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ORGANIZATIONAL AND ENVIRONMENTAL CORRELATES OF OSHA VIOLATIONS IN SELECTED INDUSTRIES: AN EXPLORATORY STUDY

by

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A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

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This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

Organizational And Environmental Correlates Of OSHA Violations In Selected Industries: An Exploratory Study

by

Parveen C. Chopra

Advisor: Professor Moshe Banai

This exploratory study tests the relationship between U.S. corporation's violations of OSHA laws and some of the organizational (performance, structure, technology, control of board by insiders, slack, and growth) and environmental (external pressures, and enforcement) variables.

Most corporate crime studies have been done on Fortune 500 data and suffer from range-restriction. Non-farm small businesses usually hire less than 500 employees. Fortune 500 studies represent less than one percent of the universe. There is strong need for other than Fortune 500 companies to be studied. This empirical study represents a cross section of firms: global or national, large or small, publicly or privately owned, offering stock for sale or not, in rural or urban areas and found violating OSHA laws or not.

Industries were analyzed based on the compliance ratio calculated for this study. Behavior of certain industries was analyzed as compared to others, to see how they comply with the OSHA laws. Three industries representing different levels of

compliance; auto and parts, fabricated structural metal products, and petroleum and coal industries were selected for organization level analysis.

A theoretical review of studies on corporate crimes as they relate to organization theory is provided. A conceptual model based on inter-disciplinary and systems approach is presented to explain the occurrence of violation of laws.

Changing role of OSHA under different Presidents, implications of this research, and critical issues for compliance are discussed. The role of the recently formed U. S. Sentencing Commission for uniform application of laws holding executives personally liable for corporate illegality is discussed.

In order to study the seriousness of violatory behavior systematically and due to difficulty in getting corporate violatory data, an Index of Seriousness of Violatory Behavior (ISVB) was developed. Alternate form reliability coefficients of ISVB, with four measures of violatory behavior: standards violated, fines imposed, fines after appeal and fines actually paid to OSHA; varied between .72 and .92, and were highly statistically significant at $p<.0001$, giving indication that researchers can use ISVB where violatory data are not available from a regulatory agency.

A total of 1105 questionnaires were sent to Presidents of corporations in three industries and 156 usable questionnaires were received back. The response rate varied between 12.85% and 21.16% in these industries.

In correlation analysis, the study found the number of inspections by OSHA, corporate negative growth rate, long term debt ratio and some of the operational measures of size significantly and positively related to violatory behavior. In one industry positive growth rate was significantly associated with serious violations only. Contrary to hypothesis technology was found to be positively correlated with violatory behavior in regard to serious violations. Organizational slack and control of board by the insiders were not found having any significant relationship with the violatory behavior. The researchers are warned that results of this study are tentative and due to restrictive sample size they cannot be generalized. They need to be replicated in larger sample studies.

Multiple regression analysis was used to find the contribution of each variable while other predictors were statistically controlled. The number of inspections in auto and parts, and fabricated structural metal products industry; were found positively and significantly related to violatory behavior. Growth rate in fabricated metal products, and petroleum and coal industry classifications were found negatively and significantly correlated with violatory behavior. External environmental pressure due to higher long term debt to assets ratio was found positively and significantly related to violatory behavior in fabricated metal products industry. All these findings were consistent with the hypotheses. Contrary to hypothesis profit margin was found positively and significantly correlated with violatory behavior in petroleum and coal

industry indicating that corporations may violate the laws even though they are financially well off, but such organizations do not commit serious violations or are fined heavily. Similarly another contradiction faced by this study was that operation of expensive, complex technology may sometimes be associated with serious OSHA violations. Organizational slack was found having no significant relationship to violatory behavior in any of the three industries studied.

ACKNOWLEDGEMENTS

Some missions in life command more devotion, feelings, interest, enthusiasm, endless energy and superb efforts than others. There is no clear answer as to why some people follow their inner compulsions and callings and never give up until the goal is achieved? The success in the mission depends not only on the individual's obsession with the goal and willingness to sacrifice anything to achieve it but also the system's willingness to let it happen.

I think this study will not be complete until I dwell upon, perhaps a record breaking phenomenon of a doctoral student spending 23 years in the Ph. D. program and finally completing his dissertation when the leadership in the program changed and a faculty member showed the moral courage to stand up and be willing to be a sponsor for this dissertation and guide the work of a long standing student. Two thirds of this period was spent on the struggle to form a committee and get feedback on the dissertation draft. When the committee was in place the dissertation was completed and approved within two years thereafter.

I have come to believe that human beings are social and cultural beings and the quest for truth is structured in that frame work. Most of the problems of discrimination emanate from lack of diversity.

I am extremely grateful to Provost Geoffrey Marshall and Associate Provost Pamela T. Reid for their great help in seeing that the system opened up at last and that justice prevailed. Their leadership, compassion and concern in assuring that different parts of the larger system do not go out of balance and thus create pseudo exclusivity are admirable.

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Credit for help in forming the committee and creating conditions that help a dissertation writer to complete the mission, goes to the Executive Officer of the Doctoral Program in Business, Dr. Gloria Thomas. Let me put it plainly and simply that if it was not for her, I would still be struggling to find a sponsor and my long standing and record breaking diligent efforts would have been of no avail. I will always remain grateful to her for the rest of my life for she is a great academic leader who can not only create an educational system, fairer and equitable to all but also stand up with an iron will to see that the non-academic factors that stifle academic progress are minimized. Her direction, support, advice, inspiration, generosity, personal guidance and supervision were exemplary which I have not seen anywhere else in my life.

Dissertation work very much like writing a book is a cooperative enterprise. Although a doctoral student writes the dissertation and takes responsibility and credit for it; yet one has to depend on the ideas of many other scholars and one's committee for direction, criticism, support and approval.

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I dedicate this study to my family: my deceased father, my mother in India, my wife Usha and our two sons Samir and Sachin. My parents made untold sacrifices for me to bring me up and provide education. I learnt from my father the value of persistence and hard work. My mother taught me the virtue of patience and kindness. Their blessings and prayers have contributed to the success of this mission.

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CHAPTER - 1

INTRODUCTION

1 (a) The purpose of this study

There is very little known about the field of corporate crimes and violatory behavior of a corporation. There are many interesting and vital questions that need to be explored from the point of view of organization theory. What proportion of organizations are involved in violatory behavior in any given industry? Is this proportion increasing or decreasing and why? In a given industry where violatory behavior is lowe- is · ɔ enforcen ·· bei- -elaxed or are organizations becoming more socially responsive? Does an organization change its posture toward laws if administrative or civil or criminal sanctions are passed against it? Under the external contingencies do corporations change their compliance behavior? Why do some organizations continue to be ethical and follow the regulations and legal norms whereas others chose to go the other way even though conditions for both types of organizations remain the same in the industry? What factors cause an entire industry to be criminogenic? When an organization is involved in violatory behavior, does the entire organization or only certain levels of an organization take part in such behavior? What can and needs to be done to reduce the incidence of organizational crimes? Questions are many and answers only a few. All these questions are of utmost importance to an organizational theorist interested in the organizational crime phenomenon. Answers to these and many other questions may not be easy to come by until researchers break fresh ground in the domain of organization crime theory and are willing to use non-traditional besides traditional methods to study them. This study attempts to address some, if not all such questions.

This exploratory study focuses on the violatory behavior of corporations and its relationship to certain organizational and environmental factors. It tries to find out if violatory behavior of a corporation is a phenomenon that offers a clue to a larger issue of organizational performance and why some organizations in a given industry commit crimes while others do not. Corporate performance is addressed by a number of organization theories and cannot be claimed as the domain of a single theory. Similarly, many researchers in the disciplines of Sociology, Criminology and Organization Theory have tried to explore the phenomenon of corporate crimes and their relationship to organizational survival as well as their undesirable outcomes for society.

Crimes are geographically, culturally and time specific. A corporate behavior that is treated as a crime today may not have been viewed the same way some time ago. Similarly a corporate behavior that is treated as a crime in one culture may not be treated as a crime in another culture.

The difference between corporate violatory behavior and criminal behavior is a matter of degree. Corporate crimes that result in prison sentences are a sub set of violatory behavior. Violations of law result in sanctions that could be administrative, civil or criminal depending upon the harm to a party under the enactment of laws at a given time; and their enforcement by the administrative, semi-judicial, and judicial branch of the government. All crimes may be considered as violations of laws. Most violations result in civil sanctions unless they have actual or potential severe outcomes for employees or customers which may also result in additional punishment of prison sentences. (Sethi and Chopra, 1991).

The violations under the Occupational Safety and Health Act of 1970 (OSHA) are the main focus of this study. An attempt has been made to find out if the violatory

behavior of a corporation is related to organizational variables such as performance, structure, slack, control of board by insiders, technology, and growth. Some aspects of external pressures on the organization in the form of changes in stock price, debts owed, and changes in earnings per share have also been explored to see if they are correlated with the violatory behavior of a corporation based on existing research, rationality, and assumptions about day to day functioning of an organization. In addition, an attempt has been made to find out if enforcement of laws by regulatory agencies results in increased legal compliance in a given industry.

All the 450 manufacturing industries to which OSHA laws apply, were analyzed. An attempt was made to find out the level of compliance of OSHA laws in each manufacturing industry. This population has been compared with the larger population of all 890 industries (manufacturing, agricultural, services etc.) classified by the U.S. government, to understand if the two populations were different, and if so in what way? Interesting industry behaviors of compliance were observed in specific industries at varying levels of enforcement.

Instead of selecting industries at random three industries that conformed to different levels of compliance with OSHA laws were selected. Since each industry is unique none of them can be used as a comparison group to the other.

(b) The phenomenon: theoretical and practical importance of research

The field of corporate crimes has become very important in the 1990's due to massive bank failures, security fraud, use of junk bonds in corporate takeovers and mergers based on insider information. Other areas that have received increased attention recently in corporate violations include employment discrimination,

safety and health violations, environmental protection violations, and food and drug violations, among others.

The National Institute for Occupational Safety and Health (NIOSH) estimated that on an average there were 7,000 deaths due to job related injuries alone between 1980 and 1985 (NIOSH, 1989). The National Safety Council (NSC) came up with an estimate of 12,000 deaths annually due to injuries on job for the same period (NSC, 1993). A national committee on occupational injury at the Center for Disease Control (CDC) estimated between 7,000 to 11,000 annual deaths due to job related injuries (CDC, 1992).

Due to long latency periods of occupational diseases it is difficult to come up with an accurate estimate of occupational diseases and deaths. The Presidential Report on Occupational Safety and Health (1980) had estimated 390,000 cases of occupational disease and 100,000 deaths from them on an annual basis. Another study estimated occupational deaths due to diseases in a wider range between 10,000 to 210,000 (Barth, 1980). A more recent study by Markowitz et. al. (1989) puts this estimate to be between 62,000 to 86,000 annually at the national level.

There were 6.4 million total injuries in 1988 which had increased by 300,000 from 1987 and by 700,000 from the year 1986. Some of this increase may be because of the ongoing efforts of the Bureau of Labor Statistics "to improve employer understanding of record keeping requirements in conjunction with OSHA's increased monitoring of employer records" (McGarity and Shapiro, 1993:9). Economic theory has recognized that when injured or ill workers can be replaced easily, safety precautions are not in an employer's self interest and such injuries are often not reported. A study by the National Research Council found that "employers may be failing to report as many as 30 to 45 percent of worker fatalities" (McGarity and Shapiro, 1993:6).

The costs of occupational injuries and illnesses have never been studied comprehensively. The "job related deaths exact a staggering toll on the individuals involved, family members, the legal system and employers as well as the economy at large" (Leigh, 1995:4-5). It is estimated that occupational injuries cost "$83 billion annually: $51.7 billion in lost production and $31.5 billion in medical costs in 1989" (O'Neil, 1993). National safety Council (1993) has put the cost of injuries at $116 billion annually.

Post (1996) has raised a very important issue for academicians and practitioner based on Robert Samuelson's provocative essay "R.I.P., The Good Corporation." Which appeared in Newsweek magazine (July 5, 1993) to which he has responded by raising a vital issue in an anthology of articles titled "Is The Good Corporation Dead?" (edited by Houck and Williams, 1996). Information in popular journals, magazines, and newspapers abounds showing that recession and corporate restructuring has resulted in "a net loss of more than 3 million jobs including higher paying professional and white collar jobs (since 1990). Cyclical and structural changes are eroding, sometimes shattering old ways of doing business" (Post, 1996:46). In 1993 alone more than six hundred thousand jobs were lost. The corporations declaring record profits are also simultaneously declaring elimination of jobs in thousands. Such managerial actions are reported as common nationwide as well as globally. This phenomena presents a real challenge to the organizational commitment to social responsibility of which social legislation like OSHA are part of it. There appears to be emergence of 3 R's that are becoming paradigms for modern managers to survive in 1990's and beyond. They include: (i) *Restructure* the organization to 'right size'; (ii) *Reengineer* the corporation's critical business processes; and (iii) *Refocus* the business on customers, quality and costs. The government's role also has been to deregulate, cut the size of the government, and balance the budget. The modern corporation is willingly following a leader in the

industry that uses the new paradigms and focuses on short term goals. Modern corporation will be required to protect the worker health and safety with less regulations from the government and more insight as to which organizational and environmental variables are correlated with violatory behavior so that it can take effective steps. Needless to say that treatment of violations by courts and regulatory commissions will be a key variable as to how private employers achieve the goal of worker safety and health and derive mutual benefits in the long run.

After discussing different aspects of corporate crimes and theory in this chapter we will move on to the second chapter where we will find theoretical support and rationale for variables that are being investigated for relationship with violations. Analysis of the manufacturing industries universe as well as the design of research including sampling. data collection and statistical analysis are covered in chapter three. The fourth chapter presents findings and the final chapter discusses them.

2. Corporate Crime: Theoretical Framework and Definitions

(a) The social control of corporations

The decade of the eighties was marked by increased international competition, the decline of manufacturing industries in the U.S., layoffs in huge numbers, increased governmental support for failing corporations such as Chrysler, Continental Illinois Bank, and Lincoln Bank in billions, and decline in support for unions from the government (Post, 1989). We also saw soaring Wall Street profits, massive takeovers resulting in more than 30,000 businesses restructuring (Newsday, 1989), the rise and then fall of leveraged buyouts, the increase in insider trading, and the demise of junk bonds. During this decade, corporate executives were exposed for their pure greed. held criminally liable in greater numbers than in 1970's for

corporate crimes of finance, occupational safety and environment, and sent behind the bars with much longer sentences than before. They, along with their corporations, paid fines of unprecedented amounts sometimes running into hundreds of millions of dollars (Naisbitt and Aburdene, 1990). Beginning of the 1990's marks a stronger trend towards increased concern for corporate ethics than the earlier decade of the eighties.

In criminology, the labeling theory of crime interprets crimes as a "form of behavior defined by the powerful to control the less powerful and to direct the benefits of society to those controlling economic and political power" (Wellford, 1975: 332-345). It has been suggested that this labeling perspective should be supplemented with emphasis on society's reaction to crime. The labeling theory approach is of relevance to organizational crime theory for it helps to identify, understand, research, and control organizational crimes but only when they are enforced appropriately.

Crime theories have been divided into two classes: order and conflict theories of crime (Chambliss 1973). Crime theories under the order paradigm, define the criminal law as a codification of customary beliefs of common good into law and tend to establish procedures to control criminals. The conflict theory of crime views criminal laws from the point of view of elite interests that provide coercive force to state to repress the class struggle and to legitimize the use of force. According to this later view the criminal laws are the product of class divisions which lead to class struggle and they serve to reduce the strain on the capitalistic mode of production. In order approaches, the focus is on the study of the criminal based on one's motive, circumstances, evidence, jury system etc. (Horton, 1966; and Bloom and Reasons, 1978) whereas the conflict approaches focus on the power structure and class conflicts that are considered important for the understanding of crime and criminality (Chambliss, 1973; McDonald, 1976; Reasons and Rich, 1978;

and Reasons and Goff. 1980). To a student of organization theory it might sound paradoxical that corporate laws have been created to serve the interest of the capitalist class whereas the beneficiary is society at large. Historical analysis of laws has indicated that the corporate laws "emerged during times of open conflict between social classes and that the real extent to which the laws interfere with capitalists' interests through enforcement, subsequent legislation, and court decisions is negligible" (Chambliss, 1973: 22). This view is supported widely by many who have studied some aspects of enforcement procedures or repetitive behavior of deviant organizations (Sutherland, 1949; Hartung, 1950; Geis, 1967; Hay and Kelley, 1974; McCormick, 1977; and Clinard and Yeager, 1980).

Theories of deviance in criminology, that are applicable to individuals, cannot be applied to organizations because of their distinctness in regard to the level of analysis and lack of focus on organizational structure and processes.

Corporate crimes have not received the kind of attention, from the FBI, the police, and the judicial system as the other crimes have. In a study, forty five district attorneys indicated that they may be reluctant to pursue cases of corporate crimes because of the lack of staff support, deference to pending federal prosecution and potential difficulties in investigating corporate crime acts (Maakestad, 1988).

A spate of corporate failures, attending costs to society, and expectation to treat human resources in a better manner has made the Department of Justice, as well as regulatory agencies, look at corporate violations more seriously. Many authors have recently emphasized a need on the part of corporations to develop a socially responsive view of the public interest in organizational policies. They often lack not only the habits of thinking and talking about the ways in which their products and services contribute to our lives, but also to hold them accountable for unwanted and undesirable outcomes (Gouldner, 1968; Quinney, 1970; Liazos, 1972; Thio, 1973; Taylor et. al. 1974; Farberman, 1975; Weaver, 1977; Clinard and Yeager.

1980, Sethi, 1987: 529-545;). Some authors have emphasized social control of organizational deviance and explored theoretical, empirical, and methodological aspects of organizational crimes (Sutherland, 1949; Hartung, 195o; Zald and Hair, 1972; Jacobs, 1974; Stone, 1975; Molotch and Lester, 1975; Wheeler, 1976; Ermann and Lundman, 1978; Needleman and Needleman, 1979; Finney and Lesieur, 1982; Clinard and Yeager, 1980; Sethi, 1987, pp. 471-506). Lack of studies in the organizational crime area has been pointed out in these studies and it has been suggested that we need to redirect our attention "from the petty thief to the corporate executive, (who steals for the corporation and not necessarily from it), from the offender who haunts the streets and alleys to those who inhabit the finer restaurants, and from the police to the FTC, SEC, and IRS" (Sutherland, in Wheeler, 1976: 532).

(b) White collar crimes vs. corporate crimes

Sutherland (1949) defined a white collar crime as a criminal act committed by a person of respectability and high social status in the course of his legitimate occupation. According to Sutherland, the white collar crime was committed by business managers and executives. This definition has been considered as too restrictive by certain authors (Clinard and Yeager, 1980) to cover all corporate crimes. Sutherland's definition however, did include such acts as false and deceptive advertising, mislabeling of goods, price fixing, selling adulterated goods, violating weights and measures statutes, performing illegal operations (by doctors), fee-splitting (by lawyers), and others. Sutherland's emphasis on the social status of the crime performer was somewhat new because crime was no longer defined as an illegal act performed by a blue collar or low class person, which usually was the case in the 1940's and before (Leonard and Weber, 1970; and Clinard and Yeager, 1980).

Some point out to the lack of consensus in corporate crime definition (Mathews, 1988) because of difficulty in labeling crime by an individual as a corporate crime. Others point out that corporate crime is organizationally based and even though committed by a single individual is intended to benefit the corporation itself (Kramer, 1983). Such a violation of law based on omission or commission of an act, that is punishable, may be done by an organization member or his/her agent (Swajkowski, 1985). Corporate crimes include such acts as price fixing, false advertising, violation of product safety test data, environmental pollution, falsification of company records to defraud stockholders, horizontal mergers, OSHA violations, employment discrimination and Food and Drug violations. The organizational goal in such cases is to expand organizational resources or survive through violation of laws by cutting costs or increasing profits. In case of individual crime the goal of the actor is to seek personal gain through illegal means e.g. embezzlement, stealing, accepting bribes etc. An individual in a corporation may undertake an unauthorized act for which the corporation will be held responsible. Whether the corporation gains from such an act or not, it would still be treated as a corporate crime if it violated any of the laws. Some authors do not make any distinction between white collar crime and corporate crime. To them "corporate crime is white-collar crime", because of its occurrence in a network of relationship with boards of directors, executives, and managers on one side and parent corporations, corporate divisions and subsidiaries on the other side (Clinard and Yeager, 1980: 13 & 17).

Most of the definitions of corporate crime, besides emphasizing the illegal nature of organizational behavior also emphasize the motive or intention behind the unlawful act (Geis, 1975; Stone, 1975; Conklin, 1977; Shover, 1978: 7-9; Schrager and Short, 1978 and 1980; Sherman, 1980; Gross, 1980; Geis and Stotland, 1980; Clinard and Yeager 1980: 231, 273-276; and Kramer, 1984: 18; and Sethi, 1987) .

In law a crime includes both the act, or *actus rea*, and the intent to commit the act, or *mens rea* (Funk & Wagnalls Encarta® Encyclopedia, 1996). In order to find whether *mens rea* was present or not, three elements must be considered. (1) Did a corporate member make a choice to commit a wrongful act? (2) Was this choice made freely without any coercion? (3) Did the corporate member know or could one have recognized the wrongfulness of one's act? An individual who is insane is incapable of making a choice of illegal act (element 1). An organizational member under duress is not making choice freely (element 2). An infant is not capable of knowing that the exercised choice is wrong (element 3). Under jurisprudence, an organizational member must be implicated to have committed a corporate crime. Corporate crimes are usually done at the expense of consumers, stockholders, employees, competitors, government and society at large. An unethical behavior may not necessarily be an illegal act. Ethics and conscience vary from "person to person" (Sherwin, 1983) whereas laws are uniform in terms of their applicability to organizations (Grusky, 1962; and Sethi, 1987: 494-495).

It is important to recognize that the definition of corporate crimes has been changing along with the passage of time and that the parameters of criminal laws are both statutorily and culturally implicit. "The developing trend within the courts which recognizes the possibility of corporate homicide has come to be reflected in the rewording of state and federal model penal codes to include corporation in the definition of criminally liable persons" (Cited by Clard in Swigert and Farrell, 1981) which was not the case a few years ago. There seems to be increasing interest in corporate criminality also due to "enormous growth of regulatory processes as part of government social control" and in addition there has been a change in "public definition of deviance" (Wheeler, 1976: 529). It is possible that in some areas the public may even elect to relax the legal definition of corporate criminality in return for public gains such as lower unemployment rates than

higher levels of public health, so that an organizational act that was illegal in terms of regulations may not be so in future. In 1977, residents of Pittsburgh area voted by a margin of 2 to 1 to relax air pollution standards which threatened thousands of steelworkers' jobs (Smith, 1977), which have continued to diminish in any case due to international competition. This new trend could transfer responsibility for public health due to environmental pollution from federal to local communities. If government tries to monitor it in light of public standards then it assumes that the public is willing to accept the attending risks and costs involved.

There may be firms that did commit violations but never got caught. Or there may be firms that spent huge amounts of resources on legal defense and thereby came out clean because they could see loopholes in statutes. There could also be firms that committed illegality but denied it and had an out-of-court settlement without accepting guilt. Hence, only a small fraction of firms come under the purview of violatory or illegal behavior.

(c) Organization theory and violatory behavior

Before we make an attempt to build a conceptual model to explain the occurrence of corporate violations based on a review of existing research, logic, and philosophy of management regarding organizational crimes, let us look at the occurrence and implications of violatory behavior for corporations in organization theory.

Earlier studies in organization theory that focused on the adaptive mode of an organization projected environment as hostile in a Darwinian sense. Organizational survival depended on inner directed efforts. On the one hand this internal focus resulted in a mechanistic design of an organization where the degree of structure was high, demand for products in the environment relatively stable, and nature of products relatively homogenous. On the other hand, an organic design was found to be more effective if the environment was uncertain and changing rapidly and as a

result an organization could not place too much emphasis on structure (Burns and Stalker, 1961). This prescriptive model of Burns and Stalker (1961) considers rate of change in environment as a key indicator as to how much flexibility was to be maintained by the organization in terms of methods, functions, responsibilities and powers to be assigned through the organization. The problem with this prescriptive model is that the ideal types used in this study ignored empirical realities of illegality which take place while confronting the environment. The two extreme management systems - mechanistic and organic - are based on polarity rather than dichotomy and there would be many intermediate stages between the polarities. Are corporate crimes more likely to take place at extreme points of polarity or at any intermediate point of the continuum when the degree of change in structure is not in relationship to the rate of change in environment? The later may be a more plausible explanation because there is nothing in the ideal types themselves that explains occurrence of organizational crimes. Structurally deviance could be explained based on misfits between rate of change taking place in the environment and obsolescence of structure which does not permit the organization to achieve its production, marketing and financial goals any more. Management attempts to accomplish its goals through deviant means instead of changing the structure. It may even be hard to attain structural changes fast and also might have undesirable consequences in the short run. As a result the organization accepts an instant solution of illegality.

To Woodward (1965) organizational structure dominated by technology was more important than anything else to achieve organizational efficiency. Whereas Lawrence and Lorsch's (1967) study indicated that for successful leadership in the industry, the organization's level of integration must be at least equal to or higher than the level of differentiation so that the resource and market uncertainty could be handled effectively. All these studies although attempted to show relationship

between organizational environment and its structure yet hardly had any specific and direct measures of environment included in their studies. Furthermore, neither Joan Woodward (1965) nor Lawrence and Lorsch (1967) included organizational outcome of deviance beyond changes in organizational structure due to environmental uncertainties. Environmental uncertainty could either be used to cut costs, thereby violating one or more laws or it could be interpreted as an opportunity to increase profits illegally because of low enforcement standards. If management is motivated by pure greed, it could even invent ways to circumvent the laws.

There are many ways through changes in structure and strategy that organizations have tried to maintain their performance level and stay within the legal framework of society. If it was not possible for external powerful members critical of the organization to join the organization due to internal resistance or due to the fear that any changes at or near the top of the organization would change the entire power structure, then alternatively the organization could try to seek their support in a consultative manner. The Management could even recognize alternative views to change the organization but show negative consequences of bringing such changes at that point of time (Litwak and Hylton, 1962; Zald, 1967; and Zald and Hair, 1972).

Organizations could also sign long term contracts (Macaulay, 1963) to reduce uncertainty of inputs while on other occasions they could use common suppliers to avail of quantity discounts so that it created a barrier for new entrants into the industry (Porter, 1981). Organizations also formed internal coalitions to handle threats through side payments from the organizational slack (Cyert and March, 1963; Wahba and Lirtzman, 1972; and Lirtzman and Wahba, 1972). If need be, organizations could even form external coalitions through joint ventures (Aiken and Hage, 1968). Whenever government tried to put unfavorable controls through

legislation, organizations thwarted such attempts through strong lobbying attempts (Thompson, 1967). Organizations have also sought to reduce competition through a spate of mergers besides - making non-productive use of dollars (New York Times, 1984b & 1986). A higher market concentration is probably one of the surest ways to control environmental uncertainty. Oligopolistic conditions that are closest to monopolistic conditions provide as much control to organizations over their environments as is possible (Pfeffer, 1972; and Pfeffer and Slancik, 1978). Another approach used by organizations has been to create high barriers to entry such as huge capital investment, elaborate arrangements for service after the sale or through expansion in distribution networks so that even the future level of competition could be controlled (Porter, 1981). In order to continue to declare higher levels of dividends, corporations in the past, are said to have manufactured certain types of goods, provided services of dubious value, even made products dangerous to users and thwarted public investigation through mass propaganda (Sethi, 1970). Still other organizational responses to control or to lower the level of uncertainty have been through indirect interlocking of boards of directors (Clinard and Yeager, 1980: 252; and Schoorman, Bazerman and Atkin, 1981), through avoidance of market constraints on profits (Burt, Christman and Kilburn, 1980), or through long term patterns of accumulation (Norich, 1980). All these attempts to gain control of the environment were assumed to be made in a legitimate manner permitted under the law but organizations were no longer silent spectators in these studies. They emphasized external efforts of organizations that helped them to manage their environments by toning down the level of uncertainty so that organizational continuity could be assured. These efforts were not deviant in any way in light of legal constraints even though they may not be considered ethically or morally acceptable to all.

Some organizations do adopt a proactive stance to change the specific dimension of the environment important to their long term survival. Such organizations react by lobbying so that the laws that are detrimental to their interests are not passed, and if passed are circumvented and followed minimally or reduced in terms of their importance through interlocking acquisitions, forced takeovers and mergers. Such proactive organizational attempts included external cooptation (Selznick, 1949) by absorbing uncertainty causing elements into the organization.

For Selznick (1948) when environmental uncertainty threatened organizational survival. cooptation was exercised in situations where formal. authority was out of balance with the institutional environment. Through the process of external cooptation. power was shared with other interests in the organization and so were the burdens of administration. Absorption of new external elements into an organization publicly was assumed to save the organization from being deviant as this change would increase the legitimacy of the governing group. A higher level of uncertainty would create a need for organizational ideology rather than illegality. which was considered desirable for long range survival of the organization. Selznick did see the possibility of an organization becoming deviant in cases where it could not handle threats to its survival through either cooptation or formulation of ideology. As a result, Selznick cautioned that ideology be based on accepted political and moral values since it would be used by managers as a parameter for decisions.

Some have argued that it is the environment that is criminogenic in certain industries such as chemical, oil, and automobile industries (Clinard and Yeager, 1980: 119-122) and hence such elements are imbibed by an organization in its structure and processes. In the past, more studies have relied on case method (Hartung, 1950; Leonard and Weber, 1970; Schuck, 1972; Zald, 1972; Roebuck and Barker, 1974; Sage, 1974; Faberman, 1975, DeLorean. 1979; Sethi, 1982, 1987

and 1990; Caudill, 1987; Pankau, 1988; Srodes, 1989; Zinkewicz, 1989; and Naisbitt, 1990) than historical data (Sutherland, 1949; Clinard, 1952; Lane, 1953 and 1954; Geis, 1967; Staw and Swajkowski 1975; Clinard & Yeager, 1980; Clinard 1983; Baucus, 1987 and 1989) to explain the deviant environment of an organization. There is great need to review these case studies and relate their findings to corporate crime theory.

Some attempts have been made in organizational theory to recognize environmental influences and also to thwart other environmental effects which could have forced an organization to act in a deviant manner. Thompson (1967) pointed out that organizations use a number of strategies to meet their goals. They do so in such a way that no matter what is the level of environmental uncertainty, organizations are able to increase their operational certainty through legitimate means which are buffering of raw materials and finished goods, smoothing peak loads through price incentives to customers, forecasting of future demand and adaptation through planning. Finally, if previous strategies did not help then organizations could introduce rationing of scarce resources which, of course, would be an unhappy solution for the organizations. It is the inability of management to control uncertainty that evokes the issue of corporate illegality and thus motivates the organization to make a choice, that is economically rational at that point but may have unwanted consequences due to its nature of illegality. In the past, some managers have performed wrongful acts under the impression that if certain actions of a corporation were treated as illegal still they were justifiable as long as a corporation could afford to pay the penalties and carry on its business as usual. Such examples in the past included the NLRB imposed fines on Stevens Textile Mills, or the EPA imposed fines on steel mills in the Ohio River Valley area for pollution of the environment, and inclusion of out of court settlement cost due to defective engine design in the auto industry by Ford Motor Company, etc. The Cost

of conformity to law was perceived as much higher than the cost of violations and thus organizations developed a rationale for violating the corporate laws.

3. Corporate Crime: Empirical Research

Although at the present time, the relationship between organizational crime and its environment is not well understood, there is a growing body of literature that has touched upon some aspects of organizational crimes empirically. The pioneer empirical study by Sutherland (1949) revealed that 70 of the 200 largest U.S. non financial organizations were involved in illegal behavior. During an average life span of 45 years of these organizations, 97. 1 % were found to be recidivists with 14 enforcement actions on an average and at least two or more adverse decisions taken against them. The forty one corporations that were criminally convicted, had an average of four such convictions. Between one half to one third of the corporations that engaged in illegal behaviors, were found to be habitual offenders with an average of 5. 1 decisions against them (Sutherland, 1949: 25-61). Sutherland concluded that enforcement hardly had any deterrent or rehabilitative effect on future deviant behavior (Sutherland, 1949: 218). According to some, fourteen enforcement actions on an average over a period of 45 years, or one action every three years may not be considered too many but it brings the point home that organizations have been engaging in violatory behavior all along and organizational design researchers and educators have to find ways to control it.

Lane's (1953) study tested the differential association hypothesis of Sutherland, as one possible explanation for repeated organizational crimes in the shoe industry. In the 1990's this industry is almost reaching the level of extinction in U.S. due to international competition. Lane found that the incidence of organizational crimes was much higher in those organizations that were located in a small rather than a

larger community. A number of studies have been done exploring the task environment of an organization to find if environment itself was criminogenic, and if so to what extent it influenced the behavior of an organization? Various studies by Hartung (1950) and Schuck (1972) in the wholesale meat and meat packaging industry; Leonard and Weber (1970), Faberman (1975) and Swigert and Farrell (1981) in the automobile industry; and Caudill (1977) in the coal mining industry have brought to light various organizational crimes that are committed due to criminogenic environments.

A major study, funded by Law Enforcement Assistance Administration, involving administrative, civil or criminal actions either started or completed by 25 federal agencies during the year 1975-76, involving 477 of the largest publicly owned manufacturing organizations and 105 largest wholesale, retail and service corporations revealed that on an average there were 2.7 federal cases against sixty one percent of all the organizations that had at least one federal action brought against them (Clinard et. al. 1979; and Clinard and Yeager, 1980: 113). Clinard's (1983) recent descriptive study explored the relationship between leadership and corporate criminality. He interviewed 64 retired middle managers in a hotel room. These managers had spent on an average 32 years in corporations. This study revealed that half (53 %) of the managers interviewed felt that top management was the primary reason for large corporations being unethical and violating the laws a great deal (Clinard, 1983: 53-70). This study did not relate responses of these managers to organizational characteristics except merely indicating that the 51 corporations studied were part of Fortune 500's largest industrial organizations.

Etzioni (1985) points out that approximately two thirds of the Fortune 500 companies were found to have been involved in illegal acts. But we do not know

the similarities and differences between these companies and non Fortune 500 firms and the extent to which they have been involved in illegality.

Legality may represent a minimum acceptable standard of ethical performance, but many unethical acts are not illegal, e.g. using checking overdrafts as a way of lowering costs (Lemke and Schmink, 1989). Sometimes, corporations engage in intelligence gathering by unethical and/or illegal means so that they can find out about the illegal and legal behavior of competitors. In a survey of 113 CEO's of manufacturing firms. it was found that they used various questionable intelligence gathering techniques (QIGTS) in business practices. The most commonly practiced QIGTs were found to be pumping buyers for information about competitors, raiding competitors for workers' knowledge about innovations. and picking the brains of competitors' technical staff at professional meetings. The less commonly used techniques included paying an employee of another company for proprietary information. hiring an imposter to obtain competitor information. and conducting phony job interviews to glean competitor's information. Very rarely used QIGTs were found to be inducing competitors to respond to a bogus bid or buying a competitors' trash for analysis (Morris et. al. 1989). The use of these QIGTs was more likely to take place in organizations that were large. have organizational slack. have developed concentrated markets and their CEO's exercise an autocratic style of leadership (Morris et. al. 1990).

In terms of characteristics of organizations that get into illegality, in a lab study of MBA students (Lemke & Schmink, 1989). it was found that organizations in decline were more likely to be involved in unethical activities. The greater the decline. the greater the practice of unethical behavior in organizations staffed by students. The study concluded that it was the organizational decline and not the initial propensity toward unethical conduct that explained unethical behavior.

A recent study of 88 Fortune 500 organizations that had committed a total of 141 violations found that convictions for illegality were negatively correlated with both sales and return on equity of a firm. This effect was even more severe on those corporations that had several prior convictions in one year. This study suggests that there may be a time lag between corporate illegality and customers and stockholders' negative reaction towards the convicted firm (Baucus 1989).

Another study of Fortune 500 firms found that firms cited for illegal activities performed less well than others in the five years preceding the citation (Staw and Szwajkowski, 1975). In another study, Swajkowski (1985:558-567) theorized that "questionable activity will occur specially within situations of economic pressure, whether they be from a downturn in organizational performance, depression within the industry or a general recession." Sometimes organizations may try to merge with others or use other strategy to avoid being on the declining curve. Wier (1983: 208) examined the effect of prosecution for alleged illegal acquisitions and mergers. The stockholders of these prosecuted firms on an average received approximately 2% return on their stock holdings at the announcement of the final decisions. The firms that canceled the illegal proposed acquisitions to avoid legal charges gave a return of 8 % to stockholders. We know very little about the strategies used by the firms to mitigate effects of illegality e.g. it is quite likely that a firm may use a strategy of price reductions, philanthropy, mergers, use slack resources to increase or maintain a high level of dividends, etc. so that status quo is maintained or perceptual damage diminished among customers and stockholders.

Studies regarding the role of environmental uncertainty and munificence have yielded conflicting results. Staw and Swajkowski (1975) showed that in those industries that were facing shortage of inputs, corporations were more likely to engage in illegal activities. Whereas, Baucus'(1989) study, that was also based on

the Fortune 500 firms, showed that firms were more likely to engage in illegal activities when resources were plentiful in the environment. These studies indicate that organizations could take an illegal route in both environmental situations of scarcity and munificence. It suggests that an organization's own financial history might have a stronger impact on illegal behavior than the environment. Baucus (1989) further suggests that environmental heterogeneity does not affect corporate wrong doing.

4. Organization Crime's Model

Several attempts have been made to integrate theoretical and empirical studies to develop conceptual framework to explain occurrence of corporate crimes (Finney and Lesieur, 1982; Swajkowski, 1985, and Sethi, 1987). Even though many variables have been posited to be associated with corporate crimes yet only a few of such variables have received theoretical and empirical support (Baucus, 1989).

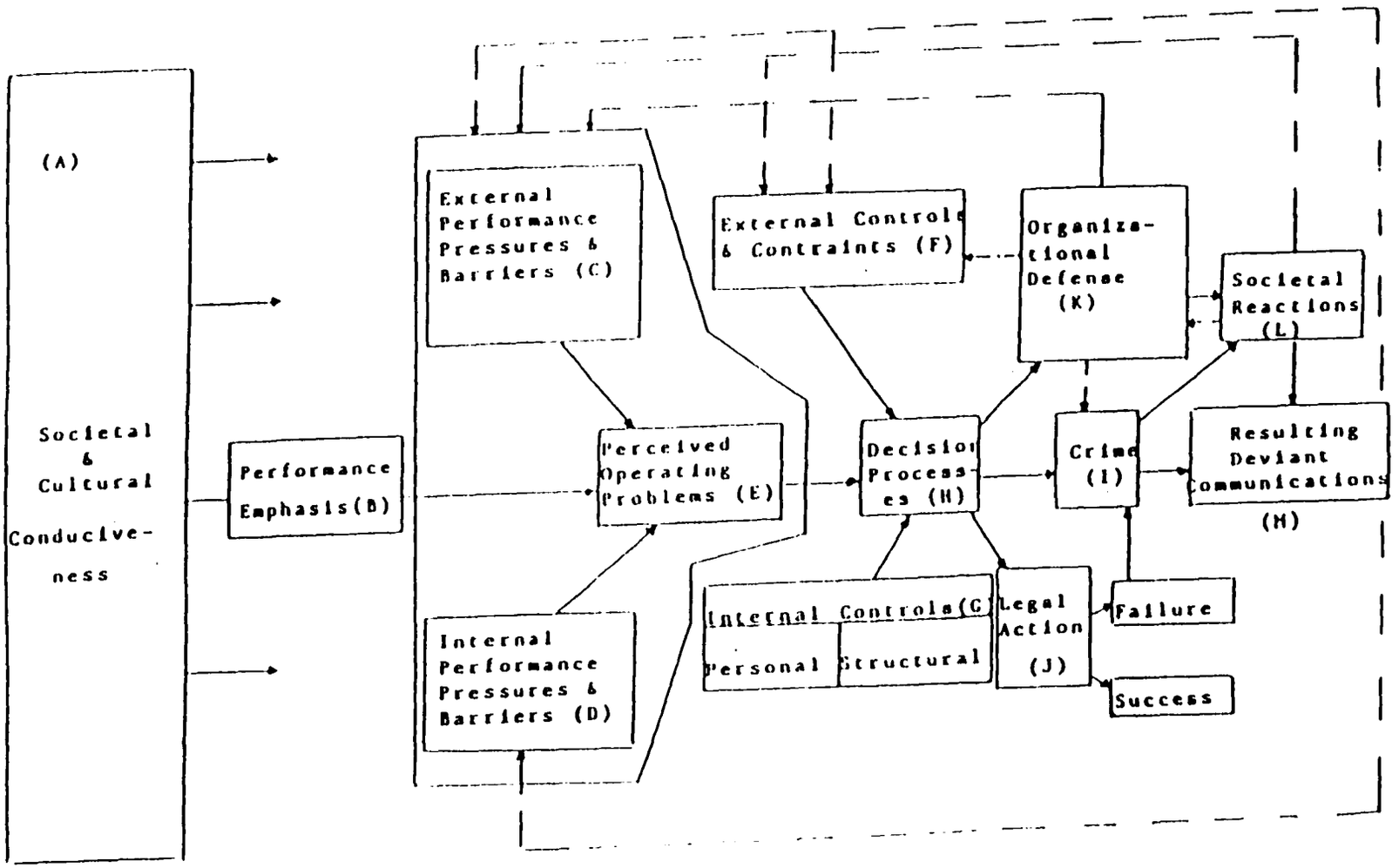
(a) Finney and Lesieur's Model

Finney and Lesieur (1982) have developed a contingency model of organizational crimes. Perhaps this is the first conceptual model developed to explain the occurrence of organizational crimes. This contingency model presented in Figure-I, assumes that differences in cultural values of countries either facilitate or inhibit certain organizational crimes. American society is structured by values that are taken to task by the government. Box B (performance emphasis) of the model emphasizes goal orientation of organizations. It is believed that profit maximization is the most serious goal organizations pursue. Boxes C, D and E (external and internal performance of organization) of the model produce structural constraints.

Internal performance (Box D). particularly declining financial performance and indebtedness is hypothesized to be leading to organizational crimes. External performance Pressures (Box C) are hypothesized as a poor fit between environmental task uncertainty and internal structure. Individual virtues of organizational crimes as shown by "whistle-blowers" and structural controls in the form of selective recruitment, promotions, transfers and incentives, as well as organizational socialization, are hypothesized to create a climate for organizational crimes. Industry conditions, role of regulatory agencies in the form of external controls (Box F) is assumed to be a major force in the organizational crimes committed. The resultant decision process (H) which leads to criminal behavior is believed to be partly a function of cost-benefit and partly a function of value added process of action (Smelser, 1963). The impact of repetitive behavior of organizational crime is shown as a function of social reactions to past violations in the form of new laws, journalistic or congressional investigations, and strong enforcement (Box L). Organizational effort to weaken or redirect the societal reaction is achieved through bribing. lobbying. hiring multiple auditors and attorneys. litigation. self policing bodies and selective advertising (Box K); and organizational structural commitments e.g. cooptation, destruction or falsification of records (Box M) to benefit from future violations by using information from past experiences. The three variables: societal reactions, organizational defense and resulting deviant commitments (Boxes K, L and M) provide feedback to internal and external performance pressures setting the stage for continual criminal behavior, or its stoppage, based on various unspecified contingencies. Finney and Lesieur's model has tried to put together a vast amount of research efforts of various scholars in criminology and sociology of organizations which does provide some conceptual order(Figure-I).

FIGURE 1

Finney and Lesieur's Model of Organizational Crimes (1982)



Source: Finney, H.C. and Lesieur H.R. 1982 A Contingency rheory of Organizational crime. In Research in the Sociology of Organizations, Greenwich, CT.: JAI Press.

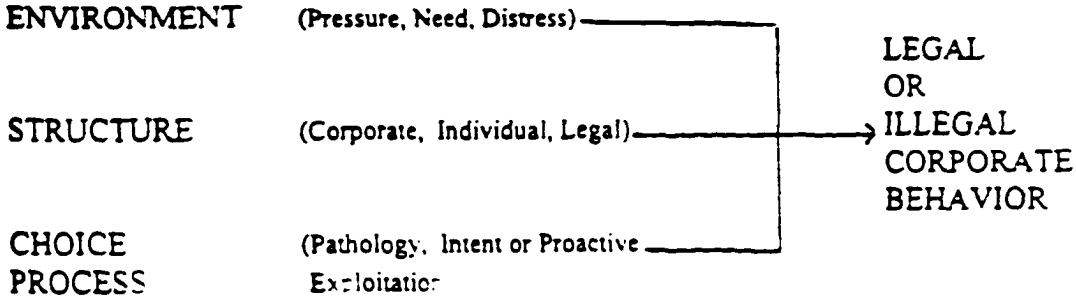
In summary, major variables in Finney & Lesieur's model include performance and internal as well as external pressures that are responsible for deviant behavior which if not checked by internal or external controls result in organizational crimes. Legal action or organizational defense have important consequences for repeated organizational criminal behavior. So far, Finney & Lesieur's model has neither been empirically tested by these authors nor by others (Figure - I).

(b) Swajkowski's Model

Swajkowski (1985) believes corporate crime theory attempts have progressed unevenly in terms of both quantity and direction which has resulted in diverse collection of theories that need to be integrated (Figure-II). Like Finney and Lesieur (1982), Swajkowski (1985) also used an interdisciplinary approach to explain the causes of corporate crimes. His review of several studies identified three central explanatory variables that seem to cause corporate crimes. They included environment (pressure, need or distress), structure (corporate, individual or legal) and inner directed choice processes (pathology, intent, or pro-active exploitation). Stimulators for corporate crimes were always present in these three variables but the variable that seem to make a real difference for corporate legality or illegality was management philosophy and inner directed choice process. Like the previous model of Finney and Lesieur (1982), the Swajkowski (1985) model has not been empirically tested.

FIGURE - II

SWAJKOWSKI'S MODEL OF CORPORATE ILLEGALITY (1985)



Source: Swajkoski, E. 1985. Organizational illegality theoretical integration and illustrative application. Academy of Management Review, 10 558-567. (Model formulated based on information in the article.)

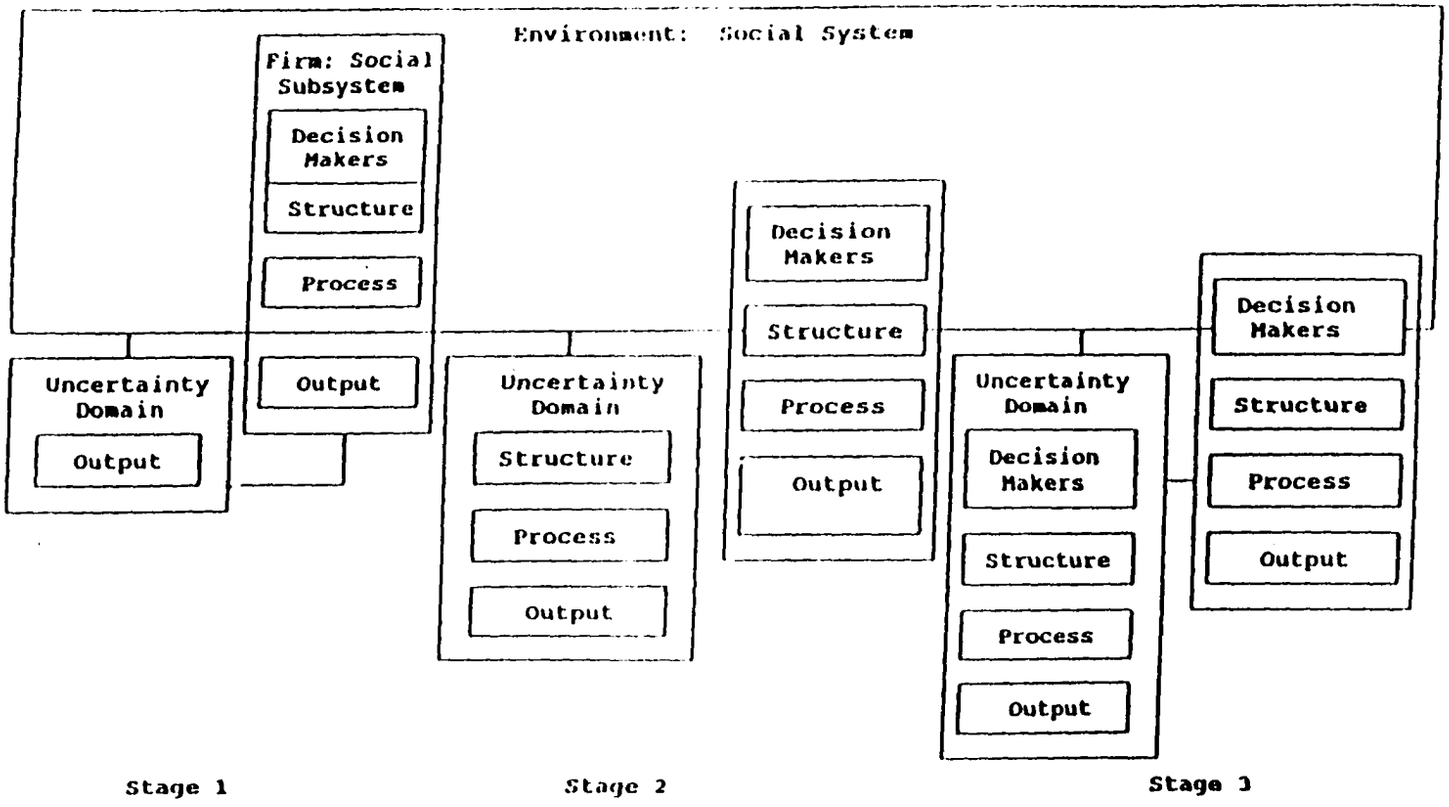
(c) Sethi's Model

Sethi's (1987) model explains legal as well as illegal corporate behavior based on systems approach. Environment plays a key role at stage I of the conceptual model (Figure-III). Market discipline helps the organization to make appropriate choices for the right outputs needed in the marketplace or organization ceases to exist and thus no illegality is involved. This is possible because the organization is small and well within the control of management. At stage II of the model when organizations become large and diversified they are not as vulnerable to market discipline as they were before. Signals for change from the environment are weak and diffused, and members of the organization are either unwilling or unable to bring changes within organizations that meet society's expectations. Organizational structure and decision making processes are exposed to external pressures, scrutiny and control and as a result the regulatory framework develops to monitor the illegal behavior of an organization. During this stage, use of outside directors with a greater sense of social accountability, helps the corporate board to meet their societal responsibilities and legal pressures (Wallace & Rosenbloom, 1977: and Sethi 1987). Government imposes process controls on organizations to curb illegal practices. New social legislation is imposed in diversified fields through various government agencies e.g. installation of scrubbers and smoke stacks by Environmental Protection Agency; affirmative action programs and prohibition of discrimination based on sex, race, age, ethnic origin, and religion by Equal Employment Opportunity Commission; and inplant safety standards by Occupational Safety and Health Administration. Process controls result in regulatory delay and red tape. Government agencies shift their emphasis to compliance with the letter of the law as violatory behavior increases or becomes severe. Administrative, civil and criminal sanctions are passed against organizations for ignoring process controls.

At Stage III of the model, regulatory agencies notice that regulation of output, processual controls as well as organizational structure that are under the control of the decision makers have failed to achieve socially and legally desirable outcomes and thus impose severe penalties on corporate executives for illegal acts including prison sentences to bring a corporation back to the legal framework of society. The underlying assumption is that the threat of punishment will lead the top-ranking executive to extend pressure on their middle management subordinates who in turn will exert pressure on lower management, supervisors and operatives - a trickle down theory of ethics. More convictions lead to more law abiding behavior. This trend is on the increase as shown by the analysis of recent case laws (Sethi and Chopra, 1991). Sethi (1987) has provided ample evidence through case studies and case laws as to the efficacy of his model and how government changes its control mechanisms to keep corporations under social control.

FIGURE - III

Executive Liability of Corporate Crimes in
Sethi's Model of Business -
Society Interface: Modes of Societal Control



Source: Sethi, S.Prakash. 1987. Corporate Law Violations and White Collar crime. In Business and Society: Dimensions of Conflict and Cooperation by S. Prakash Sethi and Cecilia M.Falbe (eds.) Lexington, MA.: D. C. Heath & Co., pp. 471-527.

CHAPTER - 2

THEORIES, RATIONALE, ASSUMPTIONS AND HYPOTHESES

This chapter explains the variables that may be associated with violatory behaviors of corporations. The corporations that violate the occupational safety and health laws in a given industry are the focus of this study. The relationship between corporate violatory behavior and certain organizational and environmental variables are explored. It helps us to understand which kinds of corporations get involved in violatory behavior. We examine eight variables to find theoretical justification for their association with corporate crimes. Organizational variables that are prominent in organization theory and have been given considerable attention and thus merit exploration in regard to violatory behavior of corporation, include performance, structure, slack, insiders on the Board, technology and growth. The two environmental variables included for possible relationship to corporate violations are external pressures on the corporation and enforcement of OSHA laws. Previous research on these variables is described herein and justification for such relationships sought in the literature.

1. Organizational Performance and Violatory Behavior

Researchers have taken different positions on the nature of relationship between corporate crimes and organizational performance. Those research findings that maintain that the two variables are not related to each other have cited reasons as minor expenses involved to remove violations (Staw & Swajkowski, 1975), low publicity of violations (Baucus, 1989), and decision to recall products due to safety

considerations (Bromily and Marcus, 1989). In such cases, it seems the organization took timely action to avoid performance being affected negatively. Perceptual damage of being labeled as a violatory corporation was repaired before the real damage could take place in the minds of stockholders and consumers. Either negative perceptions were obliterated through positive incentives or such perceptual damage was kept under control in a state of indecision so that stockholders' or customers' perceptions did not trigger unfavorable behavior that was detrimental to the corporation.

Firms forced to recall products rarely received lower returns (Bromily and Marcus, 1989). Sometimes when it is not possible to take direct action the firms manipulate the perception of customers and stockholders through philanthropy, aggressive advertising, and by repositioning its strategy to maintain a favorable image of the corporation in public. Such organizations might have faced only a single violation (Baucus, 1989) or might have prevented questionable corporate behavior in the future that was attacked in the press (Fisse and Braithwaite, 1983). These researchers did not find any relationship between financial performance and corporate illegality or felt that it was unclear at this stage of corporate crime research.

The second group of authors maintain that lower performance is indeed responsible for corporate illegality. Violation of the law happen because the organization is under pressure to cut costs to better its performance. While doing so, the organization pays little attention to its legal obligations and thus violatory behavior follows. These actions were justified in the name of economic efficiency and rationale provided. It was posited that if the organization does not adopt a violatory posture, it would have to engage in other more severe and unwanted behaviors such as lower stock price, layoffs, divesture or even closure. It was a best choice among

evil alternatives. Lane's (1954) study found that employment levels, a year before and a year after the corporation committed illegality continued to decline. Clinard and Yeager (1980) explain that the corporate violations in their study were done to cut costs and improve declining performance. Finney and Lesieur (1982) as well as Sethi (1987) have provided the same justification in their conceptual framework. There may be a time lag between declining corporate performance and violations (Staw and Szwajkowski 1975; and Swajkowski, 1985).

The third group of studies has provided somewhat different evidence. Researchers in this group believe that there is no economic justification present for corporate violations. In fact, they take the position that corporations deliberately violate the laws during the periods when they are performing well so that they can further increase their profits (Baucus, 1989). Hocevar and Bhambri's study (1989) also supports the theoretical conclusion of a review study (Swajkowski, 1985) pointing out to greed as a dominant dimension of management philosophy that was found to be more closely associated with corporations in trouble with the law. Case studies such as "True Greed: R.J.R. Nabisco" by Hope Lampert (1990); and "Barbarians at the Gate" by Bryan Burroughs and John Helyar (1990) that involved $25 billion sale with mostly borrowed money from junk bonds, vividly bring out the symptoms of management philosophy for corporate outcomes in the 1980's. The poor or declining firm performance was not found to be an antecedent condition for corporate illegality, which strengthens the support for this hypothesis (Baucus 1987, 1989). In order to validate this evidence, we need to replicate such empirical studies. It could be that the majority of Fortune 500 firms are different from others in certain other ways too. They certainly are the largest in their industry and have created a powerful image for themselves through advertising in mass media and may not think their corporate image would be tarnished by any violations. In addition, smaller size firms were not included on an industry specific size basis. It

points to the possibility that larger firms which were twice as likely to be involved in corporate crimes were also likely to generate more profits than smaller size firms. Such large firms were caught violating laws like those corporations that did not make high profits, particularly in the 1980's when the international competition was on the increase in certain industries. If larger size Fortune 500 firms, that usually provide a higher yield on money and that is why they attract more stockholders, were also found involved in corporate illegality, then this argument could not be sustained purely on the ground of higher profits. Profit performance could also be a function of other variables such as size, market share, etc. The issue here is of complexity and causality and not of mere association. Causality requires a lot more rigorous proof in a random sampling in research with regard to not only what a phenomenon is but also for what it is not . An earlier study by Baucus (1987) had indicated that both investors and customers respond negatively to a firm's conviction for illegal activities but was also cautious to indicate that illegal corporate behavior did not have a significant effect.

The fourth group of studies has maintained that the relationship between corporate performance and violatory behavior is moderated by extraneous factors. Staw and Szwajkowski (1975) maintain that just because a corporation was involved in violations does not mean it would do so in the future. If removal of violations was less expensive then the corporation would attempt to remove them but it is only where huge outlay of expenses is needed when the corporation chooses to maintain illegality. When Iowa Beef Processing was asked by OSHA to upgrade technology that was causing frequent worker accidents it chose not to because it involved millions of dollars to do so (Sethi and Chopra , 1991).

Nonetheless, after the congressional hearing OSHA increased the fine from $2.6 million to $5.6 million for lack of cooperation on the part of management to create

safe working conditions for workers through modernization. Cochran and Nigh (1987) pointed out yet another contingency that led to corporate illegality and that is increased pressure from supervisors that results in corporate crimes at lower levels.

Violations that have long term negative consequences as a reaction from customers and stockholder will be viewed more seriously and would have a deterrent effect. It is because they convey a powerful signal to executives not to enter into such violatory behavior.

In order to ascertain the nature of a relationship between corporate performance and illegality, we need longitudinal studies. One such study (Baucus, and Near, 1991) that examined antecedent conditions and long term financial consequences of corporate illegality over a period of 19 years did not find declining firm performance as an antecedent condition of illegal corporate behavior (Table - 1).

Table - 1

RELATIONSHIP BETWEEN CORPORATE PERFORMANCE AND CORPORATE ILLEGALITY

(i) Authors positing unclear or no relationship between corporate performance and corporate illegality:

AUTHOR	YEAR	VARIABLES	RELATIONSHIP WITH ILLEGALITY
Staw & Szwajkowski	1975	Minor expenses	None
Fisse & Braithwaite	1983	Preventive Management Approach	None
Baucus	1989	Low publicity or single violation	None
Bromily & Marcus	1989	Recalling unsafe products	None

(ii) Authors positing low performance as responsible for corporate crimes:

AUTHOR	YEAR	VARIABLE	RELATIONSHIP WITH ILLEGALITY
Lane	1954	Declining employment	Yes
Clinard & Yeager	1980	Not enough resources	Yes
Finney & Lesieur	1982	-do-	Yes
Sethi	1987	-do-	Yes
Staw & Swzajkowski	1975	Economic pressure	Yes
Szwajkowski	1985	-do-	Yes

(iii) Authors positing higher corporate performance as responsible for corporate crimes due to management philosophy influenced by greed:

AUTHOR	YEAR	VARIABLE	RELATIONSHIP WITH ILLEGALITY
Baucus	1987	Low performance	None
Szwajkowski	1985	Higher profits and return on equity	Yes
Baucus	1989	-do-	Yes
Hocevar & Bhambri	1989	-do-	Yes
Cochran & Nash	1987	Increased pressure from supervisor	Yes
Staw & Szwajkowski	1975	Huge expenses	Yes

In the earlier studies. corporate performance was treated as an independent variable and violatory or illegal corporate behavior as a consequent state. Recent studies have shown a healthy trend by exploring other possibilities. Since so much emphasis has been placed on firm performance by previous researchers, we need to look at different measures of corporate performance. To date no one has tried to look at the profit margin as a ratio between gross profit and sales revenue in a given industry. It could also prove to be an objective measure across industries in future studies. Corporations with higher profit margins are not likely to violate the laws because they have plenty of resources to share with employees, stockholders and discharge other financial obligations. Similarly, we need to look at the organizational slack. Those corporations that have surplus resources are not expected to ignore laws because they can spend money and either not let violatory behavior take place or if it did take place would tend to remove violations sooner so that corporation's better image that attracts stockholders and customers, is not tarnished.

RATIONALE

Organizational performance is a function of structure, process and technology and how they relate to the environmental conditions. If organizational performance declines or is sluggish, most organizations would look at these three major properties and bring changes in their designs through interventions that are part of organizational development activities. Since planned organizational change is time consuming and sometimes even prohibitive in terms of cost, an organization may choose an easy way out of its financial problems by ignoring regulatory or legal expectations. Vaughan (1980) suggests that the contributing factors to corporate crimes are: the conflict between free competition and profit maximization; an

organizational stratification system with wealth as its base; norms which support profit maximization; and low risk of sanctions against corporations. In the recent past the situation has changed drastically. Sethi (1987) and Sethi and Chopra (1991) have cited numerous cases of violations accompanied by increased regulations as well as expanded scope of personal, civil and criminal liability on the part of corporate executives for violations done by even subordinates. Lane's (1954) study involving interview with top management of 25 New England industrial firms and seven leaders of governmental regulatory agencies indicated that business men run afoul of the law for economic reasons because they would like to "make a fast buck", e.g., if a company does not recognize a union and moves away and thereby gets rid of union demands, then it is going to be reflected in the company profits. Similarly, if a company goes for price collusion and uses this as an opportunity to standardize its products then this would result in higher profits. Another example when a company overstates its claims in an advertising campaign or classifies a group of employees as managers because their work involved long hours so that it could avoid paying overtime. All these are the attempts "to make a fast buck" in the marketplace which may not have a relevance to the environmental constraints because in such cases it is the value system of the managers that is playing a dominant role. Organizations have a tendency to reinforce those values that result in profit maximization. This most valued skill is pursued at the cost of other firms that do exercise business honesty (Vaughan, 1980).

The gross profit as percent of sales is a measure of organizational efficiency. It indicates as to how well an organization is using its internal resources. The role of management in the use of internal resources is of paramount importance. If the organization is able to keep various costs under control while increasing output, its organizational efficiency rises and so would net income as percent of sales revenue. A decline in profits, similarly, reflects the way an organization is being managed.

This also indicates that sometimes a decrease in organizational profits is due to a decrease in organizational efficiency. At the same time, a company may emphasize its short term goal of efficiency at the cost of long term goal of survival. Organizations that do experience a decrease in efficiency may be more likely to find themselves in violatory behavior as compared to organizations that do not have this-stressful situation of low efficiency.

Contradictory results have been revealed by a study by Baucus (1989) indicating that organizations performing well were more likely to be behaving illegally. This was probably so because of management philosophy towards profits (Swajkowski, 1985). Such corrupt managers are guided more by greed and opportunity to violate the laws than by ethics. We need more research evidence to corroborate or disconfirm this finding.

There are many authors who have questioned the adequacy of financial measures to tap all the dimensions of organizational performance. At the same time, there is no real consensus on the appropriate measures of financial performance of an organization (Cochran and Wood, 1984). Sethi (1975: 67-80) has criticized profits as a true measure of organizational performance on the ground that "to the extent a firm's profit does not proportionately reflect the external economies exploited by it or the diseconomies created by it, profits cannot be a true measure of a firm's 'reward' for delivering socially desirable goods". Major criticism against the use of profits as a true measure of performance is that it does not take into account certain dimensions such as corporate social responsibility, personnel development or degeneration, product development or obsolence, technological relevance or obsolence. Sethi (1975: 10) rightly points out that "profits no longer suffice as a gauge of the differential effects of corporate social reform. New processes are needed for the complex balancing of interests. " Some of the accounting measures of financial performance, used in various studies, have been criticized on other

grounds too that they are strongly influenced by rate of inflation which varies from state to state, rate of growth, as well as by accounting practices themselves (Bragdon and Marlin, 1972; Bowman and Haire, 1975; Folger and Nutt, 1975; Preston, 1978; Cochran and Woo. 1984). Although financial criterion has been criticized by many yet no new alternatives have been suggested as a valid measure of organizational performance. Nonetheless, despite their shortcomings, accounting returns have been considered to be the best proxy for financial performance of an organization (Cochran and Wood, 1984). Besides. the use of profit margin rather than the profits alone minimizes the problems of measurement of organizational performance inherent in financial measures.

ASSUMPTIONS

Sufficient amount of profit margin is needed before any organization can discharge its obligations towards various parties as well as have retained earnings for future growth. If profit margin is small then it is assumed that the organization will assign a low priority to meeting its obligations towards the law.

Corporations that work on a tight budget due to severe financial constraints will neglect safety as compared to those that do not have these constraints.

Based on the literature survey, rationale and assumptions presented above the following hypotheses have been posited.

HYPOTHESIS 1: (a) The smaller the profit margin the higher the incidence of violatory behavior in organizations in the auto and parts industry.
(b)The smaller the profit margin the higher the incidence of violatory behavior in organizations in the fabricated metal products industry.
(c)The smaller the profit margin the higher the incidence of violatory behavior in organizations in the petroleum and coal industry.

2. Organizational Structure and Violatory Behavior

Many authors have noticed a strong relationship between organizational size and structure (Pugh, Hickson, Hinings and Turner, 1968 and 1969; Hickson, Pugh and Physey, 1970; Hall, 1972; Kimberly, 1976; and Aiken and Hage, 1968). Some authors (Pugh, Hickson, Hinings and Turner, 1968; and Hickson, Pugh and Pheysey, 1970), have taken the position that size is a contextual variable that affects organizational structure. Other scholars (Hall, 1972; and Aiken & Hage, 1968) consider size as part of structure itself. In the context studies, seven primary concepts were investigated: origin and history, ownership and control, size, charter, technology, location and dependence on other organizations. Size alone as a predictor of structuring of organizational activities explained 69% of the variance. Size of parent organization as a predictor did not increase predictability beyond the explanation provided by the size of organization itself. It was then concluded that "the impact of the size of an organization is thus considerably greater than the size of the parent organization on specialization, standardization, normalization, etc." (Pugh, Hickson, Hinings, and Turner, 1968:65-105). Out of the two competing conceptual positions of size as a content and size as a structure neither one explains the relationship between organizational structure (or for that matter organizational size) and violations. Since contextual approach has treated size as representation of structure and has been able to explain variation in organizational structure to a large extent, it makes sense to use this approach in the study of organizational violations. Pugh et al.'s (1968 and 1969) studies included government organizations in their sample of 46 organizations. Our study does not include any such organizations. But in terms of representation of manufacturing industries Pugh et al.'s study had preponderance of engineering and metal organizations, which is similar to the manufacturing industries involved here.

One might argue that if due to increase in size organization loses some of its controls which serves as a pre-condition for illegality then why all large organizations do not violate the laws? Since we assume that not all large corporations indulge in violations so there must be other structural properties of an organization such as span of control, chain of command, number of levels in hierarchy, contingencies related to employee characteristics, and other organizational structure variables that permit greater control and thus moderate the relationship between size and violations. But none of such possibilities has been subjected to research so far.

Studies have shown that as organizational size increased so did corporate crimes (Clinard & Yeager, 1980; Simpson 1986; and Cochran and Nigh, 1987). A recent study by Baucus (1989: 93-118) pointed out that "an organization's size was a good predictor of illegal activities. Very large Fortune 500 firms were almost twice as likely to behave illegally as smaller firms."

But some of the studies did not find any relationship between size and illegality (Lane, 1953). Baucus (1989) explains that conflicting results may be due to differences in operationalization of measures of size. Some have used personnel while others used total assets of a corporation as a surrogate of corporate size (Table -2).

Table - 2

RELATIONSHIP BETWEEN ORGANIZATIONAL STRUCTURE AND CORPORATE ILLEGALITY

AUTHOR	YEAR	RELATIONSHIP BETWEEN STRUCTURE AND ILLEGALITY
Lane	1953	None
Vaughan	1982	Relationship may exist but is difficult to detect.
Clinard & Yeager	1980	Due to loss of control by top management increase in size results in illegality.
Simpson	1986	-do-
Cochran & Nigh	1987	-do-
Baucus	1989	-do-
Sethi & Chopra	1991	-do-

One of the major explanations for corporate illegality provided earlier was loss of control by management which is due to increase in size. It is a state of helplessness on the part of management to improve financial performance. Under such conditions, management does not believe it can achieve its financial goals while staying on the legal course and as a result either deliberately engages in violatory behavior or tolerates it when done by others. More opportunities to behave illegally exist in larger firms. It is because it is more difficult to detect illegality in larger firms (Vaughan, 1982; and Baucus, 1989). At the least, greater size makes corporate crimes as a potential act of an organization that is the result of greater complexity, lack of controls, diffusion of authority etc. These organizational conditions were usually used, in arguments given by corporate attorneys before judges in various case laws published by Sethi and Chopra (1991). Smaller organizations cannot do so when caught by law and enforcement agencies.

RATIONALE

What is there in the organization structure that makes people in an organization commit illegal acts? Blau (1972) observed that as size increases, it is associated with increases in problems of communication and coordination. It is not the size by itself that is a problem, it is the lack of coordination and control that is associated with size which is more likely to affect organizational performance and thus occurrence of corporate crimes. With increased size, the sub units of large organizations apparently begin to engage in activities that are out of the control and coordinating power of those at the top. As a result, it opens up the possibility of corporate crimes being committed at levels other than top management. Dewar and Hage (1978) argue that newer specializations in technology are added only when manufacturing process becomes more complicated. Increased complexity is likely

to create more need for coordination at the top, in absence of which there will be increased possibility of corporate crimes at lower levels of the organization. Studies by Grusky (1962) and Kriesberg (1962) suggest that succession and turnover among top management has less influence on large organizations than on small organizations. This is probably because of diffusion of controls. Whether higher turnover in top management is an antecedent or a consequent condition of organizational crimes is not known. Another question of relevance to size is the nature of sampling. Needleman and Needleman's (1979) classification of organizational crimes based on corporate size is interpreted as large size organizations to be more 'crime coercive' whereas small size organizations are likely to be more 'crime facilitative' since in the later type of organizations the leader leads others to break the law for system's economic gains which would not be possible in a large size organization because it may not be possible to convince and socialize a large number of employees to violate the laws. But nonetheless, from our point of view, both types of organizations could get involved in violatory behavior.

Size is also related to the amount of resources organization spends on legal services and thereby the extent to which it stays immune from law is unclear. But its clear that the defenders of corporate crimes are those lawyers that "studied at top law schools ... and serve the highest-paying clientele of the legal profession - corporations, corporate executives, and other persons of high socioeconomic status" (Kinsley, 1985; and Sethi 1987). Such defenders of corporate crimes have endless advantages over government prosecutors and over other colleagues (generally government paid) who defend street criminals. These defenders have a lot more experience, more resources for building a case, and fewer clients allowing a lot more time per client. They hire highly special consultants for jury selection,

bombard juries with highly technical and financially complex details, and try to project the corporate criminal as a community leader (Kinsley, 1985).

Another contingent variable that could moderate relationship between size and corporate criminality is the degree of enforcement by the government. Recently the regulatory agencies have been criticized for being quite active in regulating the behavior of construction firms that rigged bids but took a back seat in the administration of anti-trust laws with regard to a firm that acquired or eliminated its competitors outright and the shutdown capacity and fired workers in the name of economic efficiency of free markets. Such an approach originates from a political ideology rather than from the enforcement of corporate laws (New York Times, Jan. 3, 1984).

It seems that the perception of corporate crimes in society by even large size corporations does not get wider coverage as compared to street crimes thereby limiting the negative effects of corporate crimes that get to be known by society. A recent study analyzed the press coverage of 12 incidents of large size corporate crimes (Bennett, 1981) that included the Hooker Chemical/Occidental Petroleum incident at Love Canal; the Ford Pinto trial; the General Electric bribery indictment; the Bethlehem Steel Bribery admission and fine; Mobil Oil's unfair and deceptive advertisements hearing before the F.T.C.; Ford Motor Company's agreement with the F.T.C. about its failure to disclose car defects; the allegation of unlawful gas diversion by Texaco; the Public Interest Group - Oil Company overcharge suit; and charges by the FTC that General Motors withheld information on known auto defects from buyers were analyzed and findings supported hypotheses that the news papers pay far more attention to government than to crimes by private corporations. The responsibility of the corporation with regard to corporate crimes was de-emphasized whereas the government was blamed for delays in detecting the violation or for not aiding the consumer. It is quite possible that irresponsibility in

organization may in fact be institutionalized to reduce accountability. Usually size, delegation and specialization combine in order to abdicate a degree of personal responsibility on the part of management. It results in production of faulty or dangerous products to bid rigging (Clinard and Yeager, 1980: 44) that took place in the corporations for which managers were held criminally liable.

Along with changes in administrative intensity an organization may be far removed from the headquarters so that what goes on in a divisional office is neither known nor controlled by the headquarters. So manifestation of size in the form of multi-divisional offices which are more stringently regulated by the home office with regard to financial criterion is another situation where a divisional office is likely to be involved in corporate crimes relating to augmentation of profits illegally. In the electrical industry when the corporations involved were charged with price fixing, the home offices showed ignorance about it in the large size organizations (Herling, 1962; Hay and Kelley, 1974; and Dirks and Gross, 1974).

ASSUMPTIONS

As size increases, it is assumed, specialization and decentralization also increase. Decision making is pushed downward resulting in possible lack of controls by top management and thus increase in corporate illegality. This position assumes illegality can take place at any level of the organization In light of the above literature review, rationale and assumptions following hypotheses are posited:

HYPOTHESIS 2: (a) The larger the company's size the greater the corporate violatory behavior in auto and parts industry.
(b) The larger the company's size the greater the corporate violatory behavior in the fabricated metal products industry.
(c) The larger the company's size the greater the corporate violatory behavior in the petroleum and coal industry.

3. Organizational Slack and Violatory Behavior

Cyert and March (1963) used the concept of organizational slack to explain difference between the level of aspiration and the level of achievement of management in an organization. They believed that creation of organizational slack was a function of environmental forces that were beyond the control of an organization.

Organizational slack provides management an option to not to circumvent the laws because of the cost factor. Slack is used to make side payments to parties so that impending conflicts can be solved at a quasi-resolutionary state for the time being. Organizational conflicts are never resolved on a permanent basis (Cyert and March, 1963). Firms with little or no organizational slack, when faced with external uncertainties or internal problems, are more likely to enter into violatory behavior because otherwise they will have to disturb permanent arrangements which are instantly painful and more visible. Conversely, organizations with slack have the option to use the slack and not be tempted to follow the course of illegality.

According to Baucus (1989: 93-118) organizational slack has not received much attention from investigators of illegal corporate behavior but "there is ample theoretical support for organizational slack as an antecedent and the next step is for researchers to develop indicators of slack so they can empirically test it as a predictor of illegal corporate behavior". Research by Baucus suggests that even a little organizational slack helps an organiztion to stay away from illegal behavior.

RATIONALE

Baucus (1989) observes that lack of organizational slack is an antecedent condition of illegal corporate behavior. Organizational slack provides leverage to management to take care of uncertainties. Operational costs, that are certain, would

be budgeted and only uncertain costs will be accommodated by the slack resources. These slack resources are a function of favorable changes in the environment (Cyert & March, 1963). They are unexpected profits and as such parties have no claim to them. This gives management a greater degree of flexibility to spend these resources. In the absence of slack resources management would have to unleash funds from budgeted costs which is lot more painful and obvious. So slack would help management to stay ethical and legal. Sometimes it may not cost much to avoid violations and probably that is why Baucus' (1989) study found that even a "little organizational slack or few excess resources of the firm did not significantly increase the likelihood of illegal activities". It seems even small amount of surplus resources are indicative of normality of organizational behavior and when organizations do not have any slack to fall back on then they may follow a course that takes organizations beyond the expected behavior and into the zone of illegality.

ASSUMPTIONS

Organizations with slack will have a choice when they get into conflicts which are inevitable. Rather than taking the illegal route management is assumed to be able to use part of slack resources and stay on legal course. If they do not have this option then the organization could be drawn towards illegality because in the perception of management such an opportunity exists at a low risk of sanctions since fines by some of the regulatory agencies like OSHA are very small in relation to the actual or potential of damage done to labor.

In light of the above literature review, rationale and assumptions following hypotheses are posited for various industries:

HYPOTHESIS 3: (a) The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the auto and parts industry.

(b)The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the fabricated metal products industry.
(c)The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the petroleum and coal industry.

4. Internal Board Control and Violatory Behavior

Does separation between ownership of assets by family or stockholders and control by management have any important consequences for corporate illegality? Zeitlin (1974) has raised the issue as to whether the separation between ownership and control is a "pseudofact". If so, then he claims managerial theories are without foundation. One of the much cited studies by Berle and Means (1932 and 1967: 84-105) classified 44% of the top 200 largest corporations in the USA. as presumed or actually under management control, but they also pointed out that they had "reasonably definite information" on at the most two thirds of the 200 largest companies studied. A later study of 500 largest nonfinancial corporations in the USA by Larner (1970: 132) found that 75 % of the corporations were controlled by management which indicated a sharp trend towards control of organizations by managers rather than by owners in the U.S.

Researchers have experienced difficulty in inferring control which has generally been defined as power to select the board members so that organizational policies can be controlled (Berle and Means, 1967; 65-66). It is argued that in a mature corporation the stockholders do not have any power and the Board of Directors is usually a passive instrument of the management (Galbraith, 1971: 174). This separation between ownership and control raises a few questions with regard to organizational crimes. Does lack of ownership also lead to lack of concern for corporate laws? How controls shift from board to management or vice versa? What difference it makes when managers are offered ownership in the company they

manage; does it increase or decrease illegality or has no effect at all? Larner (1970) found that the rate of profit earned by management controlled or owner controlled organizations was almost the same but the illegality of behavior of corporation differed.

Managers are not likely to benefit from the profits which may result from violations of law but certainly they might endanger their chances for additional compensation or other perquisites or even loose their job if their actions indeed result in serious losses to the corporation due to various reasons including illegality (Gordon. 1966). It would follow from this argument that managers do not take illegal actions for short term personal gains. There is a strong assumption on the part of the managers that illegality will not be exposed and benefits to organizations will result in slack that will be available for distribution among those who helped to create it.

At the same time if illegality is not supported by top management or the Board of Directors that oversees organization's performance, a manager might have to pay for one's illegal actions through separation or transfer in the short run.

Another position taken is that dominant force that influences the behavior towards legality or illegality is the role played by major corporations in inter-organizational behavior with banks as the central coordinating agencies and an inner group of "corporate class" providing the human linkage which takes care of the interest of major, interrelated corporate bureaucracies (Kerbo and Fave, 1983). This view supports strong external influences on corporations for illegality in an industry. The Senate Committee on the Government Affairs (SCGA, 1978a: 258) also found that Morgan Guaranty Trust & Co. was the number one voter due to its stock holdings in 27 corporations and was among the top five stock voters in 56 corporations followed by Citibank exercising this right in 7 and 25 corporations

respectively. The SCGA also discovered that "voting right(s) to about half of the stock in U.S. corporations are held by banks and trust companies, foreign investors, investment companies, foundations, and education endowments" (SCGA, 1978b: 1014). Domestic institutional investors accounted for about 43.5 % of all stock voting rights indicating that more than half of the ownership of firms is held by other firms and not individuals making it possible for 'inter-corporate complex" to influence organizational behavior towards legality or illegality. Organizations were also found to be using pyramiding which is basically corporate control of other organizations through a legal device involving a small proportion of ownership, to retain control of the market place (Zeitlin, 1974).

An analysis of the violation rates in the Mellon interest group, the Du Pont interest group, and two firms associated with the Avery family (U.S. Gypsum and Montgomery Ward) showed that there was little common policy among the firms in each group (Lane, 1953). It was deduced from this data that it did not appear that any common association (or even control) had an influence on compliance with laws. It was also pointed out that the incidence of violation among the big business interests was markedly lower than the general rates for all businesses (Lane, 1953).

The foregoing analysis suggests that organizations do not necessarily go for profit maximization. Publicly owned organizations did not necessarily consider profit maximization more important than the privately owned corporations. In absence of profit maximization, maintaining the status quo of dominant coalitions becomes the major goal. No conclusive evidence is found in research that privately owned businesses are less prone to organizational crimes than the publicly held businesses because of paucity of research. There is also no scientific knowledge available at this time to resolve the question whether lack of private ownership necessarily increases illegal behavior in organizations? It is also suggested that coalitions

outside the organizations seem to be controlling organizational behavior through stock ownership by outside interrelated corporations, interlocking in the board of directorates and pyramiding.

Although inter-organizational relations have received attention from some scholars (Starbuck, 1965 and 1975; Pfeffer and Salancik, 1978; Aldrich, 1979; and Nystrom and Starbuck, 1981) yet unlawful conduct has seldom been analyzed from an inter-organizational point of view (Clinard and Yeager, 1980; and Hochstedler, 1984). Finney and Lesieur (1982) have rightly pointed out that despite serious efforts researchers have not come up with a model or theory to explain the selective occurrence of crime in certain industries. It has been posited that certain social structural arrangements contribute to crime between organizations. These arrangements exist in the environment in which organizations operate (Vaughan, 1980). To what extent common ownership in several organizations contributes to interorganizational violatory behavior is less well known but badly needs attention of researchers.

RATIONALE

A clear legal definition exists to differentiate between ownership and administration. The reason for the creation of a board of directors is to let the stockholders, who take risk with their capital, to formulate policies and control the forces that influence business outcomes such as profits and dividends . Yet, in reality that may not be the case. It is quite possible that administrators may be appointed to the board and in reality may even control it. The extent to which administrators overlap the board of directors, gives them a unique control in decision making. In absence of fear of reprisal or censure of administration by the board, the administration has the opportunity to violate the laws without being criticized internally.

What is the relationship between family ownership or board controlled or management controlled organizations and corporate illegality? No comparative research in this direction was found. It is pointed out that in a mature corporation stockholders do not have any power and the board of directors usually becomes a passive instrument of the management (Galbraith, 1971: 174). As a result, it is argued that the board develops the symptoms of what Irving Janiz (1971) has called as group think. This means that management develops an illusion of unanimity, there is no questioning of leadership or of each other, no contingency plans are developed, no outside consultants hired and the organization would get into illegality once the groupthink culture has fully developed. Larner (1970) points out that the rate of profit earned by management controlled or owner controlled organization was the same but illegality differed. It suggests that management, under groupthink conditions, may show more concern for profits than legality, or means to reach their goals.

ASSUMPTIONS

The control of the Board by insiders creates vested interest in profits particularly when insiders have made financial investments or have stock options linked with the future performance of the organization. As a result, there may be a tendency to over emphasize profits even by ignoring the costly requirements of adherence to law because of the perception that management is in control of day to day affairs of the corporation. Sometimes when the competition is too hard and unmanageable, the goal of sheer survival might also make the insiders on the board to ignore adherence to laws so that organization can make it through lean periods.

HYPOTHESIS 4: (a) The greater the proportion of insiders on the board the higher the corporate violatory behavior in the auto and parts industry.
(b) The greater the proportion of insiders on the board

the higher the corporate violatory behavior in the fabricated metal products industry.
(c) The greater the proportion of insiders on the board the higher the corporate violatory behavior in the petroleum and coal industry.

5. Financial Value of Technology And Violatory Behavior

Until the 1960's workers were not legally protected from health and safety hazards on the job. The toll still continues to be very high. The U.S.A. National Safety Council and the Public Health Service have estimated that 14,000 workers died of industrial accidents and approximately another 100,000 died of occupationally caused illnesses every year. In addition to this, 2.2 million disabling injuries were caused and more than 400,000 were occupational illnesses that set in every year (Ashford, 1976: 84-92; Szasz 1984: 103-116; and Michalowski, 1987: 325-328). Initially, management took the position that working conditions were solely the prerogative of management and even supported the ideology of accident proneness which blamed workers for their injuries.

After the passage of OSHA in 1970, management care for worker safety was reflected in the desire for sophisticated technology that minimizes industrial accidents. Technology that is sophisticated is bound to cost more but is likely to minimize the accidents. There have been situations when management failed to replace outmoded technology causing high rate of accidents and as a result was fined heavily by OSHA for non-compliance (Sethi and Chopra, 1991).

RATIONALE

Newer specializations in technology are added only when the manufacturing process becomes complicated (Dewar and Hage, 1978). Increased technological complexity, with lack of controls from top management is likely to result in

violations at lower levels of the organization. There are plenty of Federal case laws to show that an employer is fully responsible for employee violations of OSHA standards. In one case, even though an employer had workers educated, threatened and even persuaded unsuccessfully to use hard hats to prevent accidents, yet the employer was fined when the workers did not do so (Flippo, 1984: 519).

Dewar and Hage (1978) suggest that administrative complexity is a function of organizational size. As size increases, so does administrative complexity but not necessarily technological complexity. Administrative complexity when associated with lack of controls causes violations.

ASSUMPTIONS

It is assumed that modern technology is more expensive than the old or obsolete technology. Old technology also requires more expensive care because it is worn out, is likely to have more break downs and is valued less. New technology is less likely to breakdown and probably costs much less to maintain at least in the initial stage which reduces the possibility of non-compliance. At the same time, an organization might like to spend more money on maintenance to prevent machinery breakdown or failures for a long period of time. But old and worn out plants, it is assumed, will need more maintenance than newer plants.

Based on the theory, rationale, operational reality and assumptions the following hypotheses are posited:

HYPOTHESIS 5:

(a) (I) The greater the financial value of technology the lesser the violations in the auto and parts industry.

(a) (II) The greater the financial value of technology the lesser the violations in the fabricated metal products industry.

(a) (III) The greater the financial value of technology the lesser the violations in the petroleum and coal industry.

(b) (I) The greater the book value of technology the lesser the violations in the auto and parts industry.

(b)(II) The greater the book value of technology the lesser the violations in the fabricated metal products industry.
(b) III) The greater the book value of technology the lesser the violations in the petroleum and coal industry.

(c) (I) The older the company's oldest plant the higher the violations in the auto and parts industry.
(c) (II) The older the company's oldest plant the higher the violations in the fabricated metal products industry.
(c) (III) The older the company's oldest plant the higher the violations in the petroleum and coal industry.

6. Organizational Growth and Violatory Behavior

The organization life cycle approach has been offered, as a parallel explanation to natural selection logic, to explain changes in the behavior of organizations (Freeman, 1982). Like product life cycle, it is believed, that an organization passes through a number of phases or stages which are introduction, growth, maturity and decline (Kotler, 1972). These stages are reflected in the rate of growth of industry sales. There appears to be some controversy about whether the life cycle approach applies only to the individual products or to the whole industry (Porter, 1981). Aldrich (1979) showed that between 1940 and 1962 some 3,390,000 new firms were created in the United States and some 2,847,000 firms were discontinued. For every 100 firms, in existence at the beginning of each year, slightly less than three disappeared and a little over three new organizations were created. This tells us that although dying firms are replaced by newer organizations at almost the same rate, yet it does not help us to find the life span of an organization in an industry or the duration of each organizational stage. What causes this evolutionary process to move from one stage to the next is also less well explored. However, it is argued that factors such as demographics, changes in life styles, availability of substitutes and complementary products as well as penetration of the customer groups are responsible for changes in evolutionary stages (Porter, 1981: 156-158).

It is very likely that some industries may not have an organizational life cycle at all and instead may have inflection points only as it happened in the motor cycle industry or even in the radio advertising industry (Porter, 1981: 156-158).

Since the organizational life cycle approach is referred to in practically every textbook of management and serves as an alternative explanation to understand organizational behavior so it is of importance to use this approach to find out if this variable is related to corporate crimes. Lane's study (1954) did shed some light on the issue of relationship between declining financial position of a firm and violations. This study covered 275 shoe manufacturing firms in the New England states. Because of difficulty in getting financial data of these firms, Lane used the number of personnel as an indication of the organizational stage. His study revealed that violations of trade practice laws were more closely associated with the organizational decline stage, whereas violations of labor relations laws had nothing to do with the declining stage. A lab study on MBA students revealed that simulated organizations in decline were more likely to be involved in unethical activities (Lemke & Schmink, 1989). The greater was the decline, the greater was the practice of unethical behavior in simulated organizations staffed by students.

RATIONALE

If violations are caused because of a paucity of funds and the need of the organization to control scarce resources, then violations are least likely to happen during the rapid growth stage because the organization has an abundance of resources. Availability of resources, at the least, eliminates the economic justification for violations often pleaded by managers when charged with illegality. The increased revenues, during the growth stage, give management a choice to expand business at a pace that does not interfere with the safety laws because human and technological resources are considered a vital part of the strategy. If at

all, violations do take place during this stage, then they would be a function of either management philosophy to gain from the perceived opportunity to violate laws, and thereby pay the meager costs of committing corporate crimes, or they could be due to the situation that management has no time to care about such violations. Violations with the knowledge of management are more likely to happen during the declining phase of an organization. It is because the organization is struggling hard to survive. This general attitude of neglect in declining stages applies to all phases of business, e.g., plant, employees, creditors, customers, etc. All that matters to the organizations is to prolong its life and keep the essential jobs intact without getting into serious troubles with the law. If indeed it does, then it will become another factor to close the business earlier. Very much like the medical field which has no cure for cancer, respiratory diseases, etc., there are hardly any management theories to save such ailing organizations.

It is believed that organizations that have just entered into the maturation stage are not likely to be involved in violatory behavior. Perhaps those organizations that continue to stagnate for a longer period of time might get into violatory behavior as a cost cutting measure. There is no known study that indicates as to what is the duration of each stage in any industry. In the absence of such studies, the rationale for no violations during the stage of maturation depends upon the strategic ability of management to plan for the future.

ASSUMPTIONS

If the percentage of growth is higher then it is assumed that surplus revenue will be available to correct situations that would otherwise result in violations of law. Although our study is not directly concerned with the testing of organizational life cycle approach yet we are using this variable to hypothesize that the organizational stage of decline is likely to be associated with higher violatory behavior.

In light of the foregoing discussion on theory, rationale, operational reality and assumptions the following hypotheses are posited:

HYPOTHESIS 6: (a) The higher the company's growth rate the fewer the violations in the auto and parts industry.
(b) The higher the company's growth rate the fewer the violations in the fabricated metal products industry.
(c) The higher the company's growth rate the fewer the violations in the petroleum and coal industry.

7. External Pressures and Violatory Behavior

It was Max Weber (1946) who in his 'paradox of domination' pointed out that rational organizations would develop a power relationship with people they served within the organization as well as in the environment. This was done to gain predictability in the inherently unstable marketplace. The environment in which a capitalist enterprise operated consisted of labor markets, capital markets, commodity markets, technology markets etc. In order to stabilize the relationships, Weber predicted that organizations would develop power relationships over both subordinates and over exchange partners in the environments. In this process, instead of efforts at efficiency alone, there would be efforts at "efficiency at control" which requires setting of organizational goals for each market and direction of organizational efforts to achieve those goals so that a manageable relationship between the organization and environment was created.

A number of environmental variables have been identified that create uncertainty (Katz and Kahn, 1978). Organization theorists identified such influences as political power of external players who can disturb internal power relations (Selznick, 1949), technological innovations (Chandler, 1962, and Woodward, 1965), demand fluctuations due to changes in economy and population (Burns and Stalker 1961; Chandler, 1962), availability of inputs and their costs (Lawrence and

Lorsch. 1967), time span for definite information on acceptance or rejections of new products in the market place (Lawrence and Lorsch, 1967; and Bromily and Marcus, 1989). These external organizational pressures, they predicted, would necessitate changes in structure and strategy (Chandler, 1962; and Pfeffer and Salancik, 1978) even though the order in which these changes take place is not clear.

Organization crime theorists have suggested the role of external pressures that could make the organization to move in the direction of illegality include: pressure from other competing firms in industry (Finney & Lesieur, 1982). criminogenic environment (Ermann & Lundman, 1978; Clinard and Yeager, 1980; Sethi, 1987), scarce resources (Staw and Swajkowski, 1975; Pfeffer and Salancik, 1978; Baucus, 1986; and Sethi, 1987), and recessionary economic conditions (Simpson, 1986).

There is an implicit assumption made by some managers in regard to organization crimes. If organizations could not stay within the legal framework, it was because management in such organizations either failed to manage rationally and legally because of the lack of ability (Clinard, 1983), or had its own definition of criminal behavior and applied it to the situation. This assumption on the part of management gives credence to the belief that being illegal is not criminal (Conklin, 1977). Management in such organizations did not seek outside consultation or bring changes in the Board with people who had the right kind of professional knowledge and background that was needed to avoid illegality (Sethi, 1987).

Environmental conditions of firms cause external pressures and provide information for predicting corporate behavior (Katz and Kahn, 1978). These external pressures need to be investigated to find the level of their association with corporate illegality. Firms try to adapt to environmental changes so that they can maintain their equilibrium. But, during recessionary periods, when the survival of business is

threatened, firm practices become "increasingly ruthless, predatory and conspiratorial" (Simpson, 1986).

The trial of a corporation for product liability has been observed to be associated with declining sales volume and thereby decreasing a firm's ability to attract capital (Komisarjeusky, 1983). Firms accused of antitrust violations suffered a decline in stock price in the one week period after government released the names of violators in the press (Randall and Newman, 1979). It is clear from these studies that when firms cannot handle their external pressures, they may violate the laws. Exposure to such illegal behavior in the public has negative consequences for the firm. The stockholders and customers react to this situation negatively as soon as they get to know about the violatory behavior. It is not clear as to how long this negative reaction from the public lasts.

Davidson and Worrell's (1988) study of reactions of the stock market to corporate crimes involving at least one corrupt practice resulting in either a conviction of federal criminal charge or a consent decree indicated that the market does react negatively but only once on the day the news first reaches the market. This study indicates that the effect lasts only for a very short period of time. Looking from the corporate compliance point of view, firms that see the long term negative consequences of their illegality, are more likely to stay away from it but there is a dearth of such studies in organization crime theory.

It is also quite possible that a firm may take corrective measures as soon as it is caught by law and enforcement agencies. Bromily and Marcus (1989) point out that recall of products, due to dubious corporate behavior though not necessarily illegal, did not necessarily result in lower returns. In some cases they even profited from this dubious or illegal behavior. Leonard and Weber (1970) pointed out that General Motors, on an average basis, gave highest level of dividends over a period of seven years (20.5 %) as compared to Ford (14.3 %) and Chrysler (11. 8 %)

between the years from 1960 to 1967 whereas the average dividends for all industries, were between 8 to 9%. The Federal Trade Commission pointed out that highest dividends were also found to be related to corporate illegality.

While the above studies point out that illegal corporate behavior does have a short term negative reaction from stockholders, the long term negative consequences for organizations are not clear. It is possible that firms do other things to thwart long term negative consequences. Such steps may include launching new products, aggressive marketing and advertising campaigns, rebuilding corporate image through philanthropy and sponsorship of community events to cultivate confidence in the ability of management to manage its affairs in the marketplace, and use of slack at the time of need. During such periods, while organizations are struggling with the issue of illegality, it appears they continue to give higher dividends to avoid negative reactions from outsiders.

RATIONALE

The rationale for undue external pressure resulting in organizational illegality is that the organization has to maintain stability in relations with the exchange partners without which it cannot survive. External pressures create uncertainty and are perceived as a threat to the inputs or dispersal of outputs. These external sources of strains or pressures if not managed will internally influence an organization to behave illegally. Researchers have pointed out in the past that such external pressures result in corporate illegality such as price fixing (Pfeffer and Salancik, 1978; and Aldrich, 1979), and higher market concentration and horizontal mergers (Barber, 1970) which reduces competition and moves the industry in the direction of oligopolistic or monopolistic conditions that do not favor the customer and are illegal under the Sherman's Act of 1894.

ASSUMPTIONS

In the capital markets, if stockholders receive a rate of return that is less than the one in the previous year, it is believed, such corporations are more likely to be under pressure to get involved in violatory behavior while reducing their costs. Similarly, an organization that has bequeathed a higher proportion of its identifiable assets, will be under constant external pressure to pay for its liabilities and thereby is not likely to pay as much attention to the violatory behavior as compared to other organizations that are not burdened heavily with long term debts. It is also believed that happy, contented and satisfied stockholders who continue to receive higher dividends on their investments are not likely to generate any pressures on the corporation. It is rather conceivable that they, like others, are likely to invest more capital into the firm that gives them higher dividends as well as appreciate in stock price over a period of time.

Based on the earlier discussion of theory, rationale, operational reality and assumptions the following hypotheses are offered.

HYPOTHESIS 7:

(a) (I) The higher the external pressure, due to negative changes in stock price over a period of three years, the greater the violatory behavior in the auto and parts industry.

(a) (II) The higher the external pressure, due to negative changes in stock price over a period of three years, the greater the violatory behavior in the fabricated metal products industry.

(a) (III) The higher the external pressure, due to negative changes in stock price over a period of three years, the greater the violatory behavior in the petroleum and coal industry.

(b)(I) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the auto and parts industry.

(b) (II) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the fabricated metal products industry.

(b) (III) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the petroleum and coal industry.

(c) (I) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the auto and parts industry.

(c) (II) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the fabricated metal products industry.

(c) (III) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the petroleum and coal industry.

8. Role of Regulatory Agency and Violatory Behavior

The earlier legislation consisting of the Antitrust Act, the Securities and Exchange Commission (SEC), and the Interstate Commerce Commission (ICC) were passed to regulate the economic competition among the firms. The social legislation of the sixties in the form of Civil Rights Act, Equal Employment Opportunity Commission (EEOC). Occupational Safety and Health Administration (OSHA). and the Environmental Protection Agency (EPA) were social laws created to protect the workers from discrimination or unsafe working conditions (Szasz. 1984) and to improve the quality of a worker's life.

(a) OSHA laws and sanctions

On December 29, 1970 the 91st Congress passed Public Law 91-596 called Occupational Safety Health Act of 1970. It states, "Congress finds that personal injuries and illnesses arising out of work situations impose a substantial burden upon, and are a hindrance to, interstate commerce in terms of lost production, wage loss, medical expenses, and disability compensation payments" (Occupational Safety Health Act of 1970: sec 2). This act of congress assures "so far as possible

every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources" (sec 2(b)).

Even after the OSHA laws were passed "thousands of new regulations were written to help the managers, the safety and health requirements were vague and subject to interpretation by industry and OSHA itself" (Michaud, 1995).

OSHA laws are enforced by the Secretary of Labor through inspections, fines and sometimes by criminal sentences. OSHA inspections are avoidable if you believe that accidents are preventable. There could be a number of reasons as to why OSHA may conduct an inspection in a firm. Some of the reasons could be: "an employee complaint, the occurrence of an accident or catastrophe, the presence of an imminent hazard, a notification by another agency of the existence of an allegedly unsafe condition (Peterson and Cohen, 1996: 63-64).

The Bureau of Labor Statistics which is part of the Department of Labor obtains the logs for approximately 275,000 workplaces each year. The information on accident and illnesses is compiled into a survey report which OSHA uses to target certain industries. "The basic policy for many years has been to schedule an inspection of those industries and establishments that show the greatest number of injuries." (Michaud, 1995: 89-90). When an inspector visits a workplace and after examining OSHA Log 200 finds that a corporation's rate is less than the industry's rate (as calculated by the Bureau of Labor Statistics) the inspection is terminated at that point of time. It is an established OSHA policy to target inspections in high hazard areas. OSHA schedules inspections "in a way that ensures maximum feasible protection for all working men and women. The Area Director is responsible for creating inspection priorities. Inspections may be either programmed or unprogrammed. Unprogrammed inspections generally have a high priority status" (Peterson and Cohen, 1996: 64). Unprogrammed inspections are usually based on

an imminent danger to other workers based on the occurrence of a fatality. The source of the information resulting in inspection is usually not important.

An inspection could be of ordinary or serious nature. A serious violation involves a "substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations or processes which have been adopted or are in use, in such place of employment unless the employer did not, and could not with the exercise of reasonable diligence know of the presence of the violation." (Occupational Safety Health Act of 1970, 29 U.S.C.A. Sec.666(K)). A mandatory penalty of $7,000 could be imposed for a serious violation. For a non-serious violation the fine could be reduced by as much as 95% based upon the past history of violations, good faith of employer to mitigate the negative outcomes, gravity of the hazard and the size of the business.

An OSHA inspector must give a two fold test before classifying a violation as serious. The inspector must determine that there is a substantial probability that a death or serious physical harm could occur due to the conditions existing. Secondly the OSHA agency must prove that the employer had earlier knowledge of the existence of violation or with the exercise of reasonable diligence could have known of the presence of violation. The burden of proof lies with OSHA agency otherwise on appeal an inspection could be classified as a violation other than a serious violation.

An employer can file an appeal within 15 working days of the receipt of a citation to the OSHA Review Commission and a hearing is scheduled under subsection (c) of Section 10 of OSHA Act of 1970.

Under section 11 of OSHA Act any person adversely affected or aggrieved by an order of the Commission "may obtain a review of such order in any United States Court of Appeals for the Circuit in which the violation is alleged to have occurred or where the employer has its principal office, or in the Court of Appeals for the

District of Columbia Circuit by filing in such court within sixty days following the issuance of such order a written petition praying that the order be modified or set aside."

OSHA provides civil and criminal sanctions against employers for injuries at the workplace. For violations resulting in death OSHA laws provide an employer "upon conviction be punished by a fine of not more than $10,000 or by imprisonment for not more than six months or by both" (Sec. 17(e)). These sanctions could be doubled for a second violation. "If any person who gives an advance notice of any inspection to be conducted....shall upon conviction, be punished by a fine of not more than $1,000 or by imprisonment for not more than six months, or by both" (sec. 17(f)). Similarly if anyone "who makes a false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Act shall, upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than six months, or by both" (sec. 17(g)).

(b) Working conditions and enforcement of OSHA laws

The work of researchers and some unions began to produce solid evidence about the causes of occupational illness (Ashford, 1976: 3, 46). Ashford indicates that the work of Selikoff on asbestos induced cancer was an example of the contribution of the scientific community. Unions along with the legislators in the late 1960's played a key role in the passage of OSHA legislation. Besides, the rate of unemployment was only 3 % in the late half of the 1960's, and inflation was very much under control.

The rate of industrial accidents rose to 29 percent in the year 1970 and the workers got concerned about their safety on the job. An explosion at the Consolidated Coal

Company's mine in Farmington, West Virginia that killed 78 miners hastened the passage of legislation. Before that, 362 miners had died in an even deadlier mine accident in 1907 at Momomgah, West Virginia but no legislative attempts were made to enact safety laws. In addition, it is pointed out that there were 250,000 fatal victims of pneumoloniosis in local mines and "half as many more had already been sent to inconspicuous graves by the same deadly ailment" (Caudill, 1987: 93-102) before the legislation was passed.

Conditions of work in steel mills were equally deplorable. Employees who worked in furnace areas went through hell every day. They came home "black as the ace of spades and (went) right to sleep." Major accidents at Bethlehem Steel in a single year included six deaths in separate incidents, one coma, seven amputations, 70 eye injuries, 86 back injuries and hernias, 181 burns, 205 fractures and dislocations and 395 large cuts and puncture wounds (Reutter, 1987).

For many years, the cotton industry denied the knowledge of lethal effects of cotton dust on its workers. It is estimated that out of a total of 400,000 textile workers in the Carolinas, approximately 115,000 were exposed to cotton dust. Estimates indicate that even though 18,000 to 35,000 Carolinians suffered from byssinosis but only 320 disability awards, for brown lungs, were granted until 1980 (Guarasci, 1987) indicating a slow pace of implementation of OSHA in the cotton industry even after its enactment.

Occupational and safety hazards result in the demise of more than 100,000 employees annually. Because of long latency period for occupational diseases, exposure to carcinogenic chemicals in industries such as auto, steel, aluminum smelting, chemicals, etc., the number of exposed workers who will face illness and die in the future is difficult to estimate (Guarasci, 1987).

Initially, OSHA had a tough time in setting standards for enforcement. Information on the use of hazardous chemicals and substances was deliberately suppressed in several industries as brought out by the accounts of Brodeur (1973) in regard to asbestos; and by Berman (1978) for the use of beryllium, cotton dust, kepone and PCB'S. OSHA adopted only 3 new health standards during the first three years of its functioning for asbestos, vinyl chloride and a set of standards for the use of 14 carcinogens. Work on another 50 standards such as heat, noise, arsenic, benzene, cotton dust, lead and pesticides was started.

Initially, OSHA enforced "consensus" standards that were adopted en masse. OSHA inspectors made 48,400 inspections in its second year and cited 155,800 violations (OSHA Reporte Vol. 1. No. 1-9). Most of the time OSHA, in the early 1970's, went after small businesses and did not pay much attention to the larger organizations. In fact, 90% of the four million businesses under OSHA's regulation employ less than 25 employees. OSHA's target at that time was to cover smaller firms employing less than 50 employees. In the fiscal years 1973 (52.6%), 1974 (63.3%) and 1975 (70.3%) inspections made in such firms accounted for half to three fourths of all inspections made during the year. Similarly, during the years 1972 to 1975, 94.6% to 96.2% of the violations were non-serious violations involving an average fine of $25.40 (Szasz, 1982). This happened because of the lack of standards that could be enforced in other industries. But OSHA inspectors had the power to enter, inspect and fine any business. The heavy focus on small business, that may not have high profits like larger corporations led to protests from small businessmen resulting in hearings before the Congress. Businessmen wanted penalty-free consultation in place of fines, and advance notice of inspection.

Safety accidents happen because management fails to maintain hazardous equipment and ignores potentially dangerous conditions. It has come to light that when managers were forewarned about inspections, it hastened repairs, maintenance

and resulted in accident free conditions. Safety does not necessarily pay when the workmen's compensation benefits cost as low as 1. 5 % of the wage bill and OSHA fines rarely surpass $10,000 for very serious accidents (Reutter, 1987). On top of this, since an injured employee's absence of over 72 hours results in a "compensable" case and the injury has to be reported to the Workmen's Compensation Board, employers sometime avoid recording and reporting of accidents. If a violation is discovered by an inspector, a citation can be issued on the spot. If there is disagreement. then the citation may be appealed to a review commission and ultimately to the U.S. Circuit Court of Appeals (Flippo, 1984: 518).

The National Institute of Occupational Safety and Health was created by the OSHA Act and based on its research and pressure from unions, it introduced proposed standards in the Federal Register. Large organizations often provided arguments of infeasibility and impracticality based on economic, scientific and technical information stating that the proposed standards were too stringent. based on inadequate data, economically harmful and technologically infeasible (Szasz, 1984). It often reduced the number of standards that would be adopted. Recently, the Director of OSHA abolished more than 1,000 small and inconsequential standards in a single directive (Flippo, 1984).

From 1955 to 1979, the health inspections increased from 6.8% to 19.3% of total inspections, citation of serious violations increased from 1.3% to 29.5%, and total proposed fines increased from $8.15 million to $23.1 million (Szasz, 1984). It is clear that OSHA had intensified its work under Dr. Morton Corn under Gerald Ford's presidency and Dr. Elva Bingham under Jimmy Carter's administration. Larger firms became the target of inspections in the later half of the 1970's and average fines were also increased.

A high degree of enforcement by OSHA helped to bring down fatalities due to frequent inspections but the 1980's saw an era of deregulation during which attempts were made to get the government off people's backs. Federal spending of OSHA declined and deaths in places like coal mines and other manufacturing firms started escalating (Kerr et. al., 1983).

A number of changes in inspection procedures have been introduced by OSHA. Reporting requirements of almost half a million establishments over 90% of which have fewer than two injuries have been changed. A firm was also exempt from most inspections if a labor-management committee was established to advise and monitor a firm's safety practices (Flippo, 1984: 520).

(c) Changing role of OSHA under different Presidents

Is there an optimal level of enforcement? This question can be answered only from a certain party's point of view: workers, stockholders, or government? In addition there is a certain degree of subjectivity involved in this issue. The expected level of enforcement will vary according to the level of union activity and party composition of the government. Demands for a certain level of regulation by the government are likely to depend on the ideology and advocacy by the presidency. If the presidents do not become advocates of reform the tide towards regulation or deregulation continues as it has happened during the past six presidencies. With the passage of social legislation the federal government became directly responsible for quality of life of workers in organizations. Increased concern for safety in work place, affirmative action, pollution control and environmental safety, and consumer protection were expressed in the form of social legislation. Before 1966 a corporation could claim that occupational safety and health issue were a prerogative of management and unions were not welcome to share their legitimate

concerns in the worker safety and health area of decision making. In 1966 the National Labor Relations Board ruled that safety was a mandatory bargaining issue and not one of management prerogative alone. Since then the coverage of work place health and safety in the labor union contracts has increased from 69% to 89% from 1957 to 1987 respectively in the manufacturing industries (Robinson, 1988). OSHA was passed in 1970 during President Richard Nixon's time when Republicans in Congress introduced this legislation to give the impression to labor unions that they were willing to do something for workers' health and safety. During the Nixon and Ford era there was emphasis on general enforcement approach which increased gradually. During the Carter administration less productive aspects of enforcement were eliminated but penalties were enhanced (OSHA Internal Report, 1984). The era of "regulatory regime" as called by some in the seventies did not last too long. Nothing else was considered more important than "taking the government off our backs" or providing "regulatory relief" to entrepreneurs in the eighties starting with Reagen Presidency. It involved undoing "paralysis" that was believed to have been done to political economy. To others it was decentralization of institutions that broadened the social movements concerning quality of life (Kerr et. al. 1983; and Harris and Milkis, 1989). "Government is not the solution to our problems, government is the problem." Based on this conviction the federal government set out to limit the size of government. Sometimes it was done to the extent that it virtually eliminated all essential government controls. The Reagan and Bush administration marked the beginning of deregulation and even the assessed penalties were reduced and certain kinds of organizations were eliminated from inspection. The number of inspectors were drastically reduced and they were required to adopt a conciliatory rather than a punitive approach. Many industries like airlines, telecommunications, trucking etc. were deregulated and made procompetitive yielding benefits to economy.

More concern for economy because of its stagnation, high unemployment, over regulation, and increasing costs, were the factors that turned the tide in favor of deregulation. OSHA inspectors without a search warrant now could be refused entry. Small businesses were given relief through curtailment of OSHA's powers. Smaller firms also came out of the purview of OSHA regulations. First time fines to firms hiring less than 11 workers for non-serious violations were banned. Small firms could not be inspected again within six months and fines could not be charged if the firm had used OSHA consultation services. No inspection could be performed when a complete inspection turned up and no serious violation was found in the previous year (Szasz, 1984; and Flippo, 1984). In the famous case of the Industrial Union Department, AFL-CIO vs. American Petroleum Institute. (1980) it was decided by the Supreme Court that OSHA must take into account economic factors while adopting standards. The election of Reagan as President and the appointment of Thorne Auchter, a Republican activist by him to replace Elva Bingham, a trained occupational epidemiologist as head of OSHA accelerated deregulation. Auchter set new goals for OSHA to replace 'punishing" enforcement to cooperation. Workers rights were examined and curtailed. The right to be paid to accompany OSHA inspectors was withdrawn. Under labeling rights, workers no longer had the right to know what chemicals they were working with. Worker education funds were severely curtailed. OSHA reviewed existing standards in the 1980's with a view to limit their applicability. Enforcement in general was also weakened. One third of the field offices were closed and the OSHA inspectors' force curtailed by 20%. "On every significant measure - total number of inspections, number of workers covered by inspectors, average time spent per inspection, fines levied, inspections due to worker complaints, reinspection following findings of violations - OSHA enforcement had suffered" (Szasz, 1984: 113). OSHA now continues to be a lower priority issue because it is believed that

its policies and implementation increases costs for producers and this is not something that is favored in a capitalistic economy (Guarasci, 1987 and Reutter, 1987). It means worker deaths caused by health and safety will be on the rise until government policy reverses. All this has been done to reduce costs by reducing spending on safety and health so that goods can face international competition. The fact remains that even Japan spends more money for assuring worker safety and environmental safety from pollution compared with the USA (Guarasci, 1987).

In the Clinton era when initial attempts to expand the role of regulatory agencies in the health industry met with resistance from the public, the role of government has been to deregulate the health industry by cutting down its funding and controlling the supply of medical professionals but to continue to protect the health of the citizens through federal environmental controls. The Environmental Protection Agency while continuing to encourage regulated entities to voluntarily discover and disclose and correct violations of environmental requirements has recently "withdrawn a plan to give the states more flexibility in carrying out environmental rules" (New York Times, March 2, 1997) because of the fear that some states in the name of innovation may not be able to achieve superior environmental performance threshold and thereby endanger the health of citizens. It appears economic pressures on the government and goal of the legislature and presidency to balance the budget by the year 2002 will result in deregulation of industries like health that was primarily responsible for increase in budget expansion and inflation but other forms of social legislation will continue to maintain status quo because of the strong role played by national unions in the politics of regulatory reform.

The economic costs of regulatory process have always been criticized by economists and at some point they do become prohibitive. The OSHA's standards cost from $1.1 million to $40 million per life saved. It is argued that higher cost

programs are more prevalent. If the total budgeted cost for OSHA were to be spent on lower cost programs it would save a lot more lives (Mendeloff, 1988). In the future if a regulatory agency's budget is slashed due to balanced budget requirements then safety and health programs should be streamlined based on cost considerations.

Several authors have observed that compliance with laws is directly related to the enforcement level of a given regulatory agency (Caudill, 1977; Cohen & Cohen, 1977; Clinard & Yeager, 1980; Finney & Lesieur, 1982, Szasz, 1984; Sethi 1982 & 1987). There is no doubt that OSHA enforcement levels have declined drastically in the 1980's as compared with the 1970's. Certain authors such as Szasz (1984) had predicted that lower OSHA enforcement levels will result in higher violatory behavior on the part of corporations. It is conceivable that in the absence of adequate resources, OSHA may not be able to detect such violatory behaviors to the extent it has done so in the past

(d) U.S. Sentencing Commission

The United States Sentencing Commission (USSC) was set up in 1984 under section 994(a) of Title 28 of the United States Code. It is part of the judicial branch and acts as an independent agency. It has seven voting and two non-voting ex-officio members and is headed by a U.S. Court of Appeals judge (Wall Street Journal, Jan 15, 1990, B1 and B6). USSC work "will assure the ends of justice by promulgating detailed guidelines prescribing the appropriate sentences for offenders convicted of federal crimes" (United States Sentencing Commission Guidelines Manual, 1995: 1). The guidelines will augment the basic purposes of criminal punishment: deterrence, incapacitation, just punishment, and rehabilitation.

The purpose of crime theory is to help in controlling the crimes including the corporate crimes. USSC has so far evaluated empirical data on 40,000 court convictions, analyzed sample data from 10,000 presentence reports, classified offender characteristics, established a sentencing table that for technical and practical reasons contains 43 levels, examined several hundreds of criminal statutes in the United States Code and has issued guidelines for courts to increase uniformity in sentencing. USSC is not bound by the past pre-guidelines sentencing practices and the new system of sentencing is not based on theory alone. It is expected that adherence to the guidelines will help to eliminate the wide disparity that currently exists in courts throughout the country. In some cases, "short sentences of incarceration for all offenders in a category have been substituted for pre-guidelines sentencing practice of very wide variability in which some defendants received probation while others received several years in prison for the same offense" (USSC Guidelines Manual 1995: 9) . The courts must select a sentence based on the prescribed guideline range. The courts can depart only in atypical cases but must indicate reasons for departure which can be challenged in a court of appeals. USSC lists several factors that can no longer be used by courts as grounds for departure which include race, sex, national origin, creed, religion, socio-economic status, lack of guidance as a youth and similar circumstances, physical condition including drug dependence and alcohol abuse, and certain factors under coercion and duress. It also abolishes the parole system and reduces adjustments for good behavior.

USSC found that under the previous pre-guidelines sentencing practices "the courts sentenced to probation an inappropriately high percentage of offenders guilty of certain economic crimes, such as theft, tax evasion, antitrust offenses, insider trading, fraud, and embezzlement, that in the Commission's view are "serious"." USSC's guidelines provide for at least a short period of sentences in such cases so

that corporate crimes are taken more seriously by the corporate world. The regulatory statutes that provide primarily civil but also criminal sanctions for serious violations; failure to keep accurate records or to provide requested information; USSC took assistance from the Department of Justice and several regulatory agencies that deal with criminal regulatory offenses and has addressed this issue in the initial guidelines.

USSC has developed a system for treating technical record keeping and reporting offenses and divides them into four categories. First in a simple case the employee may have "failed to fill out a form intentionally, but without knowledge or intent that substantive harm would likely follow. He might fail, for example, to keep an accurate record of toxic substance transport, but failure may not lead, nor be likely to lead, to the release or improper handling of any toxic substance. Second, the same failure may be accompanied by a significant likelihood that substantive harm will occur; it may make a release of a toxic substance more likely. Third, the same failure may have led to substantive harm. Fourth, the failure may represent an effort to conceal a substantive harm that has occurred." (p 8-9). Under the new sentencing guidelines a record keeping or reporting offense that conceals a substantive offense will have the same offense level as the substantive offense. Since chemical substances, mechanical hazards, non record keeping or reporting of violations etc. are covered under the Occupational Safety and Health Act and other offenses under various regulatory laws so it is very likely that past sentences that resulted in probation will result in prison sentences in future. More executives and employees are likely to be held personally responsible for such offenses that were not treated seriously by the judicial system.

USSC also funded research recently to find out as to the extent to which small and large companies were complying. In an interview survey of 300 nationwide company representatives it was found that those companies that feel "their efforts

are effective or better nonetheless have suffered many legal consequences for the wrongs of their employees. Six percent of organizations have been convicted of a criminal offense. One in six has reported adverse adjudications as a result of employee misconduct, and this actually under-reports companies' experiences. This does not count the numerous out-of-court settlements. One company in four has seen an employee convicted of an employment-related criminal offense." (Apel, 1995: 129) This USSC sponsored research has started revealing information that is only the tip of the iceberg. According to this study corporate crimes can take place at any level of the organization, and employment related criminal offenses badly need attention of the researcher since this study covered "organizations with 50 or more employees in virtually every industry in the United States".(p. 127).

Another survey based on telephone interviews of 200 randomly selected organizations hiring 50 to 500 employees indicated that "75 percent of small firms reported that compliance measures helped ensure that employees comply with standards of conduct" but it also revealed that "Nearly three-quarters treat reports of non-compliance as confidential" (Laufer, 1995: 137).

Both studies caution that their findings cannot be applied to any industry or generalized. Their findings are tentative.

Another similar sponsored study by USSC involving 200 organizations that had "made a concerted effort to develop effective ethics and compliance programs" and its sample consisted of a significant proportion of organizations with over 10,000 employees indicated that "79.5 percent had a person with corporate-wide oversight responsibilities for compliance" (Petry, 1995: 140) who was either an owner, director or other executive officer assigned corporate-wide responsibility in the area of corporate ethics and compliance. This study concluded: "There was also evidence across the board that compliance audits, monitoring and reviewing processes were all well integrated into the organization."(p. 139).

This shows that organizational compliance is a formalized process which needs to be well thought out, planned and carried out by a high level official. The researcher noticed a striking similarity of formal initiatives which included "written standards, oversight at high level, multiple means of communicating standards, training, and internal reporting systems (that) were common throughout the entire sample" (p. 139).

With the parole system abolished, adjustments for good behavior reduced, and possibility for probation sentences drastically reduced the double standards on the part of the court system will be minimized. It is hoped that sentencing commission guidelines would curtail corporate wrongdoing because corporate executives would abstain from illegal choices when faced with prison sentences. This also offers a new challenge to the corporate crime researchers to study the effects of implementation of commission guidelines. It will have a profound effect on various segments of our society like executives, investors, law profession, and customers as part of our society. This social legislation is the first serious attempt to go beyond the regulatory agencies to regulate the behavior of corporations and executives, by laying down a sentencing system that will deter corporate illegality. It is believed that more and more corporations will become aware of the work by U.S. Sentencing Commission and positive efforts will increase on the part of corporations to increase compliance in regard to work place safety and health as well as compliance of laws in other areas.

RATIONALE

An organization that has a prima-facie legal case against it is more likely to be regulated under OSHA violations because once violations have been found, the agency has an obligation to ensure that violations are removed. In a routine check, for which an organization receives notice, it is likely that it has already taken

precautions to make sure that working conditions are safe and free of accident causing factors. If an organization did not do its homework, even at the time of inspections, then such an organization is likely to be regulated more than others.

In an organization where the safety and health of workers gets a low priority, it is expected that the labor-management relations will be less than cordial and union members will seek help of OSHA for the safety of their own lives and thus increased enforcement of such organizations.

Those organizations that have a long standing history of violations, like IOWA Beef Processing Co., the largest in the industry, that has OSHA inspectors on a regular basis and received the highest level of fines $2.3 million which were further increased to $5.6 million for non cooperation (Sethi and Chopra, 1991), are likely to be enforced more meticulously.

ASSUMPTION

It is believed that management is responsible for worker safety and health. The more an organization is regulated, the greater will be its need to conform to OSHA laws. If OSHA finds that previous violations have not been removed, it usually increases fines. In addition, an organization would like to avoid litigation costs which could be enormous based on the nature of issues involved and time and cost it takes to correct the violation(s).

In light of the foregoing theory, rationality, operational reality and assumptions the following hypotheses are posited.

HYPOTHESIS 8: (a) The greater the enforcement of OSHA laws through inspections the greater the discovery of corporate violatory behavior in the auto and parts industry.
(b)The greater the enforcement of OSHA laws through inspections the greater the discovery of corporate violatory behavior in the fabricated metal products industry.
(c)The greater the enforcement of OSHA laws through inspections the greater the discovery of corporate violatory behavior in the petroleum and coal industry.

9. Proposed Systems Model of Violatory Behavior

Based on the review of empirical research, rationality, management philosophy in regard to profits, operational reality and relevant assumptions, a set of organizational variables that are likely to be associated with corporate violations has been identified. These organizational variables are: performance, structure, slack, ownership, technology and growth rate. Among the environmental variables identified as impacting the organization towards violatory behavior are the level of enforcement and external organizational pressures. Since corporate violations are assumed to be a function of both organizational and environmental conditions so the systems approach becomes the right school of thought for explanation of Violatory behavior (Figure - IV).

The postulated relationship among variables is shown in Figure - V and operational measures of these variables are summarized in Table - 3.

FIGURE - IV

CONCEPTUAL FRAMEWORK FOR SYSTEMS MODEL OF ORGANIZATIONAL CRIME

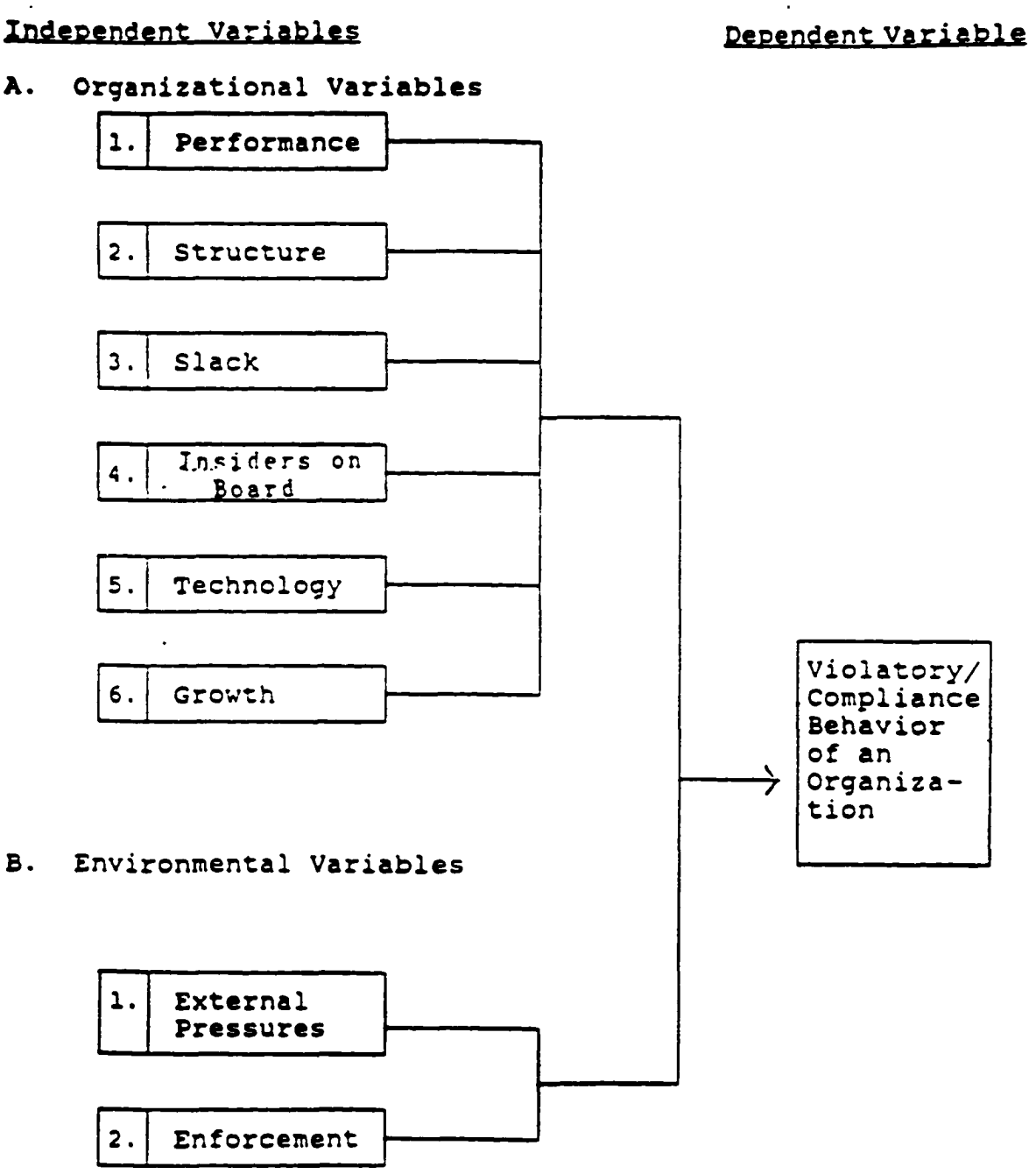


FIGURE - V

POSTULATED RELATIONSHIPS OF VARIABLES WITH ORGANIZATIONAL VIOLATORY BEHAVIOR

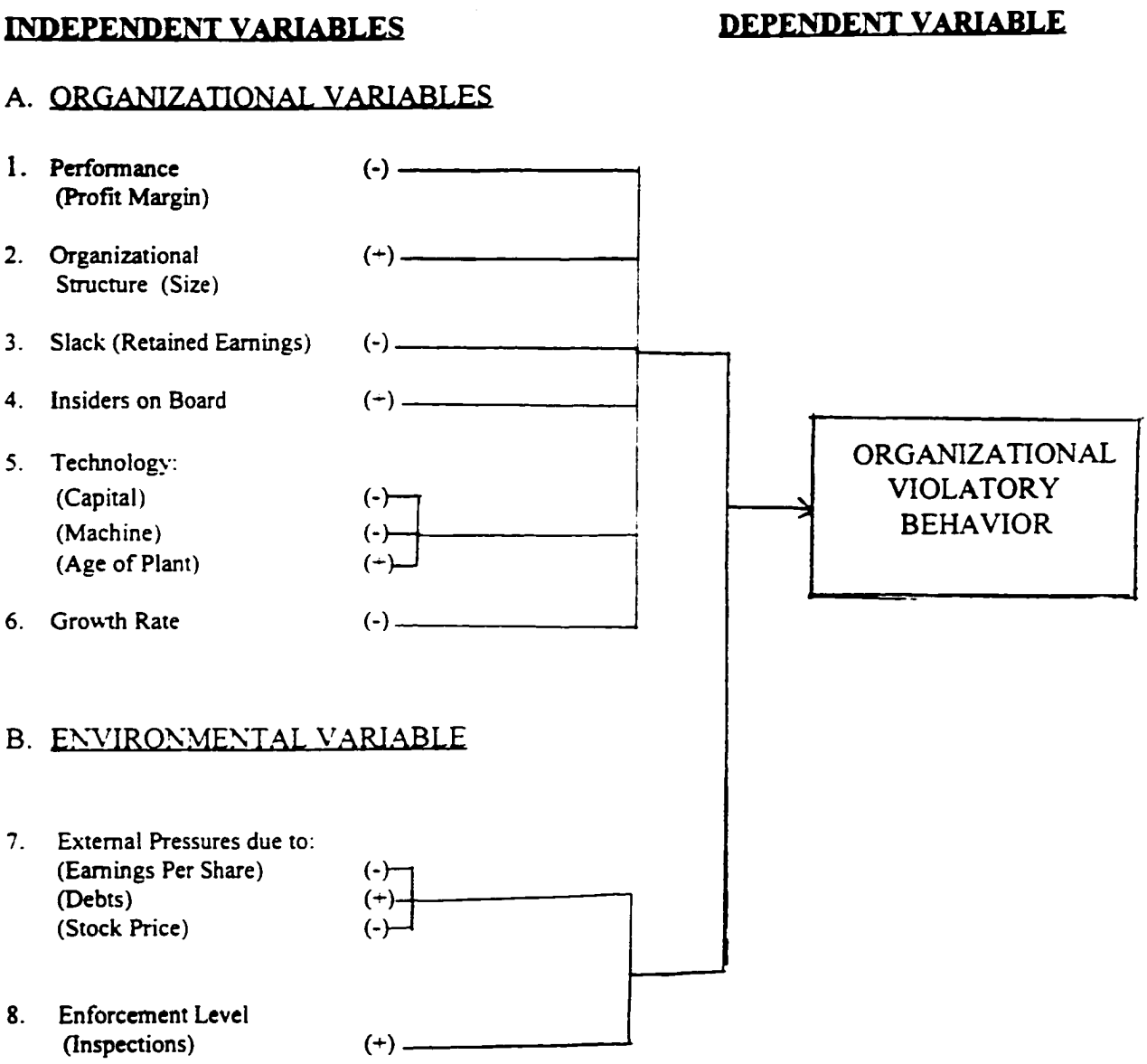


TABLE - 3

OPERATIONALIZATION OF VARIABLES

INDEPENDENT VARIABLES:

A. ORGANIZATIONAL CONSTRUCTS	OPERATIONAL MEASURES
1. Organizational Performance	Profit Margin = $\frac{\text{Gross Profits (100)}}{\text{Sales}}$
2. Organizational Structure	2.1 No. of personnel 2.2 Sales Revenue 2.3 Total Identifiable Assets 2.4 Board Members 2.5 No. of plants (Domestic) 2.6 No. of plants (International) 2.7 Domestic Market Share
3. Organizational Slack	Slack = $\frac{\text{Retained Earnings (100)}}{\text{Gross Profit}}$
4. Management Control over Board	Proportion of Insiders on the Board
5. Technology	5.1 Capital Technology= $\frac{\text{Value of Total Assets}}{\text{Total No. of Employees}}$ 5.2 Machine Technology= $\frac{\text{Value of Machine \& Equipment}}{\text{Total No. of Employees}}$ 5.3 Age of the Oldest Plant
6. Growth	Percent Change in Sales over the past year.
B. Environmental Constructs	
7. External Pressures	7.1 $\frac{\text{Long Term Debt}}{\text{Total Assets}}$ 7.2 Change in Stock Price over three years 7.3 Earnings Per Share over three years
8. Enforcement Level	No. of inspections made in the organization

Dependent Variable:

9. OSHA Violatory Behavior	9.1 No. of OSHA Standards Violated 9.2 Fines Imposed 9.3 Fines After Appeal 9.4 Fines Paid 9.5 Index Of Seriousness of Violatory Behavior

CHAPTER - 3
METHODS

1. The Universe and Selection of Industries

The total universe of all industries in the U.S. consisted of 890 industries, as classified by their Standard Industrial Classification (SIC) codes. Since the industries selected for analysis were in the manufacturing sector an attempt was made to isolate such industries and compare them with the universe. Instead of selecting industries at random it was considered desirable to select industries that depicted different levels of compliance preferably at high, average and low levels of compliance. In order to find out the average level of compliance we needed to analyze the universe. In addition, the universe analysis would also help us to understand the nature of the industries selected. For the empirical study the level of analysis was an organization and a particular industry would constitute its universe to which the findings would apply. Furthermore an industry as a universe was not comparable to another industry when it came to empirical analysis because of uniqueness of each industry and the reasons for this are discussed later on. For the purpose of industry selection the universe consisted of all the manufacturing industries, isolation of which resulted in the following two populations:

Population -I (P l) = All industries in the USA; N = 890.
Population-2 (P2) = Manufacturing industries in the USA; N = 450

Even though the two populations were not independent of each other, analysis of these two populations was made; because they do form two separate universes that may give us a wider picture of the nature of the enforcement and compliance of

industries in general. Since non-manufacturing organizations were outside the domain of this study, no attempt was made to study such a population. Data for these industries were obtained from the Federal Government. The data bases included information on OSHA violations for the period from October 1986 to September 1987.

The level of OSHA enforcement in two populations was analyzed as follows:

TABLE - 4
NUMBER OF INSPECTIONS MADE IN AN INDUSTRY IN TWO POPULATIONS DURING THE YEAR 1986-1987

	P1=All Industries (890)	P2=Manufacturing Industries (450)
Mean	68.42	38.58
Stand. Dev.	333.36	56.22
Median	11.00	17.00
Minimum	1.00	1.00
Maximum	5,166.00	864.00

The average number of inspections made in any industry for the one year period were 68.42 and 38.58 in P1 and P2 respectively indicating that P1 was regulated more rigorously as compared to P2. P1 industries had on an average 43.6% more inspections compared with P2 industries. In addition, the absolute dispersion in P1 (333.36) was several times (5.93 times) larger than P2 (56.22) suggesting widely fluctuating levels of enforcement in different industries which is evident from the highest number of inspections (5,166) made in general contracting in the non-residential industry in P1 as compared to highest number of inspections of only 864 in miscellaneous plastic products industry in P2. Looking at the number of

industries that were minimally regulated, with only one inspection in the entire industry, we notice that there were 117 (13.14%) industries in P1 whereas the number of such industries in manufacturing industries universe (P2) was only 33 (7.33 %).

The differences in enforcement levels are a function of the priorities set by the Department of Labor based upon needs of each industry as viewed by the OSHA regulatory agency. In the past, the overall role of the OSHA agency, as determined by its budget and mandate given to it, has been largely decided by the head of OSHA agency. The selection of the head of the OSHA by the President, in the past, has made a real difference in terms of the role played by OSHA during the tenureship of its head. This has varied from an offensive to a conciliatory posture taken by OSHA (Szasz, 1984). Even though these inspections were made during the era of deregulation in the 1980's, still they clearly reflect OSHA priorities in different universes. The mean number of inspections in the manufacturing industries universe was much less, indicating that manufacturing organizations were not as heavily inspected as non-manufacturing organizations. When we look at the median number of inspections made, we find that it is approximately 50% more for the manufacturing industries. This suggests that the mean was influenced, by the extremely large number of inspections in certain non-manufacturing industries. Even though enforcement levels vary, it is clear from the standard deviations that OSHA, in terms of intra-universe comparisons, used much less discretion in conducting inspections to regulate violatory behavior of manufacturing industries as compared with non-manufacturing industries.

TABLE - 5
NUMBER OF INSPECTIONS FOUND IN COMPLIANCE IN AN INDUSTRY DURING THE YEAR 1986-1987

	P1(890)	P2(450)
Mean	26.67	12.60
Stand. Dev.	131.94	17.32
Median	5.00	6.00
Minimum	0.00	0.00
Maximum	2,198.00	275.00

The mean number of inspections that were found in compliance, independent of the number of inspections made in the industry, was found to be more than double (2.12 times) in Pl (26.67) as compared with P2 (12.60). The absolute dispersion was found to be 7.61 times in Pl (131.94) as compared to P2 (17.32). This indicates that in P2 more industries were enforced at the similar level, due to lower level of standard deviation. by OSHA. This also means that there were fewer industries that were regulated either far above or below the mean level of inspections in P2. A very high level of standard deviation in Pl suggests much wider differences in inspection levels. Since the number of inspections found in compliance is independent of the number of inspections made, as a result a compliance ratio was calculated combining these two measures based on the following formula:

$$\text{COMPLIANCE RATIO} = \frac{\text{No. of compliances found in industry}}{\text{No. of inspections made in industry}} \times 100$$

The two populations yielded the following statistics:

TABLE - 6

COMPLIANCE RATIO IN AN INDUSTRY IN TWO POPULATIONS

	P1(890)	P2(450)
Mean	45.41	36.61
Stand. Dev.	28.24	20.52
Median	40.00	33.56
Minimum	0.00	0.00
Maximum	100.00	100.00

The mean compliance ratio for the two universes was found to be closer to each other as compared to the actual number of compliances in a given industry. The mean compliance ratio in the "all industries" population was found to be 24% better than the populations of manufacturing industries. Since standard deviation is an absolute measure of dispersion so a relative measure of dispersion is required for comparison purposes, particularly if we want to compare the two populations to find out whether the population consisting of all industries had more dispersion as compared with the population of manufacturing industries or vice versa. The coefficient of variation has been recommended as an appropriate measure of comparison (Hamburg, 1974) for two independent distributions. "This is essential whenever the sets of data to be compared are expressed in different units, or even when the data are in the same units but are of different orders of magnitude. Such a relative measure is obtained by expressing the standard deviation as a percentage of the arithmetic mean" (Hamburg, 1974: 67). The following coefficient of variation (C.V.) ratios were obtained that can be compared directly:

TABLE - 7

COEFFICIENTS OF VARIATION IN TWO POPULATIONS

	C.V. Ratio in P1(890)	C.V. Ratio in P2(450)
No. of inspections	4.87	1.48
No. of compliances	4.94	1.39
Compliance ratio	.62	.56

The above coefficients of variation indicate that the amount of dispersion in the "all industries" population was more than three times larger than the dispersion in manufacturing industries population in regard to both the number of inspections made and the number of these inspections that were found in compliance independent of each other. But when we compare the relative dispersion in regard to the ratio of compliance, then the two populations are not so different from each other. The manufacturing industries population was found only slightly less dispersed C.V.(P2)=.56 as compared to the population of all industries C. V.(P1)= .62.

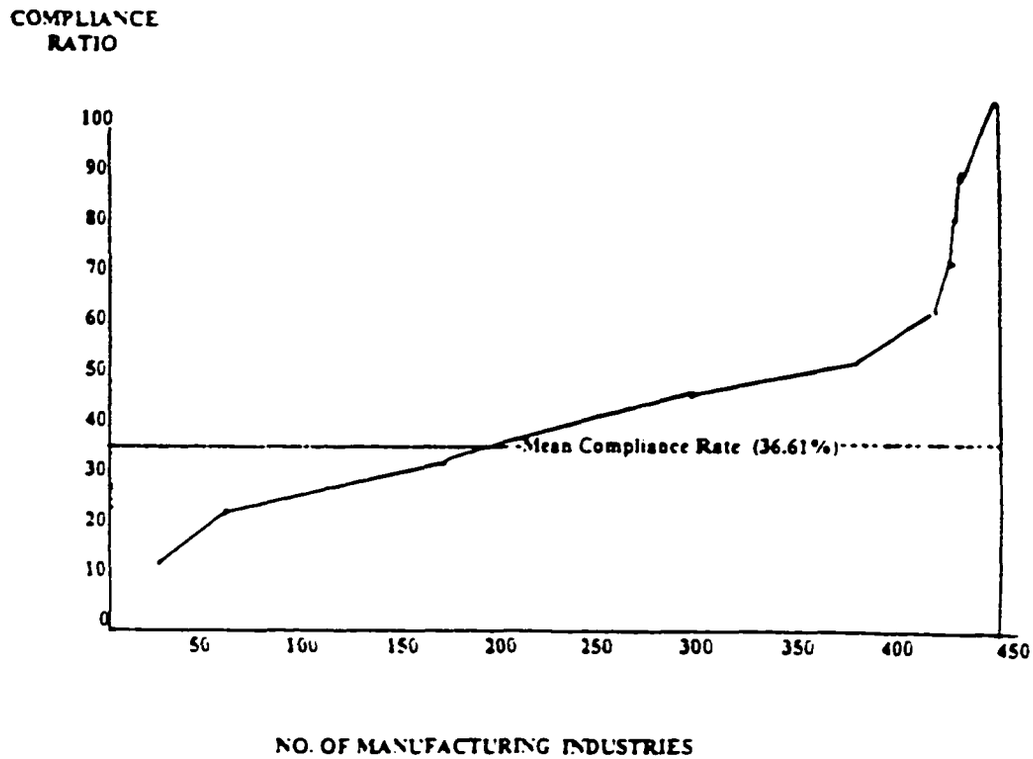
Besides facilitating comparison of two populations, the C.V. ratio is also helpful in setting the size of the random sample. An ideal way to take a sample of industries would have been to select industries that were at least one standard deviation above and below the mean ratio of compliance in the manufacturing industries population and compare them with another industry having the mean ratio of compliance. "Both absolute and relative measures of dispersion are widely used in practical sampling problems" (Hamburg. 1974: 68). Hamburg further states that if a researcher wants the estimate to be within a specified number then an absolute measure of dispersion is appropriate but if one wants the estimate to be within a specified percentage of the true average figure then a relative measure of dispersion

would be used (Hamburg, 1974:68). Unfortunately, it was not possible to use an absolute measure of dispersion because after a lot of effort, to select-representative industries it was discovered that the distribution of the compliance ratio for the manufacturing population was non-normal. It was skewed to the right having very few industries that were in the high compliance category as would be clear from Figure-VI.

Out of a total of 450 manufacturing industries 365 (81%) had a compliance rate of equal to or less than 50% whereas only 85 (19%) industries had a compliance rate above 50%. This situation was further aggravated when the number of industries stayed constant at 429 even though the compliance rate rose from 80% to 99% (Figure-VI).

FIGURE - VI

RATIO OF COMPLIANCE IN MANUFACTURING INDUSTRIES - CUMULATIVE DISTRIBUTION



Twenty one manufacturing industries had a compliance rate of 100%. But the highest number of inspections made in any of these industries was only three. In addition, 16 out of 21 of such industries had only a single visit during the year from OSHA inspectors, 3 industries 2 visits each, and two industries 3 visits per industry. All these industries that had a compliance rate in excess of 80% hardly had enough inspections giving one the confidence that they were in full compliance of the law.

Misinterpretations of means often take place because of a neglect to take dispersions into account. Because of the skewed nature of distribution sometimes no average will be typical (Hamburg, 1974: 70-71). Cangelosi et al. (1979) and Hamburg (1974) warn that when mean ratios are presented for skewed distributions without indication of the nature of the underlying data, it could easily lead to misinterpretations.

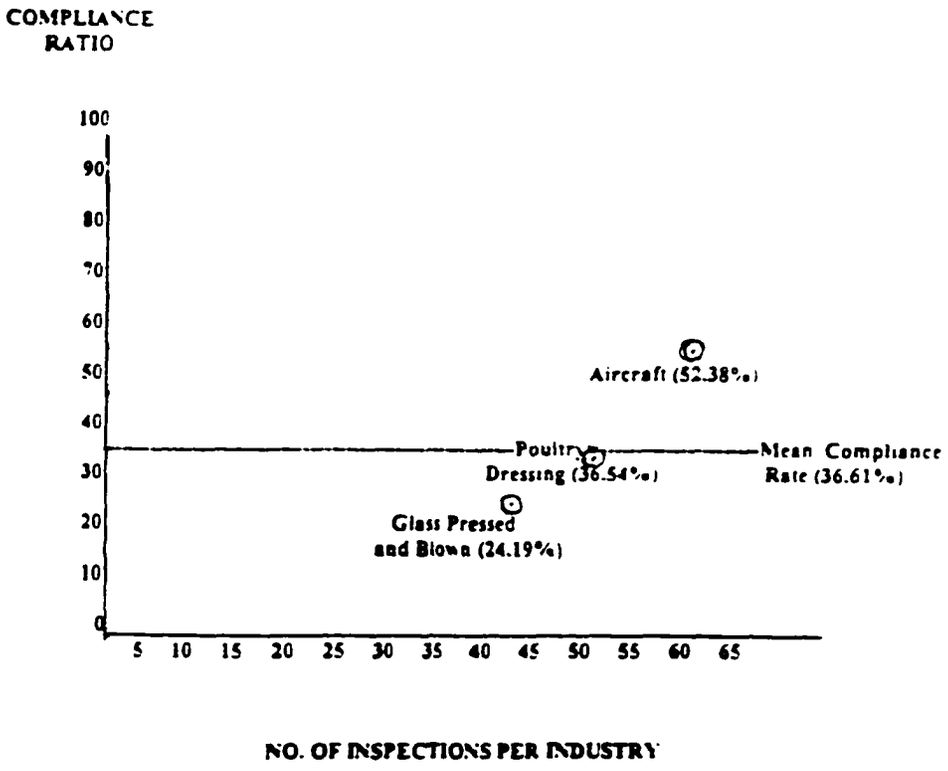
Overall, this analysis indicates that four out of every five manufacturing industries in the U.S. are found in compliance to less than or equal to half of the inspections made by OSHA inspectors. Only one out of every five industries is found in compliance of OSHA laws to more than half of the inspections made by the OSHA agency. This clearly shows that an overwhelming majority of industries are not taking adequate steps to ensure the health and safety of their workers. We must keep in mind that this situation pertains to a period of deregulation when the OSHA budget was severely cut, when agency goals, were changed from "punishment" to cooperation and the rights of workers were severely curtailed. Workers could no longer be paid to accompany an OSHA inspector and their safety and health education programs were also severely cut. OSHA inspectors now could be asked to produce a search warrant on non routine inspections, and they must produce one before an inspection is made. Small firms could not be inspected at all within six months, and fines could not be charged if the firm had used OSHA consultation services. This also comes at a time when a third of the field offices of OSHA have

been closed and OSHA inspectors reduced by 20%. This clearly indicates a desperate need to step up OSHA activity level in the 1990's so that the population of manufacturing industries conforms to health and safety standards that are so crucial for the well being of American workers.

In low enforcement industries where the number of inspections varied between 42 and 62 inspections per industry per year, the Glass Pressed and Blown industry had a compliance ratio of only 24.19 %, far below the average level of compliance (36.61 %). It was the Poultry Dressing industry that was found to be following the Population mean. On the other hand, the Aircraft industry that deals with human lives was found to be in compliance at a level (52.38%) just above average. It is quite likely that different industries would comply at different levels even though the differences in enforcement level are relatively small. This could happen at any level of enforcement (Figure VII).

FIGURE - VII

VARYING COMPLIANCE RATIO IN CERTAIN LOW ENFORCEMENT INDUSTRIES



A higher level of enforcement in any industry does not necessarily assure a higher level of compliance with the laws. It was discovered that the Plastics industry which had the highest number of inspections in the manufacturing industries population was found to be complying at a rate of only 31.82 % as compared to Motor Vehicle Parts industry (37.5 %) that was close to mean compliance rate (36.61 %). This took place despite the fact that for each inspection in the Motor Vehicle Parts industry, there were almost 3.5 inspections in the Plastics industry. The situation regarding the Plastic industry was even more puzzling because this industry had twelve times as many inspections as compared with the Petroleum Refining industry and compliance still did not go up. The Petroleum Refining industry, even though had fewer inspections (74) yet its compliance rate was much higher (60.81 %). This comparison suggests that there are other factors beyond current enforcement level that have kept the compliance ratio at a certain level. Such factors may include management philosophy, industry coalitions and culture, role of industry leaders in politics, role of lobbyists hired by trade associations, perceptions of outcomes of violations in the form of fines, litigation, criminal charges etc., role of unions, market concentration, foreign competition, product substitutes available in the marketplace, ethics of those who regulate an industry etc. Such industries that have a higher rate of recidivism might also need congressional inquiries or setting up of a commission to probe into reasons for this situation as done in the Meat Packing industry in the past (Figure - VIII).

FIGURE - VIII

VARYING COMPLIANCE RATIO AT DIFFERENT LEVELS OF ENFORCEMENT IN CERTAIN INDUSTRIES

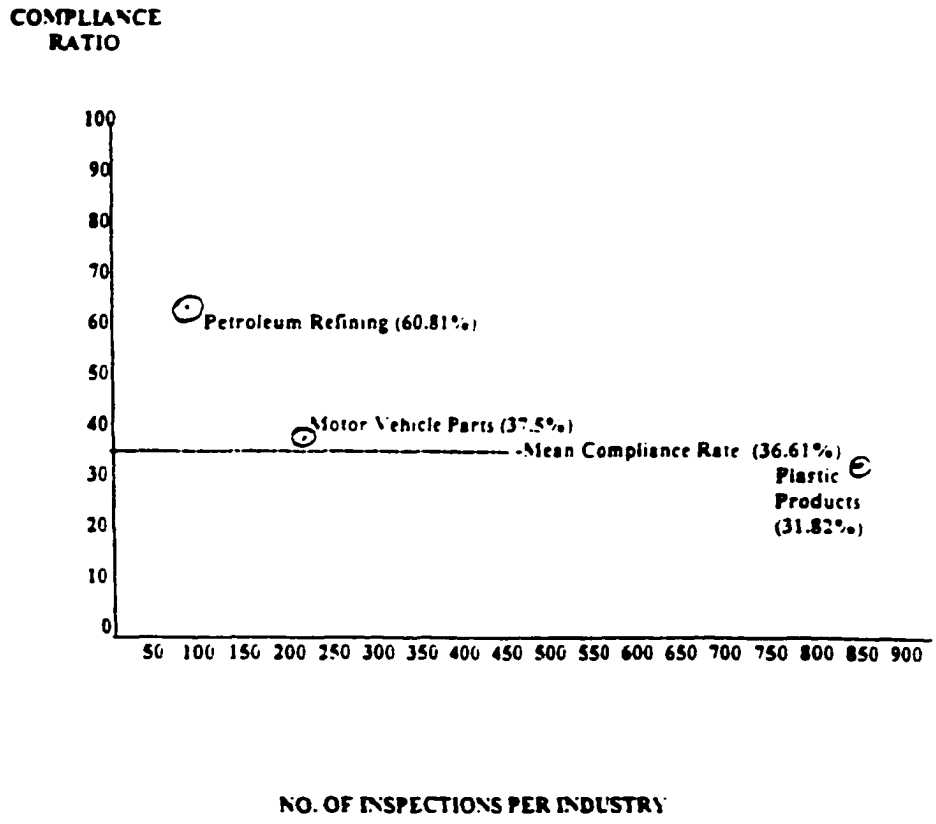
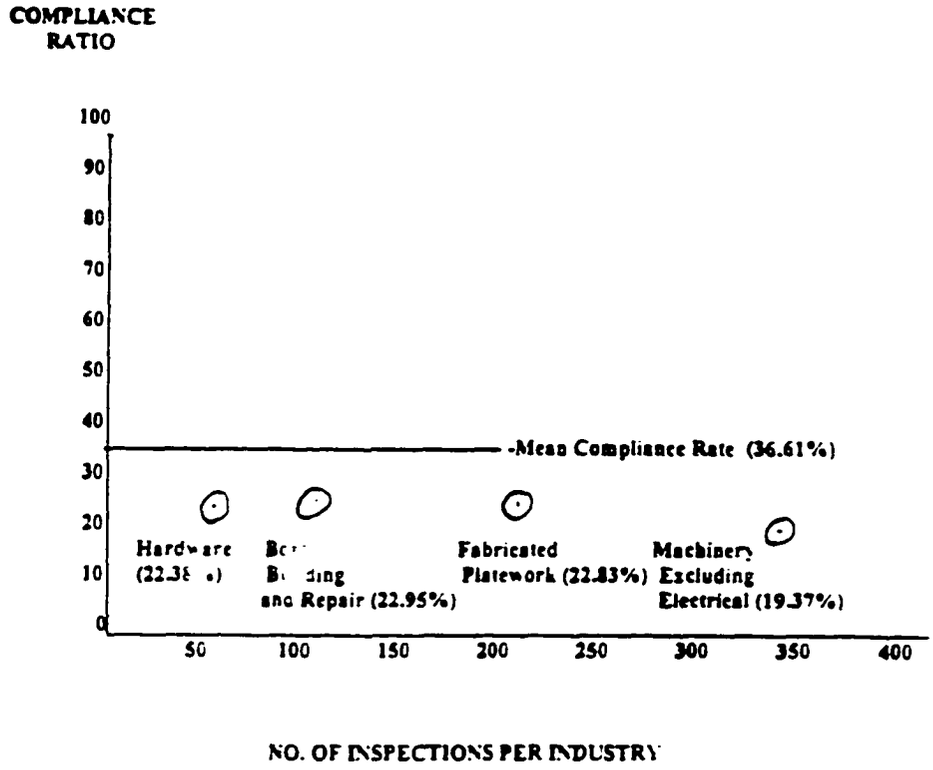


FIGURE - IX

LOW COMPLIANCE AT VARYING LEVELS OF ENFORCEMENT IN CERTAIN MANUFACTURING INDUSTRIES

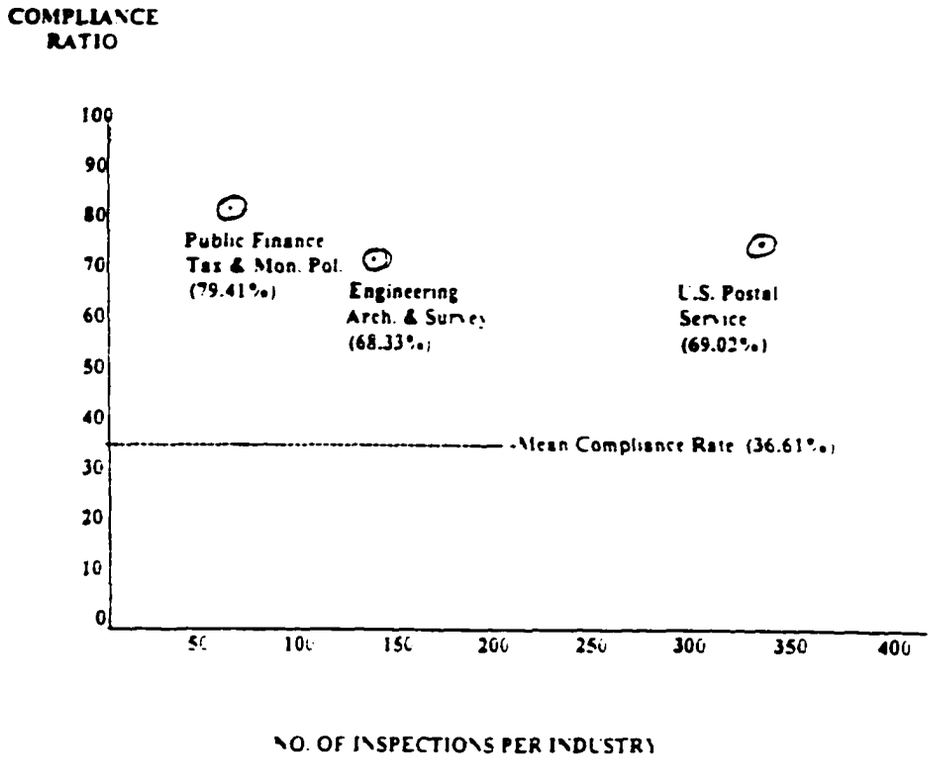


There were also other industries that had a low rate of compliance no matter what was the level of inspections. The Hardware industry had low compliance (22.38%) and fewer inspections (67). Even though the number of these inspections increased in certain industries: Boat Building (122), Fabricated Plate Work (219) and Machinery excluding Electrical Machinery (351) yet their compliance rate did not change much. It varied between 19.37 and 22.95, hardly any changes to show effect of inspections (Figure IX). All these industries that were in the manufacturing sector, it appears, were neither aware of inspection levels nor the compliance rate of other industries.

In the non-manufacturing population there were certain industries that had a very high compliance rate no matter what was the number of inspections per industry. Industries such as Public Finance, Tax and Monetary Policy (79.41) U.S. Postal Service (69.02), and Engineering Architecture and Survey (68.33) had exceptionally high compliance rates because of the non-hazardous nature of these industries for workers. They complied with the health and safety laws even though the number of inspections was reduced to approximately one third or even one fifth in Engineering Architecture, or Public Finance respectively (Figure X).

FIGURE - X

HIGH COMPLIANCE AT VARYING LEVELS OF ENFORCEMENT IN CERTAIN NON-MANUFACTURING INDUSTRIES



As indicated earlier, the distribution of all industries population was found to be skewed. Still an attempt was made to identify industries that had 50 or more inspections and lie one standard deviation below and above the mean rate of compliance. Surprisingly, it yielded only a few industries at both ends of the distribution. Only three industries (Fresh & Frozen Fish & Sea Food; Oil Field Machinery & Equipment; and Sport & Athletic Goods) were found at a distance of more than one standard deviation below the mean (Table A in Appendix). Similarly, only four such industries (Deciduous Tree Fruits; Public Finance Tax & Monetary Policy; General Government - Not Classified; and Land, Wildlife, Furs) were found at a compliance level (varying between 79.18 and 92.0) that was one standard deviation above the mean compliance ratio (Table-C in Appendix). In addition, we found 148 industries that were within one standard deviation from the all industries population mean rate of compliance (Table-B in Appendix). All these industries had 50 or more inspections per industry, a number chosen arbitrarily. Even though fifty inspections for industry may not be considered very high yet it was used as a cut off point to eliminate industries that were not adequately inspected.

The two populations (P 1 & P2) were found to have a strong positive relationship between the number of inspections made per industry and the number of such inspections found in compliance. Kendall's method of calculation of correlation, which is more restrictive as compared to other methods, yielded coefficients of .82 and .83 for P1 and P2 respectively and were highly significant at $P<.0001$. This concludes that overall, the more an industry is inspected by a regulatory agency such as OSHA, the more it is likely to find such an industry in compliance with OSHA laws. Despite highly significant correlations, we must understand that each industry is unique in terms of its internal and external forces that determine a level of compliance for a given industry. Externally, factors such as economy, product

substitutes available, international competition, regulations, political party in ruling and media focus on illegality have impact on the compliance level of an industry whereas internally, factors such as awareness of level of OSHA enforcement during a given year, information on a given industry being targeted for inspection based on previous year's performance, industry discipline and monitoring through industry trade associations, relations with the union have an impact on the compliance level. Unless industry conditions are related to OSHA priorities and goals, it is difficult to justify either the enforcement level or the compliance level of a given industry in terms of other industries.

At what point an industry that was overtly violatory makes a turn around and starts obeying the laws depends partly on the regulatory and legal agencies and partly on the kind and level of attention given by other external forces such as labor unions, journalistic exposures, congressional inquiries, public outcry and the commissions set up to investigate the affairs of a given industry. It appears from the earlier analysis that enforcement force all by itself may not be able to turn the tide. Both internal and external forces must collide to bring this turnaround. Several instances have been pointed earlier to show that there is nothing like a high or low level of enforcement in the Population. A high level of enforcement for one industry may not be considered as high enough a level for another industry. Even the highest level of enforcement, all by itself, in manufacturing industries Population in Plastic products industry could not bring up the compliance level. This strongly suggests that external factors must be brought into play if corporate compliance has to increase and worker health and safety protected by the nation.

2. Sample Selection

The design of this study has evolved in stages. Initially, an attempt was made to study a single industry so that in depth observations could be made in regard to the meat packing industry that had the highest incidence rate (30.4) of injuries or illnesses or lost work days found in the meat packing industry in 1985, when planning for this study started. Injuries included in OSHA statistics varied from occupational deaths to nonfatal injuries involving loss of consciousness, restriction of work or motion, transfer to another job or medical treatment (other than first aid). Occupational injuries and illnesses as evidenced from the incidence rates (based on 100 full time workers, working 40 hours a week and 50 weeks a year) of the top ten industries, as calculated by the Bureau of Labor Statistics, are given below:

TABLE - 8

INCIDENCE RATE OF OCCUPATIONAL INJURIES AND ILLNESSES OF TOP TEN INDUSTRIES

RANK	INDUSTRY	SIC CODE	RATE
1	Meat Packing Plants	2011	30.4
2	Special Product Sawmills	2429	28.8
3	Structural Wood Members	2439	28.5
4	Mobile Homes	2451	27.6
5	Automatic Merchandising Machines	3581	25.0
6	Prefabricated Wood Buildings	2452	24.8
7	Raw Cane Sugar	2061	24.7
8	Fabricated Structural Metal	3441	23.6
9	Truck And Bus Bodies	3713	23.4
10	Self-Contained Motor Homes	3716	23.1

An industry with the highest incidence rate of occupational injuries and illnesses, was thought to be needing more attention than other industries to study the human lives lost or at high risk at the workplace. As a result, a written request was made to

460 organizations in the meat packing industry, visited by OSHA during 1986-87 for a period of one year, to supply annual reports, irrespective of the fact whether they were found in violation or not so that a sample from both violating and non-violating organizations could be drawn. These organizations covered different segments of the Meat industry such as meat packing, prepared meats and sausages, and poultry. Unfortunately, the response rate for annual reports was so low (less than five percent) that this attempt was abandoned in favor of inter-industry sampling. Lack of response might have been primarily due to the smaller size of organizations. It appears that an overwhelming proportion of organizations existing in industry and visited by OSHA had a small size.

Another attempt was made to select three industries representing three levels of compliance that offered sufficient organizations visited by OSHA for study. Precautions were taken this time to exclude organizations with a size of less than 100 to increase the probability of response. In addition, instead of asking for annual reports, an attempt was made to send a questionnaire asking for factual information. Also, a questionnaire was sent asking attitudinal information on regulatory process. Both questionnaires are included in the appendix.

Organization crime theory needs to be tested on specific industries before it can be generalized. If there is significant relationship between organization and environmental variables and violatory behavior, then it would reflect in the magnitude of correlation found in such industries. Perhaps one way to begin would be to empirically test the organization crime theory at different levels of compliance at organizational level in the same industry.

There were only a limited number of industries from which a sufficiently large sample could be drawn and would have organizations representing all sizes. In addition we needed the sample of organizations that were inspected but found to be non-violating. This requirement had to be met in addition to an adequate sample

of violating organizations within the same industry. All these factors placed considerable restrictions on the selection of an industry.

The three industries that were chosen to represent different levels of compliance based on 1986-87 federal OSHA inspections data included the following:

Industry	Industry Compliance For 1986-1987
1.Petroleum etc.	60.81%
2.Motor Vehicles, Parts, bodies etc.	37.5% to 39.58%
3.Fabricated Structural Metal Products	24.06%

Later on more recent Federal OSHA as well as state inspection data were available which pertained to the period from September 1989 to October 1990. With the hope of increasing the response rate the more recent OSHA inspection data was used. Table - 9 indicate the response rate for questionnaires returned in each industry.

Insert Table - 9 here

TABLE - 9

RESPONSE RATE IN THREE INDUSTRIES:

FIRMS INSPECTED AND FOUND VIOLATING OSHA LAWS

Industry	Questionnaires Sent	Questionnaires Returned	Response Rate
1.Auto, Parts, body work etc.	367	45	12.26%
2.Fabricated Structural Metal Products	280	31	11.07%
3.Petroleum, Coal etc.	69	15	21.73%
TOTAL	716	91	12.70%

FIRMS INSPECTED AND FOUND NOT VIOLATING OSHA LAWS

Industry	Questionnaires Sent	Questionnaires Returned	Response Rate
1.Auto, Parts, body work etc.	201	28	13.93%
2.Fabricated Structural Metal Products	120	23	19.16%
3.Petroleum. Coal etc.	68	14	20.58%
TOTAL	389	65	16.70%

TOTAL RESPONSE RATE FOR EACH INDUSTRY

Industry	Questionnaires Sent	Questionnaires Returned	Response Rate
1.Auto, Parts, body work etc.	568	73	12.85%
2.Fabricated Structural Metal Products	400	54	13.50%
3.Petroleum, Coal etc.	137	29	21.16%
TOTAL	1105	156	14.11%

During the year 1989-90 the auto industry had a compliance rate of 35.38% and covered industries listed in the Standard Industrial Classification Manual under SIC Codes from 3711 to 3716. They involved motor vehicles, passenger car bodies, truck and bus bodies, motor vehicle parts and accessories, truck trailers and motor homes. The Fabricated Structural Metal Products industry had a compliance rate of 30.0% and covered industries listed under the SIC codes from 3411-3449. They covered fabricated structural metal products, metal cans, shipping containers, cutlery, hand tools, hardware, plumbing fixtures, heating equipment, miscellaneous fabricated metal products; and pre-fabricated metal buildings and components. The Petroleum industry had a compliance ratio of 49.60% and covered SIC codes from 2911 to 2999 that included petroleum refining, asphalt paving and roofing materials; and miscellaneous products of petroleum and coal.

The overall response rate for this study was 14.11% which is considered a low rate of response. The reason for a low rate of response could be due to the bad economic conditions and the nature of research involving violatory behavior of a corporation. In addition, 41 questionnaires were returned due to forwarding time expired, moved left no address, no mail receptacle, undeliverable address, address not known and insufficient address. There were seven corporations that indicated that they do not publicly disclose information asked and 5 corporations indicated that they did not have enough time or staff to respond. One corporation returned the questionnaire with the comments that they can not see relationship between financial performance and enforcement of regulations by the government.

3. Instruments

Data for the empirical part of this study were collected with the help of a questionnaire. After finding theoretical support for the hypotheses discussed in the

earlier chapter the variables were operationalized. Measures for which the data could be collected were included in the questionnaire. Practically all the measures of this study are objective measures.

(1) Organizational performance was operationalized as profit margin which is a ratio of gross profits to the sales revenue. Anthony and Reece (1975) point out "profit margin is a measure of overall profitability. This measure is also referred to as the net income percentage or the return on sales. Some people, particularly critics of a given industry or company, treat this measure as if it were the most important single measure of performance"(p.356). They further indicate that lower profit margin of a company may be a result of some expenses that might have "gotten out of control; perhaps there is growing inefficency....or management has gotten careless about administrative expenses"(p.357). Return on sales or profit margin was recently used by Miller and Shamsie (1996) as a measure of organizational performance. This clearly supports the use of profit margin as a good measure of organizational efficiency.

(2) The size of an organization has been operationalized by many as the number of employees hired by a firm (Lane, 1954; Kimberly 1976; Clinard 1979, and 1980; and Baucus, 1989 and 1991; and Welbourne and Andrews, 1996). Some of the other measures of size included were sales revenue, total assets, number of domestic and overseas plants, domestic market share and size of board which have also been used by others as reflection of size (Banker, Lee, Potter, and Srinivasan, 1996; Henderson and Fredrickson, 1996; and Sharma and Kesner, 1996). All these variables indicate the magnitude of operations of a corporation. As a corporation grows its growth is reflected through these measures of size.

(3) Organizational slack was operationalized as retained earnings from profits for future growth and development. This money reflects accumulation of additional equity over a period of time. The ratio between retained earnings and gross profit will give us a measure of slack resources for future use. Cyert and March (1963) who came up with this construct have defined this measure in the way explained here and Baucus and Near (1991) used it as one of their measures to study its relationship with the corporate crimes.

(4) Control of Board by management has been operationalized by the number of insiders on the Board of Directorates and their ratio to the total strength of the board. Schoorman, Bazerman and Atkin (1981) and Welbourne and Andrews (1996) defined controls of board as the number of insiders or outsiders on the board depending upon the direction of influence studied. The proportion of insiders on the board will indicate the degree of control management has over the board. A lack of control by the insiders on the board, would relieve management of undue pressures from the board members who are part of management and also own company's stock or have stock options. This would relieve management from pressures to sacrifice ethical and long term goals to declare higher dividends and profits that are boosted through illegal means.

(5) Complex technology costs more as improvements are made and the technology is improved to become more productive and safe for workers. An organization adds newer specializations in technology when the manufacturing process becomes complicated (Dewar and Hage, 1978). The financial and book value of technology has been used by accountants as a measure of technology for centuries. Thompson (1967) classified all organizations based on technology and recently Chatman and Jehn (1994) used it as an industry characteristic to classify organizations. In addition, since older plants become woefully

inefficient and unsafe to operate another dimension of technology in the form of age of the oldest plant was added.

(6) The growth rate of an organization will be measured as a percent change in sales. This measure has been used widely by accountants and organizational theorists. Recently sales growth rate was used by Chatman and Jehn (1994), Sharma and Kesner (1996), and Delaney and Huselid (1996).

Financial measures, even though far from perfect, have been widely used by management researchers for lack of better measures (Jemison, 1987; Sethi, 1987; Fiegenbaum & Thomas, 1988; and Baucus, 1989).

(7) Finally, the enforcement level measured by the number of inspections made by OSHA inspectors during the year. Enforcement of enacted laws is always through the inspections by trained inspectors who look for violations of codes of safety and health under the OSHA.

Information on the number of standards violated, initial penalty imposed, the current penalty after appeal, and the actual amount paid was collected from OSHA inspection data for each corporation returning the questionnaire. It is quite possible that the initial penalty might have been reduced through informal negotiations or through an appeal in the court. It is also likely that the nature of a violation also might have been changed on appeal. When an inspector was not sure about the borderline violations he or she marked them as s/o (Serious/ordinary) violation. It was left to the OSHA organization hierarchy, judges of the OSHA Review Commission or U. S. Circut Court of Appeals, to make the final decision on appeal if the appealing party disagreed with OSHA employees' determination . Sometimes the scope of an inspection was changed from partial to a comprehensive inspection. This happened probably when an inspector discovered serious violations.

An Index of Seriousness of Violatory Behavior (ISVB) was prepared so that its relationship to organizational and environmental variables could be studied. Most

serious violations resulted in death or physical injury at the place of work. In an accident that resulted from fire equipment sending 36 employees to a hospital for a check up and released without hospitalization, the equipment fault was treated as an ordinary violation and no fines were imposed. In another case where an inspector found 34 violations out of which 23 were serious violations a fine of $20,590 was imposed, which after appeal was reduced to $9,605. The maximum fines imposed in Auto, Fabricated Metal and Petroleum industries were $26,920, $8,600 and $5,000 respectively, and they were reduced to $14,325, $5,040, and $2,400 respectively for violations ranging in numbers from 10 to 62. Since the standards violated did not take into account the impact of violation; and fines imposed and actually paid did not reveal the whole story an Index of Seriousness of Violatory Behavior of a firm was created to study such behavior systematically. To the best of the knowledge of this researcher there is no such index in the field that can study the seriousness of violatory behavior of a firm. The formulation of this index is important because it is not easy to get the data from a regulatory agency and when it is made available after going through bureaucratic barriers it runs into thousands of pages and its presentation is very cumbersome and time consuming. Researchers have indicated that organizations show reluctance to part with violatory data. This index may be of some use to future researchers and might help in opening the field for future research. The five point ordinal measurement scale is based on the potential or actual threat to the safety and health of a worker and these points can be ranked in terms of seriousness of violations at the place of work:

1=Less than 5 violations of non serious nature without fines.

2=5 to 20 regular violations without fines.

3=21+ regular violations and/or up to 10 serious violations with a total fine of up to $1,000.

4=11+ serious violations and /or fines of $1,001 to $4,999 or occupational injuries resulting in loss of limbs.

5= Occupational death(s) and/or fines in excess of 5,000.

The alternate form of reliability of the Index of Seriousness of Violatory Behavior (ISVB) was measured with Spearman rank-order correlation test. This reliability was measured against the OSHA standards violated (of both ordinary or serious nature), fines imposed by OSHA inspectors in dollars, fines after they were appealed to OSHA hierarchy or courts, and actual amount of fines paid to OSHA agency. All these variables indicate the consequences of OSHA violatory behavior by corporations based on administrative, civil or criminal sanctions. Alternate form reliability coefficients varied from r = .72 to r = .92 in the auto and parts industry (n=73); r = .87 to r = .93 in the fabricated metal products industry (n=54); and r = .81 to r = .89 in the petroleum and coal industry (n=29). All the alternate form reliability coefficients were highly statistically significant at $p < .0001$. This indicates that the alternate form reliability of ISVB is very good as compared to other measures of violatory behavior. Information on ISVB's alternate form reliability, as measured by Spearman's rank order coefficient of correlation, which is a non-parametric test (Kerlinger, 1973) against different measures of violatory behavior in three industries, is given in Table - 10.

In the Auto industry 45 violating organizations had committed a total of 507 violations. In Fabricated Metals, and Petroleum industries the responding 31 and 15 corporations had violated the OSHA laws 342 and 65 times respectively. This resulted in a total of 91 violating organizations committing a total of 904 violations of both ordinary and serious nature in three SIC coded industries.

Table - 11 provides the descriptive statistics of the violatory behavior of violations, fines paid, and index of seriousness of violatory behavior.

TABLE - 10

ALTERNATE FORM RELIABILITY COEFFICIENTS OF INDEX OF SERIOUSNESS OF VIOLATORY BEHAVIOR (ISVB) IN THREE INDUSTRIES:

	Measures of violatory behavior			
Industry	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid
Auto and Parts (n=73)	.92 (p<.0001)	.92 (p<.0001)	.91 (p<.0001)	.72 (p<.0001)
Fabricated Metal Products (n=54)	.93 (p<.0001)	.91 (p<.0001)	.91 (p<.0001)	.87 (p<.0001)
Petroleum and Coal (n=29)	.86 (p<.0001)	.89 (p<.0001)	.89 (p<.0001)	.81 (p<.0001)

TABLE - 11

MEANS AND STANDARD DEVIATIONS OF VARIOUS MEASURES OF VIOLATORY BEHAVIOR IN THREE INDUSTRIES

AUTO AND PARTS INDUSTRY (n=73)

Violatory Behavior	mean	s.d.
1. No. of Violations	6.94	11.50
2.Fines	$1,660.00	$4,281.00
3.Fines after appeal	$1267.00	$2,764.00
4.Fines paid	$709.00	$2,157.00
5. Index of Seriousness	1.97	1.78

FABRICATED METAL PRODUCTS INDUSTRIES (n=54)

Violatory Behavior	mean	s.d.
1. No. of Violations	6.33	8.67
2. Fines	$1,137.00	$1,863.00
3. Fines after appeal	$742.00	$1,168.00
4. Fines paid	$628.00	$950.00
5. Index of Seriousness	1.88	1.86

PETROLEUM AND COAL INDUSTRY (n=29)

Violatory Behavior	mean	s.d.
1. No. of Violations	2.24	3.04
2. Fines	$671.00	$1,090.00
3. Fines after appeal	$527.00	$708.00
4. Fines paid	$469.00	$1,000.00
5. Index of Seriousness	1.79	1.88

4. Process

A total of 1,105 questionnaires were mailed during the summer of 1991 from May to August and by the middle of December, 1991 we had received back 156 usable questionnaires. The questionnaires were mailed to the Presidents of the corporations (since in a small organizations the president may be the only one who had this information) along with a self addressed stamped envelope for the return of the completed questionnaire. As is customary, a cover letter assuring complete confidentiality to the respondent and the corporation was enclosed. If more than one questionnaire was returned by a corporation, only one was selected at random.

A small number of organizations have ended up in the sample sizes of corporate crime studies because of the low response rate or cumbersome nature of data collection which is beyond the control of a researcher. Clinard's (1983) much cited study was based on 51 Fortune 500 organizations and Baucus's (1989) most recent study involved 88 such organizations. In organization theory, study of Pugh et. al (1968 and 1969) done in England exploring relationships between size and structure, that is considered a landmark study had only 46 organizations. Another innovative study in the USA exploring the relationship between organization structure and environment, involved only 10 organizations (Lawrence & Lorsch, 1967). A recent lead study investigating the resource based view of a firm in two environments involved only seven studios on a longitudinal basis (Miller and Shamsie, 1996). It brings the point home that studies using innovative methods of data collection have involved small samples because of difficulties encountered in data gathering.

(a) Data collection procedures for questionnaires

The reports of Safety and Health inspections conducted in fiscal year 1990 in the manufacturing industries, where 100 or more employees were hired by a corporation, were obtained from OSHA office. These reports covered inspections by the Federal Occupational Safety and Health Administration (OSHA) as well as states which operated their own safety and health program under section 18(b) of the Occupational Safety and Health Act of 1970. These lists ran into 3,532 pages of printed inspection data for violating firms and 674 pages of data for non-violating firms. This inspection data covering more than 4,200 pages was visually examined to find those industries that would give sufficient sample size for both violating and non-violating firms. After a comprehensive search three industries were selected that would give a sufficient number of corporations for mailing questionnaires. The health and safety inspection data for auto, fabricated metals, and petroleum industries for both violating and non-violating firms ran in 435 pages. Each industry list was checked manually to combine OSHA inspections and violations since OSHA lists outcome of each inspection separately. After summing repeat OSHA visits for the same corporation, in each industry, a serial number was assigned to each corporation visited by OSHA inspectors. This resulted in six lists, three for corporations violating OSHA codes and three for non-violating corporations in three industries where no violations were found when OSHA inspectors visited them.

The OSHA inspectors visited a specific plant and they noted down the results of their inspection. If they visited multiple plants or made multiple visits to the same plant and found violations then such inspections were summed together and so were the number of violations of a corporation during the period under study.

A Code number was assigned to each questionnaire sent so that on its return background information regarding inspections and violations could be used for

further analysis. Securities and Exchange Commission reports were also used as an aid in completing certain answers left out in the questionnaires. But this was possible only for public corporations.

The questionnaire sent out included questions on organizational and environmental information covering corporate performance, ownership, size, organizational slack, board of directors, technology, growth rate, and external pressures faced by on organization. In addition, the Presidents of firms were also asked to indicate their views on rules, regulations and laws implemented by governmental agencies for future research.

(b) Data collection procedures for financial reports

In order to cover the gaps in the information left out in the questionnaires returned. an attempt was made to collect financial and other information available from the 10K (annual) or 10Q (quarterly reports) that publicly owned companies are required to file under Section 13 or 15(d) of the U.S. Securities and Exchange Commission Act of 1934. For global companies headquartered in the United States 6K and/or 20 F reports (Annual or transaction reports) were referenced. One of the nine regional offices of SEC located at New York City was consulted and provided microfiche films. A researcher is cautioned that a regional office of SEC did not have all the microfiche films for the corporations that file their reports with SEC. In certain cases only part of the 10K report was available even though its computer records indicated that the corporation had filed such a report with the S.E.C. This was another reason that resulted in testing of certain hypotheses on only part of the sample.

Information regarding personnel and age of incorporation appeared in the beginning of the 10K reports whereas information on directors was found at the end of the reports. Age of plant was calculated as of December 31, 1990 and any fraction

more than half was rounded to the next number. Occasionally, information on domestic plants and age of oldest plant was not given at any specific location requiring extensive search on scores of pages of microfiche reports, particularly if corporations had merged before. Retired employees on the board were treated as insiders because of their earlier relations to other board members.

Data on changes in earning per share and stock price were calculated by comparing 1990 figures with 1987 year end figures as far as possible. If information was not available, then figures as close to the year end as possible, were used.

Consolidated statements were also used from 10K reports because companies did not always provide information on some of the variables in the business segment of reports. Reference to footnotes of 10K reports was made frequently to ascertain correctness of information.

Information on plants was gleaned from domestic and overseas operations of the corporations. Corporations quite often referred to the countries where they were operating, or domestic states in which they were carrying on operations. An assumption was made that each country or domestic state had only one plant unless the report specifically stated otherwise.

For global corporations where the information given was in foreign currencies in SEC reports, such figures were converted into American currencies, using dollar equivalency, given in the report as required under SEC regulations, pertaining to the specific year to which the information belonged.

Sales revenue included only sales and operating revenues during the year excluding interests, dividends, gain on sales of assets, equity in earnings of affiliated cost or miscellaneous income.

Assets included total identifiable assets of the company including current assets, investments, properties and deferred charges.

Personnel hired were the number of employees at year end. They covered all the plants in U.S. and overseas. Instead of actual number of employees the corporations sometimes provided average number of employees during the year, that were used from 10K reports where the respondent did not provide this information.

For book value of machine technology, the value at cost of property, plant and equipment as reported on the balance sheet was used.

The long term debt figures excluded current portion and represented only non-current liabilities in future.

Whenever the stock price at the end of the year was not quoted, the average of high and low stock prices during the year was used.

There were certain corporations that had chosen not to file10K reports with SEC at the year end. In such cases the fiscal year end closest to the year end was used. In addition the statements filed with the SEC were sometimes unaudited but there is no reason to doubt their authenticity.

Descriptive statistics and correlations of variables are given separately for each industry in tables 12 through 14.

TABLE - 12

MEANS, STANDARD DEVIATIONS AND CORRELATIONS FOR ORGANIZATIONAL VARIABLES IN AUTO & PARTS INDUSTRY

Variables	n	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Board Members	60	8 98	5 44																			
2 Board Insiders	61	3 87	2 78	55** (60)																		
3 Employees (a)	73	26 71	104 70	71** (60)	64** (61)																	
4 Employees Non Exempt (a)	58	1 61	20 98	39* (48)	24 (49)	74** (57)																
5 Plants Domestic	69	14 72	36 61	56** (58)	12** (59)	73** (69)	58** (56)															
6 Plants Abroad	41	5 09	14 92	47** (36)	21 (17)	63** (41)	63** (34)	88** (41)														
7 Domestic Marketshare	57	20	15	17 (47)	01 (48)	37** (57)	23** (47)	22 (54)	11 (15)													
8 Plant Age (d)	72	28 09	20 83	16 (59)	00 (60)	13** (72)	29** (57)	29** (68)	46** (40)	41** (57)												
9 Value of Technology (b)	58	1 61	11 41	64** (48)	41** (48)	77** (58)	26 (64)	41** (54)	29 (33)	21 (45)	06 (58)											
10 Sales Revenue (b)	72	4 96	21 19	73** (59)	41** (60)	85** (72)	59** (56)	69** (68)	61** (41)	34** (56)	20 (71)	84** (58)										
11 Gross Profit (b)	71	025	35	67** (52)	36** (53)	72** (63)	64** (53)	53** (60)	49** (36)	30* (48)	05 (62)	75** (52)	81** (61)									
12 Retained Earnings (b)	66	55	3 14	69** (60)	36* (61)	75** (58)	28 (39)	61** (67)	67** (28)	31* (37)	18 (69)	78** (63)	85** (50)	86** (69)								
13 Total Identifiable Assets (b)	66	1 08	33 56	68** (53)	34** (54)	81** (66)	62** (53)	64** (62)	64** (36)	24 (50)	12 (65)	85** (56)	96** (66)	87** (60)	88** (68)							
14 Total Long Term debt (b)	65	1 57	7 25	73** (50)	37** (51)	85** (63)	38** (68)	69** (59)	65** (33)	38** (47)	23 (62)	84** (53)	96** (61)	86** (56)	89** (66)	96** (61)						
15 Growth Rate	63	04	08	05 (51)	-03 (52)	01 (63)	-13 (52)	20 (59)	26 (36)	10 (69)	09 (63)	04 (55)	06 (61)	14 (57)	07 (66)	10 (61)	09 (58)					
16 Rates of EPS (c)	30	17	3 21	27 (17)	11 (18)	21 (20)	30 (10)	-01 (16)	11 (9)	41 (13)	12 (19)	41 (15)	23 (20)	21 (17)	28 (17)	33 (18)	19 (19)	-50* (15)				
17 Rates of Stock Price (c)	24	1 06	46	-47* (21)	-36 (22)	-51** (24)	-52 (13)	29 (20)	-31 (12)	21 (16)	36 (23)	42 (18)	61* (24)	17 (21)	-42 (18)	-38 (22)	-39 (20)	38 (18)	-86** (19)			
18 Rates of Debt	63	16	34	-05 (50)	00 (51)	-01 (63)	-19 (49)	01 (59)	-05 (34)	20 (47)	29* (62)	06 (54)	11 (63)	10 (57)	03 (47)	-14 (63)	07 (61)	-25* (59)	-22 (18)	-01 (19)		
19 Inspections	73	1 15	0 63	12 (60)	16 (61)	29** (73)	-35* (57)	66** (69)	48** (41)	23 (57)	09 (72)	03 (58)	21* (72)	10 (61)	18 (50)	13 (66)	27* (61)	34** (63)	01 (20)	-10 (24)	06 (61)	

* p< 05 **p< 01

(a) Employees and non exempt employees are in thousands and logs of these variables have been used

(b) Value of technology, Gross Profit, Retained Earnings, Sales Revenue, Total Identifiable Assets and Total Long Term Debt are in billions and logs of these variables have been used

(c) Change in EPS and change in stock is a ratio over 3 years

(d) Plant age is in years

TABLE 13

MEANS, STANDARD DEVIATIONS AND CORRELATIONS FOR ORGANIZATIONAL VARIABLES IN FABRICATED METALS INDUSTRY

Variables	n	avg.	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Board Members	45	7 24	3 62																			
2 Board Insiders	44	3 65	2 24	60** (44)																		
3 Employees (a)	51	1 83	5 15	53** (44)	21 (43)																	
4 Employees Non-Exempt (a)	36	34	65	36* (31)	28 (30)	77** (35)																
5 Plants Domestic	50	11 58	46 40	04 (43)	06 (43)	35* (39)	29 (35)															
6 Plants Overseas	37	22 94	96 55	-15 (33)	-06 (33)	25 (36)	05 (27)	51** (16)														
7 Domestic Market Share	37	0 19	0 24	07 (31)	10 (30)	-00 (16)	-14 (28)	-01 (16)	06 (27)													
8 Plant Age (d)	51	30 70	31 22	13 (43)	07 (42)	15 (49)	10 (35)	-11 (48)	17 (36)	28 (37)												
9 Value of Technology (b)	48	98 57	341 72	55** (40)	08 (40)	67** (46)	58** (32)	14 (46)	22 (34)	04 (32)	26 (46)											
10 Sales Revenue (b)	52	240 37	837 44	39** (45)	-09 (44)	65** (50)	57** (35)	01 (49)	04 (36)	04 (36)	27 (50)	81** (47)										
11 Gross Profit (b)	49	54	107 12	28** (40)	-01 (39)	51** (43)	50** (32)	-00 (43)	04 (33)	05 (34)	09 (43)	67** (40)	88** (45)									
12 Retained Earnings (b)	47	22 24	73 75	17 (40)	-17 (40)	49** (43)	47** (28)	04 (43)	05 (32)	-02 (32)	24 (43)	65** (41)	79** (45)	70** (40)								
13 Total Identifiable Assets (b)	47	173 13	454 98	48** (40)	-08 (40)	62** (45)	55** (33)	06 (45)	12 (34)	02 (32)	24 (45)	80** (45)	91** (47)	83** (41)	77** (43)							
14 Total Long Debt (b)	47	40 96	190 82	54** (37)	12 (37)	62** (41)	42* (30)	55** (41)	10 (30)	18 (28)	42 (41)	75** (41)	79** (43)	67** (38)	63** (38)	80** (42)						
15 Growth Rate	48	0 09	0 12	-26 (41)	-18 (41)	-09 (46)	03 (32)	-03 (46)	08 (34)	-10 (34)	-20 (48)	-10 (44)	-01 (48)	32* (41)	18 (43)	-04 (45)	-10 (41)					
16 Ratio of EPS (c)	9	4 92	12 60	-65 (7)	36 (7)	-02 (7)	-10 (2)	-39 (7)	42 (7)	71 (3)	-38 (8)	10 (9)	14 (9)	14 (5)	31 (8)	22 (9)	27 (7)	75* (8)				
17 Ratio of Stock Price (c)	7	1 24	80	-54 (6)	-30 (6)	-60 (6)	(2)	-66 (6)	01 (7)	11 (4)	-39 (6)	-35 (7)	-54 (7)	-25 (4)	-24 (7)	-57 (7)	-56 (5)	59 (6)	73 (6)			
18 Ratio of Debt	45	25	30	-15 (38)	11 (38)	-01 (43)	-02 (33)	-01 (43)	-07 (32)	02 (30)	09 (43)	00 (43)	-07 (45)	-13 (39)	-08 (41)	-27 (45)	16 (42)	01 (43)	12 (8)	-43 (6)		
19 Inspections	54	1 03	0 19	-19 (45)	-06 (44)	-07 (51)	-31 (36)	-04 (50)	56** (37)	01 (37)	-13 (51)	-24 (48)	02 (52)	08 (45)	00 (45)	01 (47)	-07 (43)	38** (48)	-10 (9)	02 (7)	-10 (45)	

* p< 05 ** p< 01

(a) Employees and non exempt employees are in thousands and logs of these variables have been used

(b) Value of technology, Gross Profit, Retained Earnings, Sales Revenue, Total Identifiable Assets and Total Long Term Debt are in millions and logs of these varia

TABLE 14
MEANS STANDARD DEVIATIONS AND CORRELATIONS FOR ORGANIZATIONAL VARIABLES IN PETROLEUM & COAL INDUSTRY

Variables	n	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Board Members	14	15.28	5.91																		
2 Board Insiders	14	7.35	6.24	.70** (14)																	
3 Employees (a)	29	11.77	28.65	.56* (14)	.41 (14)																
4 Employees Non Exempt (a)	20	1.70	5.50	.36 (5)	.01 (5)	.91** (20)															
5 Plants Domestic	29	16.62	20.75	.42 (14)	.61** (14)	.81 (29)	.76** (20)														
6 Plants Abroad	21	6.0	9.18	.40 (9)	.39 (9)	.68 (21)	.80** (15)	.79** (21)													
7 Domestic Market Share	11	11	11	.43 (10)	.12 (10)	.01 (11)	.00 (9)	.00 (11)	.14 (10)												
8 Plant Age (d)	28	28.14	22.28	.43 (13)	.40 (13)	.69** (28)	.59** (20)	.63** (28)	.78** (20)	.36 (13)											
9 Value of Technology (b)	27	51	1.50	.24 (12)	.09 (12)	.69** (27)	.66** (18)	.34 (27)	.36 (19)	.12 (13)	.40* (26)										
10 Sales Revenue (b)	28	1.17	2.79	.00 (13)	.14 (13)	.46** (28)	.70** (19)	.45** (28)	.39 (20)	.10 (14)	.69** (27)	.51** (27)									
11 Gross Profit (b)	27	.05	.14	.48 (10)	.48 (10)	.66* (24)	.78** (17)	.55 (24)	.51 (18)	.21 (12)	.45* (23)	.65** (23)	.94** (24)								
12 Retained Earnings (b)	27	.05	.23	-.18 (11)	.02 (11)	.59** (26)	.69* (18)	.50** (26)	.51* (19)	.13 (13)	.53** (25)	.48** (26)	.78** (26)	.73** (25)							
13 Total Identifiable Assets (b)	27	.29	.96	.13 (12)	-.19 (12)	.66* (27)	.72** (19)	.31 (27)	.36 (20)	.06 (13)	.52** (26)	.64** (26)	.85** (27)	.82** (25)	.70** (25)						
14 Total Long Term Debt (b)	28	.18	.60	.00 (13)	-.18 (13)	.27 (28)	.73** (19)	.23 (28)	.28 (20)	.17 (14)	.22 (27)	.52** (27)	.79** (28)	.71** (24)	.68** (26)	.83** (27)					
15 Growth Rate	26	.06	.01	.25 (11)	.15 (11)	.36 (26)	.04 (17)	.28 (26)	.17 (19)	.01 (13)	.20 (25)	.33 (26)	.01 (26)	.05 (22)	.02 (25)	.09 (26)	.12 (26)				
16 Rate of EPS (c)	11	7.00	13.80	.05 (11)	-.41 (11)	.43 (11)	(3)	-.36 (11)	.29 (9)	-.33 (9)	.11 (10)	.24 (9)	.24 (10)	.24 (9)	.25 (9)	.41 (10)	.24 (10)	.08 (9)			
17 Rate of Stock Price (c)	12	1.18	.45	-.07 (12)	.01 (12)	-.49 (12)	.15 (5)	-.06 (12)	.00 (9)	.15 (9)	-.20 (11)	-.49 (10)	.41 (11)	.20 (9)	.45 (10)	.38 (10)	.48 (11)	.19 (9)	.30 (10)		
18 Ratio of Debt (c)	27	.37	.47	-.17 (12)	.16 (12)	.01 (27)	.48 (18)	.15 (27)	.04 (20)	-.23 (13)	-.04 (26)	-.17 (26)	.37 (27)	.09 (25)	.33* (25)	.26 (27)	.59** (27)	.32** (26)	-.07 (10)	.46 (10)	
19 Inspections	29	1.03	.18	.00 (14)	.00 (14)	.12 (29)	.05 (20)	.11 (29)	.14 (21)	.00 (13)	-.14 (28)	.15 (27)	.17 (28)	.19 (24)	.17 (26)	.14 (27)	.11 (28)	.11 (26)	.00 (11)	.00 (12)	.06 (27)

* p< .05 ** p< .01

(a) Employees and non-exempt employees are in thousands and logs of these variables have been used

(b) Value of technology, Gross Profit, Retained Earnings, Sales Revenue, Total Identifiable Assets and Total Long Term Debt are in billions and logs of these variables have been used

(c) Change in EPS and change in stock is a ratio over 1 years

(d) Plant age is in years

When some of the independent variables are very highly inter-correlated multicollinerity exists. When a very high level of multicolinearity exists regression analysis cannot be performed using the given set of independent variables. A look at the correlation matrices (Tables 12 through 14) of these industries indicated that many of the organizational and environmental variables had either no correlations or low but significant correlations with other independent variables assuring relative importance and orthogonality of independent variables included in this research.

5. Statistical Analysis

Since this is an exploratory study so correlational analysis would be the most appropriate statistical method for finding relationship among variables (Bobko, 1995). This would help to measure both the strength as well as the direction of relationship. Multiple correlation analysis would indicate the strength of a group of independent variables in explaining variation in violatory behavior. Multiple regression analysis will also be performed to find if interaction among the variables helps to isolate those variables that explain variance in the violatory behavior more than the others.

Coefficient of correlation measures a relationship, but some one might make an error of interpreting a high correlation as a cause-and-effect relationship. A correlation analysis, although measures a relationship, yet it does not define the basis for it (Cangelosi, Taylor and Rice, 1979: 299-300, Bobko, 1995: 23). The basis of relationship between a set of independent variables (organizational and environmental variables) and the dependent variable (violatory behavior of an organization) has already been provided earlier in terms of theoretical support and empirical research.

The coefficient of correlation tests are relatively a direct measure of relations (Kerlinger, 1973: 216-241; and Neter and Wasserman, 1974: 419). As a result, a

correlation test becomes more relevant and important to our research study because it helps not only to identify independent variables having a relationship with the dependent variable, but also points to the strength of these relationships. It is observed that even though T and F ratios are one or two steps removed from the independent and dependent variable relationship (Kerlinger, 1973: 228), yet they involve the same principle and structure of analysis as correlation tests (Kerlinger, 1973: 232).

One of the properties of correlations is that the "magnitude of r can be greatly affected by outlying values" (Bobko, 1995: 21), which also affect the mean and the standard deviation. There are statistical techniques available for identifying outliers, "but it is not known which of these techniques is best...(There is no right or wrong answer. The resolution should be informed by good thinking...)" (Bobko. 1995: 23).

When one deals with small and large organizations there may be some variables where a large value could influence the magnitude of r between x and y values. In order to handle this practical problem logs of certain variables were used as is the common practice in research (Kimberly, 1976; Delaney and Huselid, 1996:954-963; and Henderson and Fredrickson. 1996).

Some statisticians have recommended that correlation tests should be based on a baseline correlation to "reflect on what you want as your null hypothesis value" (Bobko: 1995: 48). This is because it is "much harder to get a significant difference between two correlations than it is to get one correlation significantly different from zero" (Bobko, 1995: 55). This argument has been put forward because the attitudinal items can induce spurious correlation (Schuman and Presser, 1981) since adjacent items can correlate more highly than remotely placed items on an attitudinal questionnaire. This spurious effect has been called as "proximity base" by Cascio (1987) and "crud factor" by Meehl (1990). This emerging practice

in correlation analysis is not relevant to this research since no attitudinal items are part of this study. In addition, in an exploratory study either no correlations are available or there are too few to serve the purpose as baseline correlations. However, for topics that have some research base, it is a feasible to do so.

Some of the studies that use samples from only large or small organizations can influence their correlations due to range restriction. "The variance of x is therefore reduced (i.e. range restricted). In turn this tends to reduce the obtained correlation between x and any other variable...the levels of analysis across which correlations are computed can make a very big difference in the resulting value of r" (Bobko, 1995: 24-25). This study does not suffer from the malady of range restriction like many other Fortune 500 studies that get responses from only large size organizations.

Multiple regression analysis was also used as a means of evaluating the contribution of hypothesized independent variables collectively. The "strength" of relationship between an independent and a dependent variables was tested by examining the statistical significance of the correlations coefficient (r_{xy}). The "form" of relationship between an independent and a dependent variable, given the presence of other independent variables, was tested by examining beta regression coefficients while the effect of other predictor variables was controlled. Since industry groups were different so both comparisons were used. Cohn & Cohn (1975: 66) point out that the comparative analysis of correlation coefficients answers the questions as to whether " x account for as much of the variance in y group E as in group F?" Whereas comparative analysis of regression coefficients helps to answer the question "does change in x make the same amount of score difference in y in group E as in group F". The difference in regression coefficient was tested using a t-statistic.

The multiple correlation model for this research is based on the following variables:

V = f(P, S, Sl, I, T, G, EP, E).

Where:

V = OSHA Violatory behavior of a corporation

P = Performance (Profit Margin)

S = Structure (Size)

Sl= Slack of organization

I= Insiders on the board of Directors (Management control over board)

T= Technology (Capital and Machine Technology and age of oldest plant)

G= Growth Rate

EP= External Pressure faced by an organization (Changes in EPS and Stock Price; and debt ratio)

E= Enforcement level by the Government.

CHAPTER - 4

FINDINGS

(A) Hypothesis Testing

The findings of the study are as follows:

HYPOTHESIS 1: (a) The smaller the ratio of profit margin the higher the incidence of violatory behavior in organizations in the auto and parts industry.
(b) The smaller the ratio of profit margin the higher the incidence of violatory behavior in organizations in the fabricated metal products industry.
(c) The smaller the ratio of profit margin the higher the incidence of violatory behavior in organizations in the petroleum and coal industry.

TABLE - 15

CORRELATION OF PROFIT MARGIN WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Ratio of Profit Margin	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	71	-.02	.00	.04	.00	-.09
Fabricated Metal	49	.08	-.08	-.03	.05	-.05
Petroleum & Coal	27	.25	-.12	-.07	-.02	-.09

The profit margin was calculated as a ratio between gross profit and sales revenue. Violations could be of ordinary or serious nature and hence fines imposed accordingly. The fines could be changed based on appeal. The Index of Seriousness

of Violatory Behavior was based on recidivism, penalty paid and biological injury or death. A distinction was made between fines imposed initially, changes after appeal, and actual amount of fines paid for violations.

A look at the Pearson's correlation coefficients in Table-15 reveals that none of the correlations reached a statistical level of significance in any of the three industries: Auto and Parts, Fabricated Metal Products, and Petroleum and Coal. Consequently hypotheses 1 (a), 1 (b) and 1 (c) were rejected.

However, the nature of correlations, though non-significant, indicated that the profit margin was, in general, negatively associated with the violatory behavior since four out of five correlations in each of the two industries (Fabricated Metal Products; and Petroleum and Coal) were negative. The highest positive correlation (r = .25) in the petroleum and coal industry was not significant and could be a random occurrence. In the Auto and Parts industry also, two correlations were negative against one being positive, and the remaining as zero correlation coefficients. This results in a situation of inconclusiveness.

HYPOTHESIS 2: (a) The larger the company's size the greater the corporate violatory behavior in auto and parts industry.
(b) The larger the company's size the greater the corporate violatory behavior in the fabricated metal products industry.
(c) The larger the company's size the greater the corporate violatory behavior in the petroleum and coal industry.

TABLE - 16

CORRELATION OF SIZE WITH CORPORATE VIOLATORY BEHAVIOR IN AUTO AND PARTS INDUSTRY

Variable		Measures of Violatory Behavior				
Size	*n*	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Measures						
Employees	73	.01	-.01	.04	-.07	-.06
Non-exempt Employees	57	-.19	-.07	-.16	-.03	-.20
Domestic Plants	69	.15	-.03	-.04	-.07	.11
Overseas Plants	41	-.11	-.05	-.06	-.09	.08
Identifiable Assets	66	.06	.03	.05	.07	.04
Sales Revenue	72	.11	-.01	.00	.02	.08
Board Members	60	.01	-.08	-.03	-.04	-.14
Domestic Mkt. Share	57	.20	.19	.24	.09	.14

Various measures of size of a corporation were explored and operationalized as employees, non-exempt employees, domestic plants, overseas plants, identifiable assets, sales revenue, board members and domestic market share in three industries. The results of Pearson Correlation analysis did not yield any statistically significant relationship between operational measures of size and various measures of corporate violatory behavior in the auto and parts industry (Table - 16) and consequently hypothesis 2 (a) was rejected. In terms of nature of relationship, only certain measures of size such as sales revenue and domestic market share were

generally found non-significantly but positively related to violatory behavior. Contrary to the hypothesis, the number of non-exempt employees, overseas plants, and the number of board members were found having an overall negative and non significant relationship with various measures of violatory behavior. The size of a corporation as operationalized by the number of employees it hired, had non significant but mixed relationship, with different measures of violatory behavior in the auto and parts industry presenting an inconclusive nature of the relationship between this measure of size and violatory behavior.

TABLE - 17

CORRELATION OF SIZE WITH CORPORATE VIOLATORY BEHAVIOR IN FABRICATED METAL PRODUCTS INDUSTRY

Variable		Measures of Violatory Behavior				
Size	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Measures						
Employees	51	-.10	.14	.12	.03	-.10
Non-exempt Employees	36	-.23	-.24	-.29†	-.32*	-.34*
Domestic Plants	50	-.12	-.11	-.11	-.11	-.16
Overseas Plants	37	.11	.35*	.43**	.38**	.15
Identifiable Assets	47	.04	.22	.22	.17	.03
Sales Revenue	52	.10	.28*	.25†	.19	.10
Board Members	45	-.35**	-.16	-.18	-.21	-.31*
Domestic Mkt. Share	37	.00	-.07	.04	.06	.23

** = $p < .01$, * = $p < .05$, † = $p < .10$

Various measures of size were significantly either positively or negatively related to certain measures of violatory behavior presenting a complex situation in the fabricated metal products industry (Table 17).

The number of overseas plants, as a measure of size, was found to be positively and significantly associated with fines imposed ($r = .35$, $p < .05$), fines after appeal ($r = .43$, $p < .01$) and actual fines paid ($r = .38$, $p < .01$). Similarly sales revenue as representation of size was found to be positively and significantly related to different measures of violatory behavior like fines imposed ($r = .28$, $p < .05$), and marginally related to fines after appeal ($r = .25$, $p < .10$). The relationship between these stated measures of size and selective measures of violatory behavior supports hypothesis 2 (b) in the fabricated metal products industry.

But there were other measures of size also in this industry that tested negatively and

significantly with different measures of violatory behavior. Non exempt employees were significantly and negatively related to serious violations ($r = -.34$, $p < .05$), fines paid ($r = -.32$, $p < .05$), and only marginally related to fines after appeal ($r = -.29$, $p < .10$). Similarly board members were significantly and negatively related to standards violated ($r = -.35$, $p < .01$) and to the index of seriousness ($r = -.31$, $p < .05$).

Certain other measures of size in the form of employees, domestic plants identifiable assets and domestic market share were not found to have any significant relationship with any measures of violatory behavior in fabricated metal products industry.

So what is the conclusion in regard to hypothesis 2 (b)? The answer lies in how a variable is operationalized. If we look at the number of overseas plants that a firm had and sales revenue that it generated, as representation of size then hypothesis 2 (b) is supported. But if we look at two other measures of size in the form of non-exempt employees, and the number of members on the board then we have to reject this hypothesis. This is not an unusual situation in a correlational study that uses multiple measures of a variable due to conflicting views and approaches adopted by scholars. This exploratory study points out that the situation is complex and requires further discussion as to which of the measures tested are better measures of size and which ones can be discarded in future research.

TABLE - 18

CORRELATION OF SIZE WITH CORPORATE VIOLATORY BEHAVIOR IN PETROLEUM AND COAL INDUSTRY

Variable		Measures of Violatory Behavior				
Size	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Measures						
Employees	29	-.13	.01	.15	-.11	-.04
Non-exempt Employees	20	.06	-.03	.01	.00	.09
Domestic Plants	29	-.20	-.18	-.14	-.25	-.27
Overseas Plants	21	-.32	-.27	-.30	-.24	-.37†
Identifiable Assets	27	.09	-.05	.06	-.16	.25
Sales Revenue	28	.01	-.07	.05	-.16	.18
Board Members	14	-.31	-.10	-.08	-.16	-.30
Domestic Mkt. Share	15	.08	-.12	-.08	-.26	-.24

† = $p < .10$

Size as measured by the number of overseas plants that a firm had was found to be only marginally, significantly and negatively related to the Index of Seriousness ($r = -.37$, $p < .10$) which runs contrary to the positive relationship hypothesized in 2 (c) and as a result this hypothesis was rejected in the petroleum and coal industry (Table- 18)

Other measures of size such as identifiable assets, sales revenue, and non-exempt employees that were found having low positive relationship, as hypothesized, with serious violations never attained any acceptable level of statistical significance.

Similarly several other measures of size such as domestic plants, board members, and domestic market share pointed generally towards the negative nature of

relationship with violatory behavior but the magnitude of correlations being low never attained significance in the petroleum and coal industry.

HYPOTHESIS 3: (a) The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the auto and parts industry.
(b) The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the fabricated metal products industry.
(c) The greater the organizational slack the lesser the likelihood of corporate violatory behavior in the petroleum and coal industry.

TABLE - 19

CORRELATION OF ORGANIZATIONAL SLACK WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Organizational Slack	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	66	-.04	.00	.00	.00	.03
Fabricated Metal	45	-.15	-.14	-.16	-.17	-.14
Petroleum & Coal	26	-.18	-.11	-.21	.08	-.25

Organizational slack was calculated as a ratio by dividing retained earnings by gross profit of a firm. Pearson correlation coefficients between organizational slack and different measures of violatory behavior are presented in Table - 19. None of the correlations presented in the above table were statistically significant and as a result hypotheses 3 (a) to 3 (c) were rejected in each of the three industries separately.

Overall, the direction of relationship between organizational slack and violatory behavior was found to be negative as hypothesized, in fabricated metal; and petroleum and coal industries although correlations failed to reach a level of significance.

HYPOTHESIS 4: (a) The greater the proportion of insiders on the board the higher the corporate violatory behavior in the auto and parts industry.
(b) The greater the proportion of insiders on the board the higher the corporate violatory behavior in the fabricated metal products industry.
(c) The greater the proportion of insiders on the board the higher the corporate violatory behavior in the petroleum and coal industry.

TABLE - 20

CORRELATION OF INSIDERS ON THE BOARD WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Insider on the Board	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	60	.05	.15	.10	.14	.03
Fabricated Metal	44	.19	.02	.09	.21	.13
Petroleum & Coal	14	.27	.00	-.02	-.24	.11

The proportion of insiders on the board of a firm was calculated by dividing the number of company executives or employers (insiders) on the board by the total number of board members.

None of the Pearson correlation coefficients shown in Table- 20, between the ratio of insiders on the board of a firm and different measures of corporate violatory behavior, in any of the three industries studied, was found to be significant and consequently hypotheses 4(a) to 4(c) were rejected.

In the auto and parts, and fabricated metal products industries the correlations were positive and consistent with the hypotheses but insignificant. But in the petroleum

and coal industry hypothesis 4(c) came across conflicting non-significant results with different measures of violatory behavior. In this industry, the number of standards violated and serious violations showed consistency with the hypothesized relationship but when it came to different kinds of fines, the results differed. The fines paid and fines after appeal were found negatively associated.

Had any of these correlations reached a statistical level of significance that would have helped us to infer the nature of relationship between the proportion of insiders on the board and violatory behavior of a corporation conclusively but the results indeed were inconclusive and not significant.

HYPOTHESIS 5 (a) (I) The greater the financial value of technology the lesser the violations in the auto and parts industry.
(a) (II) The greater the financial value of technology the lesser the violations in the fabricated metal products industry.
(a) (III) The greater the financial value of technology the lesser the violations in the petroleum and coal industry.

TABLE - 21

CORRELATION OF CAPITAL ASSETS WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Capital Technology	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	66	.05	.06	.06	.07	.30**
Fabricated Metal	45	.08	.04	.04	.08	.12
Petroleum & Coal	27	-.06	-.13	-.13	-.11	.03

** = $p < .01$

The financial value of capital technology was calculated by dividing total identifiable assets of a corporation with the total number of its employees and correlated with various measures of corporate violatory behavior (Table - 21)
Only the seriousness of violatory behavior was found to be positively and significantly correlated ($r = .30$, $p < .01$) with the ratio of capital technology which is contrary to negative hypothesized relationship. As a result hypothesis 5(a)(I) was rejected in the auto and parts industry.
In the fabricated metal products industry also correlations were positive but not significant which is also contrary to the nature of the hypothesized relationship and as a result hypothesis 5(a)(II) was also rejected.

In the petroleum and coal industry although all the correlations, except for serious violations, were negative and in the predicted direction yet hypothesis 5(a)(III) could not be accepted for a different reason because none of such correlations were statistically significant.

HYPOTHESIS 5: (b) (I) The greater the book value of technology the lesser the violations in the auto and parts industry.
(b)(II) The greater the book value of technology the lesser the violations in the fabricated metal products industry.
(b) III) The greater the book value of technology the lesser the violations in the petroleum and coal industry.

TABLE - 22

CORRELATION OF BOOK VALUE OF TECHNOLOGY WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Book Value of Technology	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	58	-.01	-.03	-.02	-.07	.07
Fabricated Metal	46	.12	.10	.10	.15	.18
Petroleum & Coal	27	.11	.04	.14	.06	.33†

† = $p < .10$

The book value of machine technology was calculated by dividing the book value of machinery and equipment by the total number of employees and correlated with different measures of violatory behavior (Table - 22).

The only marginally statistically significant correlation, between book value of technology and seriousness of violations ($r = .33$, $p < .10$), was found to be contrary to hypothesized negative association, in the petroleum and coal industry and as a result hypothesis 5(b)(III) was rejected.

We found very low non-significant negative association in the auto and parts industry; and very low non-significant positive association in the fabricated metal products industry resulting in the rejection of hypotheses 5(b)(I) and 5(b)(II) also.

HYPOTHESIS 5: (c) (I) The older the company's oldest plant the higher the violations in the auto and parts industry.
(c) (II) The older the company's oldest plant the higher the violations in the fabricated metal products industry.
(c) (III) The older the company's oldest plant the higher the violations in the petroleum and coal industry.

TABLE - 23

CORRELATION OF AGE OF OLDEST PLANT WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Age of Oldest Plant	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	72	-.01	.01	.03	-.11	.08
Fabricated Metal	51	.07	.10	.08	-.01	.19
Petroleum & Coal	28	-.21	-.09	.01	-.23	-.04

Since it was not possible to get the age of all the plants in a corporation so age of only the oldest plant was ascertained and correlated with the violatory behavior (Table - 23).

Hypotheses 5 (c)(I) to 5 (c)(III) did not find any support in any of the industries studied since all the correlations were low and not significant and as a result these hypotheses were rejected in all the three industries.

In the Fabricated and Metal Products industry the correlations were generally low, non-significant and positive as predicted in the hypothesis. In the other two industries they were low, negative and non-significant but negative, contrary to the nature of relationship hypothesized.

HYPOTHESIS 6: (a) The higher the company's growth rate the fewer the violations in the auto and parts industry.
(b) The higher the company's growth rate the fewer the violations in the fabricated metal products industry.
(c) The higher the company's growth rate the fewer the violations in the petroleum and coal industry.

TABLE - 24

CORRELATION OF GROWTH RATE WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Growth Rate	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	63	.12	.04	.03	.10	.30**
Fabricated Metal	48	.21	.12	.02	.04	.04
Petroleum & Coal	26	-.44*	-.37*	-.34†	-.34†	-.59***

*** = p < .001, ** = p < .01, * = p < .05, † = p < .10

The test results of hypothesis 6 (c) were confirmatory since growth rate of a firm, as predicted in the hypothesis, was found to be significantly and negatively correlated with all the measures of the corporate violatory behavior. The relationship between growth rate and serious violations was found to be highly significant (r = -.59, p < .001); followed by moderately significant relationships with the number of standards violated (r = -.44, p < .05), and fines imposed by the OSHA agency (r = -.37, p < .05); and marginally significant relationship with fines after appeal (r = -.34, p < .10) and fines actually paid (r = -.34, p < .10), providing strong support for this hypothesis in the petroleum and coal industry.

In the auto and parts industry hypothesis 6 (a) was found to be positively and significantly correlated with only seriousness of violations ($r = .30$, $p < .01$) contrary to negative relationship hypothesized. It means in certain industries the growth rate may also be associated positively with serious violations. Other measures of violatory behavior had very low correlations in this industry resulting in rejection of hypothesis 6 (a) in the auto and parts industry. Similarly the correlations were very low and non-significant in the fabricated metal products industry resulting in the rejection of hypothesis 6 (b) also.

HYPOTHESIS 7: (a) (I) The higher the external pressure, due to negative changes in stock price over a period of three years. the greater the violatory behavior in the auto and parts industry.
(a) (II) The higher the external pressure, due to negative changes in stock price over a period of three years, the greater the violatory behavior in the fabricated metal products industry.
(a) (III) The higher the external pressure, due to negative changes in stock price over a period of three years, the greater the violatory behavior in the petroleum and coal industry.

TABLE - 25

CORRELATION OF EXTERNAL PRESSURE (DUE TO NEGATIVE CHANGES IN STOCK PRICE) WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Negative Change In Stock Price	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	24	.01	-.13	-.13	.02	-.08
Fabricated Metal	7	-.59	-.37	-.36	-.41	-.70†
Petroleum & Coal	12	-.12	-.47	-.47	-.23	-.10

†= $p < .10$

The results of Pearson correlation analysis with negative changes in stock price, yielded only one correlation of marginal significance with seriousness of violatory behavior ($r = -.70$, $p < .10$) that was consistent with hypothesis 7 (a) (II) in the fabricated metal products industry. Even though some of the other correlations were also high in this industry but they were not significant due to fewer organizations available for testing this hypothesis and consequently hypothesis 7(a) (II) was found getting low support in the fabricated metal products industry.

Even though there were low to moderate correlations consistent with hypotheses 7 (a) (I) and (III) yet they had to be rejected in the auto and parts; and petroleum and coal industries respectively because they were not significant due to small sample size.

HYPOTHESIS 7: (b) (I) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the auto and parts industry.
(b) (II) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the fabricated metal products industry.
(b)(III) The higher the external pressure, due to greater long term debt ratio, the higher the violatory behavior in the petroleum and coal industry.

TABLE - 26

CORRELATION OF EXTERNAL PRESSURE (DUE TO LONG TERM DEBT RATIO) WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Long Term Debt Ratio	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	63	-.03	-.04	.01	-.09	-.09
Fabricated Metal	45	-.01	.04	.08	.11	.17
Petroleum & Coal	27	.32†	.17	.19	.04	.34†

†= $p < .10$

This ratio was based on the long term debt that a firm owed in relationship to the total identifiable assets and correlated with various measures of violatory behavior (Table - 26).

Some of the correlations were marginally significant and did provide low support for hypothesis 7 (b) (III) in relation to the standards violated ($r = .32$, $p < .10$) and seriousness of violations ($r = .34$, $p < .10$).

The hypotheses 7 (b) (I) and (II) tested in other industries were not supported due to non-significant and low correlations found in the auto and parts; and fabricated

metal products industries. These correlations were consistent with the hypothesis, but not significant in the fabricated metal products industry only.

HYPOTHESIS 7: (c) (I) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the auto and parts industry.
(c) (II) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the fabricated metal products industry.
(c) (III) The higher the external pressure, due to negative changes in earnings per share over a period of three years, the greater the violatory behavior in the petroleum and coal industry.

TABLE - 27

CORRELATION OF EXTERNAL PRESSURE (DUE TO NEGATIVE CHANGES IN EPS) WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Change in EPS	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	20	-.02	.12	.12	.14	.11
Fabricated Metal	9	-.45	-.24	-.26	-.29	-.52
Petroleum & Coal	11	-.23	-.09	-.09	.39	.06

The changes in earnings per share were calculated over a three year period from 1987 to 1990 and correlated with different measures of violatory behavior (Table - 27).

Some of the correlations were low to moderate but none were statistically significant due to fewer observations available to test hypotheses 7 (c) (I) to (III) and were consequently rejected in all the three industries.

The nature of the correlations though non-significant were consistent with the hypothesis in the fabricated metal products; and petroleum and coal industries; and mostly inconsistent in the auto and parts industry.

HYPOTHESIS 8: (a) The greater the enforcement of OSHA laws the greater the discovery of corporate violatory behavior in the auto and parts industry.
(b) The greater the enforcement of OSHA laws the greater the discovery of corporate violatory behavior in the fabricated metal products industry.
(c) The greater the enforcement of OSHA laws the greater the discovery of corporate violatory behavior in the petroleum and coal industry.

TABLE - 28

CORRELATION OF ENFORCEMENT WITH CORPORATE VIOLATORY BEHAVIOR

Variable		Measures of Violatory Behavior				
Enforcement	n	Standards Violated	Fines Imposed	Fines After Appeal	Fines Paid	Index of Seriousness
Industry						
Auto & Parts	73	.45***	.33**	.40***	.27**	.36***
Fabricated Metal	54	.27*	.39**	.48***	.47***	.27*
Petroleum & Coal	29	-.14	-.11	-.14	-.09	-.18

*** = p < .001, ** = p < .01, * = p < .05

The enforcement of OSHA laws was operationalized by the number of inspections done by inspectors in a given firm and correlated with different measures of violatory behavior (Table - 28).

Externally, the OSHA laws are enforced through inspections and fines. Internally an industry may sometimes regulate the behavior of its members avoiding or minimizing policing function by the government. The number of inspections in any given industry is a function of the past history of violations, priorities assigned by OSHA management, budgetary resources and the role played by the labor unions and their membership. All these factors are influenced by the political environment

outside the organization. It was not possible to find out as to what proportion of inspections were initiated internally, in a given industry.

The level of enforcement was found to be highly significantly correlated with all the measures of violatory behavior consistent with hypotheses 8 (a) and (b) in the auto and parts; and fabricated metal products industry. In auto and parts industry the enforcement was found to be highly and significantly related to standards violated ($r = .45$, $p < .001$), fines after appeal ($r = .40$, $p < .001$), and the Index of Seriousness ($r = .36$, $p < .001$). The remaining two measures of violatory behavior, fines imposed ($r = .33$, $p < .01$) and fines actually paid by a firm ($r = .27$, $p < .01$) were also found significantly related, providing strong support for hypothesis 8 (a).

Similarly, in the fabricated metal products industry two measures of violatory behavior; fines after appeal ($r = .48$, $p < .001$) and fines actually paid by a firm ($r = .47$, $p < .001$) were highly statistically significant and consistent with the hypothesis 8 (b). In addition, the remaining measures of violatory behavior studied in this industry, were also found providing excellent overall support for this hypothesis. The amount of fines imposed ($r = .39$, $p < .01$), the number of standards violated ($r = .27$, $p < .05$), and the seriousness of violations committed ($r = .27$, $p < .05$) also provided moderate support for hypothesis 8 (b) in this industry. This was the strongest support found in this empirical study for these two hypotheses in the auto and parts; and fabricated metal products industries.

Contrary to hypothesis 8 (c) the low correlations were found to be non-significant resulting in its rejection, in the petroleum and coal industry and explanations for this sought in the next chapter.

A summary of the results for hypotheses 1 through 8 are presented in Table - 29, showing the nature of relationship found in the results and Table - 30 shows the amount of support or contradiction found in those tests for each hypothesis.

TABLE - 29

TREND OF CORRELATION TESTS PREDICTED VS. ACTUAL IN THE THREE INDUSTRIES

Variable in Hypothesis	Auto Industry		Fabricated Metal Products		Petroleum & Coal	
	Prediction	Actually Found in Sample	Prediction	Actually Found in Sample	Prediction	Actually Found in Sample
1. Profit Margin	-	-/+ n..s.	-	-/+ n.s.	-	-/+ n.s.
2. Size	+	-/+ n.s.	+	+/- Significant*	+	- Significant
3. Organizational Slack	-	-/+ n.s.	-	- n.s	-	- n.s.
4. Insiders on the Board	+	+ n.s.	+	+ n.s.	+	+/- n.s.
5. (a) Capital Technology	-	+ Significant	-	+ n.s.	-	- n.s.
(b) Machine Technology	-	-/+ n.s	-	+ n.s.	-	+ Significant
(c) Age of Oldest Plant	+	+/- n.s.	+	+/- n.s.	+	-/+ n.s.
6. Growth rate	-	+ Significant	-	+ n.s.	-	- Signifiant
7. (a) Change in Stock	-	-/+ n.s.	-	- Significant	-	- n..s.
(b) Debt to assets ratio	+	-/+ n.s	+	+/- n.s.	+	+ Significant
(c) Change in EPS	-	+/- n.s	-	- n.s.	-	-/+ n.s.
8. Inspections	+	+ Significant	+	+ Significant	+	- n.s.

The first sign of -/+ or +/- denotes preponderance of correlations.

* = Some of the violatory behavior measures were positively significantly related while others were negatively significantly related as explained in the next chapter.

TABLE - 30

A SUMMARY OF SUPPORT FOR HYPOTHESES TESTED IN CORRELATION ANALYSIS IN THE THREE INDUSTRIES

Variable in Hypothesis	Auto Industry	Fabricated Metal Products	Petroleum & Coal
1 **Profit Margin**	none	none	none
2. **Size**	none	Moderate support/ contradiction*	Mild contradiction
3. **Organizational Slack**	none	none	none
4. **Insiders on the Board**	none	none	none
5 **(a) Capital Technology**	Mild contradiction	none	none
(b) Machine Technology	none	none	Mild contradiction
(c) Age of Oldest Plant	none	none	none
6. **Growth rate**	Mild contradiction	none	Strong support
7. **(a) Change in Stock Price**	none	Mild support	none
(b) Debt to assets ratio	none	none	Mild support
(c) Change in EPS	none	none	none
8. **Inspections**	Strong support	Strong support	none

* = Some measures of violatory behavior supported moderately while other measures contradicted.

B. RESULTS OF MULTIPLE REGRESSION ANALYSIS

An attempt was made to find out the combined effect and relative contribution of each variable tested, while other predictors were controlled, through multiple regression analysis. The question here is whether or not a given variable contributes to the explanation of violatory behavior over and above other explanatory variables in the equation. Would the squared multiple correlation significantly increase if a variable was added to the regression equation after all other variables had already been entered. It is referred by some as the "net regression coefficient" (Berenson and Levine, 1989: 628-629; and Bobko 1995: 190-191).

The five measures of violatory behavior explored in multiple regression analysis were the number of OSHA standards violated by a firm, the initial penalty imposed, the fine after appeal, the amount of fine actually paid, and the seriousness of violatory behavior as measured by ISVB index.

Due to limited sample size the entire model could not be tested in each industry. As a result certain number of variables had to be eliminated from regression analysis in each industry depending upon the response rate for each variable in a given industry. Elimination of variables was guided by the earlier correlation analysis tests performed on the entire model. An attempt was made to retain as many variables in the regression equation as possible. The need of theory to test as many variables in the model as possible and the expectations of empiricism to test a variable on as many observations as possible were optimized. This process helped to mitigate the dilemmas usually faced in empirical research.

Since correlation analysis does not assume the existence of other variables so it is essentially an individual test whereas the multiple regression analysis gives the aggregate effect called explained variation. In addition one can determine the influence of a single predictor while others are statistically controlled. The variables

tested for their combined explanatory power in the auto industry included ratio of profit margin, organizational slack, growth rate, ratio of capital technology, ratio of long term debt and the number of inspections made by OSHA inspectors. The five multiple regression models, showing significance of explained variation in regard to each of the five measures of violatory behavior: standards violated, fines imposed, fines after appeal, fines actually paid and seriousness of violations as measured by the Index of Seriousness of Violatory Behavior for all the three industries are given in Tables- 31 to 33.

TABLE - 31

RESULTS OF MULTIPLE REGRESSION ANALYSIS IN AUTO AND PARTS INDUSTRY (n=57)

Variables	Violatory Behavior									
	Standards Violated		Fines Imposed		Fines After Appeal		Fines Paid		ISVB	
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
RPM	7.12	0.38	2,917.02	0.40	2,825.88	0.73	1,719.62	0.45	-3.65	-1.43
RS	-0.24	-1.14	-41.38	-0.50	-31.06	-0.71	-28.38	-0.66	-0.01	-0.53
GR	-10.28	-0.46	-6,964.49	-0.81	-5,493.68	-1.19	-2,771.30	-0.61	4.84	1.58
RCT	0.00	0.47	0.00	0.75	0.00	1.13	0.00	0.56	.0000014	2.62**
ROD	-0.16	-0.05	-208.15	-0.19	257.58	0.44	-361.00	-0.63	0.06	0.16
NOI	14.45	3.31***	4,485.77	2.66**	3,304.85	3.65***	2,450.22	2.76**	1.20	2.00*
Rsquare		.19		.13		.22		.14		.28
F		2.02†		1.27		2.41*		1.45		3.42**
Adj. Rsquare		.09		.02		.12		.04		.20

*** p<.001 **p<.01 *p<.05 †p<.10
ISVB = Index of Seriousness of Violatory Behavior.
RPM = Ratio of Profit Margin; RS = Ratio of Organizational Slack; GR = Growth Rate; RCT = Ratio of Capital Technology; ROD = Ratio of Long Term Debt; and NOI = Number of Inspections.

TABLE - 32

RESULTS OF MULTIPLE REGRESSION ANALYSIS IN FABRICATED METAL PRODUCTS INDUSTRY (n=38)

Variables	Violatory Behavior									
	Standards Violated		Fines Imposed		Fines After Appeal		Fines Paid		ISVB	
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
RS	-1.76	-1.04	-292.10	-0.83	-143.01	-0.78	-119.70	-0.85	-0.31	-0.94
GR	-9.33	-0.54	-2,787.73	-0.78	-3,930.73	-2.11*	-2,732.82	-1.91†	-4.15	-1.23
ROD	0.51	0.10	721.47	0.71	734.67	1.39	591.15	1.46	1.79	1.88†
NOI	14.70	1.82†	4,590.93	2.74**	4,100.33	4.68***	3,121.81	4.63***	4.03	2.53**
Rsquare		.15		.24		.44		.44		.26
F		1.51		2.71*		6.91***		6.91***		3.06*
Adj. Rsquare		.05		.05		.38		.38		.17

*** p<.001 **p<.01 *p<.05 †p<.10
ISVB = Index of Seriousness of Violatory Behavior.
RS = Ratio of Organizational Slack; GR = Growth Rate; ROD = Ratio of Long Term Debt; and NOI = Number of Inspections.

TABLE - 33

RESULTS OF MULTIPLE REGRESSION ANALYSIS IN PETROLEUM AND COAL INDUSTRY (n=24)

Variables	Violatory Behavior									
	Standards Violated		Fines Imposed		Fines After Appeal		Fines Paid		ISVB	
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
RPM	18.84	2.48*	-602.40	-0.18	169.69	0.08	-149.72	-0.05	1.38	0.30
GR	-37.72	-2.08*	-11,389.00	-1.50	-5,579.78	-1.17	-12,887.00	-1.84†	-28.58	-2.59**
ROD	1.78	1.28	-27.22	-0.04	140.78	0.38	-463.86	-0.86	0.39	0.46
Rsquare		.38		.13		.11		.14		.33
F		4.30**		1.06		0.89		1.15		3.57*
Adj. Rsquare		.29		.00		-0.01		.01		.24

**p<.01 *p<.05 †p<.10
ISVB = Index of Seriousness of Violatory Behavior.
RPM = Ratio of Profit Margin; GR = Growth Rate; and ROD = Ratio of Long Term Debt

The R square, in the auto and parts industry varied between .13 and .28 but the F value was significant for only three measures of violatory behavior: standards violated (.19, p<.10); fines reduced after appeal (.22, p< .05); and for the Index of Seriousness of Violatory Behavior (ISVB) (.28, p<.01). The adjusted R square for standards violated, fines after appeal, and ISVB was .09, .12 and .20 respectively. Although the explained variation in this industry was low yet six independent variables explained more variation in ISVB as compared to other measures of violatory behavior.

The number of inspections made by OSHA inspectors in the auto and parts industry did help to explain variation across all the measures of violatory behavior and was highly significant (varying between .05 and .001) and consistent with hypothesis 8(a). It means that the more OSHA agency enforces its laws through inspections the higher the fines paid by a firm. But one should keep in mind the problems of sample size faced by this study. Another variable that was found having significant relationship with ISVB alone was the ratio of capital technology but its beta coefficient was minuscule (0.000001485) but significant (p<.01) and inconsistent with hypothesis 5(a). The remaining variables did not make any significant incremental addition to our understanding of violatory behavior.

In the fabricated metal products industry organizational slack, growth rate, ratio of long term debt and the number of inspections were tested for their effect on the violatory behavior. The R square was .24 (P<.05) for fines initially imposed; .26 (p<.05) for seriousness of violations; and .44 (p<.001) for fines after appeal as well as fines actually paid. The F values were highly significant (between .05 and .001) for these four measures of violatory behavior. The adjusted R square was moderate for both, fines after appeal and fines actually paid (.38) and highly significant (p<.001); but very low for fines paid (.05) and somewhat better for ISVB (.17) at a significance level of .05 for both of them. The only measure of violatory behavior

for which the adjusted R square was not significant was the number of standards violated by a firm.

The number of inspections made by OSHA, in the fabricated metal products industry, was again a clear predictor of all the five measures of violatory behavior in the fabricated metal products industry in this restricted sample study. The number of standards violated ($p<.10$), fines imposed ($p<.01$), fines after appeal ($p<.001$), fines paid ($p<.001$) and seriousness of violations committed ($p<.01$) were all consistent with hypothesis 8 (b). The negative growth rate predicted fines after appeal significantly ($p<.05$) and only marginally significantly ($p<.10$) the fines paid by a firm and was also consistent with hypothesis 6(b).The role of environmental pressures in the form of debt to assets ratio on serious violations was marginally significant ($p<.10$) and consistent with hypothesis 7(b II). Organizational slack failed to add anything to the explained variation at a significant level in this industry.

The Petroleum and Coal industry had the smallest sample size available for regression tests and as a result only three variables: ratio of profit margin, growth rate and ratio of debt were included in the regression model to find out the explained variation in all the five measures of violatory behavior.

Overall the regression equation in petroleum and coal industry explained .33 to .38 variation (R square) in only two measure of violatory behavior significantly and they were ISVB and the number of standards violated. The F values were significant at $p<.05$ for ISVB, and at $p<.01$ for the number of standards violated by a firm. The corresponding adjusted R square values were also moderate at .24 and .29 respectively.

The growth rate was found negatively and significantly associated with the ISVB ($p<.01$), the number of standards violated ($p<.05$) and fines actually paid ($p<.10$). All these findings were consistent with hypothesis 6 (c). The ratio of profit margin

was found to be positively and significantly associated with the number of standards violated ($p<.05$) which is inconsistent with hypothesis 1 (c). The environmental pressure in the form of long term debt to assets ratio was not found to be adding anything to the explained variation of violatory behavior in this industry.

The summary of results of multiple regression analysis found in three industries are presented in Table - 34.

Since the sample size was small, as a result no attempt was made to break the groups to see if larger size corporations were positively associated with the violatory behavior as compared to the smaller size corporations.

TABLE - 34

A SUMMARY OF RESULTS OF MULTIPLE REGRESSION ANALYSIS IN REGARD TO FIVE MEASURES OF VIOLATORY BEHAVIOR IN THREE INDUSTRIES

Variable	Predicted Sign	Auto & Parts (n=57)	Fabricated Metal Products (n=38)	Petroleum & Coal (n=24)
Organizational				
Profit Margin	-	n.s.		MIld Contradiction
Organizational Slack	-	n.s.	n.s.	
Technology (Capital Technology)	-	Mild contradiction		
Growth Rate	-	n.s.	Moderate support	Moderate support
Environment				
Debt to assets ratio	+	n.s.	Mild support	n.s.
No. of Inspections	+	Strong support	Strong support	

n.s.= No significant relationship found.

CHAPTER - 5

CONCLUSION AND DISCUSSION

1. Summary of Findings and Discussion

Several organizational and environmental variables were found to be associated with violatory behavior in correlation analysis. External pressure due to inspections was highly correlated with all the five measures of violatory behavior. The number of inspections under the Occupational Safety and Health Act of 1970 was clearly related to the number of violations found by inspectors, fines imposed by them, fines after review by the judges of the OSHA Review Commission and/or U. S. Court of Appeals in the circuit, fines actually paid and seriousness of violations found based on the Index of Seriousness of Violatory Behavior, in the auto and parts; and fabricated metal products industries.

The petroleum and coal industry was found to be have the lowest number of violations ($\bar{x}$=2.24, s=3.04) as compared to the auto and parts ($\bar{x}$=6.94, s=11.50) and fabricated metal products ($\bar{x}$=6.33, s=8.67) industries (Table - 11). This was probably so because petroleum and coal industry deals with a highly flammable product and gives high priority to occupational safety and health. If petroleum products are not properly stored, distributed and used they can cause disastrous results for the entire corporation. In addition the American Petroleum Institute, a non-profit trade association, which is part of the broad based ad hoc coalition of businesses and trade associations, known as Compliance Management Policy Group (CMPG), has long advocated for "more self-evaluation and other compliance assurance programs as the most effective and efficient means of attaining higher levels of compliance" (Kim, 1997: 60).

Other environmental measures that were found to be consistent with the hypotheses and having some impact on the violatory behavior of a corporation included negative changes in the stock price over a period of three years in the fabricated metal products industry. Such negative changes were associated with serious violations only. In the petroleum and coal industry, the long term debt ratio was found to be associated with both the number of standards violated and the seriousness of those violations. Negative changes in the earnings per share were correlated negatively with the violatory behavior in the fabricated metal products, and petroleum and coal industries but were not statistically significant.

We found mixed support in terms of relationship between organizational variables and violatory behavior. The growth rate of an organization was found to be significantly and negatively associated with all five measures of violatory behavior in the petroleum and coal industry and consistent with the hypothesis. It seems organizations do not go for growth strategy, by ignoring the safety laws in the petroleum and coal industry. They rectify the safety problems before they expand their business in exploration, production, transportation, refining and marketing of products. But in the auto and parts industry a positive growth rate was also found to be significantly associated with serious violations contrary to our hypothesis. This may be due to the constant pressure in the auto and parts industry to come up with a new product every year which means sometimes serious violations resulting in fatalities are not given as much attention as they deserve. This fact has also been recorded in several case studies (Bennet, 1981). Organizations in our sample that did go for growth were also facing stiff foreign competition. There was tremendous pressure on auto industry to innovate product lines and manage innovation and change. Another source for stress in the auto industry is the production of a yearly model by deadline otherwise the foreign competition will have the better end of it. The aging labor force that has survived due to union contracts, and the younger

workers with less seniority being let go, could also be a contributing factor. Future studies need to probe into it along those lines.

Various operational measures of size were explored to find their relationship to the corporate violatory behavior. They include employees, non-exempt employees, domestic plants, overseas plants, identifiable assets, sales revenue, board members and domestic market share (Lane, 1954; Kimberly, 1976; Clinard 1979, and Clinard and Yeager, 1980; Baucus, 1989 and 1991; Banker, Lee, Potter, and Srinivasan, 1996; Henderson and Fredrickson, 1996; Sharma and Kesner, 1996; and Welbourne and Andrews, 1996). In order to control the effect of large values natural logs were used for employees, non-exempt employees, identifiable assets, and sales revenue as is a common practice in other studies (Kimberly, 1976; Delaney and Huselid, 1996; and Henderson and Fredrickson, 1996). Various measures of size were found to be significantly correlated with different measures of violatory behavior. The number of plants that a firm had overseas was found positively and significantly related to the fines imposed, fines after appeal, and actual amount of fines paid and consistent with the hypothesis in the fabricated metal products industry. Similarly sales revenue, as a representation of size, was found to be positively and significantly related to fines imposed, and fines reduced after appeal in this industry. But there were certain other measures of size: non-exempt employees and board members that correlated negatively and significantly to violatory behavior which was contrary to hypothesis. Certain other measures of size such as employee, domestic plants, identifiable assets and domestic market share were found having no significant relationship in this industry.

Various operational measures of size in the auto and parts, and petroleum and coal industries found no significant relationship with violatory behavior except in case of

later industry, where overseas plants were found only marginally, significantly and negatively associated with only serious violations.

Other studies on size have also reported conflicting results. Lane (1953) did not find any relationship between size and illegality whereas others (Clinard and Yeager 1980; Simpson, 1986; Cochran and Nigh, 1987; Baucus, 1989; and Sethi and Chopra, 1991) posit that due to loss of control by top management, increase in size, results in illegality. Baucus (1989) explains that conflicting results may be due to differences in operationalization of measures which is what this study has also found. Are the two measures of size that were found having negative association with violatory behavior in this study, the number of non-exempt employees and the size of the board, inherently different that they deter violatory behavior or they mask the influence of other factors? The non-exempt employees are not covered by the union and primarily consist of managers and supervisors who establish controls in the organization to make sure employees meet their goals. Similarly the board takes control of the organization at the policy formulation level and the managers implement them. It seems logical that increase in the size of personnel at the top and middle level of management would help an organization to increase its ability to control and coordinate its operations in an effective and efficient manner and thereby limit and control the violatory behavior on the part of employees. Even though the negative correlations, associated with the non-exempt employees and the number of board members, were low and mostly in twenties and thirties, they point out to an important clue that when the number of board members, managers and supervisors starts going up the violatory behavior could show a significant decline.

The attorneys, while representing top management of large size firms, in courts, have often cited greater complexity, lack of controls, and diffusion of authority as

arguments before judges, in various case laws. These arguments cannot be used by smaller organizations when caught by law and enforcement agencies (Sethi and Chopra, 1991). As an organization increases in size, management experiences loss of control due to increased problems in communication and coordination which results in potential for illegal behavior. With increased size, the sub units of large organizations apparently begin to engage in activities that are out of the control and coordinating power of those at the top. As indicated earlier, if a higher ratio of managers to employees helps to increase communication and coordination of activities, which indeed it should, then it makes more sense to relate this ratio to violatory behavior rather than studying correlation between non-exempt employees or total number of employees and illegality. In addition, if more directors on the board help to get a better sense of direction as to where the organization is heading then indeed we should expect a negative relationship between size of board and illegality. It is quite possible that greater size of board will represent more specializations and diversity, and it may also have some representation from upper echelons of management. But on the other hand if board members do not have any communication with someone working in the organization or are cut of from it then this operational measure of size looses much of its luster for the study of illegality. In any case controversy between size and illegality continues and we need further research to refine the operational measures based on operational reality.

The ratio of capital technology was found positively and significantly related to seriousness of violatory behavior in the auto and parts industry (hypothesis (5)(a)(I)) and similarly the book value of technology was found positively and marginally, significantly related to serious violations in the petroleum and coal industry (hypothesis (5) (b) (III)). Both of these relationships with seriousness of violatory behavior are inconsistent with the hypotheses. It seems the reasons for the seriousness of violatory behavior go beyond the capital or book value of technology

which are proxy measures for the state of technology. In addition, organizational commitment to training and development of personnel, as technology is modernized and improved product lines are added, is important to avoid violations at lower levels of an organization. The age of the oldest plant was not related to violatory behavior. It may be because management takes pride in its oldest plant that speaks for its flagship status and thus commits more resources to avoid violations.

The ratio of insiders on the board, organizational slack and profit margin failed to show any significant relationship with the violatory behavior in any industry even though the directions of these relationships were generally supported in the correlation analysis. This may be because the insiders on the board did not own sizable amount of stock in the corporations they represented on the board. to develop vested interest in profits and dividends declared by the sampled corporations. It appears that organizational slack may be viewed by some as a resource not available right away to avoid illegality. The return on sales or profit margin, as a measure of performance though had no significant relationship with violatory behavior yet some insignificant correlations were positive ($r = .25$) suggesting that some corporations with even higher profits could indulge in violatory behavior to increase their profits even more by ignoring the laws.

In multiple regression analysis we found that the number of inspections was clearly a significant predictor of all forms of violatory behavior in the auto and parts as well as the fabricated metal products industry (hypotheses 8 a and b). It means that the more a regulatory agency enforces its laws through inspections the higher the fines paid by a firm. But we must caution that the findings of this study are based on a restricted sample size and cannot be applied to these industries nor generalized to other industries. These findings need to be tested on sufficient sample size and also need to be replicated.

The ratio of capital technology in the auto and parts industry was found having positive relationship with serious violations only which was contrary to hypothesis 5 (a). It shows that if organizations do not train their employees well in regard to changing complex technology this might sometimes cause serious harm to personnel.

Growth rate in fabricated metal products and petroleum and coal industries was found having negative relationship with the violatory behavior as expected in hypotheses 6 (b) and (c). It shows that growing firms have more resources and are not likely to commit violations but stagnant firms may do so.

The role of environmental pressure in the form of long term debt to assets ratio was found positively associated with ISVB in the fabricated metal products industry as indicated in hypothesis 7 (b) (II). It means firms with higher long term debts are likely to end up committing serious violations since they have borrowed heavily and are in a desperate situation.

The ratio of profit margin which is also called return on sales was found having positive relationship with the number of standards violated in the petroleum and coal industry which is contrary to hypothesis 1 (c). Firms doing well in the marketplace are likely to violate regulatory standards which increases their profits even more. This trend has also been reported in studies by Baucus (1989), and Sethi and Chopra (1991). But such firms do not commit serious violations or pay higher fines.

One of the major dilemmas faced by a researcher in the study of violatory behavior has been how to find data on violatory behavior in a given industry. Most organizations do not want to divulge this information for the fear of being exposed. Historically the response rate of such studies has been minuscule. Mostly archival data has been used in the past to study this field and such studies have been far and

few between. The research on the Index of Seriousness of Violatory behavior has indicated high alternate form reliability in relationship to standards violated, fines imposed, fines after appeal and fines actually paid. The magnitude of reliability coefficients were high and they were also highly statistically significant giving confidence to use this index in future where violatory data is not available. To date this is the first attempt to formulate such an index and it is likely to remove some of the impediments in the research of violatory behavior in future.

2. Critical Issues in Corporate Crimes Research

Practically all of the studies trying to find any relationship between organizational performance and illegality have used any one or more of the following four explanations to find the causes of corporate illegality: (i) cost cutting behavior to increase profits: (ii) trend followers in the environment; (iii) organizational structure being out of control of top management so that violations take place at different levels of the organization with or without the knowledge of top executives and (iv) management philosophy to increase profits based on pure greed. At this stage, neither one of these four explanations has been considered to be dominant. It is very likely that studies will use a combination of these reasons to explain corporate illegality. Leave aside organizations, even industries have not been identified where executives are likely to give one reason more than the other. Before embarking upon any strategy to curb corporate illegality, in any industry, it is important to know the reasons for illegality as perceived by their executives. At this stage, the theory of illegal corporate behavior has elementary conceptual framework and is in the process of being refined. A few conceptual frameworks that exist to explain corporate crimes have started guiding the researchers to break fresh ground.

Recent research and reviews (Baucus, 1989; Baucus and Near, 1991; and Sethi and Chopra, 1991) have indicated that poor or declining performance was not a prerequisite for corporate illegality. They predict that financially well off corporations are more likely to be involved in corporate illegality. This study also found that financially well of organizations are more likely to violate OSHA laws. These studies need to be replicated based on organizational and environmental variables. This body of research suggests, in line with current happenings on Wall Street that the "irrational exuberance" in the marketplace in late nineties is driven by pure greed (New York Times, February 26, 1997: D6; February 28, 1997: A 34; and New York Times, April 21, 1997: A1 and D4) and even warnings from the Federal Reserve Board have not been heeded to by the marketplace. Huge returns to stockholders based on mergers financed by junk bonds and insider information in eighties and unique roles played by the courts in passing criminal sentences of unprecedented duration to corporate executives has not been able to curb the pure greed of management based on such philosophy. This indeed requires replication of such findings and if the results hold across industries a re-examination of the theory of corporate illegal behavior would be in order. It seems that corporations involved in illegality have valued, unethically and illegally achieved goals more than lower level of achievement attained ethically and legally. Rationale and philosophy for ethical and legal goals were not as well explored as was the need to keep the behavior of such firms within the domain of lawful behavior. Ethical or unethical and legal or illegal behaviors are learned behaviors. What makes managers to think in the direction of unethical or illegal ways of doing business could be due to narrow focus on highly specialized education which lacks focus on liberal arts that emphasize character building and a holistic view of the world. Organizational culture that puts a high premium on profits at the expense of everything else including community participation is likely to cross the boundary lines and sooner

or later get in trouble with the law. Such organizations do not pay much attention to the development of code of ethics; assign responsibilities to managers to talk about and guard against unethical basis of decision making and operations so that laws were not circumvented; emphasize long term consequences of unethical and illegal work behavior which are bound to put such an organization in trouble in the future; and not to short change any party that dealt with the corporation including government that was there to serve the interests of various segments of society. It appears that fear of what will happen if caught was missing in the decision making process of corporations involved in illegality and violatory behavior. Society expects modern corporations to police themselves. Their legal behavior need not depend upon enforcement, particularly when they are doing so well.

Do short-term or long-term consequences of violatory behavior force executives to avoid violatory behavior? Common sense suggests that executives would use avoidance approach to violatory behavior if negative consequences were to prevail over a longer period of time. There is hardly any research evidence that suggests that either consumers' and stockholders' reactions to violations are planned on a long-term basis. Whatever little research evidence we have suggests that the reactions of consumers and stockholders to organizational violatory behavior is short lived. It usually impacts the market on the day violatory news hits the market or will have negative impact for a few days when the news is still fresh in the mind of the stockholders. It is quite likely that the organization takes prompt steps to lure such stockholders or customers back through aggressive advertising, price reductions, recall of products for safety reasons, higher dividends, merger plans resulting in higher stock price or even through support of community activities and even use of philanthropy during troubled time. If nothing else works, the organization may seek a change in its leadership to signal outsiders that normalcy would prevail in the future.

Most of our corporate illegality research has involved Fortune 500 firms. We know very little about non-Fortune 500 firms. Do non-Fortune 500 firms get involved in violatory behavior as frequently as Fortune 500 firms? Do the violatory patterns differ from industry to industry and from organization to organization in a given industry? Only future research outside the Fortune 500 domain could enlighten us. Till then we should not make an assumption that there are no differences between these two groups of firms due to size, ranking, leadership role in the industry, public exposure, market concentration, and availability of assets to such firms.

Since some of the scholars have indicated, size per se does not increase illegality, it is the loss of control due to lack of communication and coordination of activities that affects the corporate illegality, so it makes more sense to investigate organizationwide ratio of manager to employees rather than focusing on non-exempt or total number of employees in future research. In addition different measures of size need to be explored in various industries before we can conclusively say as to which operational measures adequately represent size and should be investigated as representative of structure in relation to violation of laws.

Do corporations engage in single or multiple types of violations when they are faced with changes in environment or when government brings changes in its enforcement policies? What are the overall patterns of violations in different industries? It is quite likely that a firm might choose to commit those violations that save it the most amount of resources and have the least probability of being caught. Researchers need to study a variety of violations and see if the organizations made choices preferring to violate in one area over others. Here we are assuming that violatory behavior is a rational behavior. While committing such acts, management knows the behavior chosen for the organization is illegal but highly beneficial. Based on this, an industry is more likely to engage in those violations where enforcement and fines are low and cost of adherence to law is high. Conversely, an industry will pay

more attention to those regulations where enforcement is strict and fines are higher. If it is found that firms violating in one area also violate in others, then it can be assumed that the pressures on the firm are enormous and they are beyond the control of current management signaling time for internal changes. Indeed cooperation between public and private sectors based on responsible partnership will be a better approach to follow.

Are all violations caused by the same set of variables or are there contingencies that obliterate them? Is it possible that financial corporate crimes are more likely caused by management philosophy whereas OSHA violations are the result of cost cutting measures? If it is so, then management education for developing sensitivity towards ethical and lawful behavior is more important to professionals in commercial industry whereas the level of enforcement exercised by a regulatory agency becomes important to manufacturing organizations. Similarly issues of organizational design and a heavy focus on industry conditions would give a new perspective in the social control of corporate crimes.

Are violations an antecedent or a consequent state? Like other organizational variables, does performance (low or high) lead to violations or violations lead to lower or higher performance? On one hand if the cost cutting measures are important to the survival of a firm, then there is a reason to believe that violations are a consequent state and poor performance precedes it. On the other hand, if violations take place during high performance periods, then there is reason to believe that violations are an antecedent condition and they boost performance. Recidivism in such cases will be controlled either by strong customer or stockholder reactions, or through stricter enforcement policies involving heavy fines and executive personal liability. It is the antecedentary nature of violations that gets sympathetic ear from the government due to possible loss of jobs. Only longitudinal studies can help to resolve such questions and help enforcement

agencies to develop effective strategies to regulate violatory behavior at an appropriate level.

3. Implications of research for OSHA Compliance

A major factor that is likely to increase corporate compliance is the treatment of violatory behavior by regulatory agencies and courts. There is plenty of evidence available now in the form of case laws that shows increased concern on the part of courts to hold corporate executives, which was unheard of in the earlier decades, personally and criminally liable for omissions or commissions of corporate crimes. In the eighties and nineties, sentences ranging from a few days to 25 years have been imposed on corporate executives besides personal civil and corporate penalties for corporate illegality (Sethi and Chopra, 1991). Even the lack of knowledge of illegality was not considered sufficient ground to escape criminal punishment. The new dimensions of holding executives personally accountable for wrongdoing in the judicial process is certainly going to have a serious impact on the management philosophy. Increasing profits through, violation of laws because of the management perception that opportunity to increase profits in low enforcement areas exists may not be considered as attractive in the future in light of recent judgments. By holding corporate executives personally accountable for corporate wrong doing, rather than imposing small corporate fines as in the past, courts have dealt a strong blow to the cost approach of illegality, final decision for which always lies with the chief executives. At the same time, such an approach in a capitalistic economy, could curtail executive initiative for new products and services, slow down economy with repercussions on standard of living of the nation, reduce employment and compensation, and send several industries into the stage of maturation because of lack of initiative and creativity.

It is not known at this time whether serious violations are caused by a more restrictive set of variables. In the current research we did find evidence that in some industries even though a number of OSHA standards were violated yet neither such firms committed serious violations nor did they pay higher fines. Such violating firms were doing better in the marketplace. Is it a function of management philosophy or just routine work place occurrences. It is obvious that management did not permit sever neglect of machinery or unhealthy working conditions to cause fatal accidents in such industries. It does require further research to find if management permitted excessive ordinary violations to take place or it was a matter of course or problems in technology that led to this condition and yet the management stayed alert to avoid hazardous and fatal conditions that result in higher fines and criminal sentences.

U.S. Sentencing Commission has recently passed guidelines for courts to pass uniform sentences, at the least, small imprisonment for serious illegalities instead of probationary sentences that the courts allowed in the past. This will curtail widespread disparity that the U.S. Sentencing Commission has noted in its study of over forty thousand past judgments, and no plea bargaining will be available unless special circumstances warrant it and the court will have to specify them for making any departures which could also be challenged by the district attorneys. This will further tighten the control over corporate crimes.

Increased enforcement does not necessarily mean increased compliance in all the industries. Earlier analysis of manufacturing industries universe (Chapter 3) pointed out clearly that no matter what was the level of enforcement, certain industries such as plastic (Figures VIII and IX) continued to have higher incidence of violatory behavior. This industry had twelve times as many inspections as compared with the petroleum and refining industry but the compliance still did not increase. Such

industry groups need an examination of their technology, structure, process and management philosophy. It is widely believed in such industries that laws are unfair; it is not possible to do business without violating laws; and every one does it and that is a routine way of doing business. Such industries need closer cooperation between industry leaders, trade associations, and the government to reduce recidivism. Only one out of every five industries is found in compliance of OSHA laws in more than half of the inspections made. This clearly shows that an overwhelming majority of industries are not taking adequate steps to ensure the health and safety of their workers. Chronic industries with low compliance rate might need congressional inquiries or setting up of a commission to probe into reasons for this situation as done in the meat packing industry in the recent past. In this industry OSHA even had to pressure, leading firms such as Iowa Beef Processors Inc., where a very high proportion of 18,000 employees in the company and approximately 100,000 industrywide, performed monotonous repetitive motion jobs at their assigned stations on the assembly line, to change their technology rather than to continue to risk the worker safety and health. Unwillingness of management to modernize plant to protect the worker safety and health resulted in an increase of fine from $2.59 million to $5.6 million which was the largest fine ever by OSHA (Sethi and Chopra, 1991). In certain other cases where manufacturing process was too risky and worker safety was at serious risk the owner was asked to close down National Film Recovery System that used cyanide to recapture silver from the used negative films and owner as well as managers were each sentenced to 25 years in the prison and also fined $10,000 for involuntary manslaughter and $14,000 each for reckless conduct. In another case where Warner Lambert Co's Chiclet gum plant resulted in the death of six employees due to explosion the firm was tried for criminal charges and eventually exonerated but the plant was closed down and the company was required to pay $11 million to

different parties. The manufacturer of machinery, even though outside the country in West Germany, was made to pay half a million dollars, and twelve other defendants also made payments of several million dollars. The company also agreed to make payments of $7 million dollars due to plant closing. All this information indicates that OSHA has wide spread powers to protect the worker safety and health but are not used frequently in a capitalistic society. OSHA need to target certain industries more aggressively based on the compliance record for changes in technology rather than to impose heavy fines or charge executives for criminality after the disasters have taken place.

Recently a study investigated the causes of job related deaths that accounted for 5,601 deaths annually on an average between 1979 and 1986. Leigh (1995) found. contrary to popular opinions that "motor crashes kill as many police officers and sheriffs as bullets. Firefighters are believed to die from flames and smoke, yet the SDS data suggest that more firefighters die from job-related heart failure and vehicle crashes than from flame or smoke. Gas Station Attendants and Bartenders are most frequently murdered. Lawyers are most frequently murdered or die from airplane crashes. Insurance Agents most frequently die from motor vehicle crashes Managers are most likely to die from vehicle crashes, bullets or airplane crashes. Farm Laborers are more likely to die from vehicle crashes than mishaps from agricultural machines. Garbage Collectors and Foremen most frequently die from highway vehicle crashes. Janitors most frequently die from contact with shovels or spades. Restaurant Bar Managers and Receptionists most frequently die from bullets." (p.211). This study reveals that a lot more people die from motor vehicle crashes and homicides on the job than is commonly believed. It is further pointed out that many coroners do not recognize motor vehicle crash deaths or homicides as related to job. Employees dying on jobs are rare events and since information from relatives. friends and coworkers may not indicate that the job requiring travel

is dangerous as a result a High-Risk Worker Notification Bill, as was introduced in 1987 in the Congress, need to be introduced, notifying a worker of injuries and diseases (preferably in one's native language like Spanish, Polish, Chinese) that one is likely to come across on the job particularly in small firms where deaths are high. Some employers, in a free economy, will be pressured by workers and unions to do something about it. The Occupational Safety Health Act "virtually ignores motor vehicle crashes, airplane crashes, and homicides" (p. 212) even though they have become a major cause of job related deaths.

What are the contingent variables that insulate the effect of such factors on corporate crimes? Some of the other important questions are: should the degree of enforcement be related to the size of an organization to control the violatory behavior of corporations? Should the courts peg the fines to the size of an organization whenever corporate criminality is involved? Answers to these questions and others posed earlier would be forthcoming only when increased effort to fund such research is made to study the violatory behavior of a wider range of organizations in different industries.

4. Unique Strengths of the Study

Most studies in the past have used Fortune 500 corporations ignoring those firms that do not offer their stock for sale. In addition smaller size firms were left out. Ignoring these two kinds of firms established unrepresentative samples. The U.S. Sentencing Commission data since 1984 revealed that 90 percent of all corporations convicted in federal courts each year were small businesses. An overwhelming proportion of non-farm small businesses hire less than 500 employees which means all the previous studies based on Fortune 500 data are representing less than 1% of the all industries universe. This points out to a strong

need to study other than Fortune 500 companies. The sample of this study represents a cross section of firms global and national, large or small, publicly or privately owned, offering stock for sale or not, in rural or urban areas and found violating or not in OSHA inspections of the same industry.

This study included several operational measures of variables not studied before. Most studies in the past measured size by only counting the number of employees but this study had several other measures of size included. No study of violatory behavior has so far used profit margin or return on sales as a measure of organizational efficiency; control of board by insiders; book value of technology and age of oldest plant as operational measures of technology; growth rate; and environmental measures of external pressures due to changes in stock price, earnings per share, and long term debt of the firm; and enforcement as reflected by the number of inspections made by OSHA. In addition, several measures of violatory behavior as the number of standards violated, fines imposed, fines after appeal, and fines paid were also explored. Inclusion of these variables in the study has helped to break the fresh ground and given some interesting results that need to be replicated across various industries in regard to different types of violations.

This study created its own Index of Seriousness of Violatory Behavior (ISVB) so that serious violatory behavior could be studied systematically and compared with other dimensions of violatory behavior for which sanctions were imposed. Alternate form reliability of ISVB was compared with other measures of violatory behavior in three industries and can substitute if certain types of violatory behavior data are not available. This field has not been explored primarily because violatory behavior data are not easily available, and when available are extremely cumbersome and requires laborious efforts by a researcher. Use of ISVB will hopefully encourage more research in the field. The study included three distinct industries representing different levels of compliance. It gives us insights as to what

is the relationship between a set of independent organizational and environmental variables and the violatory behavior in three industries complying at different levels with OSHA laws.

This study has measured OSHA compliance behavior of each industry where more than fifty inspections were made during the year and brought out several instances of anomalies between enforcement level and compliance of OSHA laws in different industries. The manufacturing industries universe was compared with the universe of all the industries in U.S., wherever OSHA laws are enforced. This has provided many useful insights as to the frequency and extent to which OSHA laws are enforced and complied in different industries.

To the extent that studies in the areas of Corporate Crimes and Organization Theory were integrated and new hypotheses developed and tested: this study has accomplished its goal of doing research in a relatively new area that is still struggling to attract people to do empirical studies. The conceptual model of this study can be expanded and used in other industries by researchers and applied to other types of social legislation such as job discrimination. security frauds. and environmental pollution. Before a general theory of corporate crimes is developed fully we need to conduct empirical studies in various industries testing the relevance as well as the causal relationship of variables.

This study helps the enforcement agencies as well as corporations to see the relationship between organizational and environmental variables and violatory behavior. As a result of theoretical review as well as this empirical study some policy consideration have also been discussed. The enforcement agency will benefit from this study to review its policies of enforcement, settlement and litigation. There is very little that is known about them in the studies or management literature. This study would also help a corporate manager to look at the

theoretical review and potential variables associated with the violatory behavior and do something about them.

5. Limitations of this Study

Illegality researched in this study is only in the form of OSHA violations which invoked administrative and civil sanctions. Information on criminal sanctions of these violations, if any, was not available. There are other types of violations related to discrimination, pollution, and securities that were not part of this study and need to be explored.

Previous history of violations of corporations was not included in this study. A beginning and ending date for this study had to be set up. Even if a non-violating corporation in the current year had been involved in violatory behavior in the past year(s) it was cleared by an OSHA inspector who found it not violating OSHA laws during the year 1989-90. Similarly, there is every likelihood, at least theoretically, that a violating corporation would stop violating OSHA laws in the near future due to sanctions imposed. In fact there is no such organization that can be classified permanently as violating or non-violating organization. It is relative, time specific and geographically conditioned definition based on the laws of the land.

The variables included in this study need to be expanded e.g. environmental munificence and heterogeneity were not included in this study. Similarly, other measures of environmental uncertainty likely to cause illegality can be included.

The finding of this study in three industries studied need to be interpreted with caution. They are tentative findings based on too small sample sizes. They have not been replicated. They can neither be generalized in the industries studied due to the n being too small nor can they be applied to other industries because of

"industry specific" conditions that may influence violatory behavior of a given industry. Sample size should be expanded in future studies.

APPENDIX

TABLE - A

COMPLIANCE RATIO OF INDUSTRIES ONE STANDARD DEVIATION BELOW THE MEAN

(No. of Inspections in Industry > 50)

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
2092	Fresh & Frozen, Fish & Sea	8.43
3533	Oil Field Machinery & Equip.	15.68
3949	Sport & Athletic Goods Nec	16.41

TABLE - B

COMPLIANCE RATIO OF INDUSTRIES WITHIN ONE STANDARD DEVIATION FROM THE MEAN

(No. of Inspections in Industry > 50)

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
3446	Architect & Ornament Met.	17.46
2452	Prefab Wood Buildings Etc.	18.60
3599	Machy. Exe. Elc. Nec.	19.37
2542	Metal Partition Etc.	20.27
1381	Drilling Oil & Gas Wells	20.33
2541	Wood Partitions Etc.	21.17
3429	Hardware Nec	22.38
3443	Fabr. Platework - Boiler Sh.	22.83
3272	Concrete Products Exc.	22.94
3732	Boat Building & Repair	22.95
3713	Truck & Bus Bodies	22.98
2439	Struct. Wood Members Nec.	23.63
3499	Fabr. Metal Prod. Nec.	23.85
3441	Fabr. Struct. Metal	24.06
3229	Glass, Pressed/Blown Nec.	24.19
3498	Fabr. Pipe & Fittings	25.00
3569	Gen. Ind. Machy. & Equip Nec.	25.42
1622	Bridge, Tunnel & Elev.	25.79
3993	Signs & Advertis. Displays	26.14
3523	Farm Machy. & Equip.	26.15
3531	Constr. Machy. & Equip.	26.51
2511	Wood Household Furn. Exc.	26.95
2434	Wood Kitchen Cabinets	27.10
2621	Paper Mills Etc. Building	27.27
2499	Wood Products Nec.	27.48
3325	Steel Foundries Nec.	27.58
2431	Millwork	28.28
2751	Comml. Print Letter Press	28.57
3362	Brass, Bronze & Foundries	28.57
3494	Valve & Pipe Fitting Exc.	28.81
3621	Motors & Generators	28.84
3361	Alum. Foundries (Castings)	28.98
2086	Soft Drinks	29.13
1751	Carpentering	29.28
2013	Sausage & Prepared Meat	29.33
3357	Draw & Insul. Noufe. Wire	29.41
2651	Folding Paperboard Boxes	29.62
1741	Mason, Stone & Stonework	29.69

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
1522	Genl. Contract Exc. 1 Famil.	29.70
5082	Const. & Mining Machy.	30.00
2421	Sawmills & Planing Mills	30.21
5093	Scrap & Waste Matl.	30.34
3443	Sheet Metal Work	31.00
3471	Electro Plating, Plating	31.43
3469	Metal Stampings Nec	31.70
3079	Misc. Plastic Products	31.82
3369	Nonfe. Foundries Nec.	31.88
3271	Concrete Block & Brick	32.00
3448	Prefab. Metal Bldngs. Etc.	32.00
2022	Cheese, Natural & Process	32.29
2752	Comml. Print Lithographic	32.38
2011	Meat Packing Plants	32.59
1761	Roofing & Sheet Metal	32.68
3452	Bolts, Nuts, Screws, Etc.	32.83
3537	Indust. Trucks, Tractors	32.83
3585	Air Cond. Heating Equip.	32.91
7699	Repair Service Unrelated	33.00
1521	Genl. Contract 1 Family	33.10
3496	Misc. Fabr. Wire Prod.	33.33
3731	Ship Building & Repair	33.56
1623	Water, Sewer, Pipe Line	33.81
2448	Wood Pallets & Skids	34.35
3559	Spec. Industry Machy. Nec.	34.42
1742	Plaster, Drywall, Acoust.	34.69
2099	Food Preparations	34.71
3679	Electronic Components Nec.	35.09
3273	Ready Mixed Concrete	35.21
1629	Hvy Construc. Nec.	35.53
3479	Coating, Engrav. Etc. Nec.	35.77
3316	Cold Rolled Steel Sheet	35.82
3231	Glass Prod. Of Purch Glass	35.93
3694	Elec. Equip. for IC Engines	36.00
3544	Special Dyes, Tools, Etc.	36.19
2649	Converted Paper, Etc. Nec	36.25
2016	Poultry Dressing Plants	36.53
3423	Hand & Edge Tools Etc.	36.53
4225	Genl. Warehouse & Storage	36.84
3321	Gray Iron Foundries	36.92
3069	Fabricated Rubber Prod. Nec.	36.95
1542	Genl. Contract Non-resident	37.04
2653	Corrugated and Solid Boxes	37.50
3714	Motor Vehicle Parts & Acces.	37.50
1791	Structure Steel Erection	37.59
2899	Chemicals Nec.	38.20
2411	Logging Camps and Contract	38.33
3341	Second Smelt and Refin. Nonf	38.46

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
1531	Operative Builders	38.73
761	Farm Labor Contractors	38.94
5051	Metals Serv. Ctrs. & Off.	39.06
1541	Genl. Contract Industrial	39.15
2261	Finish Broad Woven Cotton	39.28
2033	Canned Fruit Veg. & Jelly	39.47
3711	Motor Vehicle & Bodies	39.58
3999	Manuf. Indus. Nec.	39.65
5511	Motor Vehicle Dlrs. N. & U.	39.84
1611	Highway & Street Exc. Elev.	39.86
1793	Glass & Glazing	40.46
1743	Terrazo, Tile, Marble Etc.	41.25
1771	Concrete Work	41.36
1389	Oil & Gas Fld. Serv. Nec.	41.91
5085	Industrial Supplies	41.93
7399	Rental & Leasing Serv.	42.02
5161	Chemicals & Allied Prod.	42.10
5411	Grocery Stores	42.20
1794	Excavat. & Foundation Work	42.50
1721	Paint, Paper Hang. & Decor.	43.12
7539	Auto Repair Shops Nec.	43.18
3312	Blast Furnaces, Steel Etc.	43.35
1731	Electrical Work	43.43
2515	Mattresses & Bedsprings	43.54
2024	Icecream & Froz. Desserts	43.63
1711	Plum. Heat & Air Condit.	43.64
7538	Genl. Auto Repair	43.79
1799	Spec. Trade Contract Nec.	44.04
5211	Lumber & Oth. Bldng. Mat.	44.15
1795	Rec. & Demo. Work	44.76
181	Ornament Nursery Products	45.45
3662	Radio & TV Send. Equip. Etc.	46.42
2711	Newspapers & Publish. Etc.	46.72
2048	Feeds & Ingred. Animal Nec.	47.05
4953	Refuse Systems	47.16
2026	Fluid Milk	47.43
7216	Dry Cleaning Plants	47.88
5812	Eating Places	48.11
2821	Plastic Materials Etc.	48.23
3674	Semiconduct. & Relat. Dev.	49.01
7349	Cleaning & Maintenance	49.12
4463	Marine Cargo Handling	50.00
2851	Paint Varnish Lacquer, Etc.	50.49
7011	Hotels, Motels, Tours, CTS	50.90
1796	Instal. Building Equip. Nec.	51.05
7531	Top & Body Repair Shops	51.51

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
4231	Term & Serv. Facil. Motors v.	51.92
7399	Business Services Misc.	52.08
4212	Local Truck w/o Storage	52.80
1752	Floor Laying	53.71
2869	Indust. Organic Chem. Nec.	53.84
5311	Department Stores	54.16
4811	Telephone Communications	57.33
8062	Genl. Medical & Surgical Hospital	57.48
5084	Indus. Mach. & Equip.	58.62
162	Veg. & Melons	59.52
4911	Elec. Services	59.82
4213	Trucking Except Local	60.00
2911	Petroleum Refining	60.81
9711	Natl. Security	61.43
8911	Engineer, Arch. & Survey	68.33
4311	US Postal Service	69.02

TABLE - C

COMPLIANCE RATIO OF INDUSTRIES ONE STANDARD DEVIATION ABOVE THE MEAN

(No. of Inspections in Industry > 50)

SIC CODE	INDUSTRY	COMPLIANCE RATIO (%)
175	Deciduous Tree Fruits	79.18
9311	Pub. Finance Tax & Mon. Pol.	79.41
9199	Genl. Governments Not Classified	90.54
9512	Land, Wildlife, Furs and Conser.	92.00

Center for Management
Baruch College, Box 520
City University of New York
New York City, New York 10010

August 7, 1991

The President

Dear Sir/Madam,

I am a Ph.D. student in Business Administration at Baruch College, City University of New York, New York City. I am currently doing research on certain industries which are part of my doctoral dissertation work. This research will help the various industries to understand enforcement of regulations by the government. Results of this study will also be of great importance to management in planning and directing its response to environment. Without your cooperation this vital area of management cannot be studied or understood.

I will very much appreciate if you could complete the enclosed questionnaire for research and return it back to me in the enclosed stamped envelope. Completion of questionnaire will take only 15 to 20 minutes. Please be rest assured that the information you supply will be kept highly confidential and no reference made whatsoever to any organization or person in the dissertation. The questionnaire is not required to be signed by anyone.

Your help in this project is of utmost importance to me because without your help neither I can complete my dissertation nor your industry conditions can be analyzed for better understanding of management problems. Results of this study will be published in professional journals of management at a future date. Again no reference will be made to any organization or person in the findings.

Thanking you in anticipation for your help.

Sincerely,

Parveen Chopra

Parveen C. Chopra

ATTITUDE TOWARDS REGULATORY PROCESS QUESTIONNAIRE (ATRPQ)

Please give your response to the following questions by circling the number that you think most appropriately reflects your views on rules, regulations and laws implemented by government agencies. Please circle 7 if you agree to a large extent or 1 if you agree to a small extent.You can circle any one of the seven numbers.

1___2___3___4___5___6___7
Agree to a small extent — Agree to a large extent

A.REGULATORY VIEWS

To what extent you agree with the following statements in regard to the role of social regulatory agencies: Equal Employment Opportunity Commission (EEOC), Environmental Protection Agency (EPA), and Occupational Safety and Health Administration (OSHA). Such agencies:

1. Facilitate innovations in business: 1___2___3___4___5___6___7
2. Are over regulated (too many laws): 1___2___3___4___5___6___7
3. Lack enforcement (inspections etc): 1___2___3___4___5___6___7
4. Interfere in day to day decisions: 1___2___3___4___5___6___7
5. Improve compliance by fines: 1___2___3___4___5___6___7
6. Improve compliance by consultation: 1___2___3___4___5___6___7
7. Keeep cost considerations in mind: 1___2___3___4___5___6___7
8. Offer alternatives for compliance: 1___2___3___4___5___6___7
9. Adopt strategy involving lower enforcement costs but higher savings of lives: 1___2___3___4___5___6___7
10. Current level of regulations is acceptable to your industry: 1___2___3___4___5___6___7
11. In comparison with your industry, your organization was regulated (Please circle one): Less/Same/More

    If more or less to what extent: 1___2___3___4___5___6___7
12. Violating organizations just follow the trend in industry: 1___2___3___4___5___6___7
13. Loss of control over organizational structure results in violations: 1___2___3___4___5___6___7
14. Organizational performance is related to compliance behavior: 1___2___3___4___5___6___7

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15. Extent to which your organization has been considered in violation of regulatory process during the last three years: 1___2___3___4___5___6___7
Small extent — Large extent

16. Extent to which your organization has been penalized for violations during the past three years: 1___2___3___4___5___6___7

B. SATISFACTION WITH ORGANIZATIONAL VARIABLES:

To what extent you are satisfied with the following in regard to your company:

17. Company financial performance: 1___2___3___4___5___6___7

18. Growth rate of your firm: 1___2___3___4___5___6___7

19. Retained earnings for future growth: 1___2___3___4___5___6___7

20. Market share of your company: 1___2___3___4___5___6___7

21. Condition of your physical plant: 1___2___3___4___5___6___7

22. Long term debts of your company: 1___2___3___4___5___6___7

23. Short term debts of your company: 1___2___3___4___5___6___7

24. Change in stock price over the past three years (Please circle one): Decreased/Same/Increased

If decreased or increased to what extent: 1___2___3___4___5___6___7

25. Change in Earnings Per Share over the past three years (Please circle one): Decreased/Same/Increased

If decreased or increased to what extent: 1___2___3___4___5___6___7

ORGANIZATIONAL STRUCTURE

Please indicate the characteristics of your business unit's overall organizational structure by circling one number for each of the following categories:

Structure Characteristics							
Departmentalization	Formal Grouping	1	2	3	4	5	Informal Grouping
Coordination	Work Standardization	1	2	3	4	5	Mutual Adjustment
Decision-making	Centralized	1	2	3	4	5	Decentralized

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Structural Characteristics Contd..Please circle one number for each. 3

Control System	Formal Rules	1	2	3	4	5	Informal Norms
Task Forces	Rarely used	1	2	3	4	5	Often used
Interdepartmental Committees for new Product Decisions	Rarely used	1	2	3	4	5	Often used
Line-Staff Responsibilities	Distinct	1	2	3	4	5	No Line-staff Distinction
Hierarchical Disposition	Many Levels	1	2	3	4	5	Minimal Levels
Interdepartmental Communication	Formal/ In-writing	1	2	3	4	5	Informal/ Oral
Reward Criteria	Seniority/ Position	1	2	3	4	5	Accomplishments/ Expertise
Management Control and Information System	Often used	1	2	3	4	5	Rarely used

ORGANIZATIONAL BACKGROUND

1. What is the nature of ownership of your company. (Please check one):

(a) Sole ownership _____
(b) Partnership _____
(c) General Partnership _____
(d) Private Corporation _____
(e) Public Corporation _____

If your organization is a corporation please answer the following:

(f) What is the number of Board Members: _____

(g) What is the number of company executives/employees (insiders) on the Board of Directors: _____

II. Could you please tell us something about the size of your company at the end of the fiscal year 1990.

(a) total number of employees: _____

(b) number of non-exempt employees: _____

(c) number of plants on separate locations: _____

(d) If your company operated abroad what was the total number of plants in other countries: _____

(e) Domestic market share in industry: _____%

III. Please tell us something about your plysical plant at the end of fiscal year 1990.

(a) Age of the oldest plant: _____Years

(b) Total book value of machine technology and equipment: $_____

(c) Replacement value of machine technology and equipment: $_____

(d) Is the plant unionized: (1) Yes_____ (2) No_____

(e) What was the labor turnover last year: ____.___%

IV. Could you please shed some light on the financial performance of your company at the end of fiscal year 1990.

(a) Total sales revenue: $_____

(b) Gross profits or losses (Losses in parentnesis please): $_____

(c) Retained earnings (profits retained for future growth): $_____

(d) Total identifiable assets: $_____

(e) Total longterm debt: $_____

(f) Total short term debt: $_____

(g) Growth rate _____.___%

If your business is a corporation please answer the following:

(h) Stock price at end of year 1990: $_____
1987: $_____

(i) Earnings per share at end of year 1990: $_____
1987: $_____

YOUR COOPERATION IN COMPLETING THIS QUESTIONNAIRE IS HIGHLY APPRECIATED

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A PERSONAL FOOTNOTE

I was born in the northern part of India and saw, as a child, millions of lives being massacred in the greatest cross-migration of mankind when India was partitioned into Pakistan, where I was born, and a new India, where I migrated with my family in 1947.

India has been a meeting ground for many cultures, races, religions and languages. Moguls, British, Portuguese, Jews and others came to India as invaders, traders, preachers, persecuted and many got submerged in the milieu and left their own marks on the history of India.

Growing up in India, during the first thirty years of my life, I learnt very early in the childhood from Mahatma Gandhi that oppressor and the oppressed are both sinful, particularly the later, if one does not fight for his rights in a non-violent manner.

I was admitted to the Doctoral program in Business at Baruch College, City University of New York, in 1974, in addition to the Rutgers University and the Toronto University. I chose to join the City University of New York because one of my professors Dr. Mahmoud Wahba, who taught at the University of Bridgeport in 1970, where I landed as a foreign student with graduate assistantship, encouraged me to join CUNY where he had moved in 1973.

Having completed most of the course work by 1976, I joined Rutgers University as an Instructor of Management.

Next year I moved to Hofstra University where I spent the next seven years and taught ten different courses in the School of Business while finishing course work and clearing my comprehensive exams. Between 1983 and 1990 I made four

presentations of my research proposal on this topic but none was recorded and thus began a long history of discrimination. Mean while I got the opportunity to teach as a full time faculty member at the Long Island University and later on at the Kean College of New Jersey at their Graduate Schools of Management. In addition I also got the opportunity to work as an Adjunct Professor at the Graduate Schools Of Business at Fordham University and the Management Department of the Stevens Institute of Technology.

I believe most of the problems of discrimination emanate from lack of diversity. Some people believe that they are holding the standards whereas usually standards are applied selectively and often a game is designed to block out dissimilar elements.

I took to public life in 1983 when I started facing barriers. I took a few leadership roles at local, regional and national level organizations in the Indian-American community in organizations like India Association of Long Island, Federation of Indian Associations in N.Y., N.J. and CT., National Federation of Indian-American Associations etc. In 1989, I was the first Asian-American to be appointed as the Commissioner of Human Rights in Nassau County, New York and was later on promoted to Vice-Chairman of this Commission in 1997. In 1996, I was nominated by the head of the county and approved by the Nassau County Legislature to take the public office of Commissioner of Planning in

Nassau County, New York.

During the past fifteen years, I had the privilege to be honored by a number of elected officials at the city, town, county and state level as well as the Prime Minister of India. I was honored as the Marshall of India Day Parade in 1987. I also had the privilege of being honored by a number of charitable and religious associations including Sri Chinmoi Mission at the United Nations, Nargis Dutt Memorial Association etc.

I have been profiled in the Marquis's (the oldest biographer in U.S.A. since 1894) WHO'S WHO IN THE EAST IN USA; WHO'S WHO IN FINANCE AND INDUSTRY IN USA; WHO'S WHO IN USA; and WHO'S WHO IN THE WORLD.

IMAGE EVALUATION TEST TARGET (QA-3)

150mm

6″

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