comparison of Frequency Responses of Male and Female Contractors

Issue	Mean Ratings				t	Significance
	Males		Females			
	M	SD	M	SD		
1. Technical Incompetence or Misrepresentation of Competence	3.03	0.84	2.81	0.88	1.258	.209
2. Poor Quality Control or Quality of Work	3.11	0.86	3.11	0.75	0.018	.986
3. Improper or Questionable Bidding Practices	3.30	1.05	3.44	1.01	-0.671	.503
4. Misrepresentation of Completed Work or Value of Work	3.36	0.99	2.70	0.82	3.362	.001*
5. Conflicts of Interest, Improper Political/Community Involvement	2.62	0.97	2.81	1.06	-0.931	.353
6. Discrimination, Favoritism, or Harassment	2.39	0.99	2.62	1.13	-1.075	.283
7. Abuse of Company Resources	3.01	1.02	2.85	1.16	0.781	.436
8. Abuse of Client Resources	2.67	1.03	2.46	0.90	1.003	.317
9. Failure to Protect Public Health, Safety, or Welfare	2.47	0.92	2.38	0.94	0.447	.655
10. Improper Relations with Clients, Contractors, etc.	2.34	0.96	2.15	0.83	0.940	.348
11. Mishandling Sensitive Information	2.50	1.51	2.30	0.87	0.688	.492
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.71	0.95	2.70	0.99	0.047	.962
13. Alcohol and Drug Abuse	2.73	2.62	2.67	1.21	0.130	.897
14. Failure to Protect the Environment	2.36	0.93	2.41	1.28	-0.171	.865
15. Misrepresentation of Financial Status or Records	2.42	0.98	2.44	0.93	0.121	.904
Average Summated Score	**2.74**	**0.61**	**2.66**	**0.60**	**0.634**	**.527**

*Significant at the .05 level.

Table 6.

Comparison of Seriousness Responses of Male and Female Contractors

Issue	Mean Ratings				t	Significance
	Males		Females			
	M	SD	M	SD		
1. Technical Incompetence or Misrepresentation of Competence	3.52	1.08	3.85	1.20	-1.506	.133
2. Poor Quality Control or Quality of Work	3.78	1.06	4.22	1.01	-2.087	.038*
3. Improper or Questionable Bidding Practices	3.90	1.16	4.37	0.84	-2.048	.041*
4. Misrepresentation of Completed Work or Value o Work	2.99	1.08	3.63	0.97	-2.972	.003*
5. Conflicts of Interest, Improper Political/Community Involvement	3.51	1.18	4.04	1.08	-2.191	.029*
6. Discrimination, Favoritism, or Harassment	3.35	1.28	4.00	1.13	-2.772	.009*
7. Abuse of Company Resources	3.35	1.22	3.50	1.33	-0.612	.541
8. Abuse of Client Resources	3.64	1.26	3.84	1.28	-0.765	.445
9. Failure to Protect Public Health, Safety, or Welfare	3.84	1.30	4.15	1.32	-1.179	.239
10. Improper Relations with Clients, Contractors, etc.	3.59	1.34	3.77	1.34	-0.631	.528
11. Mishandling Sensitive Information	3.39	1.26	3.93	1.27	-2.082	.038*
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.41	1.13	3.74	1.37	-1.417	.158
13. Alcohol and Drug Abuse	4.05	1.25	4.33	1.27	-1.144	.253
14. Failure to Protect the Environment	3.49	1.28	3.96	1.32	-1.823	.069
15. Misrepresentation of Financial Status or Records	3.51	1.25	3.96	1.43	-1.768	.078
Average Summated Score	**3.55**	**0.87**	**3.95**	**0.94**	**-2.26**	**.024***

*Significant at the .05 level.

Table 7.

Comparison of Frequency Responses of Contractors According to Age

Issue	Mean Ratings (Age) 20-35	36-50	51-65	over 65	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	3.08	3.07	3.01	2.65	2.47	.062
2. Poor Quality Control or Quality of Work	3.15	3.17_a	3.15_a	2.67_b	3.74	.012*
3. Improper or Questionable Bidding Practices	3.08	3.40	3.36	3.03	1.74	.158
4. Misrepresentation of Completed Work or Value o Work	3.04	3.41	3.28	3.11	1.65	.177
5. Conflicts of Interest, Improper Political/Community Involvement	2.85	2.63	2.61	2.51	0.59	.619
6. Discrimination, Favoritism, or Harassment	2.50	2.37	2.47	2.31	0.38	.767
7. Abuse of Company Resources	3.23	3.00	2.97	2.91	0.55	.651
8. Abuse of Client Resources	2.85	2.67	2.68	2.29	1.89	.131
9. Failure to Protect Public Health, Safety, or Welfare	2.65	2.41	2.57	2.23	1.71	.165
10. Improper Relations with Clients, Contractors, etc.	2.50	2.35	2.25	2.23	0.65	.581
11. Mishandling Sensitive Information	2.69	2.59	2.35	2.22	1.06	.365
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.00	2.71	2.69	2.58	1.04	.376
13. Alcohol and Drug Abuse	2.69	2.83	2.70	2.35	0.37	.776
14. Failure to Protect the Environment	2.96_a	2.29_b	2.37_b	2.31_b	3.81	.011*
15. Misrepresentation of Financial Status or Records	2.27	2.49	2.44	2.17	1.29	.278
Average Summated Score	**2.84**	**2.76**	**2.73**	**2.50**	**2.17**	**.092**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Table 8 compares contractor responses regarding seriousness of ethical transgression issues among the four age groups. Three out of 15 issues indicated significant differences: (5) Conflicts of Interest, Improper Political or Community Involvement, (9) Failure to Protect Public Health, Safety, or Welfare, and (13) Alcohol and Drug Abuse. In all three cases, contractors over the age of 65 considered the seriousness of the issue to be significantly less than those of younger age groups. Age was not a factor for summated scores for seriousness.

Education. Table 9 indicates that two frequency issues showed significant differences regarding level of education of the respondents. Regarding issue 4, "Misrepresentation of Completed Work," contractors possessing graduate degrees rated it as occurring more frequently than did all other education levels, significantly higher ($p < .001$) than participants with some college or bachelor's degrees. This higher score indicates a perception of higher occurrence of the transgression.

Contractors with a high school education or less scored significantly higher ($p = .029$) than all other education levels when it came to perceived frequency of Alcohol and Drug Abuse occurrences.

Table 10 reflects the responses of participants regarding the seriousness of ethical transgressions by education level. Three of the 15 issues were found to have significant differences among the four education levels; (1) Technical Incompetence or Misrepresentation of Competence, (2) Poor Quality Control or Quality of Work, and (7) Abuse of Company Resources. Participants with a high school education or less scored significantly higher than those participants with Bachelor's Degrees on all three issues.

Table 8.

Comparison of Seriousness Responses of Contractors According to Age

Issue	Mean Ratings 20-35	36-50	51-65	over 65	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	3.42	3.59	3.58	3.41	0.39	.761
2. Poor Quality Control or Quality of Work	3.62	3.96	3.77	3.50	2.40	.068
3. Improper or Questionable Bidding Practices	4.04	4.01	3.99	3.49	2.23	.085
4. Misrepresentation of Completed Work or Value o Work	2.81	3.06	3.15	2.91	0.92	.430
5. Conflicts of Interest, Improper Political/Community Involvement	3.50	3.75_a	3.46	3.03_b	3.96	.009*
6. Discrimination, Favoritism, or Harassment	3.62	3.46	3.35	3.21	0.613	.607
7. Abuse of Company Resources	3.65	3.37	3.35	3.21	0.673	.569
8. Abuse of Client Resources	3.73	3.75	3.66	3.18	1.88	.132
9. Failure to Protect Public Health, Safety, or Welfare	3.96	4.02_a	3.80	3.29_b	3.17	.024*
10. Improper Relations with Clients, Contractors, etc.	3.42	3.70	3.64	3.32	0.95	.419
11. Mishandling Sensitive Information	3.46	3.54	3.43	3.14	0.96	.411
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.38	3.45	3.47	3.44	0.042	.988
13. Alcohol and Drug Abuse	3.96	4.21_a	4.16_a	3.39_b	4.57	.004*
14. Failure to Protect the Environment	3.65	3.67	3.42	3.22	1.64	.180
15. Misrepresentation of Financial Status or Records	3.62	3.60	3.61	3.22	0.978	.403
Average Summated Score	**3.59**	**3.68**	**3.59**	**3.26**	**2.152**	**.094**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Table 9.

Comparison of Frequency Responses of Contractors According to Education

Issue	Mean Ratings HS Or less	Some College	BS Degree	Grad Degree	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	3.14	2.90	2.99	3.21	1.30	.273
2. Poor Quality Control or Quality of Work	3.32	3.06	3.07	3.29	1.23	.299
3. Improper or Questionable Bidding Practices	3.32	3.08	3.36	3.53	1.81	.144
4. Misrepresentation of Completed Work or Value o Work	3.09	2.93_a	3.39_b	3.71_b	6.61	<.001*
5. Conflicts of Interest, Improper Political/Community Involvement	3.00	2.51	2.63	2.66	1.34	.261
6. Discrimination, Favoritism, or Harassment	2.38	2.35	2.38	2.61	0.61	.608
7. Abuse of Company Resources	3.45	2.89	2.95	3.16	2.05	.107
8. Abuse of Client Resources	2.76	2.54	2.65	2.79	0.62	.601
9. Failure to Protect Public Health, Safety, or Welfare	2.38	2.37	2.53	2.32	0.99	.396
10. Improper Relations with Clients, Contractors, etc.	2.71	2.28	2.28	2.32	1.35	.257
11. Mishandling Sensitive Information	2.73	2.31	2.51	2.49	0.55	.646
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.90	2.61	2.69	2.87	0.93	.426
13. Alcohol and Drug Abuse	4.23_a	2.49_b	2.69_b	2.41_b	3.06	.029*
14. Failure to Protect the Environment	2.09	2.31	2.38	2.56	1.24	.295
15. Misrepresentation of Financial Status or Records	2.57	2.29	2.43	2.51	0.68	.566
Average Summated Sore	**2.94**	**2.59**	**2.73**	**2.83**	**2.37**	**.070**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Table 10.

Comparison of Seriousness Responses of Contractors According to Education

Issue	Mean Ratings HS Or less	Some College	BS Degree	Grad Degree	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	4.00$_a$	3.70	3.39$_b$	3.79	3.71	.012*
2. Poor Quality Control or Quality of Work	4.18	3.90	3.73	3.86	1.44	.231
3. Improper or Questionable Bidding Practices	4.14	3.94	3.94	3.89	0.23	.873
4. Misrepresentation of Completed Work or Value o Work	3.64$_a$	3.12	2.91$_b$	3.24	3.67	.013*
5. Conflicts of Interest, Improper Political/Community Involvement	3.95	3.68	3.46	3.55	1.37	.253
6. Discrimination, Favoritism, or Harassment	3.71	3.36	3.38	3.43	0.46	.709
7. Abuse of Company Resources	4.10$_a$	3.32	3.29$_b$	3.37	2.69	.047*
8. Abuse of Client Resources	3.86	3.57	3.66	3.71	0.30	.828
9. Failure to Protect Public Health, Safety, or Welfare	3.81	3.86	3.86	3.95	0.07	.978
10. Improper Relations with Clients, Contractors, etc.	3.76	3.48	3.64	3.63	0.35	.790
11. Mishandling Sensitive Information	3.64	3.46	3.43	3.38	0.20	.897
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.62	3.44	3.40	3.59	0.46	.714
13. Alcohol and Drug Abuse	4.32	3.99	4.08	4.03	0.41	.743
14. Failure to Protect the Environment	3.77	3.50	3.45	3.82	1.18	.317
15. Misrepresentation of Financial Status or Records	3.67	3.56	3.51	3.72	0.36	.784
Average Summated Score	**3.88**	**3.59**	**3.54**	**3.66**	**1.04**	**.375**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Position in Company. The original questionnaire expressed 6 position levels. Due to insufficient numbers for 4 of the 6 categories, the variable was re-coded into 3 positions, executive, management, and other. "Other" includes design/engineering, estimating, and supervision positions.

Table 11 compares participant responses relative to the frequency of ethical transgressions according to position in company. Three of 15 issues indicated significant differences between position levels. The mean score for perceived frequency for those respondents at the executive level was significantly higher than those respondents at the "other" level regarding issue (4) Misrepresentation of Completed Work or Value of Work. The "other" category includes estimators, designers, supervisors, and engineers.

Respondents at the management level scored significantly higher than those at the executive level on the frequency of issues (10) Improper Relations with Clients, Contractors, etc. and (13) Alcohol and Drug Abuse.

No significant differences were detected between position levels regarding the seriousness of ethical transgressions. However, a table comparing the means for each of the 15 issues is included in Appendix D - Miscellaneous Tables (Miscellaneous Table 1).

Years of Experience. Number of years employed in the construction industry was re-coded into 4 experience categories; under 10 years experience, 10-20 years experience, 21-40 years experience, and over 40 years experience. Several issues regarding frequency and seriousness of ethical transgressions were significantly related to experience.

Frequency means of ethical transgressions relative to participant experience are presented in Table 12. Significant differences were found between the four levels of

Table 11.

Comparison of Frequency Responses of Contractors According to Position in Company

Issue	Mean Ratings Exec	Management	Other	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	2.97	3.11	3.06	0.74	.478
2. Poor Quality Control or Quality of Work	3.11	3.21	2.94	1.08	.340
3. Improper or Questionable Bidding Practices	3.28	3.42	3.38	0.51	.600
4. Misrepresentation of Completed Work or Value o Work	3.37_a	3.27	2.91_b	3.10	.046*
5. Conflicts of Interest, Improper Political/Community Involvement	2.60	2.66	2.79	0.54	.584
6. Discrimination, Favoritism, or Harassment	2.35	2.56	2.52	1.28	.280
7. Abuse of Company Resources	3.04	2.97	2.75	1.11	.330
8. Abuse of Client Resources	2.62	2.81	2.59	0.91	.402
9. Failure to Protect Public Health, Safety, or Welfare	2.46	2.53	2.34	0.45	.639
10. Improper Relations with Clients, Contractors, etc.	2.24_a	2.60_b	2.31	3.39	.035*
11. Mishandling Sensitive Information	2.45	2.65	2.39	0.54	.583
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.65	2.90	2.73	1.68	.188
13. Alcohol and Drug Abuse	2.58_a	3.43_b	2.39	3.16	.044*
14. Failure to Protect the Environment	2.37	2.46	2.19	0.85	.427
15. Misrepresentation of Financial Status or Records	2.42	2.48	2.28	0.46	.632
Average Summated Score	**2.70**	**2.87**	**2.64**	**1.92**	**.148**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Table 12.

Comparison of Frequency Responses of Contractors According to Experience

Issue	Mean Ratings Under 10 Yrs.	10-20 Yrs.	21-40 Yrs.	Over 40 Yrs.	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	2.91	3.11_a	3.05_a	2.61_b	3.21	.023*
2. Poor Quality Control or Quality of Work	2.95	3.20_a	3.15_a	2.73_a	2.93	.034*
3. Improper or Questionable Bidding Practices	3.14	3.38	3.34	3.12	0.75	.521
4. Misrepresentation of Completed Work or Value o Work	3.00	3.47	3.30	3.06	2.26	.082
5. Conflicts of Interest, Improper Political/Community Involvement	2.68	2.68	2.61	2.52	0.26	.851
6. Discrimination, Favoritism, or Harassment	2.55	2.56	2.34	2.24	1.49	.216
7. Abuse of Company Resources	2.91	3.11	2.98	2.70	1.38	.249
8. Abuse of Client Resources	2.59	2.82_a	2.67_a	2.09_b	4.34	.005*
9. Failure to Protect Public Health, Safety, or Welfare	2.50	2.50	2.48	2.21	0.89	.449
10. Improper Relations with Clients, Contractors, etc.	2.50	2.26	2.36	2.15	0.82	.484
11. Mishandling Sensitive Information	2.23	2.80	2.38	2.21	2.33	.074
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.91	2.77	2.73	2.35	2.07	.105
13. Alcohol and Drug Abuse	2.36	2.59	2.96	2.11	1.37	.251
14. Failure to Protect the Environment	2.82_a	2.46	2.26_b	2.26_b	2.71	.045*
15. Misrepresentation of Financial Status or Records	2.14	2.50	2.49	2.12	2.18	.090
Average Summated Score	**2.68**	**2.82_a**	**2.75_a**	**2.43_b**	**3.63**	**.013***

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

experience for four of the 15 issues listed in the questionnaire; (1) Technical Incompetence or Misrepresentation of Competence, (2) Poor Quality Control or Quality of Work, (8) Abuse of Client Resources, and (14) Failure to Protect the Environment. Contractors with over 40 years of experience scored perceived frequency significantly lower than did contractors with 10 to 40 years of experience on issues 1 ($p = .023$), 2 ($p = .034$), 8 ($p = .005$), and on the summated scores. However, on issue 14, contractors with the least experience (under 10 years) scored perceived frequency significantly higher ($p = .045$) than contractors with 21 years of experience or greater.

Six issues were found to have a significant relationship between perceived seriousness and experience of the contractor. Those issues include (2) Poor Quality Control or Quality of Work, (3) Improper or Questionable Bidding Practices, (5) Conflicts of Interest, Improper Political/Community Involvement, (8) Abuse of Client Resources, (9) Failure to Protect the Public Health, Safety, or Welfare, and (13) Alcohol and Drug Abuse. On all 6 issues and the summated scores, participants with over 40 years of experience scored perceived seriousness lower than all other experience levels--significantly lower than participants with 10 to 40 years of experience. These results are presented in Table 13.

Contractor Classification. In comparing general contractors to specialty contractors (subcontractors), there was only one issue that indicated significance relative to frequency of ethical transgression. That issue was (6) Discrimination, Favoritism, or Harassment. As can be seen in Table 14, specialty contractors scored significantly higher ($p = .003$) than general contractors, indicating that specialty contractors perceive

Table 13.

Comparison of Seriousness Responses of Contractors According to Experience

Issue	Mean Ratings				F	Sig
	Under 10 Yrs.	10-20 Yrs.	21-40 Yrs.	Over 40 Yrs.		
1. Technical Incompetence or Misrepresentation of Competence	3.32	3.58	3.61	3.33	0.93	.428
2. Poor Quality Control or Quality of Work	3.55	3.82_a	3.94_a	3.25_b	4.39	.005*
3. Improper or Questionable Bidding Practices	4.14	3.97	4.01_a	3.42_b	2.70	.046*
4. Misrepresentation of Completed Work or Value o Work	3.23	3.08	3.02	2.85	0.61	.611
5. Conflicts of Interest, Improper Political/Community Involvement	3.50	3.82_a	3.54_a	2.94_b	4.51	.004*
6. Discrimination, Favoritism, or Harassment	3.59	3.51	3.40	3.00	1.39	.247
7. Abuse of Company Resources	3.18	3.54	3.35	2.97	1.88	.132
8. Abuse of Client Resources	3.45	3.84_a	3.72_a	2.90_b	4.83	.003*
9. Failure to Protect Public Health, Safety, or Welfare	3.91	4.09_a	3.90_a	3.06_b	5.21	.002*
10. Improper Relations with Clients, Contractors, etc.	3.45	3.69	3.66	3.19	1.34	.262
11. Mishandling Sensitive Information	3.41	3.53	3.47	3.09	1.047	.372
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.45	3.36	3.52	3.15	1.14	.332
13. Alcohol and Drug Abuse	3.77	4.22_a	4.23_a	3.06_b	9.84	<.001*
14. Failure to Protect the Environment	3.68	3.64	3.53	3.09	1.66	.175
15. Misrepresentation of Financial Status or Records	3.45	3.66	3.59	3.12	1.63	.183
Average Summated Score	**3.54**	**3.69_a**	**3.63_a**	**3.09_b**	**4.19**	**.006***

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

Table 14.

Comparison of Frequency Responses of Contractors According to Contractor Class

Issue	Mean Ratings General Contractor	Specialty Contractor	t	Significance
1. Technical Incompetence or Misrepresentation of Competence	3.01	2.96	0.39	.697
2. Poor Quality Control or Quality of Work	3.08	3.25	-1.31	.191
3. Improper or Questionable Bidding Practices	3.30	3.34	-0.28	.776
4. Misrepresentation of Completed Work or Value o Work	3.32	3.23	0.61	.543
5. Conflicts of Interest, Improper Political/Community Involvement	2.58	2.85	-1.83	.069
6. Discrimination, Favoritism, or Harassment	2.33	2.77	-2.97	.003*
7. Abuse of Company Resources	2.95	3.25	-1.95	.052
8. Abuse of Client Resources	2.63	2.77	-0.95	.341
9. Failure to Protect Public Health, Safety, or Welfare	2.44	2.49	-0.38	.702
10. Improper Relations with Clients, Contractors, etc.	2.29	2.40	-0.74	.460
11. Mishandling Sensitive Information	2.42	2.72	-1.33	.186
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.70	2.75	-0.35	.730
13. Alcohol and Drug Abuse	2.73	2.66	0.18	.858
14. Failure to Protect the Environment	2.33	2.45	-0.89	.372
15. Misrepresentation of Financial Status or Records	2.40	2.46	-0.40	.686
Average Summated Score	**2.70**	**2.82**	**-1.34**	**.183**

*Significant at the .05 level.

discrimination, favoritism, or harassment to be occurring more frequently than do general contractors.

Likewise, there was only one issue relative to seriousness of ethical transgressions found to be significant between general contractors and specialty contractors. That issue was (5) Conflicts of Interest, Improper Political or Community Involvement. In this case general contractors scored significantly higher ($p = .034$) than did specialty contractors. (See Table 15).

Company Size. Originally, company size was divided into 5 categories. After the results were calculated, an insufficient number of responses from contractors working for companies under $1 million and over $250 million were received. Therefore, company size was re-coded into 3 categories, companies with revenues up to $5 million, companies with revenues between $5 and 50 million, and companies with revenues over $50 million.

As seen in Table 16, company size was related to frequency of only one issue, (4) Misrepresentation of Completed Work or Value of Work. Respondents who worked for companies with revenues between $5 and 50 million scored higher than larger companies, and significantly higher ($p = 021$) than companies with revenues less than $5 million. There were no significant differences detected between company size groups when it came to seriousness of ethical transgression issues, however, Miscellaneous Table 2 compares the means of the various company sizes in Appendix D.

Union Affiliation. There were no differences detected between construction practitioners who were employed by primarily union affiliated companies and construction practitioners who were employed by companies that were primarily non-

Table 15

Comparison of Seriousness Responses of Contractors According to Contractor Class

Issue	Mean Ratings General Contractor	Specialty Contractor	t	Significance
1. Technical Incompetence or Misrepresentation of Competence	3.57	3.53	0.23	.820
2. Poor Quality Control or Quality of Work	3.84	3.77	0.42	.673
3. Improper or Questionable Bidding Practices	3.94	3.96	-0.14	.889
4. Misrepresentation of Completed Work or Value o Work	3.02	3.25	-1.43	.154
5. Conflicts of Interest, Improper Political/Community Involvement	3.61	3.23	2.13	.034*
6. Discrimination, Favoritism, or Harassment	3.39	3.49	-0.51	.608
7. Abuse of Company Resources	3.38	3.34	0.20	.842
8. Abuse of Client Resources	3.71	3.47	1.24	.214
9. Failure to Protect Public Health, Safety, or Welfare	3.87	3.89	-0.09	.923
10. Improper Relations with Clients, Contractors, etc.	3.63	3.55	0.42	.674
11. Mishandling Sensitive Information	3.46	3.43	0.15	.878
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.47	3.31	0.95	.343
13. Alcohol and Drug Abuse	4.10	3.98	0.65	.514
14. Failure to Protect the Environment	3.50	3.74	-1.24	.218
15. Misrepresentation of Financial Status or Records	3.56	3.56	0.03	.975
Average Summated Score	**3.60**	**3.57**	**0.23**	**.822**

*Significant at the .05 level.

Table 16.

Comparison of Frequency Responses of Contractors According to Company Size

Issue	Mean Ratings			F	Sig
	Up to $5 Million	$5-50 Million	Over $50 Million		
1. Technical Incompetence or Misrepresentation of Competence	3.02	3.01	2.97	0.05	.955
2. Poor Quality Control or Quality of Work	3.07	3.13	3.08	0.148	.863
3. Improper or Questionable Bidding Practices	3.30	3.30	3.44	0.32	.723
4. Misrepresentation of Completed Work or Value o Work	3.09_a	3.43_b	3.16	3.90	.021*
5. Conflicts of Interest, Improper Political/Community Involvement	2.66	2.58	2.83	1.07	.344
6. Discrimination, Favoritism, or Harassment	2.30	2.44	2.54	0.95	.386
7. Abuse of Company Resources	3.02	2.93	3.25	1.51	.224
8. Abuse of Client Resources	2.49	2.67	2.89	2.08	.127
9. Failure to Protect Public Health, Safety, or Welfare	2.43	2.46	2.50	0.09	.915
10. Improper Relations with Clients, Contractors, etc.	2.29	2.31	2.42	0.24	.787
11. Mishandling Sensitive Information	2.48	2.47	2.51	0.01	.986
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.57	2.75	2.78	1.22	.296
13. Alcohol and Drug Abuse	3.11	2.53	2.84	1.67	.190
14. Failure to Protect the Environment	2.34	2.35	2.49	0.36	.699
15. Misrepresentation of Financial Status or Records	2.36	2.42	2.57	0.59	.552
Average Summated Score	**2.70**	**2.72**	**2.82**	**0.63**	**.532**

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

union affiliated when it came to frequency of ethical issues. Miscellaneous Table 3 in Appendix D compares the frequency means for union affiliation.

Table 17 reveals that the seriousness of two issues, (8) Abuse of Client Resources and (9) Failure to Protect Public Health, Safety, or Welfare were related to whether or not a contractor was affiliated with a union. Those participants who were affiliated with unions scored significantly higher ($p = .045$ and $p = .015$ respectively) than those participants who were not affiliated with unions, when it came to the perceived seriousness of these two issues.

Region of Country. Although several issues were related to region of country when it came to the perception of seriousness of ethical transgressions, no significant differences were found between regions of the country when it came to how often the transgressions occurred. However, the means of the four regions are compared regarding frequency of the issues in Miscellaneous Table 4 in Appendix D.

Table 18 shows that five various issues were related to region of country; (1) Technical Incompetence or Misrepresentation of Competence, (2) Poor Quality Control or Quality of Work, (8) Abuse of Client Resources, (13) Alcohol and Drug Abuse, and (14) Failure to protect the Environment. The Northeast and the West were found to be significantly different than the other regions on several issues.

Respondents from the Northeast scored "perceived seriousness" significantly higher ($p = .045$) than the Southern region in regard to "Technical Incompetence." Respondents from the West scored "perceived seriousness" significantly higher ($p = .045$) than respondents from the Midwest regarding "Poor Quality." Respondents from the Northeast scored significantly higher ($p = .025$) than all other regions when it came to

Table 17.

Comparison of Seriousness Responses of Contractors According to Union Affiliation

Issue	Mean Ratings		t	Significance
	Union	Non-Union		
1. Technical Incompetence or Misrepresentation of Competence	3.66	3.46	1.55	.122
2. Poor Quality Control or Quality of Work	3.84	3.77	0.58	.561
3. Improper or Questionable Bidding Practices	3.97	3.89	0.59	.553
4. Misrepresentation of Completed Work or Value o Work	3.07	3.01	0.50	.616
5. Conflicts of Interest, Improper Political/Community Involvement	3.49	3.56	-0.47	.641
6. Discrimination, Favoritism, or Harassment	3.47	3.35	0.75	.454
7. Abuse of Company Resources	3.32	3.37	-0.36	.716
8. Abuse of Client Resources	3.82	3.52	2.02	.045*
9. Failure to Protect Public Health, Safety, or Welfare	4.10	3.73	2.45	.015*
10. Improper Relations with Clients, Contractors, etc.	3.68	3.56	0.76	.449
11. Mishandling Sensitive Information	3.47	3.39	0.48	.634
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.48	3.39	0.68	.497
13. Alcohol and Drug Abuse	3.97	4.11	-0.88	.380
14. Failure to Protect the Environment	3.61	3.47	-0.88	.379
15. Misrepresentation of Financial Status or Records	3.55	3.53	0.09	.929
Average Summated Score	**3.63**	**3.54**	**0.84**	**.405**

*Significant at the .05 level.

Table 18.

Comparison of Seriousness Responses of Contractors According to Region of Country

Issue	Mean Ratings NE	S	MW	W	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	3.90_a	3.36_b	3.51	3.66	2.71	.045*
2. Poor Quality Control or Quality of Work	3.82	3.72	3.66_a	4.08_b	2.71	.045*
3. Improper or Questionable Bidding Practices	4.13	3.84	3.90	4.02	0.78	.508
4. Misrepresentation of Completed Work or Value o Work	3.39	3.00	3.01	2.99	1.49	.216
5. Conflicts of Interest, Improper Political/Community Involvement	3.90	3.59	3.48	3.46	1.46	.227
6. Discrimination, Favoritism, or Harassment	3.77	3.28	3.28	3.52	1.91	.128
7. Abuse of Company Resources	3.53	3.26	3.19	3.57	1.81	.145
8. Abuse of Client Resources	4.00_a	3.49_b	3.47_b	3.88_a	3.15	.025*
9. Failure to Protect Public Health, Safety, or Welfare	4.21_a	3.68_b	3.65_b	4.14_a	3.83	.010*
10. Improper Relations with Clients, Contractors, etc.	3.74	3.50	3.49	3.80	1.17	.322
11. Mishandling Sensitive Information	3.50	3.43	3.28	3.58	0.76	.514
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.64	3.34	3.32	3.59	1.43	.233
13. Alcohol and Drug Abuse	4.03	4.04	3.75_a	4.43_b	4.51	.004*
14. Failure to Protect the Environment	3.73	3.37_a	3.33_a	3.82_b	3.07	.028*
15. Misrepresentation of Financial Status or Records	3.75	3.34	3.55	3.72	1.82	.143
Average Summated Score	**3.78**	**3.49_a**	**3.45_a**	**3.75_b**	**2.71**	**.045***

*Significant at the .05 level. Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Tukey honestly significant difference comparison. No subscript means not different from any of the other means.

perceived seriousness regarding Abuse of Company Resources. Respondents from the West scored significantly higher (p = .004) than respondents from the Midwest regarding the seriousness of Alcohol and Drug Abuse. And lastly, the West also scored significantly higher (p = .028) than the Southern and Midwest regions regarding the seriousness of Failing to Protect the Environment.

Company Code of Ethics. Only one issue revealed a significant difference between contractors who worked for companies with a Code of Ethics and those companies that did not regarding frequency of occurrence (see Table 19). That issue is (4) Misrepresentation of Completed Work or Value of Work. Contractors who worked for companies without a Code of Ethics perceived a significantly higher (p = .000) occurrence of this particular transgression. No differences were detected when it came to perceived seriousness of ethical transgressions (see Miscellaneous Table 5 in Appendix D for means showing these comparisons).

Summary of Demographics

Although several individual ethical issues were related to several individual demographic factors, only three demographic factors were found to be significant when it came to the summated scales for perceived frequency of ethical transgressions and summated scales for perceived seriousness of ethical transgressions: experience, gender, and region of country.

Only contractor experience was found to be related to both frequency and seriousness of summated scores for the 15 ethical transgressions. Generally, contractors with the most experience perceived the occurrence of ethical transgressions to be least

Table 19.

Comparison of Frequency Responses of Contractors According to Code of Ethics

Issue Code of Ethics -	Mean Ratings Yes	No	t	Significance
1. Technical Incompetence or Misrepresentation of Competence	2.90	3.05	-1.51	.132
2. Poor Quality Control or Quality of Work	3.04	3.13	-0.89	.374
3. Improper or Questionable Bidding Practices	3.18	3.37	-1.55	.123
4. Misrepresentation of Completed Work or Value o Work	2.78	3.45	-3.93	.000*
5. Conflicts of Interest, Improper Political/Community Involvement	2.69	2.61	0.72	.474
6. Discrimination, Favoritism, or Harassment	2.38	2.41	-0.21	.838
7. Abuse of Company Resources	2.97	2.99	-0.17	.864
8. Abuse of Client Resources	2.54	2.69	-1.18	.237
9. Failure to Protect Public Health, Safety, or Welfare	2.38	2.49	-1.01	.314
10. Improper Relations with Clients, Contractors, etc.	2.31	2.32	-0.10	.923
11. Mishandling Sensitive Information	2.54	2.45	0.47	.641
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.69	2.72	-0.25	.806
13. Alcohol and Drug Abuse	2.61	2.77	-0.50	.615
14. Failure to Protect the Environment	2.36	2.34	0.20	.843
15. Misrepresentation of Financial Status or Records	2.35	2.45	-0.79	.430
Average Summated Score	**2.65**	**2.75**	**-1.19**	**.236**

*Significant at the .05 level.

frequent and, when they did occur, they perceived them to be less serious than contractors with less experience.

Gender and Region of Country were only related to the seriousness of ethical transgressions on the summated scale. Females perceived ethical transgressions to be more serious than did males. Contractors from the West perceived ethical transgressions to be more serious than contractors from the South or the Midwest.

CHAPTER V

DISCUSSION

Introduction

The discussion presented in this chapter generally is organized in the order of the research questions presented in Chapter I. The primary topics for discussion are listed below:

1. In response to research question 1, discussion regarding perceptions relative to the general ethical behavior of the industry is presented. Overall frequency of occurrences and overall seriousness of occurrences is discussed.
2. To broaden the scope of research question 1, discussion relative to the relationship between the perceived frequency of ethical transgressions and the perceived seriousness of ethical transgressions is presented. The discussion focuses on the four most frequently occurring transgressions relative to the seriousness of those transgressions.
3. In response to research questions 2, 3, and 4, discussion regarding perceptions relative to specific ethical transgressions and the relationship of the variables of primary market focus, contractor classification, and gender is presented.
4. In response to research question 5, discussion regarding perceptions relative to specific ethical transgressions and the relationship of the demographic variables of age, education, position in company, experience,

size of company, union affiliation, region of country, and existence of a code of ethics is presented.

5. Conclusions.
6. Acknowledged weaknesses of the study.
7. Implications and recommendations for future research.

The discussion of these results is based upon the presumption of accuracy of the responses. However, it would be prudent to keep in mind that, although the participants were urged to answer honestly, there is no real way of knowing how accurate their responses truly are.

Perceptions of Ethical Behavior in the Construction Industry

One of the primary purposes of this study was to assess the perceptions of experienced construction practitioners regarding the "frequency" and "seriousness" of ethical transgressions within the industry. Research question number one asked, "How frequently do each of the ethical transgressions described in the 15 item questionnaire occur in the construction industry and, when they do, how serious is it considered by experienced construction practitioners?"

Frequency of Occurrence. The scale for frequency ranges from a rating of (1) never occurs, to (5) occurs very frequently. The results indicate that the means for frequency ranged from a low of 2.3187 to a high of 3.3178, with an average mean of 2.727. None of the ethical transgressions appears to be occurring at a level that would be

considered alarming. Only 4 of the 15 individual transgression issues scored a mean of 3.00 or above, with the majority falling between "rarely occurring and occurring sometimes." The "self view" score for overall ethical behavior of the industry supports this result. Where 1 equals highly unethical and 7 equals highly ethical; construction practitioners scored themselves closer to the highly ethical side of the scale, with a score of 4.78, than they did to the highly unethical side of the scale.

Interestingly, the same participants perceived the public to view the ethical behavior of the industry to be significantly less flattering with a score of only 3.31—nearer the highly unethical end of the scale. The significant difference between the perceived self-view and the perceived public view may be reflective of an assessment made in an Engineering News Record article (March 6, 1995) that described the public image of the industry as "abysmal." However, this study did not measure the actual perception of the general public. It only measured the perceptions of contractors regarding how they think the public perceives their ethical behavior. So the score of 3.31 for "public view" is not necessarily a reflection of the public's true view.

In light of this perception, it is interesting to note that several of the trade associations have instigated "image improvement" campaigns in the last few years. For example, the National Association of Home Builders has instigated a public relations campaign, effective January 2000, to create positive public awareness of the building industry by raising visibility for home builders' philanthropic and community programs at the grassroots level. The campaign, known as HOME BUILDERS CARE 2000, is intended to establish a visible and readily recognizable public reminder of the enormous contributions that the home building industry makes to the well-being of those who live

in their community (Design/Build, Jan. 2000).

The Associated Builders and Contractors and the Associated General Contractors have instigated similar campaigns in the last few years. The AGC program, known as "The Build Up Program," was launched in mid-1998. The new industry image program was designed to reach out initially to fifth graders and later to older students making career choices. The program is a combination of curriculum, video, and hands-on activities developed by AGC in partnership with Scholastic Inc., a major educational publisher (Krizan, 1998).

Although the "self view" score was relatively high, there were several written comments included on the returned questionnaires that reflect some concern over the ethical behavior of the industry. Some of those comments are listed below.

- There are still some quality people in our industry, but not as many as there used to be.
- I believe ethics in the workplace have slipped--not just in construction. It's all about "show me the money."
- From my experience I would have to say that the overwhelming majority of contractors are quite ethical--not all, but the overwhelming majority.
- Ninety five percent of the contractors display high ethical values. The other 5 percent are the ones that give the industry a bad name. Very rarely do these 5 percent succeed, but it seems someone always steps in to take their place.

However, not all participants who submitted comments with their questionnaires were so positive. One participant related that "this industry exhibits the highest level of routinely

unethical conduct I have ever observed." None the less, a majority of the comments were positive, attesting that the industry is generally ethical, with its share of dissenters as in any industry. Unfortunately, the participants do recognize that the few do influence the public view of their industry.

Seriousness of Occurrences. The seriousness scale ranges from a rating of (1) not serious at all to (5) extremely serious. The means for seriousness of the 15 different ethical issues ranged from a low of 3.0503 to a high of 4.0870, with an average mean of 3.602. With all 15 issues being scored above a 3.0, it is obvious that the construction practitioners who responded to the survey consider all 15 of the ethical transgressions to be serious when they do occur. One of the participants in the study conveyed in a 2-page letter accompanying his returned questionnaire that ethics is "the most serious issue I have to deal with." He concludes his letter by saying that "the only real problems that we experienced on a recent $46 million project were a direct result of unethical behavior on the part of a few important subcontractors." Although this particular participant points specifically to subcontractors' ethical behavior, it should be noted that this study found no differences between the perceived ethical behavior of subcontractors (specialty contractors) and the behavior of general contractors overall.

The participant indicated that the problem shows itself primarily in the areas of quality and schedule requirements. Interestingly, this study found "poor quality" to be the third most frequently occurring transgression, and the fourth most serious.

The Relationship of Frequency and Seriousness. One of the most interesting aspects of the study is the relationship between an issue's perceived occurrence and its perceived seriousness.

The most frequently occurring ethical transgression, according to the contractors responding, was *"Improper or Questionable Bidding Practices."* This is probably of no surprise to anyone with experience in the construction industry, including the researcher. Examples of this transgression include bid shopping, bid-peddling, bid cutting, and bid rigging.

Most contractors, when interviewed, immediately think of bidding transgressions when asked about ethics. The findings indicate that this issue is also perceived to be the second most serious issue of the 15. The results of this study indicated that questionable or improper bidding practices were perceived to occur more than any of the other ethical transgressions and, when they do occur, they are considered quite serious with a mean score of 3.94 out of 5.

A questionable bidding practice known as "bid-shopping" is discussed in an article entitled "Shop Til They Drop," published in Engineering News-Record (ENR-March 9, 1992) magazine. According to the article, classic bid shopping is well known to the industry. As a matter of fact one of the participants in this study commented on their returned questionnaire that "bid shopping was the number one problem in the industry" and, according to the results, it appears that their perception is correct.

Bid shopping occurs when a prime contractor or owner obtains price quotes and other information from suppliers or contractors and uses the information to induce competitors to submit lower prices. In the article, David G. Miller, president of Buckeye

Electrical Construction and Maintenance Inc. in Newark, Ohio, is quoted as saying that "bid shopping is lying, cheating, and stealing (p.26)." The article contends that bid-shopping and related practices are running rampant in some areas of construction. The article goes on to say that, although few contractors will talk about it on the record, contractors and suppliers claim that bid shopping undermines quality, provokes legal disputes, and invites cheap substitutions.

The above referenced article clearly corroborates the findings of this study regarding both the frequency and the seriousness of questionable bidding practices. However, the findings also evoke a more serious question. If the transgression is occurring as often as it is, and it is perceived as being as serious as it is, why does it continue to occur?

Bid shopping is a very complex and controversial issue. On the one hand, the ENR article points out that concerned contractors and trade associations alike are seeking legislative remedies such as bid listing or bid filing. Furthermore, the practice has been condemned by such organizations as the Associated General Contractors, the American Subcontractors Association, the Associated Specialty Contractors, the American Society of Professional Estimators, and the American Institute of Architects (Katz, 1992). On the other hand, Katz (1992) indicates that the biggest obstacle to controlling or eliminating bid shopping is the federal government. The Federal Trade Commission sees bid shopping as a form of "auction." Moreover, the Federal Trade Commission warns that trade associations that try to bar their members from bid shopping--as opposed to trying merely to persuade them not to do it--could be accused of illegal restraint of trade.

With such mixed messages, and the fear that a contractor will not be competitive if they do not bid shop, it is no wonder that nothing much has been done to correct the problem. As Leslie Baker, chairman of AGC's subcontractor's relations committee and president of Baker Construction in Albuquerque, New Mexico points out in the ENR article, "We've taken a position against it. We deplore it and view it with alarm. But beyond that there isn't a heck of a lot we can do (p. 28)."

To complicate the issue even more is the cyclical economic nature of the construction business and the added pressure that brings to a competitive market. The traditional method of project delivery in the construction business is Design-Bid-Build. Under this method, "low bidders" are awarded the work. Many contractors feel that the only way they can compete is to shop for bids.

One Massachusetts pipe supplier in the ENR article admits he is as guilty as the next guy is. "It's horrible. We're shopping prices because we have no choice. We have to meet payroll (p.27)." According to Katz (1992), bid shopping is more likely to occur when there is a tight economy and work is scarce. "The solution is more work," says a general contractor quoted in the Katz article. "You can talk about ethics all you want, but when it comes down to it, a person does what he or she has to do to keep the doors open (p.31)." According to the ENR article, the simple solution to the problem is to just say no. However, the article goes on to say that not everyone has that kind of fortitude, especially when business is bleak.

Some believe that the Design-Bid-Build delivery method itself, which is dependent upon the lowest bidder, is at the root of the problem. The Collaborative Process Institute points to a flawed system where unethical behavior is rewarded.

> Building projects were once collaborative undertakings between owners, designers, and builders. Early in the Twentieth Century, this system began to come unraveled in the United States. Arguably, builders were the first group to systematically breach the unwritten code by which the industry operated. In many cases, relationships were exploited for unfair advantage, creating large profits for the builders at the expense of the owners and the public at large.
>
> To counteract these abuses, virtually every state in the U.S. adopted 'competitive bidding' regulations requiring all publicly funded projects to be lump-sum bid to interested general contractors from complete design documents. This 'design-bid-build' approach was also widely adopted in the private sector. While these changes made enormous progress in stamping out the widespread abuses in the industry, the collaborative relationship between builders, designers, and owners was dealt a mortal blow.
>
> For a while, designers and owners continued to work collaboratively. However, with a legal wedge driven between designers and builders, it was only a matter of time until designers would be forced to choose between their own success and that of their clients, a dilemma which would be faced by many owners as well. Under pressure from competitive contractors, designers and owners often fought over responsibility and liability, eventually undermining the trust necessary for collaboration.
>
> The economic pressures on the industry during the 1980s brought this tension to a head. Faced with rapidly falling real estate values and project backlogs, the courts were often viewed as a means of surviving the downturn. The entire industry--owners, designers, and builders alike--became engulfed in a tidal wave of litigation. The building industry had completed its transformation: what was once widely viewed as a paradigm of cooperation had now degenerated into one of the most adversarial sectors of the economy.
>
> (From "Collaboration in the Building Process," the Collaborative Process Institute, September 1997)

Given this bleak scenario, it is no wonder that this traditional method of project delivery is reported to be on the decline, according to Engineering News-Record and the Design Build Institute of America. It is projected that the use of Design-Bid-Build will decline from a present market share of 54 percent to less than 40 percent by 2010. On the

other hand, the Design-Build method, which is not dependent upon low bid as a criteria for selecting the successful contractor, will increase its market share from approximately 35 percent currently to over 50 percent by 2010 (ENR, October 13, 1999).

The concerns illustrated in these few articles are reinforced by the results of this study. The need to address the issue of bid shopping and other questionable bidding practices is evident and desired. According to Michael B. Carringer, a chief estimator with Hensel Phelps Construction Company in the ENR article (March 9, 1992), "Bid-shopping is the seed that grows the misshapen tree. It stirs resentment and mistrust before a single shovel of soil has been turned. The net result is the Owner gets cheated (p. 26)."

The second most frequently occurring transgression was *"Misrepresentation of Completed Work or Value of Work."* Examples of this transgression might include:

- Inflating completed work percentages
- Adjusting schedules of value
- Front-end loading schedules of values

Interestingly, although this transgression is perceived to occur second most frequently, it was perceived to be the least serious issue. In other words, although "Misrepresentation of Completed Work or Value of Work" is occurring at a rate just under the occurrence of " Improper or Questionable Bidding Practices," those construction practitioners responding to the survey did not perceive it as being very serious. When correlations between frequency and seriousness were performed on the 15 ethical issues, all issues indicated a significant positive correlation except "Misrepresentation of Completed Work or Value of Work."

A practice known as "front end loading" is an example of "Misrepresentation of Completed Work or Value of Work." According to Kirksey & Maute (1996), front-end loading simply means that the contractor, instead of pro-rating jobsite overhead costs and its profit in all of the items in the schedule of values, adds these items to a relatively few activities that will be completed early in the project. Kirksey & Maute (1996) continue by suggesting that some contractors take front-end loading a step further and readjust the values of various items of work. For example, a contractor may reduce the value of work to be completed late in the project and add the amount by which late-finished work is reduced to the value of work to be completed in the beginning of the project. These practices allow the contractor to "secretly" bill for all of its overhead and profit early in the project, thereby negating the adverse effects to its cashflow of any stipulated retainage. According to Kirksey & Maute (1996), most architects are aware that front-end loading is a common practice and approve applications for payment anyway. Such nonchalance only adds to the perception of triviality when it comes to this issue.

Although many contractors view this practice as insignificant, as evidenced by the finding for seriousness, Kirksey & Maute (1996) contend that they are at risk for civil fraud claims. An example of how serious the transgression might be appeared in the June 21, 1999 issue of Engineering News-Record (ENR, p.16). The U.S. attorney in St. Louis charged that a large contractor falsified invoices to get early payment from the government on certain federal projects. The suit alleges that the contractor engaged in "frontloading," or improperly seeking early payments on several projects. At stake were several projects valued at almost 200 million dollars.

The practice of holding retainage may be one of the reasons contractors use to justify front-end loading. Retainage is a strategy implemented by Owners to protect their interest in case of contractor default. The Owner retains a portion (usually 10 percent) of each progress payment due the contractor during the course of construction. The accumulated retainage is finally paid to the contractor when the job is complete and all subcontractors and suppliers have executed final releases of claims. However, Kirksey & Maute (1996) point out that many contractors argue that retainage is unfair because a contractor's net profits are often less than five percent of the contract price, and retainage forces them to absorb real performance costs until final payment.

Given the nonchalant attitude of architects who approve applications for payment and the perception of unfairness by contractors regarding the practice of retainage, the apparent conflict between frequency and seriousness of "Misrepresentation of Completed Work or Value of Work" is perhaps understandable.

The third most frequently occurring ethical transgression in the industry according to the participants of this study is *"Poor Quality Control or Quality of Work."* This transgression also ranked among the four most serious ethical transgressions, ranking fourth among the 15 issues. Examples of this transgression may be:

- Cutting corners in the face of budget or time pressures
- Not satisfying specifications
- Hedging on standards
- Not performing in a workmanlike manner

There is plenty of evidence to corroborate the findings of this study regarding concerns around the issue of quality. According to Schriener, Angelo, and Mc Manamy (1995) the construction industry is way behind the curve on quality management from what it should be. The quality statistics are dismal. Only about 20 of the 6,300 U.S. firms certified for ISO 9000 quality standards by 1995 were from the design and construction industries (Schriener, Angelo, and Mc Manamy, 1995). Less than 50 percent of Associated General Contractors members surveyed by Doloitte & Touche LLP said they were using or planning to use quality teams (Engineering News-Record, 11/14/94, p.10).

Krizan (1999) suggests that when many U.S. contractors hear the words "ISO registration," eyes quickly glaze over or roll upward in anticipation of another numbing layer of bureaucracy. But the globalization of industrial and manufacturing markets and clients' relentless march toward higher quality product and service suppliers has persuaded some specialty and general contractors that the registration process can be a tool to clean up their own acts as well as demonstrate a quality commitment to clients.

The findings of this study indicate that contractors do consider the issue of quality to be a serious one, as they should. As pointed out in a May 15, 1995 article in ENR entitled "Customers Demand the Industry Take Quality Very Seriously," owners are asking what kind of quality program you have when you bid now. Contractors can no longer get by with some seat-of-your-pants answer. Owners are looking for a serious, formal program.

According to Schriener, Angelo, and Mc Manamy (1995), owners are demanding it, consultants are preaching it, and construction firms are still struggling with it, as the

results of this study indicate. Construction historically is an industry reluctant to change. However, overseers of the industry's evolving total quality management movement say they are still winning converts in droves, despite institutional resistance to change and pockets of criticism over unsuccessful applications (ENR, February 27, 1995, p.15).

The traditional project delivery method of Design-Bid-Build, where low bid is the single criteria for contract award, may contribute to problems with quality. According to Buckner-Powers (1999), when a giant in the health care industry (Columbia/HCA) switched from the traditional method of competitive low bid for the construction of their new hospitals to a negotiated cost-plus method, quality went up and costs went down.

An executive with Columbia/HCA relates in the article that "the company had trouble when it was hard bidding projects (low bid method). We were getting some bad products, hordes of change orders and a lot of hard feelings. But it was a problem of the company's own making. We were asking for the cheapest a company could give and still survive (p.85)." Columbia/HCA is measuring data that it expects will continue to show the new approach delivering a better quality product at a lower cost; not to mention lower stress levels for everyone involved.

The fourth most frequently occurring ethical transgression is *"Technical Incompetence or Misrepresentation of Competence."* Examples of this transgression might be:

- Operating outside one's area of expertise
- Operating without a license
- Misleading advertising or claims for performance or products
- Misleading schedules or ability to perform

- Misleading information on resumes or qualifications statements

Although this transgression was ranked fourth for frequency it was only ranked ninth for seriousness of ethical transgressions. The researcher found very little written on the issue of technical incompetence or misrepresentation of competence specific to the construction industry. Contractors who operate without proper licensing are an issue in some segments of the industry and one with which the public, in particular, needs to be concerned. However, this is rare among AGC members or commercial contractors in general. However, submitting misleading schedules or ability to perform is an issue of misrepresentation that is common in the industry. One of the simplest examples is when a contractor or subcontractor represents that he/she will start their portion of work at a certain time and complete it at a certain time and than fails to do so. From the researcher's personal experience, this transgression is very common in the industry. This may be why "misrepresentation of competence" shows up in the top four most frequently occurring transgressions. However, the researcher suspects that most construction practitioners do not view this practice as an ethical transgression at all and thus the low ranking when it comes to seriousness of the transgression.

Not all of the top four ranking transgressions in terms of frequency showed up on the top four most serious transgressions. Only two of the four most frequently occurring transgressions appeared to be considered among the top four most serious transgressions.

The number one, most serious ethical transgression was *"Alcohol and Drug Abuse."* This issue was number six on the frequency side. Construction supervisors, laborers, plumbers, and painters rank among occupations with the highest levels of illicit

drug and heavy alcohol use, according to survey by the federal government (Korman, 1996).

According to Korman (1996), illicit drug use by construction industry employees remains well above the average for all industries. Overall, the construction industry had the sixth-highest rate of current illicit drug use at 12.2 percent. Certain construction occupations are worse than the industry average. The occupational category in the study that includes roofers, masons, and tilesetters ranked highest for current illicit drug use at 17.3 percent. Construction supervisors were a close second at 17.2 percent. The picture for heavy alcohol use was gloomier. Construction laborers and the category covering roofers, masons, and tile setters were the top two categories, each showing that 20 percent of the people surveyed were heavy alcohol users.

However, Korman (1996) goes on to report that the overall use of drugs on or off the job has been declining in construction and all other industries since the 1980s. The overall decline in construction industry drug use is tied to drug testing by employers. Drug testing of employees from 1993 to 1995 drove down the positive test results from about 14 percent to 6 percent, according to Earl Seruntine, president of Advanced Management Concepts. His company provides drug-testing services to members of the Associated Builders and Contractors.

Given the safety concerns typical to every job site, it is no surprise that this issue would show up as a very serious ethical transgression. Workers' compensation rates and other safety concerns are a great deterrent to allowing alcohol or drugs on a job site. In response, many construction companies, like Rentenbach Constructors, Inc., a North Carolina Contractor, have adopted "Drug-Free Workplace Policies" that require

employees to submit to random drug testing (ENR, Oct. 18, 1999). One of the participants in the study commented on their returned questionnaire that union members have drug-testing mandatory in their contracts.

Another issue ranking among the four most serious ethical transgressions was *"Failure to Protect Public Health, Safety, or Welfare."* Although this issue ranked high on the seriousness side, it only ranked eleventh out of 15 regarding frequency of occurrence. There are probably more government regulations pertaining to "Public Heath, Safety, and Welfare" than any other ethical transgression category on the questionnaire. Frequent inspection by OSHA, building officials, and other regulatory agencies is standard practice in the construction industry. Violations result in job shut downs, significant fines, and denial of permits. This may be the reason why the issue is considered so serious, and yet it occurs so infrequently.

Effects of Demographic Factors on Perceptions of Ethical Transgressions

Although the discussion considers all eleven demographic variables, only three of the variables showed significant differences among the groups for summated scores -- gender, experience, and region of country. The summated scores consider all 15 issues as a group and therefore may reflect an overall perception of frequency and seriousness of ethical transgressions in general. All eleven of the variables are discussed below.

Market Focus. Research question 2 asked, "How do the perceptions of residential construction practitioners and commercial construction practitioners differ regarding the frequency and seriousness of ethical transgressions within the construction industry?"

Unfortunately, this comparison was not possible to make. The number of residential construction practitioners who responded to the survey was insufficient to make the comparison. Only 13 of 307 contractors listed their primary market focus as being residential. The main reason for the lack of residential representatives was the sample source. The AGC is primarily a trade association representing commercial contractors. Therefore, question 2 could not be addressed in this study.

Contractor Classification. Research question 3 asked, "How do the perceptions of general contractors differ from subcontractors regarding the frequency and seriousness of ethical transgressions within the construction industry?" In the analysis of summated scores, there were no significant differences between general contractors and specialty contractors (subcontractors) regarding either frequency or seriousness of ethical transgressions. However, there were differences detected for specific ethical issues.

Specialty contractors perceived discrimination, favoritism, or harassment to occur more frequently than did general contractors. This may be best explained by the normal contractor-subcontractor relationship that exists with traditional competitive bidding. For example, when a subcontractor submits a price quote to a general contractor, the contractor is under no obligation to accept their price, and enter into a contract with them, even if they are the low bidder. The general contractor is generally free to use any subcontractor they choose, whether they submitted the low price or not. This opens the door for unfair treatment, favoritism, and possible discrimination. It is of no surprise to the researcher that there is a difference between general contractors and specialty

contractors when it comes to the perception of discrimination, favoritism, or harassment frequency.

General contractors perceived "Conflicts of Interest, Improper Political, or Community Involvement" to be more serious than did specialty contractors. One possible reason for this difference may be that general contractors are more likely to be in a position to experience such activities than are subcontractors. For example, it is the general contractor who is typically responsible for obtaining building permits, requesting inspections, or requesting regulatory variances.

Gender. Research question 4 asked, "How do the perceptions of male construction practitioners differ from female construction practitioners regarding frequency and seriousness of ethical transgressions within the construction industry?"

When considering the summated scores for all 15 ethical issues, female construction practitioners did not perceive the frequency of ethical transgressions to occur any more than male construction practitioners overall. However, females did perceive the seriousness of ethical transgressions to be significantly higher than did males. Females perceived 6 of the 15 issues to be more serious than did their male counterparts. The ethical issues perceived as more serious to the female respondents include poor quality; questionable bidding practices; misrepresentation of completed work; conflicts of interest; discrimination, favoritism, or harassment; and mishandling of sensitive information.

It should be noted that, although the percentage of women to men in this study is low at 9.2 percent, it is representative of the industry ratios in reality. Women currently make up only 7 percent of the industry as a whole. However, it should be noted that this

number represents a significant increase when one considers the number was practically zero in 1987 (Touby, 1996).

Given the small sample size, one might question the reliability of the findings of this study. However, there is abundant research supporting the differences between men and women when it comes to perceptions regarding ethical behavior.

For example, Dawson (1997), points to several studies revealing that the ethical standards of women were higher than the ethical standards of men and found females to be more concerned with ethical issues in business than their male counterparts. In a recent article in Engineering News Record (May 24, 1999), Richard D. Fox, executive vice-president of Camp, Dresser, & McKee Inc. of Cambridge, Massachusetts, expressed his concern regarding an increase in voluntary turnover of employees. He specifically commented that, "We are very concerned about losing women. They told us that as an organization, we weren't fixing things that are wrong soon enough."

In consideration of single-issue differences, it should be noted that males perceived the frequency of "Misrepresentation of Completed Work or Value of Work" to be greater than did women. This difference may be explained by the likelihood that there are fewer women in the positions usually deemed responsible for preparing schedules of value or percent complete documents, and therefore are not witness to such activities.

Research question 5 asked, "What relationships exist between experienced construction practitioners perceptions of frequency and seriousness of ethical transgressions within the construction industry and the demographic variables of age, education, position, experience, company size, union affiliation, region of country, and company code of ethics?" These variables are discussed below. Two of them,

experience and region of country, revealed significant differences for summated scores as well as for individual issues.

Age. Younger construction practitioners perceived more frequent occurrences for 2 of the 15 ethical transgressions, Poor Quality and Failure to Protect the Environment. They also perceived 3 of the 15 transgressions to be more serious than did older construction practitioners. The three thought to be more serious by younger participants were Conflicts of Interest; Improper Political or Community Involvement; Failure to Protect Public Health, Safety, or Welfare; and Alcohol or Drug Abuse.

One of the reasons for the differences between younger and older constructors may simply be a more idealistic view of ethical behavior by younger people, especially in regard to such issues as quality or protecting the environment. In a previous study conducted by the researcher (Jackson, 1998), younger construction students scored significantly higher on the "ethical" response to several questionable ethical situations. In other words, they offered a more ethical response to questionable scenarios. In this regard, the findings of this study coincide with the findings of the researcher's previous study.

Education. Contractors with the least education (high school or less) perceived one transgression to occur more frequently than more educated contractors, "Alcohol and Drug Abuse." It is possible that alcohol use or drug use is more likely to viewed at the "field" or "labor" level. Construction laborers were among the top two occupational categories for heavy alcohol use in a study conducted by the federal government according to Korman (1996). It is more likely to have less educated practitioners working as laborers than it is to have higher educated practitioners working as laborers.

Given that alcohol or drug abuse is considered to be the most serious ethical transgression according to the participants in this study, these construction practitioners may provide the greatest insight into the depth of the problem.

Contractors with the least education also perceived three transgressions to be more serious than did contractors with more education: Technical Incompetence, Misrepresentation of Completed Work, and Abuse of Company Resources.

Position in Company. Construction practitioners at the executive level perceived "Misrepresentation of Work or Value of Work" to occur more frequently than persons classified as "other" for the purposes of this study (designers, engineers, estimators, supervisors). On the other hand, executives perceived two transgressions to occur significantly less frequently than did those at the management level. Those two transgressions were Improper Relations with Clients, Contractors, etc., and Alcohol and Drug Abuse.

This finding may be related to an executive's direct exposure to the situations where such activities might occur. For example, it is more likely for an individual at the executive level to be involved with schedules of value than it is for someone who is a designer or supervisor. On the other hand, it is less likely that someone at the executive level is going to be directly in contact with the field where something like alcohol or drug abuse may occur. Therefore, those at the executive level may simply not be as privy to certain ethical transgressions as might someone at the management level.

No differences were detected between position groups for perceived seriousness of ethical transgressions.

Experience. Analysis of the summated scores revealed that contractors with over 40 years of experience perceive ethical transgressions overall to occur less frequently than do contractors with less experience (10 to 40 years). Furthermore, contractors with over 40 years of experience perceive ethical transgressions to be less serious overall than do contractors with less experience (10 to 40 years).

Specifically, more experienced construction practitioners perceived three transgressions to occur less frequently than did less experienced practitioners: Technical Incompetence, Poor Quality, and Abuse of Client Resources. More experienced construction practitioners perceived six transgressions to be less serious than did less experienced practitioners: Poor Quality; Questionable Bidding Practices; Conflicts of Interest; Abuse of Client Resources; Failure to Protect Public Health, Safety, or Welfare; and Alcohol or Drug Abuse.

One explanation for this finding might be that practitioners at this level of experience are probably furthest from the day to day operations where the ethical transgressions might occur and where they may have to deal with the consequences of such transgressions. On the other hand, practitioners at this experience level might actually be acutely aware of the consequences of such transgressions, but find them to be less important than other factors impacting their businesses.

Another reason for the differences between more experienced practitioners and less experienced practitioners may be that those construction practitioners with over 40 years of experience have simply become resigned to unethical practices which have become standard practices--like bid-shopping and front-end loading schedules of value.

Such common behavior may simply be deemed more acceptable after 40 years of working in the construction industry.

Company Size. There were very few differences between the various company sizes in regard to perceptions of frequency and seriousness of ethical transgressions. Only one difference was detected. Contractors who work for companies with revenues under 5 million dollars perceived "Misrepresentation of Completed Work" to occur less frequently than did companies with revenues of 5 to 50 million dollars. There were no differences perceived between company sizes regarding "seriousness" of ethical transgressions.

Union Affiliation. It should be pointed out that the actual participants who responded to this survey are not typically members of unions themselves (mostly executives and managers). However, they may very well hire union workers to perform the actual construction. This is what was meant by "primarily union affiliated."

Surprisingly, there were no differences between respondents from companies which were primarily union affiliated and companies which were primarily non-union affiliated when it came to perceived "frequency" of ethical transgressions. Much of the corruption typically reported in the media links questionable ethical behavior and illegal activity to union affiliation. Several examples are listed below:

- Union President Arthur A. Coia is charged with improper dealings with mobsters and suppliers. (Winston, 1997)
- Oklahoma Union Official indicted for fraud for falsifying prevailing wage records on construction projects that didn't exist. (ENR, July 28, 1997)

- Agents of the country's biggest plumbers' and pipefitters' local union pleaded guilty to racketeering charges in New York State Supreme Court. (ENR, May 13, 1996)
- Federal government to keep watch over New York's mason's union for an additional three years. (ENR, Feb. 15, 1999)
- Laborer's union in Chicago is placed under trusteeship to rid the union of the influence of organized crime. (ENR, Feb. 16, 1998)
- A jury in New York City convicted the former leader of the New York District Council of Carpenters of misappropriating union funds for personal use. (ENR, April 6, 1998)

Although such media headlines might suggest a relationship between union affiliation and questionable ethical behavior, the results of this study indicate otherwise. However, the results do reflect the notion suggested in a March 10, 1997 Engineering News Record article, that more and more there is less of a difference in views between responsible union and nonunion leaders.

On the other hand, two ethical issues were perceived to be more serious by respondents from companies that were union affiliated. Those two transgressions were Abuse of Client Resources and Failure to Protect Public Health, Safety, or Welfare. It may be that union affiliated companies are more scrutinized by the media and the press and, therefore, see such transgressions as being more serious due to potential consequences than those who are employed by companies which are not union affiliated.

Region of Country. No differences were detected among the regions pertaining to the perceived frequency of ethical transgressions. This was a surprise to the researcher.

Several contractors were interviewed prior to starting this study and many expected differences between regions regarding the occurrence of ethical transgressions. This was not the case.

However, after analyzing the summated scores for "seriousness" of ethical transgressions in relation to regions of the country, there were significant differences between the regions. The Western Region of the United States which included the states of Arizona, New Mexico, Colorado, Wyoming, Montana, Utah, Idaho, Nevada, California, Oregon, and Washington, perceived ethical transgressions overall to be significantly more serious than did construction practitioners from the Midwest or Southern Regions.

Given higher standards and increased legislation around such things as auto emissions, environmental issues (spotted owl, red frogs, etc.), and anti-sprawl initiatives (Save Our Agricultural Resources-SOAR), one could speculate that western states are more sensitive to ethical issues than are the other regions of the country. This might help explain the differences regarding "seriousness" of ethical transgressions. However, the investigator was unable to find any research that would substantiate this speculation.

When considering individual transgressions, the Northeast Region perceived "Technical Incompetence" to be a more serious transgression than did the Southern Region. The Western Region perceived "Poor Quality" and "Alcohol or Drug Abuse" to be more serious than did the Midwest Region, and "Failure to Protect the Environment" as more serious than either the Southern or Midwest Regions. The Northeast and the Western Regions perceived "Abuse of Client Resources" and "Failure to Protect Public Health, Safety, or Welfare" to be more serious than did the South or Midwest Regions.

Code of Ethics. There were very few differences between respondents who worked for companies with a written code of ethics and those who worked for companies without one. Only one difference was detected. Practitioners who worked for companies with a written code of ethics perceived "Misrepresentation of Completed Work or Value of Work" to occur more frequently than did practitioners who worked for companies without a code of ethics. One of the reasons for this difference might be that companies with a written code of ethics might actually forbid this common practice and, in so doing, make its occurrence that much more noticeable. For example, Granite Construction Corporation of Watsonville, California has a written "Code of Conduct." A rule of conduct spelled out in that code conveys that "no company transaction or payment shall be made with fraudulent, false or misleading documentation." Such a statement would probably prohibit "Misrepresentation of Completed Work" even when this practice is considered commonplace in the industry. Therefore, when such a transgression does occur, it clearly stands out as being unethical when measured against the company code of ethics. When the researcher interviewed Brian Fox of Granite Corporation, he pointed out that having a written code of ethics helps his company clarify expected employee behavior in regard to "questionable practices" commonly encountered in the industry. According to Fox, "It is far more responsible to come right out and tell your employees how you want them to react in these situations than it is to sit on the fence and let them sweat it out on their own."

No differences were detected between participants who worked for companies with a code of ethics and those companies without a code of ethics regarding the "seriousness" of ethical transgressions.

Conclusions

One of the primary objectives of this study was to ascertain the perceptions of construction practitioners regarding the extent to which ethical transgressions occur in the construction industry. The assumption was that those persons actually working in the industry know better than anyone else does when it comes to issues like poor quality, improper bidding practices, discrimination, abuse of client resources, and alcohol or drug abuse, just to name a few. Participants were asked to base their responses on their personal experience working in the industry, and they were assured of anonymity. According to the construction practitioners who responded to the survey, the frequency of the kinds of ethical transgressions presented in the questionnaire is rare. As a matter of fact, the participants of this study view the behavior of the construction industry to be quite ethical. However, they do perceive that the general public does not hold their industry in the same positive light. The industry acknowledges that it has an image problem and is taking steps to address through various campaigns initiated by the Associated Builders and Contractors, the National Association of Home Builders, the Associated General Contractors, and others.

Another primary objective of the study was to ascertain the perceived seriousness of ethical transgressions when they do occur in the industry. Clearly, those construction practitioners who responded to the survey think ethical transgressions are a serious

matter. Some of the ethical issues, like alcohol or drug abuse, improper bidding practices, and failure to protect public health, safety, or welfare, are close to being perceived as extremely serious. There have been serious efforts made to address some of these issues with mixed results. For example, drug testing is mandatory for union workers but not for non-union workers, although many companies now require drug testing at least at the time of hiring. Bid listing legislation has been adopted in more than two dozen states, and most trade associations have condemned the practice of bid shopping; however, the Federal Trade Commission warns trade associations to step lightly in this area to avoid anti-trust violations themselves. There are no easy answers to these serious ethical concerns. However, efforts are being made, and individual company results are often positive. But, as an industry, there appears to be no clear mandate or requirement to address serious ethical issues, even when a significant number of industry people share similar concerns.

Not all ethical issues are considered serious even when they occur more frequently (for example, Misrepresentation of Completed Work or Value of Work). It is questionable whether some items listed in the questionnaire represent ethical transgressions at all, as far as the industry is concerned. There appears to be a lack of accountability among the parties when it comes to certain activities, for example, front-end loading schedules of values to offset retainage charges. Such nonchalance clouds the issue to the point where the integrity of the system itself is jeopardized.

The results of this study indicate that female construction practitioners perceive ethical transgressions to be more serious than do male construction practitioners. In a previous study conducted by the researcher, a similar result was found when

comparing the ethical perceptions of female construction students and male construction students. However, at that time, the researcher concluded that it seemed unlikely that this would have much impact on the industry as a whole given the small number of women who were actually employed in the industry. However, there are current reports that suggest a different outlook. The National Foundation for Women Business Owners reported in 1997 that between 1987 and 1996 construction was the *fastest-growth* area for women business owners (Touby, 1997). Additionally, the number of women starting construction businesses was staggering. In 1997, over 320,000 female contractors employed more than a million people and took in $130.4 billion in revenue, representing an increase of 170 percent in nine years (Touby, 1997).

Furthermore, the nature of the business itself is changing. Touby (1997) may have said it best. "More and more construction companies are being run by MBAs than craftsmen. Bidding on and completing a project requires a whole new constellation of professional skills. What this means is that the straw boss mentality is giving way to a new, more sophisticated business style, and female contractors are perfectly poised to prosper (p. 40)." And, given the evidence suggesting that women may be more sensitive to ethical issues (Cole, 1993, Dawson, 1997, and Jackson, 1998), one might expect to see real changes in the ethical culture of the industry.

On the other hand, one must not overlook several theories also presented by Dawson (1997). He suggested that the opposite could occur--while women may enter business careers with values different from men, they will respond similarly to the same training and occupational environment and become more like men in their actions and perceptions.

Although women still make up a very low percentage of the total workforce in construction (7 percent), the increases have been significant. Furthermore, those women entering the construction industry are entering at higher positions. More and more women (and men) are being professionally educated in construction. At Auburn University, in Alabama, John Mouton, head of the department of building science, says he has seen a steady increase in the number of women getting construction related engineering degrees. Mouton says there is a tremendous demand for these graduates in the workforce. Women make up 10 percent of the class, and the university estimates that the number will double every five years until it hits 40 percent (Touby, 1997).

There appears to be an association between the perceived "frequency" and "seriousness" of ethical transgressions and "experience" of the construction practitioners. Analysis of the summated scores revealed that contractors with over 40 years of experience perceive ethical transgressions overall to occur less frequently than do less experienced constructors. Furthermore, contractors with over 40 years of experience perceive ethical transgressions to be less serious overall than do contractors with less experience. There was very little research found by the investigator to corroborate these findings and the researcher questions the validity of them. Construction practitioners with over 40 years of experience are likely to be over age 60 and may not be as close to the day to day construction operations as they once were. Thirty-five participants were listed as having over 40 years of experience, and 37 participants were over age 65. Therefore, they may be out of touch and unable to access the real ethical behavior of the industry.

There appears to be no differences across regions of the United States in regard to the frequency of ethical transgressions. This came as a surprise to the researcher. Most contractors that were interviewed prior to the start of this study expected regional differences. It was thought that the frequency of transgressions would be higher in the Northeast by most of the contractors interviewed. This notion was often associated with union corruption being more prevalent in the Northeast. Interestingly, no differences were found between respondents from union affiliated firms and respondents from non-union affiliated firms when it came to frequency of transgressions either. And, although the lowest number of respondents to the study came from the Northeast, the number was still sufficient to make reliable comparisons.

However, there was an association between the perceived "seriousness" of ethical transgressions and "region of country." The Western Region of the United States perceived ethical transgressions overall to be significantly more serious than did construction practitioners from the Midwest or Southern Regions. The investigator found no research to corroborate this finding.

Some ethical transgressions are perceived to be occurring more than others are. Improper or questionable bidding practices were perceived to be the most frequently occurring ethical transgression. It is also considered quite serious when it does occur. Although many trade associations and some legislative regulations are addressing it, it appears that the problem is not going away any time soon.

Some ethical issues are perceived to be more serious than others are. Alcohol or drug abuse was perceived to be the most serious ethical transgression. Fortunately, mandatory drug testing by unions and substance abuse policies initiated at the company

level have resulted in a steady decline in both drug use and heavy alcohol use among construction workers since the 1980s.

Although some may joke at the notion of construction ethics, it is clear from this study that the issue of ethics is no laughing matter to those who work in the industry. Three hundred twenty one experienced construction practitioners from all over the United States participated in this study. According to the National Center for Construction Education, construction in the United States makes up over eight percent of the Gross National Product, which is more than the automotive and steel industries combined. Over 5.3 million people have careers in the construction industry. Any impact that this study may have on the ethical behavior of the industry will potentially have far reaching consequences.

Acknowledged Weaknesses of the Study

1. Overall scope of the study: In hindsight, the researcher acknowledges that the overall scope of the study relative to the numerous variables to be considered was very broad and difficult to manage. Any single variable or ethical issue relative to the variables could have been a legitimate study in and of itself. However, the broad scope of the study helps illuminate the richness of the topic, revealing a multitude of opportunity for future research.
2. Difficulty in obtaining sample: As alluded to in Chapter III, the methodology for obtaining the sample had to be revised. This change in methodology, although necessary, ultimately impacted the study's outcomes. For example, one of the primary goals of the study was to look at the differences between residential

contractors and commercial contractors regarding perceptions of ethical transgressions. However, under the new methodology, an insufficient number of residential contractors responded to the survey.

3. Low response rate: Although the overall sample size was adequate, the study would have been stronger if a higher response rate could have been obtained. A larger overall sample size would have increased subgroup sizes, which would have reduced potential sampling error and strengthened the overall study.

4. Limited representation of various subgroups:

    a) Residential Contractors: One of the primary targets of the study, residential contractors, could not be accessed due to a lack of subjects. The Associated General Contractors was an inappropriate source for residential contractors. However, when it came to finding a single trade association to represent the industry and in consideration of the other variables, the AGC was the best selection.

    b) Women: Although an attempt was made to over sample women contractor members of the AGC, it was not possible. The general AGC membership list denotes companies and not individuals and although the officers of each company were listed, it was impractical to review over 7000 companies in an attempt to find all of those headed by women. The researcher contacted the AGC to determine whether a separate list or database was available which specifically identified women members. There was no such list or database. Therefore, increasing the sample size for women was not an option.

The researcher acknowledges that sampling error goes up when subgroups are small.

c) Lack of "Trades" Perspective: As previously stated, the AGC membership list is comprised of construction companies and identifies officers of each company. Assuming that a higher response rate would be obtained by sending questionnaires directly to individuals rather than to "companies," questionnaires were sent directly to CEOs, Presidents, Vice Presidents, or Managers of the companies. The researcher recognizes that the "trades" or the "field" (labor force) perspective has not been considered in this study and that the executive-management perspective may have been biased and not necessarily representative of the industry as a whole.

5. Questionnaire scope: The scope of some of the issues listed on the questionnaire was too broad. For example, the issue that dealt with "Improper or Questionable Bidding Practices" listed bid shopping, bid peddling, and bid rigging as samples of these practices. Several respondents pointed out that it was difficult for them to rate the frequency or the seriousness of the general issue (questionable bidding practices) because the range of samples was too broad. Bid shopping, which is not against the law, occurs often. Bid rigging which is illegal (conspiracy to commit fraud) is another matter altogether and rarely occurs. Some respondents justified their responses by crossing out bid rigging as one of the samples and noting that it was "another whole issue."

Implications and Recommendations for Future Research

The findings of this study suggest the following implications and recommendations for future research.

1. It is clear from numerous written comments included with the returned questionnaires that ethics is a topic of great interest and concern to many in the industry. Several of those comments are listed below:

- I applaud this effort and am eager to see the results.
- This is a very worthwhile endeavor. I hope some good comes of it.
- Excellent survey topic. The construction industry provides for some very interesting ethical questions.
- I would like to congratulate you on doing a study concerning the most serious issue I have had to deal with in construction.

It appears that there would be support for future research in this area and that such research would be greatly appreciated. It is the researcher's opinion, based on the above stated comments and others received both in writing and verbally by many in the industry, that construction professionals are not satisfied with the status quo or business as usual when it comes to ethics.

2. The implications for future research in the area of ethics in construction are tremendous. The richness of the topic has been revealed through this study. The following are just a few of the many areas that could lead to interesting and important studies on the issue of ethics and their impact on the industry:

There is no doubt that women will be making an impact. Richard Ray of the National Center for Construction Education and Research suggested in a telephone

interview that "women entering the construction workforce will have a bigger impact on the industry than the child labor laws had on the industrial revolution." Given the propensity of women toward a more ethical perspective and the increase in women owned construction businesses, the entire ethical climate of the industry could be impacted. Both qualitative and quantitative research opportunities exist in this area.

Although no differences were detected regarding frequency and region of country, there were regional differences when it came to the perceived seriousness of ethical transgressions. The researcher was unable to uncover any reasons why the Western Region of the United States in particular seems to be more sensitive to ethical issues. A broader look into this area relative to psychology, sociology, and political science might reveal issues regarding ethics and ethical behavior that this study doesn't begin to address.

The industry is seriously concerned about bid shopping and bid peddling. There are no easy solutions to this problem. The integrity of the industry seems to be blemished by these common practices. Research could be conducted to quantify the impact of such practices on quality, job costs, schedules, change orders and other aspects of customer satisfaction in an effort to bring the issue to the forefront where real solutions might be considered. From a legislative perspective, research could be conducted to investigate laws and regulations intended to remedy the problem and their effectiveness (i.e., bid listing).

There are some in the construction industry that argue that legislation to remedy ethical issues should only be considered as a last resort. However, there is some evidence in this study suggesting that ethical issues associated with strict regulation are the least

occurring. For example, failure to protect the environment; discrimination, favoritism, or harassment; and misrepresentation of financial records--each of these issues have strict laws and penalties associated with them, and they were found to be the least frequently occurring transgressions. Therefore, the idea of using legislation to better manage ethical issues is one that should not be overlooked.

A more interesting study might be to look at the "systems" that contribute to several of the ethical issues addressed in this study. The researcher suspects that the three most frequently occurring ethical transgressions, Improper or Questionable Bidding Practices, Misrepresentation of Completed Work or Value of Work, and Poor Quality are directly related to the traditional method of project delivery known as "Design-Bid-Build." A significant interest in alternative project delivery methods has emerged in the industry in the last several years, primarily due to dissatisfaction on the owners' part and the need for faster delivery methods. A method known as Design-Build for example, which focuses more on collaboration and innovation than on low bid, is predicted to increase from 30 percent use, currently, to over 50 percent use by 2005. Although not specifically motivated by ethical concerns, these methods will surely have implications regarding several of the ethical issues addressed in this study.

Other common practices within the traditional system, such as retainage or penalty clauses for delays, could be looked at as well. These practices which are intended to protect owners' interests may actually be a detriment to the overall project success. Studies pertaining to the effectiveness of such practices could be conducted.

It would be useful to know how the general public perceives the ethics of the construction industry, and what is actually influencing that perception. It is assumed that

the media is the primary informer of the public's perception, however, we have no idea for sure what the perception is and what influences it. Construction is a market driven industry. There is a great deal of information regarding the types of products people want in their buildings, however, there is little information regarding what types of companies people would most want to work with. Having better information regarding the public's view of the industry and how that influences their buying could ultimately influence ethical behavior.

3. One of the more disturbing aspects of the study for the researcher was the apparent confusion construction people have regarding ethics. Moulton (Kidder, 1997) referred to ethics as obedience to the *unenforceable.* In other words, even when there are no laws preventing a behavior, people don't do certain things because they are "wrong." People in construction appear to be confused about right and wrong when it comes to certain practices, like bid shopping.

There may be several reasons for the confusion. One of the reasons may be a lack of clear messages from company leadership. Companies need to clearly state their core values and codes of conduct when it comes to ethics, especially around ambiguous and potentially volatile issues like improper bidding practices, quality, and representation of completed work. Educating employees regarding a company's core values and code of ethics will eliminate doubts and make it easier for people to determine what is "right" and than act accordingly.

Such confusion may also imply an increased need for ethics education and training for all parties involved in the construction process--contractors, subcontractors, venders, and suppliers, as well as owners and owner representatives. The move toward

more collaborative methods for project delivery could also lead to the formation of ethical alliances for improved project delivery. The idea of empowered partnerships based on shared values and codes of conduct could result in a real transformation in the way we traditionally do business in construction.

4. As previously reported in this study, the American Society of Chartered Life Underwriters & Chartered Financial Consultants found that 48 percent of U.S. workers admitted to unethical or illegal acts on the job in 1996 due to "pressures," such as long hours, sales quotas, job insecurity, balancing work and family, and personal debt. If job pressure were directly related to unethical behavior, than it would be wise to identify the "pressures" that typically impact construction workers, and take actions to decrease or eliminate those pressures. These same pressures may also be related to the issue of "alcohol or drug abuse" found to be the most serious ethical transgression in this study.

5. In an effort to counter the negative image of the industry, construction companies need to make known their concerns about the issue of ethics. Construction companies and trade associations need to increase their efforts to make the industry aware and promote ethical conduct and decision-making at all levels. Top executives need to set standards and model ethical behavior for their companies, and encourage open communication and discussion regarding ethical concerns. They also need to make a point of publicizing the positive ethical behaviors that occur in the everyday business of constructing and not let the media simply focus on the negative.

This study was a look into a very important topic seldom addressed in construction. The possibility for further research in this area is immense. It might be

easier to ignore the issue of ethics altogether than to engage it. After all, ethics has never been a clear-cut issue in the business world, and is definitely not a simple issue in the complex construction industry. There are no easy answers. The true ethical culture that exists within the industry is yet to be determined. However, with continued research in the area of ethics in construction, a more accurate picture may be drawn. Once we are actually aware of that "ethical culture," we may have the opportunity to influence it, if we so choose. Hopefully, this study brings us one step closer to that awareness.

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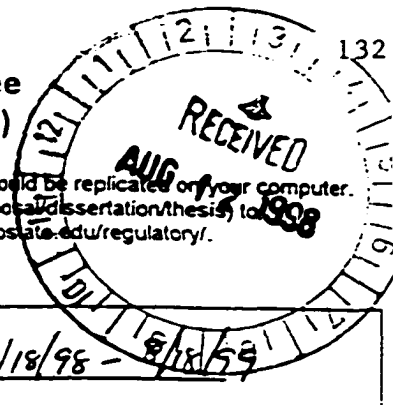
APPENDIX A

Colorado State University Human Research Committee
Application to Use Human Subjects (H-100, Rev 4/98)



Complete Part A and Part B. On separate pages, list all questions from Part C and respond to each as applicable. Part C should be replicated on your computer. For full review protocols, return the ORIGINAL (with original signatures) and 11 copies (each with all attachments except proposal/dissertation/thesis) to Regulatory Compliance, 410 University Services Center. Assistance is available on our web page at http://www.research.colostate.edu/regulatory/.

Action of the CSU Human Research Committee

- ☒ Approved as EXEMPT research — Approval number: 98-187HX — Period: 8/18/98 - 8/18/99
- ☐ Approved as NON-EXEMPT research — Approval number: _____ — Period: _____
  - ☐ Conditions: use of approved consent form
  - ☐ Other (*see attachment for details*)
- ☐ Cannot be approved as currently submitted (*see attached memo for details*)
- ☐ Tabled (*see attached memo for details*)

HRC Authorization: Ellen S Walker — Date: 8/18/98

Part A. COVER SHEET

☒ New Protocol ☐ Resubmission

1. Project Title: Perceptions of Experienced Construction Practitioners Regarding Ethical Transgressions in the Construction Industry
2. Principal Investigator (PI): Gene Gloeckner
3. Telephone: 491-7661
4. Department: School of Education
5. E-mail: ggloeckner@cahs.colostate.edu
6. Co-Principal Investigator: Barbara J. Jackson
7. Telephone: 495-1894
8. Department: School of Education
9. E-mail: bjaxin@lamar.colostate.edu
10. If Co-PI is a student, is this project for a: ☐ Thesis ☒ Dissertation ☐ Neither
    (Attach thesis/dissertation prospectus, abstract, or methodology chapter.)
11. Date project activity to begin: Sept. 15, 1998 or upon approval of application
12. Will this project be supported by external funds? ☐ Yes (answer 13-15) ☒ No (go to signatures)
13. Funding Agency (attach proposal or methodology section):
14. Grant/contract number:
15. Proposal deadline:

As the PI submitting this proposed research and signing below, I agree to conduct the research involving human subjects as presented in the protocol or modifications to it and as approved by the Department and the Human Research Committee; to obtain and document informed consent and provide a copy of the consent form to each subject unless this is waived by the HRC; to present any proposed modifications in the research to the HRC for review and approval prior to implementation; to retain records for the mandated lengths of time; and to report to the HRC any problems or injuries to subjects.

PI Signature: _____ Date: _____

Department Chair/Head or Acting (circle which) Signature

My signature below confirms that I have read this protocol and approve of this research.

Signature: Gene A. Gloeckner — Date: 8/6/98

RETAIN THIS PAGE WITH YOUR APPROVAL NOTIFICATION

Colorado State University

Office of Regulatory Compliance
Office of Vice President for Research
and Information Technology
Fort Collins, CO 80523-2046
(970) 491-1563
FAX: 491-2293

IMPORTANT REQUIREMENTS REGARDING YOUR HUMAN SUBJECTS APPROVAL

☐ This project is approved with no conditions.

☐ This project is approved with the condition that the attached consent form is signed by the subjects and each subject is given a copy of the form. It is the investigator's responsibility to obtain this consent form from all subjects. **No changes** may be made to this document without first obtaining the approval of the Committee.

☒ This project is approved with the condition that all subjects must receive a copy of the approved cover letter printed on departmental letterhead. Because of the nature of this research, it will not be necessary to obtain a signed consent form.

☒ This project is approved with the following additional condition(s): **Copies of the agreements with the professional organizations be provided for the HRC record.**

This project is approved for the following number of subjects: **3600**

It is the responsibility of the investigators to

- immediately inform the HRC of any serious complications, unexpected risks or injuries resulting from this research;
- notify the HRC of **any** changes in experimental design, participant population, or consent procedures. This can be done with a memo which completely describes the changes and their consequences (new consent form, or altered survey instrument, for example).

A status report of this project will be required within a 12-month period from the date of approval. The necessary form (H-101) will be mailed to the Principal Investigator prior to that date. The Principal Investigator will report on the numbers of subjects who have participated this year and project-to-date, about problems encountered, and provide a verifying copy of the consent form or cover letter used.

Students serving as Co-Principal Investigators may not alter projects without first obtaining PI approval. The PI is ultimately responsible for the conduct of the project.

Any questions about the Committee's action on this project should be directed to

Celia S. Walker
Administrator, Human Research Committee
Regulatory Compliance Office
410 USC Campus 2046

Telephone: 970-491-1563
e-mail: cwalker@research.colostate.edu

Information on human subjects research is available on the web at *www.research.colostate.edu/regulatory/*

Colorado State University

Office of Regulatory Compliance
Office of Vice President for Research
and Information Technology
Fort Collins, CO 80523-2046
(970) 491-1563
FAX: (970) 491-2293

MEMORANDUM

TO: Gene Gloeckner, School of Education, 1588

FROM: Celia S. Walker, Administrator
Human Research Committee CSWalker

SUBJECT: PROJECT APPROVAL
Title: Perceptions of Experienced Construction Practitioners Regarding Ethical Transgressions in the Construction Industry.
Protocol No.: 98-187H
Funding Agency: N/A
Funding Agency Deadline: N/A

DATE: February 17, 2000

I am pleased to inform you that the above-referenced project was approved by the Human Research Committee on Janaury 26, 2000 for the period January 26, 2000 to January 26, 2001. Because of the nature of this research, it will not be necessary to obtain a signed consent form. However, all subjects must receive a copy of the approved cover letter printed on department letterhead. The requirement of documentation of a consent form is waived via § __.117 (c)(2). **Approval is for an additional 7260 contractors members.**

A status report of this project will be required within a 12-month period from the date of approval. You will be sent a reminder approximately two months before the protocol expires. The Principal Investigator will report on the numbers of subjects who have participated this year and project-to-date, about problems encountered, and provide a verifying copy of the consent form or cover letter used. The necessary form (H-101) is available from the Regulatory Compliance web page (see below). Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

It is the responsibility of the investigator to immediately inform the Committee of any serious complications, unexpected risks, or injuries resulting from this research. It is also the investigator's responsibility to notify the Committee of any changes in experimental design, participant population, or consent procedures or documents. This can be done with a memo which completely describes the changes and their consequences (new consent form or cover letter, or altered survey instrument, for example). Students serving as Co-Principal Investigators may not alter projects without first obtaining PI approval. The PI is ultimately responsible for the conduct of the project.

This approval is issued under Colorado State University's OPRR Multiple Projects Assurance M-1153-01 issued August 1, 1996. If approval did not accompany a proposal when it was submitted to a sponsor, it is the researcher's responsibility to provide the sponsor with the approval notice.

Please direct any questions about the Committee's action on this project to me for routing to the Committee. Additional information is available from the Regulatory Compliance web site at www.research.colostate.edu/regulatory/

Attachment
xc: Barbara Jackson w/attachment

APPENDIX B

CAL POLY
California Polytechnic State University
San Luis Obispo, CA 93407
California Center For Construction Education
Construction Management Department
(805) 756-1323 • Fax (805) 756-5740

Date , 2000

Dear Construction Professional,

As a 20 year veteran of the construction industry myself, and an Assistant Professor in the Construction Management Department at California Polytechnic State University in San Luis Obispo, California, I am researching the topic of ethics in construction. Ethics is a topic of great concern in the construction industry and can be a sensitive issue. An important part of this research is finding out how people who have been working in the field of construction for several years view the ethical behavior of others in the business.

You have been selected randomly from a national list of construction professionals. I know you are a very busy person, however, your input and participation in this study is vital to its success. If you have been working in the construction industry for at least five years, would you (or a qualified employee) please take five to ten minutes to complete the attached questionnaire? There are no right or wrong answers to the questions. It is very important that you be honest and truthful in your responses. At no time is the questionnaire asking how you yourself conduct business. The questionnaire simply asks,

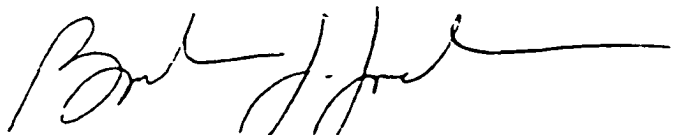
> "In your experience, how often do you think particular incidents occur?"
> "And when they do, how serious do you think they are?"

Do not include either your name or your company name on the survey. All participants and their responses will remain completely anonymous. Each questionnaire is numbered to allow confirmation of return. However, this tracking number will be removed upon return of the questionnaire to assure anonymity.

Please use the attached envelope to mail the questionnaire directly back to me. Although there is no direct benefit to you as an individual, your participation will contribute greatly to the overall assessment of the ethical climate of the construction industry. There is no risk to you. As far as we know this will be the first time that constructors themselves will be assessing the ethics of their own industry. If you should have any questions about this study, or would like to be informed of the results when the survey has been completed, please contact me directly at (805) 756-1723. If you have questions or concerns regarding the manner in which the study is conducted, you may contact Steve Davis, Chair of the Cal Poly Human Subjects Committee, at (805)756-2754, or Susan Opava, Dean of Research and Graduate Programs, at 756-1508.

Approximately 1500 construction practitioners from across the United States will be asked to participant in this important study. The image of our industry is not always portrayed in the best light. With your assistance, we will be able to shed some reality on the true ethical climate of the industry. By doing so, we may either be able to contradict the typical negative view given by the media, or proactively address our own issues.

Once again, I assure you that your returned questionnaire will remain completely anonymous. Thank you so much for your help with this research.



Barbara J. Jackson, Assistant Professor
Construction Management Department
California Polytechnic State University
San Luis Obispo, CA. 93407

Please indicate your agreement to voluntarily participate in this research by completing and returning the attached questionnaire. Please retain this cover letter for your reference.

APPENDIX C

Ethics Survey - Demographic Information

1. Gender: _____ Male _____ Female

2. Age: _____ Under 20 _____ 20-35 _____ 36-50 _____ 51-65 _____ Over 65

3. Education: _____ High School or Less _____ Some College/Business School/Vocational Training

   _____ Bachelor's Degree _____ Master's or Doctorate Degree

4. Position in Company (Please select the one that best describes your position or type of work)

   _____ Executive _____ Management _____ Design/Engineering

   _____ Estimating _____ Supervision _____ Other:_____

5. Number of years employed in the construction industry: _____ (round up or down to nearest whole number)

6. Contractor Classification: _____ General Contractor _____ Subcontractor _____ Associate (Supplier, etc.)

7. Primary Market Focus: _____ Residential _____ Commercial (Includes Industrial & Heavy Highway)
   (Please select only one)

8. Company Size: _____ Under $1 million _____ $5 to $50 million _____ Over #250 million

   _____ $1 - $5 million _____ $50 to $250 million

9. Trade Association Affiliation: (Please circle all that apply)

   AGC ABC NAHB NAWIC ASA WCOE Other: _____

10. Union Affiliation: _____ Primarily Union _____ Primarily Non-Union

11. Region of Country:

    _____ Northeast (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, Minnesota)

    _____ Southern (Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Texas, Oklahoma, Arkansas, Louisiana)

    _____ Midwest (Michigan, Wisconsin, Illinois, Indiana, Ohio, Kentucky, Kansas, Nebraska, Iowa, Missouri, South Dakota, North Dakota)

    _____ Western (Arizona, New Mexico, Colorado, Wyoming, Montana, Utah, Idaho, Nevada, California, Oregon, Washington)

12. Does Your Company Currently Have a Written Code of Ethics or Ethics Policy? _____ Yes _____ No

13. On a scale of 1 to 7, how do <u>you</u> perceive the overall ethical behavior of the construction industry?

    Highly Unethical 1 2 3 4 5 6 7 Highly Ethical

14. On a scale of 1 to 7, how do you think the <u>general public</u> perceives the overall ethical behavior of the construction industry?

    Highly Unethical 1 2 3 4 5 6 7 Highly Ethical

Page 1

Opinion Survey on Ethics in Construction

Below are 15 issues that may arise for those working in the construction industry. Listed under each category are examples that might be representative of each issue.

Remember, your responses are not a reflection of your personal behavior, but rather are to be based on your personal experience working in the construction industry.

Please rate each issue according to:

1. **How frequently you think it occurs in the industry.**
   1 = never **2** = rarely **3** = sometimes **4** = often **5** = very often

2. **How serious you think it is when it does occur.**
   1 (not serious at all) **2** **3** **4** **5** (extremely serious)

Circle your responses: Higher numbers indicate higher frequency or greater seriousness.

Issue 1- Technical Incompetence or Misrepresentation of Competence
(Examples of this issue might be- Operating outside one's area of experience or expertise, operating without a license, misleading advertising or claims for performance or products, misleading schedules, misleading information on resumes or pre-qualification statements, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 2- Poor Quality Control or Poor Quality of Work
(Examples of this issue might be- Cutting corners in the face of budget or time pressures, not satisfying specifications, hedging on standards, not performing in a workmanlike manner, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 3- Improper or Questionable Bidding / Estimating Practices
(Examples of this issue might be- Bid-shopping, bid peddling, bid rigging, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 4- Misrepresentation of Completed Work or Value of Work
(Examples of this issue might be- Inflating completed work percentages, adjusting schedules of value, front-end loading schedules of value, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 5- Conflicts of Interest, Improper Political or Community Involvement
(Examples of this issue might be- Political contributions or activity for personal or company gain, undue influence, fraud, conflicts of commitment, financial, personal, political, or other interest in people or organizations that one performs construction services for, etc.)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 6- Discrimination, Favoritism, or Harassment
(Examples of this issue might be- Unfair treatment on the basis of race, sex, etc, in business, or relative to evaluations, promotions, or recommendations, supervisory harassment of subordinates, sexual harassment, etc.)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 7- Abuse of Company Resources
(Examples of this issue might be- Abuse of travel allowance, fudging on time cards, personal use of company supplies, equipment, telephone, or facilities, using company employees for personal projects or benefit, etc.)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 8- Abuse of Client Resources
(Examples of this issue might be- Over billing for time and material, excessive change orders and charges, inflating hours, wasting public funds, etc)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 9- Failure to Protect Public Health, Safety or Welfare
(Examples of this issue might be- Poor safety or risk analysis or assessment, neglect in regard to worker safety, hazardous materials, natural hazards, etc.)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 10- Improper Relations with Clients, Contractors, etc.
(Examples of this issue might be- Excessive gifts, entertainment, or gratuities, undue influence, inside information, failure to maintain independent judgment; kickbacks, bribery or blackmail, fraud, etc.)

Frequency 1 2 3 4 5 **Seriousness 1 2 3 4 5**

Issue 11- Mishandling Sensitive Information
(Examples of this issue might be- Revealing or obtaining proprietary or confidential information, revealing or discussing confidential bids and prices, misrepresentation of data, lack of informed consent, violation of privacy, gossip, insider trading, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 12- Failure to Reconcile Employee or Subcontractor Concerns
(Examples of this issue might be- Falsely blaming others for poor performance or schedule delays, company disloyalty, technical dissent, company communication, reporting, and grievance procedures, public exposure of misconduct or technical conflict, improper punishment or retaliation against an employee, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 13- Alcohol or Drug Abuse
(Examples of this issue might be- Use of alcohol or drugs while on the job, excessive use of alcohol or drugs while off the job, effects of substance abuse on performance and decision-making)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 14- Failure to Protect the Environment
(Examples of this issue might be- Conduct contributing to pollution, deterioration or destruction of air, water, or nature, resource depletion, poor resource allocation, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Issue 15- Misrepresentation of Financial Status or Records
(Examples of this issue might be- Misinforming or misleading the IRS, lending institutions, banks, clients, bonding agencies, etc.)

Frequency 1 2 3 4 5 **Seriousness** 1 2 3 4 5

Comments

This survey is an adaptation of the Murdough Center for Engineering Ethics Survey, Texas Tech University, (Vann & Vesilind, 1991)

APPENDIX D

Miscellaneous Table 1.

Comparison of Seriousness Responses of Contractors According to Position in Company

Issue	Mean Ratings Exec	Management	Other	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	3.52	3.55	3.81	1.01	.365
2. Poor Quality Control or Quality of Work	3.84	3.84	3.67	0.38	.685
3. Improper or Questionable Bidding Practices	3.93	3.94	4.09	0.30	.744
4. Misrepresentation of Completed Work or Value o Work	2.98	3.24	3.15	1.62	.199
5. Conflicts of Interest, Improper Political/Community Involvement	3.54	3.50	3.78	0.66	.520
6. Discrimination, Favoritism, or Harassment	3.34	3.62	3.45	1.16	.314
7. Abuse of Company Resources	3.31	3.48	3.50	0.70	.498
8. Abuse of Client Resources	3.67	3.73	3.48	0.41	.667
9. Failure to Protect Public Health, Safety, or Welfare	3.88	3.77	3.97	0.27	.761
10. Improper Relations with Clients, Contractors, etc.	3.62	3.65	3.55	0.60	.942
11. Mishandling Sensitive Information	3.40	3.60	3.47	0.64	.528
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.42	3.54	3.41	0.26	.768
13. Alcohol and Drug Abuse	4.05	4.08	4.19	0.16	.853
14. Failure to Protect the Environment	3.52	3.60	3.52	0.09	.911
15. Misrepresentation of Financial Status or Records	3.52	3.69	3.55	0.42	.659
Average Summated Score	3.57	3.65	3.64	0.11	.893

*Significant at the .05 level.

Miscellaneous Table 2.

Comparison of Seriousness Responses of Contractors According to Company Size

Issue	Mean Ratings			F	Sig
	Up to $5 Million	$5-50 Million	Over $5 Million		
1. Technical Incompetence or Misrepresentation of Competence	3.56	3.57	3.46	0.15	.861
2. Poor Quality Control or Quality of Work	3.77	3.85	3.78	0.20	.822
3. Improper or Questionable Bidding Practices	4.00	3.97	3.68	1.19	.304
4. Misrepresentation of Completed Work or Value o Work	2.93	3.14	2.81	2.13	.120
5. Conflicts of Interest, Improper Political/Community Involvement	3.56	3.59	3.41	0.37	.694
6. Discrimination, Favoritism, or Harassment	3.34	3.44	3.42	0.17	.847
7. Abuse of Company Resources	3.26	3.34	3.70	1.78	.172
8. Abuse of Client Resources	3.46	3.72	3.78	1.53	.218
9. Failure to Protect Public Health, Safety, or Welfare	3.68	3.94	3.95	1.30	.273
10. Improper Relations with Clients, Contractors, etc.	3.49	3.63	3.81	0.77	.466
11. Mishandling Sensitive Information	3.42	3.43	3.56	0.16	.854
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.33	3.47	3.64	1.00	.369
13. Alcohol and Drug Abuse	4.17	4.03	4.14	0.44	.645
14. Failure to Protect the Environment	3.51	3.53	3.61	0.08	.918
15. Misrepresentation of Financial Status or Records	3.37	3.60	3.78	1.59	.205
Average Summated Score	3.52	3.62	3.64	0.42	.657

*Significant at the .05 level.

Miscellaneous Table 3.

Comparison of Frequency Responses of Contractors According to Union Affiliation

Issue	Mean Ratings		t	Significance
	Union	Non-Union		
1. Technical Incompetence or Misrepresentation of Competence	2.97	2.99	-0.21	.832
2. Poor Quality Control or Quality of Work	3.12	3.07	0.53	.597
3. Improper or Questionable Bidding Practices	3.45	3.21	1.93	.055
4. Misrepresentation of Completed Work or Value o Work	3.37	3.27	0.85	.395
5. Conflicts of Interest, Improper Political/Community Involvement	2.72	2.56	1.34	.181
6. Discrimination, Favoritism, or Harassment	2.49	2.37	1.01	.315
7. Abuse of Company Resources	2.89	3.04	-1.29	.196
8. Abuse of Client Resources	2.70	2.62	0.69	.491
9. Failure to Protect Public Health, Safety, or Welfare	2.52	2.41	1.08	.283
10. Improper Relations with Clients, Contractors, etc.	2.30	2.31	-0.09	.931
11. Mishandling Sensitive Information	2.41	2.51	-0.56	.575
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.71	2.71	-0.03	.974
13. Alcohol and Drug Abuse	2.51	2.86	-1.16	.245
14. Failure to Protect the Environment	2.37	2.37	-0.05	.957
15. Misrepresentation of Financial Status or Records	2.48	2.38	0.83	.406
Average Summated Score	2.73	2.71	0.39	.695

*Significant at the .05 level.

Miscellaneous Table 4.

Comparison of Frequency Responses of Contractors According to Region of Country

Issue	Mean Ratings NE	S	MW	W	F	Sig
1. Technical Incompetence or Misrepresentation of Competence	2.85	3.12	2.95	3.01	1.18	.317
2. Poor Quality Control or Quality of Work	2.97	3.23	3.07	3.06	1.16	.323
3. Improper or Questionable Bidding Practices	3.51	3.18	3.36	3.34	1.10	.351
4. Misrepresentation of Completed Work or Value o Work	3.55	3.30	3.24	3.25	0.99	.399
5. Conflicts of Interest, Improper Political/Community Involvement	2.85	2.64	2.60	2.56	0.83	.478
6. Discrimination, Favoritism, or Harassment	2.54	2.48	2.34	2.34	0.62	.601
7. Abuse of Company Resources	3.21	2.97	2.93	2.99	0.69	.556
8. Abuse of Client Resources	2.87	2.59	2.51	2.74	1.47	.224
9. Failure to Protect Public Health, Safety, or Welfare	2.38	2.53	2.40	2.47	0.44	.726
10. Improper Relations with Clients, Contractors, etc.	2.49	2.42	2.23	2.22	1.34	.260
11. Mishandling Sensitive Information	2.35	2.72	2.31	2.41	1.50	.215
12. Failure to Reconcile Employee Or Subcontractor Concerns	2.77	2.79	2.64	2.66	0.50	.684
13. Alcohol and Drug Abuse	3.43	2.67	2.45	2.74	1.39	.246
14. Failure to Protect the Environment	2.33	2.50	2.14	2.43	2.35	.072
15. Misrepresentation of Financial Status or Records	2.43	2.48	2.25	2.51	1.20	.310
Average Summated Score	2.84	2.77	2.63	2.72	1.36	.256

*Significant at the .05 level.

Miscellaneous Table 5.

Comparison of Seriousness Responses of Contractors According to Code of Ethics

Issue / Code of Ethics	Mean Ratings Yes	No	t	Significance
1. Technical Incompetence or Misrepresentation of Competence	4.45	3.60	-1.09	.277
2. Poor Quality Control or Quality of Work	3.77	3.84	-0.52	.602
3. Improper or Questionable Bidding Practices	3.88	3.98	-0.76	.450
4. Misrepresentation of Completed Work or Value o Work	3.05	3.04	0.12	.909
5. Conflicts of Interest, Improper Political/Community Involvement	3.37	3.64	-1.82	.070
6. Discrimination, Favoritism, or Harassment	3.43	3.40	0.21	.833
7. Abuse of Company Resources	3.43	3.34	0.59	.553
8. Abuse of Client Resources	3.54	3.70	-1.07	.284
9. Failure to Protect Public Health, Safety, or Welfare	3.71	3.93	-1.38	.168
10. Improper Relations with Clients, Contractors, etc.	3.53	3.66	-0.79	.433
11. Mishandling Sensitive Information	3.49	3.41	0.51	.609
12. Failure to Reconcile Employee Or Subcontractor Concerns	3.44	3.44	-0.01	.990
13. Alcohol and Drug Abuse	3.87	4.16	-1.87	.063
14. Failure to Protect the Environment	3.39	3.58	-1.23	.218
15. Misrepresentation of Financial Status or Records	3.41	3.61	-1.23	.219
Average Summated Score	3.58	3.62	-0.94	.351

*Significant at the .05 level.