

PART-TIME MANAGEMENT PERCEPTIONS OF THE
CURRENT SAFETY CULTURE IN THE
OPERATIONS ORGANIZATION AT
UNITED PARCEL SERVICE

by

Thomas J. Heitert

An Abstract

of a thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science
in the Department of Safety Sciences
University of Central Missouri

April, 2008

ABSTRACT

by

Thomas J. Heitert

When safety becomes a value and is demonstrated through individual attitudes, perceptions, and behaviors, the process develops into a culture. The purpose of this research was to assess part-time management perceptions of the current safety culture in the operations organization at United Parcel Service. A total of 100 front-line supervisors participated in a perception survey utilizing a Likert scale. The data was collected on eight management practices and assessed the current level of safety culture. Results indicated that five out of the eight management practices were optimally being performed and ranked at a Stage II maturity level of safety culture. The data supported the endeavor; validated the importance put on safety; and provided upper level management the opportunity to modify areas for improvement. United Parcel Service is aggressively pursuing individual values that will permeate into an organizational culture and this research provided the necessary foundation.

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APPROVED:



Thesis Chair



Thesis Committee Member

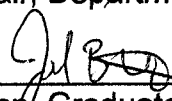


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Dean, Graduate School

UNIVERSITY OF CENTRAL MISSOURI
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CHAPTER 1 NATURE AND SCOPE

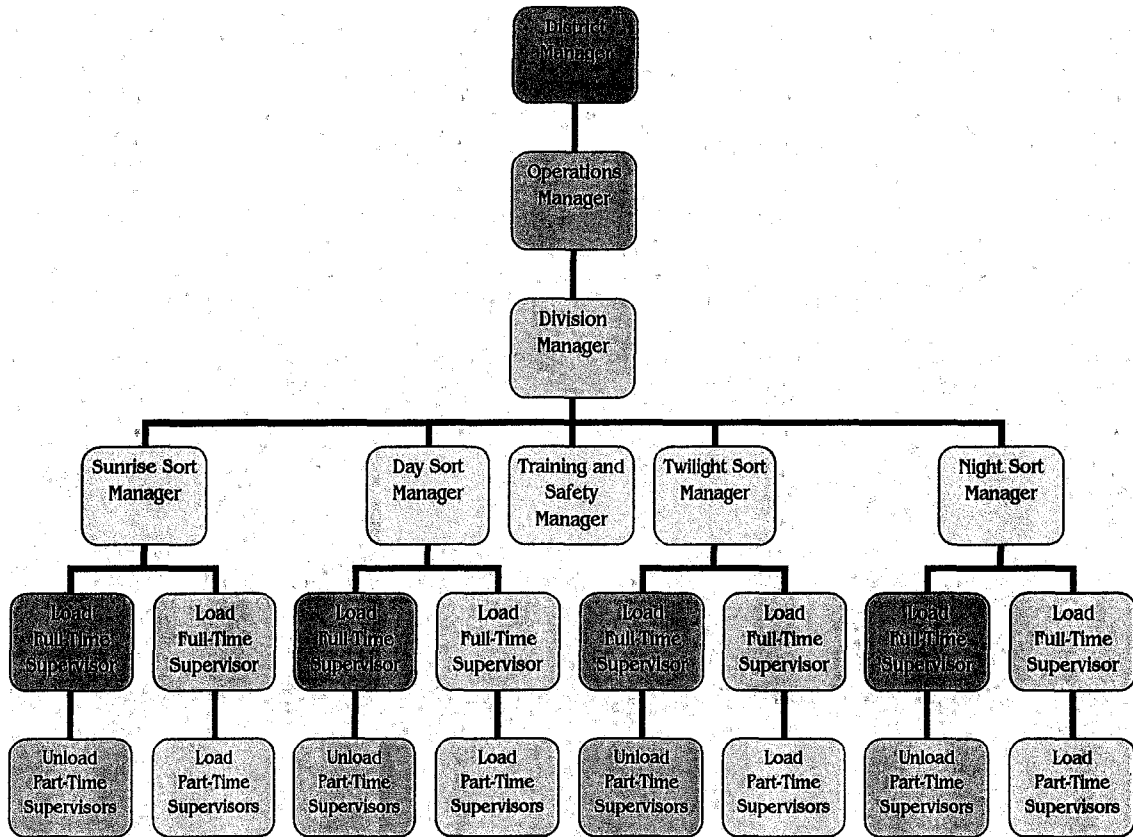
United Parcel Service (UPS™) was founded in 1907 as a messenger company in the United States and has grown into a corporation focusing on the goal of enabling commerce around the globe. UPS is the world's largest package delivery company and the third largest employer in the country with more than 360,600 U.S. employees and 427,700 globally. UPS is a leading global provider of specialized transportation and logistics services, managing the flow of goods, funds, and information in more than 200 countries and territories worldwide, and continues to develop the frontiers of logistics, supply chain management, and e-Commerce (UPS, 2007).

Training is the cornerstone of safety at UPS, spending more than \$300 million per year on training and education programs for its worldwide workforce, ensuring employees have the knowledge necessary to do their jobs safely and effectively. The Comprehensive Health and Safety Process (CHSP) was developed in 1995 to protect and improve the health and safety of UPS employees. The process was modeled after experience with the Occupational Safety and Health Administration's (OSHA) Maine 200 program, which benchmarked best-in-class companies with regards to safety. There are more than 2,400 CHSP committees at UPS facilities across the United States who train the workforce in safe work and driving methods. The committees consist of both full-time and part-time non-management co-chairs and employees (service providers and package handlers), supported by management co-chairs

(managers and full-time supervisors), who together, conduct facility and equipment audits, perform work practices and behavior analyses, conduct training and recommend work process and equipment changes. For the past five years, CHSP helped reduce lost workdays due to injuries by over sixty percent, making sustained improvements each year (UPS, 2007).

Processes, programs and core values are initiated from corporate managers and delineated throughout the corporation. The daily responsibility of implementation and fostering health and safety among all work groups is factored down to the lowest line management levels in the organizations operational management, part-time supervisors. Refer to Figure 1, UPS Operations Management Organizational Chart, for an overview of the present structure.

FIGURE 1: UPS Operations Management Organizational Chart



CHSP is the driving force for safety improvements in employee injury frequencies. Since the inception of the CHSP, UPS has been successful in reducing workplace injuries. Although these improvements are admirable, workplace injuries and accidents are still above national industry standards. One of UPS's objectives is to instill a safety culture that will foster a world class safety corporation. According to Geller, researchers have found a direct correlation between safety culture and safety performance (Geller, 2006). Safety culture is defined as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management

(IAEA, 1991). This safety culture needs to be measured and evaluated initially so the proper proactive changes in the current safety process can be made. Management practices are a particular area that need to be reviewed to identify strengths and weaknesses. Perception surveys act as a diagnostic tool in identifying potential barriers for improvement in addition to measuring the success of ongoing improvement efforts. They also provide a benchmark for further evaluation in safety performance (UPS, 2006).

Purpose of the Research

The purpose of this research was to assess part-time management perceptions of the current safety culture within the operations organization at UPS. In particular, the study intended to answer the following questions:

1. Which elements of management practices are being performed on a consistent basis?
2. Which elements of management practices are not being performed on a consistent basis?
3. What is the current stage of the safety culture on the front line of the organization based upon the perceptions of part-time operations management?

Hypothesis

This research study has identified the following directional hypotheses:

H1: The mean value score for part-time operations management perceptions of the management practice element of management commitment meets

or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.

- H2: The mean value score for part-time operations management perceptions of the management practice element of employee involvement meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H3: The mean value score for part-time operations management perceptions of the management practice element of education meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H4: The mean value score for part-time operations management perceptions of the management practice element of training meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H5: The mean value score for part-time operations management perceptions of the management practice element of communication and feedback meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H6: The mean value score for part-time operations management perceptions of the management practice element of recognition meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.

- H7: The mean value score for part-time operations management perceptions of the management practice element of safety committee effectiveness meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H8: The mean value score for part-time operations management perceptions of the management practice element of prevention and control measures meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale.
- H9: The mean value score for part-time operations management perceptions for the characteristics of the three stages of safety culture results in the categorization of the operations management safety culture with the Stage II level.

Significance of Study

Injury rates, although tried-and-true measures of some aspects of safety performance, cannot fully identify an organizations safety culture. To get a more absolute picture, assessing safety culture and management perceptions of safety through surveys can accurately measure safety performance that is not reflected in numbers (Parker, 2006).

UPS operations management is made up of full-time and part-time supervisors that are responsible for the daily operations throughout the facility. Part-time supervisors interact with non-management employees daily and are commonly referred to as front-line supervisors. These front-line supervisors are also responsible for the components of the safety process for non-management

employees who are proportionately loaders and unloaders. Given the cost, amount of time, and resources expended by UPS on this effort, an evaluation of its effectiveness was relevant and appropriate.

Various measurements to predict past and future safety trends include lagging and leading indicators. A lagging indicator, such as injury rates, provides a measure of management system failures, where as a leading indicator, such as perception surveys, provides a measure of management practices that precede events. In measuring safety programs, safety performance, and their effectiveness, the collections of data on failures that have occurred in the workplace are not acceptable. Perception surveys are a proactive approach that provides information about behaviors before they result into accidents. The survey results show where the company is headed and what actions should be taken to prevent future injuries. The results are a leading indicator that can help prioritize, take action and drive continuous improvement in CHSP programs (Parker, 2006).

Assumptions

UPS considers the safety of their employees and the general public as having the utmost importance. UPS trains their people to avoid injury to themselves and others in all phases of their work. The following assumptions were considered true and valid as part of this research:

1. The survey was a valid and measurable instrument in assessing part-time operations management perceptions of safety.

2. The survey was a valid and measurable instrument in assessing part-time operations management perceptions of the current level of safety culture.
3. Participants' confidentiality was maintained throughout the entire survey process.
4. All participants were given adequate time to complete the survey.
5. All participants were provided the consent form.
6. The responses to the survey were based on past experiences rather than a specific incident.
7. The responses to the survey were an accurate reflection of the entire part-time management's perceptions of the current safety culture in the operations organization at UPS.

Limitations

The following limitations were identified:

1. The survey was administered by a safety professional in a different testing environment which may be less than ideal.
2. Results may be influenced by the participants' time in the position, area of expertise, education level, and prior experience.
3. Results may be influenced by the participants' direct full-time supervisor and manager.
4. Results may be influenced by the participants' work shift.
5. The selection of subjects is comprised of the total population of employees categorized as part-time operations supervisors.

6. The selection of subjects is compromised of the total population of part-time supervisors located in the Earth City hub.
7. The selection of subjects is compromised of the part-time supervisors employed during the time period the survey was administered.

Definition of Terms and Acronyms

The following terms and acronyms are defined to clarify the terminology used in this study:

Attitude: A view that is developed from an organizations culture where behaviors are promoted. Attitudes are expressed through behaviors and are cultural drivers that are indicative of an organizations safety culture (Glendon, Clarke, & McKenna, 2006).

Behavior: The actions or reactions of a person in response to external or internal stimuli. A manner of behaving, whether good or bad; mode of conducting one's self and conduct (American, 2003).

CHSP: Comprehensive Health and Safety Process. A term specifically used by UPS to describe all the various health and safety programs that are available. The term process represents on-going programs that are continuously evolving.

CHSP Committee: The CHSP was developed in 1995 at UPS to directly involve front-line employees in improving health and safety methods. The committees consist of union and non-union employees, supported by non-management and management co-chairs, who collectively conduct facility and equipment audits, perform job hazard and behavior analyses, conduct

injury investigations, conduct training and recommend work process changes (UPS, 2007).

E-Commerce: Electronic commerce, commonly known as E-Commerce or eCommerce, is the buying and selling of products and services by businesses and consumers over the internet. E-Commerce covers any form of business, or administrative transaction, or information exchange, between the company and the outside world, that is executed using information and communication technology (Red Tiger, 2006).

Employee Involvement: Employee involvement is neither a goal nor a tool, as practiced in many organizations. Rather, it is a management and leadership philosophy about how people are most enabled to contribute to continuous improvement and the ongoing success of their work organization (Heathfield, n.d.).

Front-Line Supervisors: Management employees who train and supervise daily activities of package handlers and clerks to ensure that all assigned duties are accomplished safely and timely. Supervisors typically work Monday through Friday; however, weekend work may be required based upon the location and business needs. Part-time management employees are generally expected to work 5 ½ hours per day (UPS, 2005).

Full-Time Non-Management Employees: This is a physical, fast-paced position that involves continual lifting, lowering and sliding packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. Full-time

employees usually work 8 hours each weekday (Monday through Friday) and typically do not work on weekends or selected holidays (UPS, 2005).

Full-Time Supervisors: Management employees who train and supervise daily activities of part-time supervisors to ensure that all assigned duties are accomplished safely and timely. Supervisors typically work Monday through Friday: however, weekend work may be required based upon the location and business needs. Full-time management employees are generally expected to work 10 hours per day (UPS, 2005).

JHA: Job Hazard Analysis. A technique that focuses on job tasks as a way to identify hazards before they occur. JHA's focus on the relationship between the worker, the task, the tools, and the work environment. After you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level (U.S. OSHA, 2002).

H&S: Health and Safety.

Hazard Prevention and Control Measures: Current and potential hazards that must be prevented, corrected or controlled. Systems used to prevent and control hazards include: engineering controls, safe work practices, administrative controls, and personal protective equipment (U.S. OSHA, 2006).

Lagging Indicators: Lagging indicators, such as injury statistics, provide an overall estimate of the progress required to achieve minimal risk, but they do not measure the effective implementation of safety programs, proactive action plans and preventive activities in place (BHP Hilton, 2005).

Leading Indicators: A leading indicator is a metric used to drive and measure activities carried out to prevent and control injury, damage or loss. When measured and monitored effectively, they provide data to enable effective intervention to address or reverse a negative trend before it occurs (BHP Hilton, 2005).

Likert Scale: A type of psychometric response scale often used in questionnaires, and is the most widely used scale in survey research. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. The scale is named after Rensis Likert, who published a report describing its use (Mogey, 1999).

Loader: This is a physical, fast-paced position that involves continual lifting, lowering and sliding packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. Part-time employees usually work 3 ½ - 4 hours each weekday (Monday through Friday) and typically do not work on weekends or selected holidays (UPS, 2005).

Logistics: The process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finish goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements (LinXIS, n.d.).

Management Co-Chair: A non-union member of the Comprehensive Health and Safety Committee. Their role as a member is as a support function for non-management co-chairs.

Management Commitment: Effective protection from occupational hazards takes leadership and commitment from top management. Management leadership provides the motivating force and the resources for organizing and controlling activities within an organization. In an effective program, management regards worker safety and health as a fundamental value of the organization. Ideally, this means that concern for every aspect of the safety and health of all workers throughout the facility is demonstrated (U.S. OSHA, 2006).

Management Practices: Components or elements of a safety program given that each contributes to effective safety management and is prevalent in the safety culture of organizations that have low injury rates. These include management commitment, employee involvement, education, training, communication and feedback, recognition, safety committee effectiveness, and prevention and control measures.

NIOSH: National Institute for Occupational Safety and Health.

Non-Management Co-Chair: A union member of the Comprehensive Health and Safety Committee. Their role as a member is to engage with other union employees about safety and use management co-chairs as a support function.

Optimally Performed: On the Likert scale of 1 through 5, an average score equal to or greater than 4. This score indicates a performance level acceptable to management.

OSHA: Occupational Safety and Health Administration.

Package Handlers: This is a physical, fast-paced position that involves continual lifting, lowering and sliding packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. Part-time employees usually work 3 ½ - 4 hours each weekday (Monday through Friday) and typically do not work on weekends or selected holidays (UPS, 2005).

Part-Time Non-Management Employees: This is a physical, fast-paced position that involves continual lifting, lowering and sliding packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. Part-time employees usually work 3 ½ - 4 hours each weekday (Monday through Friday) and typically do not work on weekends or selected holidays (UPS, 2005).

Part-Time Supervisors: Management employees who train and supervise daily activities of package handlers to ensure that all assigned duties are accomplished safely and timely. Supervisors typically work Monday through Friday; however, weekend work may be required based upon the location and business needs. Part-time management employees are generally expected to work 5 ½ hours per day (UPS, 2005).

PCM: Pre-work Communication Meeting. This is a three minute communication meeting that is given daily from a member of the management workforce to non-management employees. The intention is to have a time set aside for the sole purpose of communicating important issues while no other activities are being performed.

Perception: To become aware of one's mind; achieve understanding of; marked by discernment and understanding. Perceptions are based on complex interactions between a multitude of physiological, psychological and environmental influences (Cooper, 1998).

Recognition: Recognition for employee safety performance in the form of safety incentives to motivate employee awareness. Examples include: award programs, attendance awards, accident prevention awards, employee appreciation gifts and corporate safety awards, safety training awards, plaques and certificates, etc.

Safety Culture: Safety culture is defined as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management (IAEA, 2002).

Service Provider: This is a physical, fast-paced, outdoor position that involves continual lifting, lowering and carrying packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. A DOT physical exam is required. Package delivery drivers must have excellent customer contact and driving skills, including the ability to operate a vehicle equipped with a standard (manual) transmission. Qualified drivers must have a valid driver's license issued by this state. Package delivery drivers are expected to comply with UPS appearance guidelines and wear the company-provided uniform (UPS, 2005).

Stages of Safety Culture: The varying levels of maturity of safety culture in an organization that represents the developmental stages of a safety culture (Barraclough & Carnino, 1998). These stages include:

Stage I Safety Culture: The organization sees safety as an external requirement and not as an aspect of conduct that will help the organization to succeed.

Stage II Safety Culture: Has a management which perceives safety performance as important even in the absence of regulatory pressure.

Stage III Safety Culture: Has adopted the idea of continuous improvement and applied the concept to safety performance.

Supply Chain Management: A business unit that supplies services such as logistics, transportation, freight, and consulting services in order to improve business performance. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption (UPS, n.d.).

Unloader: This is a physical, fast-paced position that involves continual lifting, lowering and sliding packages that typically weigh 25 - 35 lbs. and may weigh up to 70 lbs. Part-time employees usually work 3 ½ - 4 hours each weekday (Monday through Friday) and typically do not work on weekends or selected holidays (UPS, 2005).

Values: Beliefs of a person or social group in which they have an emotional investment, either for or against something (Wordreference, 2008).

Worksite Analysis: Involves a variety of worksite examinations to identify not only existing hazards, but also conditions and operations in which changes might create hazards. Effective management actively analyzes the work and the worksite, to anticipate and prevent harmful occurrences (U.S. OSHA, 2006).

CHAPTER 2 REVIEW OF LITERATURE

The term 'safety culture' was first introduced in the summary report from the International Atomic Energy Agency (IAEA) during review of the Chernobyl accident. IAEA goes on to explain in the years following the accident, the use of the term captures the insight gained that safety is reached through the people managing and operating the process. The Chernobyl accident also demonstrated that leadership commitment and the management strategies applied set the framework for how people will think and behave in relation to safety (IAEA, 1991).

Erickson discusses that there are still organizations that think effective safety programs result solely from adhering to compliance issues even though numerous studies have demonstrated the importance of organizational culture issues such as management commitment, employee involvement, communication and treatment of employees as pivotal to the success of a safety program and other areas of organizational functioning. In reality both safety programs and safety process elements are needed. Safety program elements are those that focus on regulatory compliance while safety process elements are those influencing factors underlying the relative success to the safety program. The influencing factors represent an organizations philosophy, or safety culture. Studies have demonstrated that positive organizational attitudes toward safety programs and safety processes are directly linked with objective injury data (Erickson, 2006).

Safety Culture

In *Improving Safety Culture, A Practical Guide*, M.D. Cooper explains that the 'culture' of an organization provides a context for action which binds together different components of an organizational system in the pursuit of corporate goals. Successful organizations have strong cultures that permeate through their systems and every member ensures that every task is done the right way. The prevailing organizational culture guides the behavior of its employees during their daily activities (Cooper, 1998).

M.D. Cooper also explains that the more members repeatedly behave or act in ways that appear to them to be natural, the more dominant the culture becomes. The organization's culture influences most aspects of work activity, affecting both individual and group behavior at all levels in the workplace.

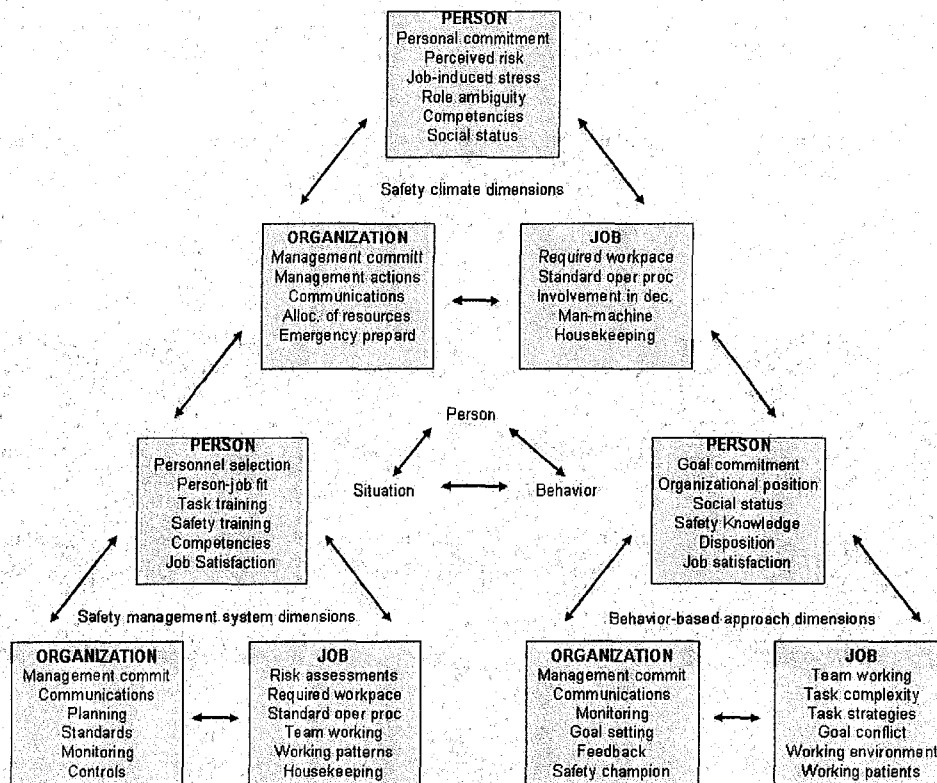
"Unless safety is the dominating characteristic of an organization's culture, safety culture can be viewed as that sub component of organizational culture which alludes to individual, job and organizational features affecting and influencing health and safety" (p. 1). If an organization has a positive safety culture, the results will have a positive impact on their quality, reliability, competitiveness and profitability (Cooper, 1998).

Recognizing that the potential for an accident is always present, there are two fundamental approaches to prevent them. The first approach is based on the fundamental belief of protecting an individual from the hazard, either by administrative or engineering means. The second approach is based on the fundamental belief that the employee will be protected from the hazard from their

knowledge and skills. With either approach for avoiding accidents, the concept of safety culture focuses on the presence of good safety management and control systems (Cooper, 1998).

An organization's safety culture is reflected in the dynamic inter-relationship between employee's perceptions about safety, daily directed safety behavior, and the presence of a safety system to support the goal oriented behavior. The safety culture is relative to the strength of each behavior, and each behavior is different during these inter-relationships. The relative influence of the inter-relationships in a safety culture can be determined at any given situation allowing either highly focused remedial actions or forward planning to take place. In this interaction, safety culture alludes to the reciprocal relationship between an organization's safety management system, the prevailing safety climate, and the daily directed safety behavior. Refer to Figure 2: Cooper's Reciprocal Safety Culture Model Applied to Each Element, for an illustration of this model (Cooper, 1998).

Figure 2: Cooper's Reciprocal Safety Culture Model Applied to Each Element

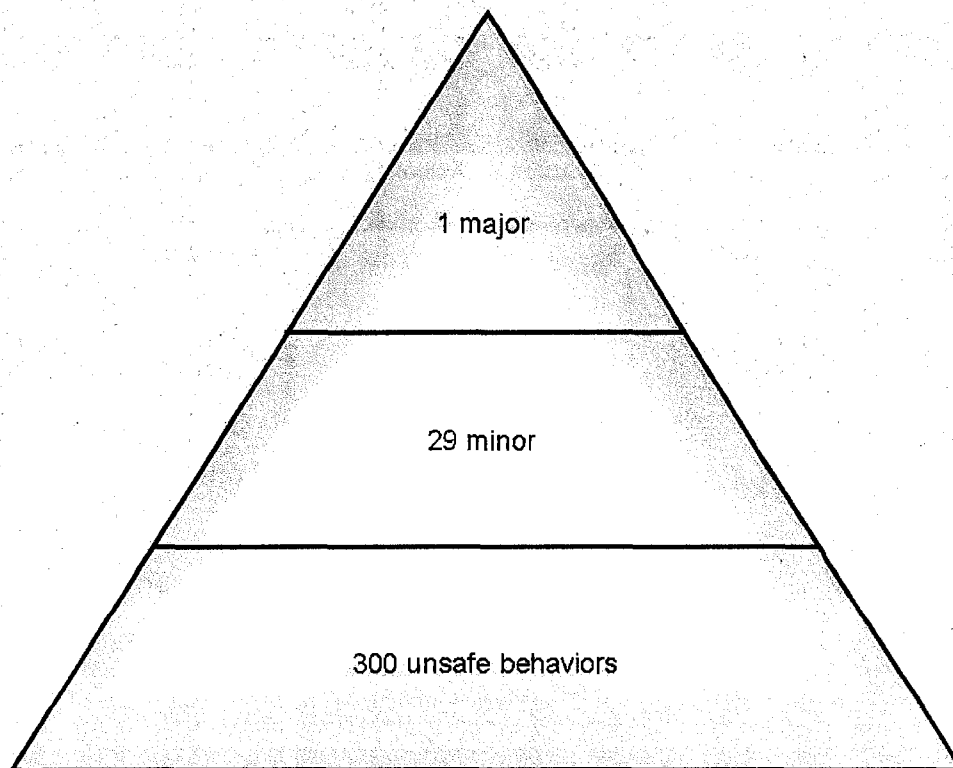


(Cooper, 1998, p. 17) *Reproduced by permission*

Given that each of these safety culture components can be directly measured individually or in combination, safety culture can be quantified in a meaningful way at many different organizational levels. Since safety surveys can measure employee's perceptions about safety, a work group's levels of perceived risk can be measured. Employees' perceptions of perceived risk are determined by their perceptions of the required workplace and management's commitment to safety. The perceptions can then be altered through management commitment, competing goals and quality of communications (Cooper, 1998).

Perceptions lead to attitudes, and attitudes result in behaviors. Unsafe behaviors also result because a person has never been injured while doing their job in an unsafe way. Over an extended period of time, the lack of any injury when an unsafe behavior is constantly engaged actually reinforces that behavior. The continuation of unsafe behavior is often supported by more than one reinforcer, some exerting stronger effects on people's behavior than others. In some instances the actual workflow process also reinforces unsafe behavior, simply because it may be the only way to get a job done. Refer to Figure 3: Heinrich's Triangle, for an illustration that for every 300 unsafe acts, 29 will result in minor injury and one in a major or lost-time incident (Cooper, 1998).

Figure 3: Heinrich's Triangle



(Cooper, 1998, p. 228) *Reproduced by permission*

Efforts to change unsafe behavior and attitudes traditionally were through altering the physical environment with engineering controls or changing people's attitudes via safety information campaigns. Efforts also included safety training and using disciplinary procedures to force them into compliance. Studies indicate that the link from behavior change to attitude change is independent and very high. Focusing on changing behavior is the most effective way to improve both safety and culture (Cooper, 1998).

Safety Culture Stages

Barraclough and Carnino define safety culture as "the assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, safety issues receive the attention warranted by their significance." The long-term management of safety calls for approaches that go beyond simple adherence to operating procedures and established design standards. The development of a comprehensive safety culture at all levels of an organization is required for continued improvement in all levels of safety. Safety culture is represented into three different stages that display a different awareness and receptiveness to the effect of human behavior and attitude on safety (Barraclough & Carnino, 1998).

Stage I safety culture is described as an organization that sees safety as an external requirement and not as an integral part of work to help the organization. Compliance with rules and regulations is considered adequate and safety is seen as a technical issue. The awareness to behaviors and attitudes towards safety are given little focus (Barraclough & Carnino, 1998).

Barraclough and Carnino explain that in Stage II safety culture management perceives safety performance as important even in the absence of regulatory pressure. While behavior and attitudes are important, they are not incorporating them into methods and procedures for solutions to concerns. Along with measuring productivity, safety performance is also evaluated. In this stage, organizations are willing to reach for outside consultation when that performance plateaus (Barraclough & Carnino, 1998).

Stage III safety culture is when an organization adopts the idea of continuous improvement and have applied the concept to safety performance. The organization understands that behaviors and attitudes can either make or break further improvements so the emphasis on changing behaviors is a high priority. Incremental steps are taken to continuously improve behaviors and there is a strong emphasis on communications, training, management style, and improving efficiency. On key characteristic of this stage is that both management and employees work together towards common goals while employees are rewarded for improving processes (Barraclough & Carnino, 1998).

The three stages of safety culture have characteristics that provide a measure for organizations to use as a basis for self-diagnosis. The stages can also give direction to the development of safety culture by identifying the current and the aspired levels. An organization can exhibit any combination of the characteristics at any time in each of the three stages because certain practices maybe more suitable to one of the three stages of development. Appendix A, *Characteristics of Stages of Safety Culture*, highlights the safety characteristics

for evaluating each stage of safety culture. The objective of every organization is to have the safety characteristics of Stage III, where management takes a more active role in long-term safety performance (Barraclough & Carnino, 1998).

Safety Programs

The Occupational Safety and Health Administration (OSHA) explains that “an effective safety and health program depends on the credibility of management’s involvement in the program; inclusion of employees in safety and health decisions; rigorous worksite analysis to identify hazards and potential hazards, stringent prevention and control measures; and thorough training” (paragraph 1). OSHA goes on to explain that there are four minimum components that effective safety programs encompass; management leadership and employee involvement; worksite analysis; hazard prevention and control measures; and safety and health training. A system is an established arrangement of components that work together to attain a certain objective, in this case to prevent injuries and illnesses in the workplace. Each system has an important contribution in influencing an organization’s safety culture. All the elements of a safety and health system are interrelated to all the other pieces. A flaw in one piece will impact all the other pieces, and therefore the system as a whole (U.S. OSHA, 2005). Refer to Figure 4: Safety and Health Management System and its Component.

Figure 4: Safety and Health Management System and its Component



OSHA describes management leadership as an effective protection from occupational hazards that provides the motivating force and the resources for organizing and controlling activities within an organization. In an effective program, management regards worker safety and health as a fundamental value of the organization. Ideally, this means that concern for every aspect of the safety and health of all workers throughout the facility is demonstrated.

Employee involvement is not the goal nor is it a tool, but rather a management leadership philosophy about how people are most enabled to contribute to continuous improvement and the ongoing success of their work organization.

Management leadership and employee involvement are complementary of one another.

Worksite analysis involves a variety of worksite examinations to identify not only existing hazards, but also conditions and operations in which changes might create hazards. Effective management actively analyzes the work and the worksite, to anticipate and prevent harmful occurrences. Hazard prevention and control measures focus on current and potential hazards to be prevented, corrected or controlled. Systems used to prevent and control hazards include: engineering controls, safe work practices, administrative controls, and personal protective equipment. One of the most effective prevention and control measures is a Job Hazard Analysis (JHA). This helps prevent workplace injuries and illnesses by looking at workplace operations, establishing proper job procedures, and ensuring that all employees are trained properly. JHA's also determine and establish proper work procedures. Management can use the findings to prevent hazards and for training new employees in the steps required to perform their jobs safely (U.S. OSHA, 2002; U.S. OSHA, 2006).

Safety and health training addresses the safety and health responsibilities of all personnel. The training is most effective when it is incorporated into other training that relates to performance requirements and job practices. One of the keys to safety training is to ensure that all employees understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards (U.S. OSHA, 2005).

A study conducted by the National Institute for Occupational Safety and Health (NIOSH) in 1979 examined distinctive features of successful safety program practices in several different industries. The study was a follow-up to

two previous related studies which analyzed safety program effectiveness through mail-out questionnaires and site-visit surveys. The purpose was to characterize in a more definitive way the factors distinguishing successful safety program practices. The study concluded that three particular elements of safety programs emerged as being strongly associated with superior safety performance. The three elements of safety programs identified were: management commitment to safety; management efficiency with respect to safety; and employee relations and safety motivation. Within the three elements of safety programs were identified characteristics that all the industries with successful safety performance had in common. "First, the programs set safety goals, assigned safety responsibilities, provided adequate resources, and evaluated safety performance. Second, the program identified problems, pre-planned solutions, and evaluated management and employee effectiveness. Finally, the program motivated and included employees." The impact of management commitment and employee involvement to safety is the major contributing factor in having a successful safety program (NIOSH, 1979).

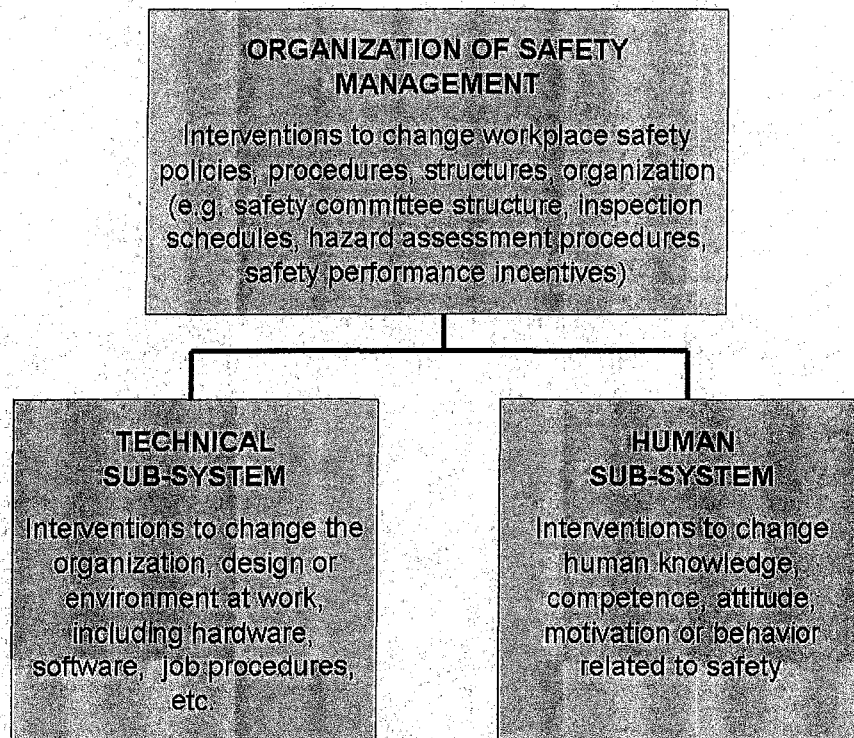
Evaluating Safety

UPS continuously makes safety and health changes in the workplace. Measuring the results of those changes benefits the employer and employees because they both gain confidence that the change results in a safer workplace or can be altered to create a safer work environment. Since most changes occur in stages, information about the effectiveness of each stage is helpful to the process. Evaluating safety then draws conclusions by examining the results from

the data and makes the necessary changes for improvement. Data must be systematically analyzed to determine whether the changes are effective.

In the NIOSH publication *Guide to Evaluating the Effectiveness of Strategies for Preventing Work Injuries*, Robson, Shannon, Goldenhar, and Hale explain that safety intervention is defined as “an attempt to change how things are done in order to improve safety” (p. 1). In a workplace safety system, safety intervention occurs at different levels. The different levels include organization of safety management, technical sub-system, and human sub-system. Refer to Figure 5: Levels of Intervention in the Workplace Safety System, for an illustration of three separate levels of intervention (Robson, Shannon, Goldenhar, & Hale, 2001).

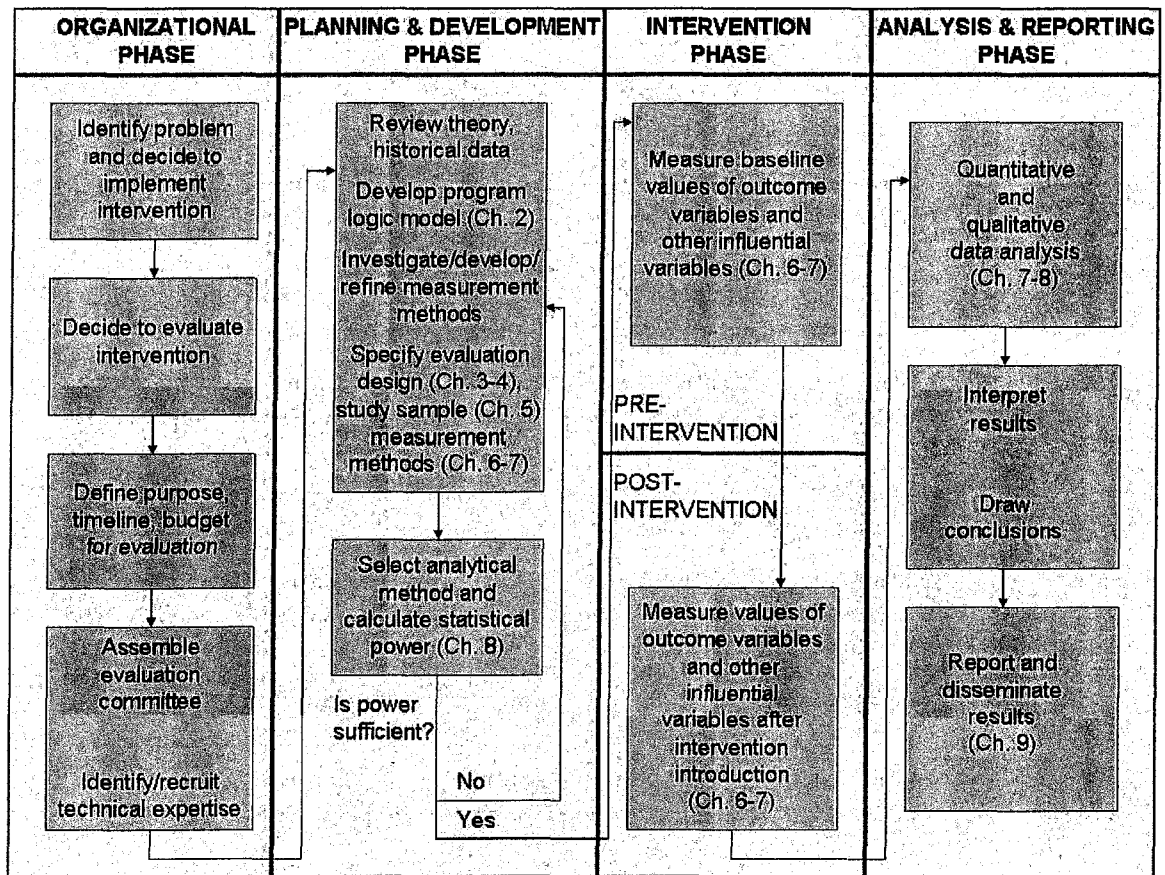
Figure 5: Levels of Intervention in the Workplace Safety System



(NIOSH, 2001, p.1) *Reproduced by permission*

With safety intervention occurring to change safety related outcome metrics, summative evaluation determines whether a safety initiative has had the intended effect. When evaluating safety related indices, much of the activity precedes the safety intervention stage. Evaluations are done retrospectively since appropriate data are typically not available. Refer to Figure 6: Overview of the Effectiveness Evaluation Process, for an illustration (Robson, Shannon, Goldenhar, & Hale, 2001).

Figure 6: Overview of the Effectiveness Evaluation Process



(NIOSH, 2001, p.3) *Reproduced by permission*

In determining an effective evaluation process, Robson, Shannon, Goldenhar, and Hale explain that employee surveys measure what cannot be observed. The surveys examine the knowledge, attitudes, beliefs, or perceptions held by individuals and can sometimes measure a group culture. Within these surveys, structured statements are not considered effective to gather qualitative information. It is assumed that many people do not want to take time to write out a response. Perception based surveys are used for safety intervention evaluations while the qualitative data elucidates the steps between intervention and the immediate outcomes (Robson, Shannon, Goldenhar, & Hale, 2001).

CHAPTER 3 METHODOLOGY

The aspect of organizational safety culture that may be visible or measurable has been referred to as the safety “climate,” which includes management systems, safety systems, and individual attitudes and perceptions. A perception survey utilizing a Likert scale was used to identify what stage of safety culture that was present and the responses were quantitatively and qualitatively assessed. The survey indicated part-time management perceptions of eight management practice elements and the current level of safety culture in the operations organization at United Parcel Service (UPS).

Design of Measurement Instrument

Part-time operations supervisors were administered a perception based safety culture survey to collect objective data on the safety programs currently utilized. The survey was developed to evaluate the current Comprehensive Health and Safety Process (CHSP) and assist in identifying management practices strengths and weaknesses. A total of 100 supervisors were surveyed, which was equivalent to two-thirds of the Earth City hub part-time management workforce. The perception based survey utilized the Likert scale to assess perceptions and was comprised of 39 safety performance statements and one open-ended comment question.

The survey safety statements were either created by the author or modified from research and published safety culture surveys previously created (Barraclough & Carnino, 1998) (Kajder, 2005). The purpose of the statements

was to target specific management practices unique to UPS and to identify the current stage of safety culture in that specific work environment. The survey was then reviewed by the district health and safety management team which included the district CHSP manager and the district health and safety manager. The appropriate changes and revisions to help target UPS hub operations were made. With consent from UPS, the final survey was then used to assess part-time management perceptions of the current safety culture in the operations organization at UPS. Refer to Appendix B, UPS Human Subjects Research Approval.

Each participant was given the consent form and survey. The consent form outlined the purpose of the research along with the explanation of risk versus benefits in addition to the request for participation. The survey had specific instructions to maintain confidentiality and when responding to the statements, to score each statement according to how it best expressed their agreement. No names, employee numbers, or other indicators to identify a specific employee were used. A copy of the approved consent form is found in Appendix C, Consent Form.

The responses to the survey used a Likert scale to specify their level of agreement to the safety statements based on five separate categories: 5-strongly agree, 4-agree, 3-uncertain, 2-disagree, 1-strongly disagree. A copy of the approved safety culture survey is found in Appendix D, Safety Culture Survey (Mogey, 1999).

Selection of Subjects

The selection of subjects for this research was part-time operations supervisors who worked out of the UPS Earth City facility. The hub operations were selected due to the vast number of non-management employees that supervisors are responsible for, approximately two-thousand (2,000). The part-time operations supervisors are on the "font-line" every day and interact with these employees on a daily basis. There are approximately one-hundred and fifty (150) part-time supervisors in total and the survey included one-hundred (100) of them, or two-thirds. Due to some part-time operations supervisors working in a more technical aspect, those supervisors were excluded and the survey was limited to those supervisors whose physical location places them on the loading and unloading docks.

The surveys were completed in four weeks which allowed time to accurately select the appropriate supervisors and make arrangements suitable for each one to participate. All participants were given the survey in a closed door conference room to ensure confidentiality and no other employees were in the room at the corresponding time. The surveys were returned in a sealed envelope, collected and taken to a separate location to be summarized and analyzed. All participants were voluntary and explained that there was no penalty in any way if the decision was made not to participate. The participants were also given the consent form, informed of the purpose of the survey, and how to attain a copy of the results. Refer to Appendix C for a copy of the Consent Form.

Uniqueness of Company

While UPS is known as a company that came from humble roots to one that efficiently manages global supply chains, history clearly reflects an equally important evolution of safety. The uniqueness of the company contributed to the distinctive methods of this research. The size and stature of UPS along with the investment that is spent in safety imposed an idiosyncratic approach to this research.

UPS has about three-hundred and fifty (350) management and administrative employees whose sole job it is to protect the health and safety of the company's workers. There are also twenty-four hundred (2,400) CHSP committees, with a minimum of five members each, which work directly on safety issues in the operation. Training is the cornerstone of safety at UPS, and management training is the logical precursor to an informed and safe workforce. The company invests more than thirty-eight million dollars a year in safety training alone. UPS employees receive nearly 1.3 million hours of safety-related training every year. There are twenty-six formal UPS safety training courses taught in over seventeen hundred (1,700) facilities.

UPS has an integrated network that continually evaluates and tests new equipment and work systems that will improve the comfort and efficiency of employees by reducing fatigue and improving safety. Even as the company continues to increase its level of technological sophistication, UPS's primary job remains the safety of their employees. Resources were made available to complete this research in the form of time, participation, and cooperation. The

willingness to participate in this research project and commitment to progressively implement the recommendations made demonstrate this dedication. Refer to Appendix B, UPS Human Subjects Research Approval.

Data Interpretation

The perception survey was used to assess part-time management perceptions of the current safety culture in the operations organization at UPS. The data from the surveys were analyzed in several methods. The first method was to determine managements overall safety perception per participant. This first analysis was performed by averaging the total score by the total number of participants to associate a mean perception. Another method used to analyze the survey results was to determine the mean perception value per each specific management practice element. The second analysis was performed by categorizing the statements in the survey that associated with each identified management practice, distributing those corresponding perceptions answered, and then taking the mean values by the total number of participants. A correlation chart depicting the relation of the survey statements with the various management practice elements is provided in Appendix E, Survey Perception Statements Correlation to Management Practices.

A third method used to analyze the results was determining which of the desired management practices addressed were being optimally performed and which management practices were not being optimally performed. On a scale of 1 to 5, an average score greater than or equal to 4 for the perception of the statements that collectively corresponded to a specific element of management

practice was considered as being optimally performed. On that same scale, an average score less than 4 for the perception of the statements that collectively corresponded to a particular management practice was considered as not being optimally performed and requires improvement.

The survey statements that related to the three stages of safety culture and varying levels of maturity, according to Barraclough and Carnino, were categorized to determine the present stage at UPS. The mean values from those statements were calculated along with each separate stage of safety culture. A correlation chart depicting the relation of the survey statement with the various stages of safety culture is provided in Appendix F, Survey Perception Statements Correlation to Safety Culture Stages. The particular stage of safety culture that is representative of the operations organization at Earth City is the stage with the highest mean value (Barraclough & Carnino, 1998).

Approval by the Human Subjects Review Committee at the University of Central Missouri for the research, survey, and consent form was received on August 16, 2007. A copy of the approval documentation is provided in Appendix G, Approval from Human Subjects Review Committee. The perception survey was administered on October 8, 2007, through November 2, 2007. The surveys returned in sealed envelopes were taken and analyzed in a separate location. The surveys were aggregated and no participant data was documented. The results of the survey were reviewed with the Health and Safety department at UPS and corrective actions to address the management practices that were not

being optimally performed were discussed. There has not been any dissemination of individual surveys or identification of individual participants.

CHAPTER 4 ANALYSIS OF DATA

Part-time operations supervisors were given the safety culture survey to obtain objective data on the safety programs currently utilized at United Parcel Service (UPS). The research was designed to assess part-time management perceptions of the current safety culture so as to identify the strengths and weaknesses of management's practices. The perception based survey was comprised of 39 safety performance statements and one open-ended comment question that supervisors rated their level of agreement with a particular management practice. A total of 100 supervisors were surveyed, which was equivalent to two-thirds of the Earth City hub part-time management workforce. The hub operations were selected due to the sheer number of non-management employees that supervisors are responsible for, approximately two-thousand (2,000). The workforce comprises of approximately 150 part-time operations supervisors, which is equivalent to a 67% participation rate and a relevant percentage number. After the data was tabulated, the completed surveys were destroyed to ensure anonymity of the participants.

The responses were quantitatively and qualitatively assessed. The responses ranked a Likert scale to specify their level of agreement to the statement based on five separate categories: 5-strongly agree, 4-agree, 3-uncertain, 2-disagree, 1-strongly disagree. On a scale of 1 to 5, an average mean score equal to or greater than 4 that is collectively associated with a particular management practice represents a management practice element that

is optimally performed. Conversely, a mean score of less than 4 was considered as a management practice element that is not optimal and requires improvement.

Management Practice Results

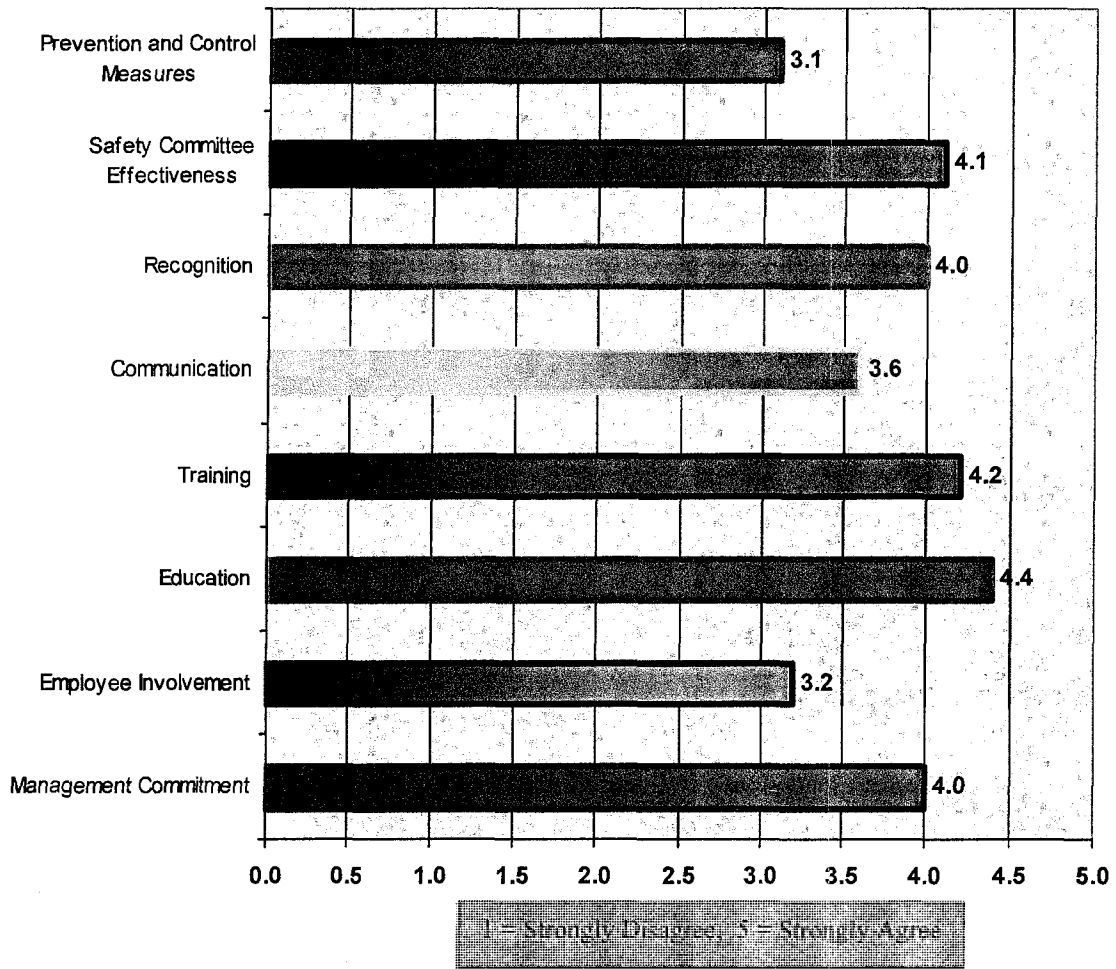
There were eight management practices there were evaluated with the perception based survey. These management practices included; management commitment, employee involvement, education, training, communication and feedback, recognition, safety committee effectiveness, and prevention and control measures. The management practice of management commitment had six corresponding statements in the survey. The management practices of employee involvement, education, recognition, safety committee effectiveness, and prevention and control measures each had five corresponding statements in the survey while training and communication and feedback had four corresponding statements. Refer to Table 1: Management Practices Correlation to Survey Statements, for a cross-reference of the survey statements that correspond to each of the eight management practices.

Table 1: Management Practices Correlation to Survey Statements

Acronym	Management Practice Element	Survey Statements
MC	Management Commitment	1, 3, 7, 18, 21, 23
EI	Employee Involvement	13, 22, 24, 33, 37
ED	Education	4, 12, 15, 17, 28
TR	Training	8, 16, 32, 34
CF	Communication and Feedback	5, 20, 30, 35
RE	Recognition	2, 10, 19, 27, 31
SE	Safety Committee Effectiveness	9, 14, 26, 38, 39
PC	Prevention and Control	6, 11, 25, 29, 36

Over half of the management practices were being optimally performed, with a mean score equal to or greater than 4. Those management practices included: management commitment, education, training, recognition, and safety committee effectiveness. The management practice element of education had an average score of 4.4, the highest mean score of all the practices that were evaluated. There were three management practices that were not being optimally performed, with a mean score below 4. Those management practices included: employee involvement, communication, and prevention and control measures. The management practice element of prevention and control measures had a mean score of 3.1, the lowest average score of all the practices that were evaluated. Refer to Figure 7: Results: Management Practices, for a chart that illustrates the mean score for each of the eight management practice elements.

Figure 7: Results: Management Practices



Stages of Safety Culture Results

The perception based survey was also designed to identify the current maturity stage of safety culture that is present in the Earth City hub facility. There were a total of 39 safety performance statements in the survey, 13 of which were categorized into each stage of safety culture. The three stages of safety culture included: Stage I – Safety solely based on rules and regulations; Stage II – Good safety performance becomes an organizational goal; and Stage III – Safety performance can always be improved. Refer to Table 2: Safety

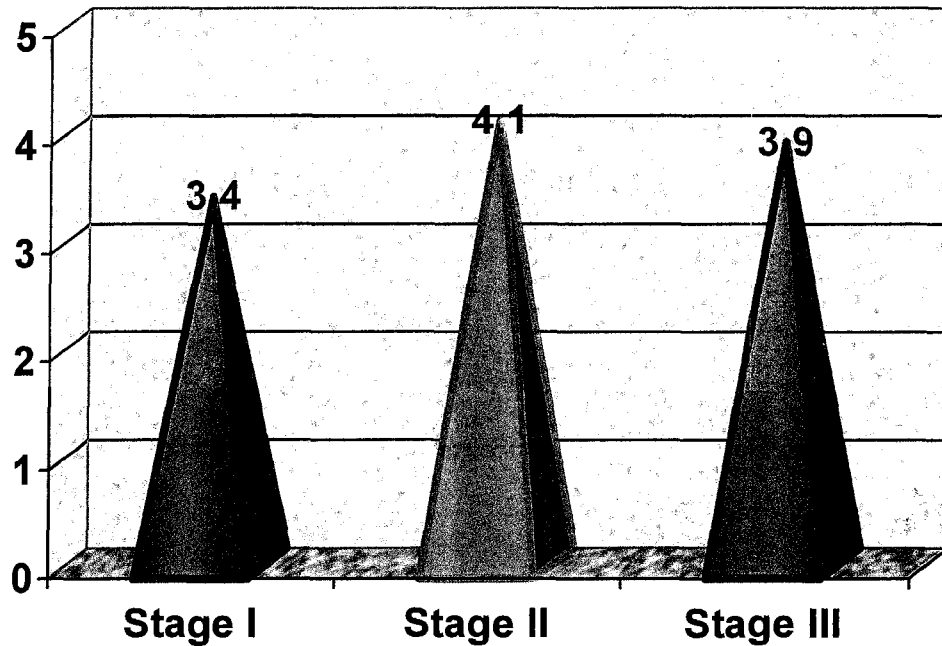
Culture Stages Correlation to Survey Statements, for a cross-reference of which survey statements related to each of the safety culture stages.

Table 2: Safety Culture Stages Correlation to Survey Statements

Stage	Safety Culture	Survey Statements
I	Safety solely based on rules and regulations	4, 6, 9,12, 13, 14, 17, 21, 22, 24, 25, 29, 34
II	Good safety performance becomes an organizational goal	2, 3, 5, 8, 10, 11, 15, 16, 18, 20, 33, 35, 39
III	Safety performance can always be improved	1, 7, 19, 23, 26, 27, 28, 30, 31, 32, 36, 37

Each survey statement was given a mean score and those scores were then totaled into the corresponding safety culture stage. The 13 individual mean scores were then averaged to determine an overall mean score for each of the safety culture stages. Stage I, safety solely based on rules and regulations, was determined to have a mean score of 3.4. Stage II, good safety performance becomes an organization goal, had a mean score of 4.1. Stage III, safety performance can always be improved, was determined to have a mean score of 3.9. The highest means score of 4.1 corresponds to the current maturity stage of the current safety culture at the Earth City hub operations, Stage II. Refer to Figure 8: Results: Stages of Safety Culture, for a graphical illustration of the results for the three stages of safety culture.

Figure 8: Results: Stages of Safety Culture



Comment Results

The perception based survey utilized the Likert scale to evaluate perceptions and was comprised of 40 statements, 39 safety performance statements and one open-ended comment question. In the open-ended comment question, participants were able to comment on any particular aspect regarding safety at the Earth City hub operations. The comments were transferred over and can be referred to in Table 3: Results: Comments. For an overview of the means for each statement in the perception survey, refer to Appendix H, Results: Mean Score Per Survey Statement.

Table 3: Results: Comments

Comments
I do not attend safety meetings because they are before the work shift and I have school so I cannot make them. The times should be changed every couple meetings to let other people show up.
Production happens, injuries don't. That's why it seems like production is the focus all the time.
Some safety committee members take advantage of being on the committee for getting out of work and walking around.
I agree with safety but it seems like it would be better to talk to and work with employees than filling out paperwork all night long.
We will get our raise every year whether we have injuries or not. If we have to many or run a bad area, we just get moved to an easier one.
All I hear every day is safety, safety, safety.
At this company, all we do is manual labor of lifting/lowering for 5 hours straight. There are going to be injuries sometimes.
If someone gets hurt at home, they don't do anything. They get hurt at work, they want to go to the doctor. MONEY!
You get a ton of training when you get hired and once a year, but nothing in between or after to tone up your skills.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of the research was to assess part-time management perceptions of the current safety culture in the Earth City hub operations organization at United Parcel Service (UPS) and to identify the maturity or stage of safety culture. In particular, the study intended to answer the following questions:

1. Which aspects of management practices are being performed on a consistent basis?
2. Which aspects of management practices are not being performed on a consistent basis?
3. What is the current stage of the safety culture on the front-line of the organization based upon the perceptions of part-time operations management?

Summary

UPS part-time management supervisors interact with the non-management employees on a daily basis. There are approximately 150 part-time supervisors in total and 100 participated in the research. Due to some part-time operations supervisors working in a more technical aspect, those supervisors were excluded and the survey was limited to those supervisors whose physical location requires them to be at the loading and unloading docks. The survey included 67% of the part-time management workforce and the participant population of front-line supervisors was approximately 110, which included 90%

of the targeted group in the survey. The hub operations of the organization were selected simply due to the vast number of non-management employees which are responsible for approximately two-thousand employees (2,000). These non-management employees contribute approximately two-hundred thousand (200,000) working hours every month and compromise 40% of the UPS employees in the state of Missouri.

A perception survey was administered to identify the components of the safety program: management practices and what stage of safety culture that was present at the Earth City hub operations. The responses to the survey used a Likert scale to specify participants' level of agreement to the safety statements and the responses were quantitatively and qualitatively assessed to establish a mean value. The mean values were associated with management practices and level of safety culture to determine their optimal performance and maturity stage.

The survey safety statements were either created by the author or modified from research and published safety culture surveys previously created (Barracough & Carnino, 1998) (Kajder, 2005). The survey was then reviewed the by the district health and safety management team, a consensus of appropriate changes were made, and the final survey was then administered to assess part-time management perceptions of the current safety culture.

The surveys were administered on October 8, 2007, and completed on November 2, 2007. The four week time frame allowed adequate time to make arrangements for the appropriate supervisors to participate in the survey. All participants were given the consent form, informed of the purpose of the survey,

and how to attain a copy of the results. The participants scored the survey in a closed door conference room to ensure confidentiality and the completed surveys were returned in sealed envelopes. The results were collected, tabulated and analyzed in a different location. The surveys were aggregated and no participant data was documented. All the results of the survey were reviewed with the Health and Safety department at UPS and corrective actions were taken to address the management practices that were not being optimally performed.

Conclusions

The research identified eight management practices to include: management commitment, employee involvement, education, training, communication and feedback, recognition, safety committee effectiveness, and prevention and control measures. Through analysis, the results indicated that 63%, or five of the management practices were being optimally performed, with an overall mean score equal to or greater than 4, with 5 being the highest. Those management practices included: management commitment, education, training, recognition, and safety committee effectiveness. The management practice element of education had a mean score of 4.4, the highest mean score of all the practices that were evaluated. Three management practices had a mean score below 4. Those management practices included: employee involvement, communication, and prevention and control measures. The management practice element of prevention and control measures had a mean score of 3.1, the lowest mean score of all the practices that were evaluated.

Refer to Figure 7: Results: Management Practices, for a chart that illustrates the mean score for each of the eight management practice elements.

The element of management commitment to safety is the major component for an organization's safety program to be effective. Management commitment had a mean score of 4.0, indicating that the part-time operations supervisors viewed this element as being optimally performed. The perception result also indicates that the management team is sincere about fostering a safe workplace (Vredenburg, 2002).

Management commitment and employee involvement are the two motivating force for organizing and controlling activities within an organization. Employee involvement provides the means through which employees develop and express their own commitment to the health and safety protection not only for themselves, but also for their fellow workers. According to the National Institute for Occupational Safety and Health (NIOSH) elements of a Safety and Health system, both management commitment and employee involvement must be intertwined to have an effective safety program. The survey results for management commitment were a mean of 4.0 while employee involvement had a mean value of 3.2. The need for improvement in employee involvement is evident and would be best utilized through the safety committee, especially through their mean valued score of 4.1 in effectiveness. The safety committee is instrumental in every facet of worksite analysis and hazard prevention and control. These non-management members are the conduit to the rest of the workforce. The closeness of the mean scores for management commitment and

worker participation indicates a good foundation for the safety culture moving towards a world-class safety program (Robson, Shannon, Goldenhar, & Hale, 2001).

The management practice of hazard prevention and control had a mean value of 3.1, which indicates that this practice is not being optimally performed. Activities in this element are performed by the safety committee and reinforced through management. Both hazard prevention and control, work together in a continuous process to develop solutions and assign responsibilities to reduce or eliminate hazards identified in the worksite analysis. Controls to eliminate hazards include engineering controls, such as guarding, administrative controls, such as training, policies or procedures, and personal protective equipment.

The management practice of training had a mean value of 4.2 while the management practice of education had a mean value of 4.4. Both of these management practices are an ongoing process for all employees. Gaining the knowledge and skills necessary to perform a job safely begins at an employee's employment date and continues through their employment. Safety education and training helps ensure that both management and non-management understand their responsibilities. The mean valued scores for both management practices are being optimally performed and has the foundation for a successful safety culture.

The element of communication and feedback had a mean value of 3.6, identifying this as a management practice that requires improvement. In order to influence safety practices in employees, feedback must be given in a meaningful

and sincere manner. Improving the frequency and openness of safety communication at all organizational levels is required to achieve a total safety culture. Communication is best demonstrated through behavior based surveys that require observations and feedback. One-on-one discussions about behaviors along with informal group meetings that discuss overall observations help break down the barriers of communication while also reinforcing safe work practices (Parker, 2006).

The management practice of recognition program had a mean value of 4.0, identifying the element as being optimally performed. Recognition and awareness programs is perhaps one of the more controversial and divisive issues in safety. Good safety performance needs to be recognized and rewarded; the concern is how safety performance is measured. No matter how safety performance is measured, the motivational power in recognition lies mainly in its ability to appeal to an employee's sense of pride. The important concept to remember about recognition is that different people like to be recognized differently. Through employee pride and involvement of the safety culture, determining the positive form of recognition can come directly from the employees for continued success (Wayne, 1997).

These eight management practices working individually will result in an optimally viewed management perception for that specific element, but all eight working together will demonstrate an effective safety program and safety culture. The surveys evaluated at the Earth City hub operations at UPS indicated that 63%, or five of the management practices were being optimally performed, with a

mean score equal to or greater than 4. Those management practices included: management commitment, education, training, recognition, and safety committee effectiveness. The three management practices that were not being optimally performed included: employee involvement, communication, and prevention and control measures. Even though these management practices were not performing at optimal performance, all three were above a mean value of 3 and with minimal effort can be improved and positively increase the safety culture.

Safety culture calls for approaches that go beyond simple adherence to established design standards and operating procedures. Continued improvement in levels of safety requires the development of a comprehensive safety culture at all levels of an organization. Safety culture is represented in different developmental stages. Three stages seem to emerge, each of which displays a different awareness and receptiveness to the effect of human behavior and attitude on safety. The characteristics of each stage provide a measure to use as a basis for self-diagnosis and give direction to the development of the safety culture, identifying the current and aspired stages.

The perception based survey was also designed to identify the current maturity stage of safety culture that is present in the Earth City hub facility. The survey was comprised of 39 safety performance statements, 13 of which were categorized into each stage of safety culture. The three stages of safety culture included: Stage I – Safety solely based on rules and regulations; Stage II – Good safety performance becomes an organizational goal; and Stage III – Safety performance can always be improved. Refer to Table 2: Safety Culture Stages

Correlation to Survey Statements, for a cross-reference of which survey statements related to each of the safety culture stages.

The perceptions scored by part-time management resulted in an overall mean value of 3.4 for Stage I, 4.1 for Stage II, and 3.9 for Stage III. The highest score of 4.1 identified the Earth City hub facility in the Stage II of the current safety culture. The difference in Stage II and Stage III can be analyzed as a difference of only a 0.2 increase per management perceptions in correlation to those corresponding survey statements while the difference in Stage I and Stage II is an increase in a 0.7 per management perception in correlation to those corresponding survey statements. Refer to Appendix I, Results: Survey Percentages of Likert Scale Statements, for a detailed chart depicting the results of each response per survey statement.

The characteristics of Stage II safety culture describe several proactive approaches in safety that is demonstrated on a consistent basis. These approaches include management encouraging cross-departmental and cross-functional teams and communication, and senior manager's function as a team and begin to coordinate departmental and function decision. Characteristics of this type are evident in the Earth City hub operations and continue to contribute to the overall success in safety. With these positive approaches, there is still opportunity for improvement to positively impact the safety culture. Improvements include the organization concentrating primarily on day to day matters, decisions often centered on cost and function, and management's response to mistakes is to put more controls, via procedures and retraining, in

place. While these characteristics identify the areas that need improvement, they are obtainable through a systematic approach that the hub operations management is highly prioritized on and committed to fostering. The progression of safety culture is shifting and UPS has both leading and lagging indicators that demonstrate this transition.

Recommendations

Identified in this research are nine directional hypotheses. A statement accepting or rejecting the hypotheses is provided after each hypothesis.

- H1: The mean value score for part-time operations management perceptions of the management practice element of management commitment meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The first directional hypothesis was supported by the data and is accepted.
- H2: The mean value score for part-time operations management perceptions of the management practice element of employee involvement meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The second directional hypothesis was not supported by the data and is rejected.
- H3: The mean value score for part-time operations management perceptions of the management practice element of education meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The third directional hypothesis was supported by the data and is accepted.

- H4: The mean value score for part-time operations management perceptions of the management practice element of training meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The fourth directional hypothesis was supported by the data and is accepted.
- H5: The mean value score for part-time operations management perceptions of the management practice element of communication and feedback meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The fifth directional hypothesis was not supported by the data and is rejected.
- H6: The mean value score for part-time operations management perceptions of the management practice element of recognition meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The sixth directional hypothesis was supported by the data and is accepted.
- H7: The mean value score for part-time operations management perceptions of the management practice element of safety committee effectiveness meets or exceeds the optimal mean related performance score equivalent to the numerical value of 4 or above on the Likert scale. The seventh directional hypothesis was supported by the data and is accepted.
- H8: The mean value score for part-time operations management perceptions of the management practice element of prevention and control measures meets or exceeds the optimal mean related performance score equivalent

to the numerical value of 4 or above on the Likert scale. The eighth directional hypothesis was not supported by the data and is rejected.

H9: The mean value score for part-time operations management perceptions for the characteristics of the three stages of safety culture results in the categorization of the operations management safety culture with the Stage II level. The ninth directional hypothesis was supported by the data and is accepted.

UPS is continually striving to be a world class safety organization and improve their safety performance. The perception based survey identifies the current safety culture stage as Stage II and is in the progression of moving towards Stage III safety culture that is world class. The management practice of management commitment is being optimally performed and provides the foundation for further success.

There are several recommendations based on the data that supported the directional hypothesis tested:

1. All non-management hours allocated for safety committee activities should be planned prior to the fiscal year and utilized. If hours are not fully utilized in a calendar month, then those hours should be rolled over into the next calendar month.
2. All non-management hours allocated for safety committee activities in a fiscal year should be charged out in the business plan whether they are utilized fully or not. A reduction in used hours will not improve performance related indices.

3. Make Comprehensive Health and Safety Process (CHSP) training an annual process and tracked in the same manner as regulatory annual training.
4. Re-train all full-time and part-time supervisors on the CHSP process with enough time allocated for sufficient coverage of all the key elements of behavior based safety.
5. Incorporate CHSP training into the new supervisor's orientation and require the training to be given by a safety committee member or health and safety department member.
6. Business managers adjust CHSP committee member's dispatch to ensure that CHSP activities are completed as scheduled.
7. Ensure all CHSP committee members are paid for CHSP related time including safety committee meetings and training.
8. Fully utilize PCM time daily and start with safety first. Alternate speakers with H&S management and non-management co-chairs.
9. Gather best practices from CHSP committees who have successful programs based on process and outcome metrics. Share those practices through the committee members rather than electronically.
10. Conduct annual district safety conferences with district staff, business managers and non-management co-chairs to educate on updates to CHSP.

11. Ensure that all new co-chairs have completed CHSP training prior to assuming their new role and have a safety committee member mentor process for the first 30 working days to ensure effectiveness.
12. Incorporate a training system for safety committee co-chairs based on level of experience and time that incorporates a level of tiers for ranking purposes. As members become proficient in their levels of responsibility, a new level of training for new levels of responsibilities are available; which would also include a tangible symbol of completion for each level.
13. Non-management co-chairs to attend pre-sort meetings with the full-time management staff to ensure effective communication to other non-management safety committee members and employees of daily business issues.

Implementing these recommendations will help positively change the safety culture in the Earth City hub operations and move them into the right direction of becoming a world class safety organization. This research can be performed in other functions, departments and operations at UPS to develop a comparative data analysis. This research can also be done again in a calendar year as a measurement tool for improvement in perceptions of management practices and maturity of the safety culture.

Embracing safety as a personal value will foster a sense of safety stewardship; looking out for the health and safety of fellow employees and

accepting nothing less than 100 percent in safety attitudes, conditions, and methods. An organization's priorities usually include measures like earnings, output, quality and service. These priorities may change time to time. There are usually numerical goals associated with these priorities and these goals usually represent continuous improvement in each key priority. However, personal values are different. Personal values are absolute. A personal value signifies what is truly important to UPS. As this personal value is instilled in the operations and through each employee, unprecedented safety performance and a new stage of safety culture will prevail, one far beyond Stage III that is world class.

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APPENDIX A CHARACTERISTICS OF STAGES OF SAFETY CULTURE

Reference: Carnino, A. (n.d.). *Management of safety, safety culture and self assessment*. International Atomic Energy Agency, Division of Nuclear Installation Safety. Retrieved on November 17, 2007 from <http://www-ns.iaea.org/publications/mng-safety.htm>

Stage I: Safety solely based on rules and regulations

At this stage, the organization sees safety as an external requirement and not as an aspect of conduct that will help the organization to succeed. The external requirements are those of national governments, regional authorities, or regulatory bodies. There is little awareness of behavioral and attitudinal aspects of safety performance, and no willingness to consider such issues. Safety is seen very much as a technical issue. Mere compliance with rules and regulations is considered adequate. For an organization which relies predominantly on rules, the following characteristics may be observed.

- Problems are not anticipated; the organization reacts to them as they occur.
- Communication between departments and functions is poor.
- Departments and functions behave as semi-autonomous units and there is little collaboration and shared decision-taking among them.
- The decisions taken by departments and functions concentrate upon little more than the need to comply with rules.
- People who make mistakes are simply blamed for their failure to comply with the rules.
- Conflicts are not resolved; departments and functions compete with one another.
- The role of management is seen as endorsing the rules, pushing employees and expecting results.
- There is not much listening or learning inside or outside the organization which adopts a defensive posture when criticized.
- Safety is viewed as a required nuisance.
- Regulators, customers, suppliers and contractors are treated cautiously or in an adversarial manner.
- Short term profits are seen as all important.
- People are viewed as 'system components'- they are defined and valued solely in terms of what they do.
- There is an adversarial relationship between management and employees.
- There is little or no awareness of work, or business, processes.
- People are rewarded for obedience and results, regardless of long term consequences.

Stage II: Good safety performance becomes an organizational goal

An organization at this stage has a management which perceives safety performance as important even in the absence of regulatory pressure. Although there is growing awareness of behavioral issues, this aspect is largely missing from safety management methods which comprise technical and procedural solutions. Safety performance is dealt with, along with other aspects of the business, in terms of targets or goals. The organization begins to look at the reasons why safety performance reaches a plateau and is willing to seek the advice of other organizations.

- The organization concentrates primarily on day to day matters; there is little in the way of strategy.
- Management encourages cross-departmental and cross-functional teams and communication.
- Senior managers function as a team and begin to co-ordinate departmental and functional decisions.
- Decisions are often centered around cost and function.
- Management's response to mistakes is to put more controls, via procedures and retraining, in place. There is a little less blaming.
- Conflict is disturbing and discouraged in the name of teamwork.
- The role of management is seen as applying management techniques, such as management by objectives.
- The organization is somewhat open about learning from other companies, especially techniques and best practices.
- Safety, cost and productivity are seen as detracting from one another. People think that safety means higher cost and reduced production.
- The organization's relationship with regulators, customers, suppliers and contractors is distant rather than close; this is a cautious approach where trust has to be earned.
- It is important to meet or exceed short-term profit goals. People are rewarded for exceeding goals regardless of the long-term results or consequences.
- The relationship between employees and management is adversarial, with little trust or respect demonstrated.
- There is growing awareness of the impact of cultural issues in the workplace. People do not understand why added controls do not yield the expected results in safety performance.

Stage III: Safety performance can always be improved

An organization at stage III has adopted the idea of continuous improvement and applied the concept to safety performance. There is a strong emphasis on communications, training, management style, and improving

efficiency and effectiveness. Everyone in the organization can contribute. Some behaviors are seen within the organization which enable improvements to take place and, on the other hand, there are behaviors which act as a barrier to further improvement. Consequently, people also understand the impact of behavioral issues on safety. The level of awareness of behavioral and attitudinal issues is high, and measures are being taken to improve behavior. Progress is made one step at a time and never stops. The organization asks how it might help other companies.

- The organization begins to act strategically with a focus on the longer term as well as an awareness of the present. It anticipates problems and deals with their causes before they happen.
- People recognize and state the need for collaboration among departments and functions. They receive management support, recognition and the resources they need for collaborative work.
- People are aware of work, or business, processes in the company and help managers to manage them.
- Decisions are made in the full knowledge of their safety impact on work, or business, processes as well as on departments and functions.
- There is no goal conflict between safety and production performance, so safety is not jeopardized in pursuit of production targets.
- Almost all mistakes are viewed in terms of work process variability. The important thing is to understand what has happened rather than find someone to blame. This understanding is used to modify the process.
- The existence of conflict is recognized and dealt with by trying to find mutually beneficial solutions.
- Management's role is seen as coaching people to improve business performance.
- Learning from others both inside and outside the organization is valued. Time is made available and devoted to adapting such knowledge to improve business performance.
- Safety and production are seen as inter-dependent.
- Collaborative relationships are developed between the organization and regulators, suppliers, customers and contractors.
- Short term performance is measured and analyzed so that changes can be made which improve long-term performance.
- People are respected and valued for their contribution.
- The relationship between management and employees is respectful and supportive.
- Aware of the impact of cultural issues, and these are factors considered in key decisions.
- The organization rewards not just those who 'produce' but also those who support the work of others. Also, people are rewarded for improving processes as well as results.

APPENDIX B
UPS HUMAN SUBJECTS RESEARCH APPROVAL



13818 Rider Trail Dr.
Earth City, MO 63045

July 13, 2007

Tom Heitert
United Parcel Service
13818 Rider Trail Drive
Earth City, MO 63045

Mr. Heitert,

This letter is to inform you that your request for studying part-time management perceptions of the current safety culture in the Operations organization at United Parcel Service has been approved. This approval includes the use of a survey, questionnaire, part-time management time, physical location, and any other needed items required to complete this study. This approval is valid through July 13, 2008.

Please notify myself of any changes in your research project prior to implementing. You can notify myself either verbally or in writing.

Do not hesitate to let me know of any support you need with this research project. We are looking forward to the results of the survey and any feedback you can share with us to make United Parcel Service a safer workplace.

Sincerely,

A handwritten signature in cursive script that reads "Cheryl Beckett".

Cheryl Beckett
Health and Safety Manager
cbeckett@ups.com

pc: Steve Dernlan, Compliance Manager
Dave McHenry, CHSP Manager

**APPENDIX C
CONSENT FORM**

APPROVAL EXPIRES
8/16/08 Tom

Identification of Researchers: This research is being done by Tom Heitert, a graduate student with the Safety department at Central Missouri State University, and an employee of United Parcel Service. I have developed the questionnaire and is being conducted as a partial requirement for graduation from Central Missouri State University to complete a Master of Science Degree in Occupational Industrial Safety.

Purpose of the Study: The purpose of this study is to assess part-time management perceptions of the current safety culture in the Operations organization at United Parcel Service.

Request for Participation: You are invited to participate in a study on perceptions of safety at United Parcel Service. It is up to you whether you would like to participate. If you decide not to participate, you will not be penalized in any way. You can also decide to stop at any time without penalty. If you do not wish to answer any of the questions, you may simply skip them. You may withdraw your data at the end of the study. If you wish to do this, please tell me before you turn in your materials. Once you turn in the materials, I will not know which survey or test is yours.

Exclusions: You must be at least 18 years of age to participate in this study.

Description of Research Method: This study involves completing a short survey. The survey is multiple-choice and will take fifteen (15) minutes to complete. You will be asked to read questions and circle a number corresponding to your perception. The results of this survey will be tabulated, scored, compiled, and assembled into a final report which will be used in the planning of any improvement initiatives. Please note that I cannot give you your individual results because the data is anonymous.

Privacy: All of the information collected will be anonymous. I will not record your name, employee number, or any information that could be used to identify you. You will also be provided a blank sheet of paper so that you can cover your responses as you write them down. This will prevent other research participants from seeing your answers. The completion of this survey means you are consenting to the use of the information you provide. After the survey results are documented, the survey forms will be destroyed to ensure complete confidentiality.

Explanation of Risks: The risks associated with participating in this study are similar to the risks of everyday life.

Explanation of Benefits: You will benefit from participating in this study by getting firsthand experience in psychological research. You may also enjoy completing the survey.

Questions: If you have any questions about this study, please contact Tom Heitert. He can be reached at theitert@ups.com or (314) 344-1456. If you have any questions about your rights as a research participant, please contact the Human Subjects Protection Program at (660) 543-4621.

Your participation is greatly appreciated.

**APPENDIX D
SAFETY CULTURE SURVEY**

Your participation in the survey is voluntary and your answers will remain anonymous. All survey results are strictly confidential and individual survey forms will not be shared with others. All answers will be compiled and assembled into a final report.

Directions: Please do not write your name, employee number, or any other personal information on this survey. Answer each statement as honestly as possible by circling the number that best expresses your opinion.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
Health and safety of my employees is important to me.	5	4	3	2	1
I remember the last time my full-time supervisor personally did something to encourage safety in my work area.	5	4	3	2	1
Hub management is committed to safety.	5	4	3	2	1
I know what my work areas safety goals are.	5	4	3	2	1
I routinely discuss my employees safety record with them.	5	4	3	2	1
Employees are mainly responsible for their own safety, not me.	5	4	3	2	1
Management will act upon employee concerns regarding safety issues.	5	4	3	2	1
I have adequate training in health and safety.	5	4	3	2	1
Health and safety committee members are available when I need them.	5	4	3	2	1
I remember clearly the last time I personally did something to encourage safety in my work area.	5	4	3	2	1
My employees have the proper tools and equipment available to perform their job safely.	5	4	3	2	1
My full-time supervisor is knowledgeable about the health and safety procedures.	5	4	3	2	1
Health and Safety Committee activities and meetings should be paid for (on the clock).	5	4	3	2	1
Health and Safety is about filling out paperwork.	5	4	3	2	1
I know and understand the safe work methods for my work area.	5	4	3	2	1
If I am not sure about a safety rule or regulation, someone is available to explain it to me.	5	4	3	2	1
I understand the cost associated with injuries.	5	4	3	2	1
Management clearly wants a safe working environment.	5	4	3	2	1
Safety performance results are included in my annual salary increase.	5	4	3	2	1
Safety is discussed every day at my pre-sort meetings.	5	4	3	2	1

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
My full-time supervisor and manager are sometimes more concerned about performance than safety.	5	4	3	2	1
I regularly attend safety committee meetings.	5	4	3	2	1
Management does not knowingly compromise safety concerns for productivity.	5	4	3	2	1
If I see an unsafe condition but it is not in my work area, I don't leave it alone.	5	4	3	2	1
I feel that I have enough time to work on safety during my operation.	5	4	3	2	1
I know how to contact my safety committee member if I need them.	5	4	3	2	1
I feel I have an impact on the hub's overall safety performance results.	5	4	3	2	1
I understand all the benefits of having a safe work area.	5	4	3	2	1
Injuries and near-misses are part of the job.	5	4	3	2	1
Enforcement of discipline for safety rule violations are administered consistently.	5	4	3	2	1
Safety performance is included in my Quality Performance Review (QPR).	5	4	3	2	1
I feel my employees can do my job productively without compromising safety.	5	4	3	2	1
I feel comfortable about correcting unsafe behaviors with my employees.	5	4	3	2	1
I feel that I have had sufficient training for me to do my job safely.	5	4	3	2	1
Safety is the first item discussed at every meeting.	5	4	3	2	1
Safety is never compromised for the sake of getting the job done.	5	4	3	2	1
Regular safety activities are performed by my full-time supervisor or manager.	5	4	3	2	1
The safety program at UPS has increased my safety awareness off-the-job.	5	4	3	2	1
UPS's health and safety program is effective.	5	4	3	2	1

Comments:

Thank You for Your Participation and Responses!

APPENDIX E
SURVEY PERCEPTION STATEMENTS CORRELATION TO MANAGEMENT PRACTICES

The perception survey is designed to address both management practices and the stages of safety culture. These charts depict the correlation between the survey statements and the management practices.

Management Practice:

Acronym	Hypothesis	Management Practice Element	
MC	H1	Management Commitment	Survey Statements: 1, 3, 7, 18, 21, 23
EI	H2	Employee Involvement	Survey Statements: 13, 22, 24, 33, 37
ED	H3	Education	Survey Statements: 4, 12, 15, 17, 28
TR	H4	Training	Survey Statements: 8, 16, 32, 34
CF	H5	Communication and Feedback	Survey Statements: 5, 20, 30, 35
RE	H6	Recognition	Survey Statements: 2, 10, 19, 27, 31
SE	H7	Safety Committee Effectiveness	Survey Statements: 9, 14, 26, 38, 39
PC	H8	Prevention and Control	Survey Statements: 6, 11, 25, 29, 36

Number	Survey Statement	Management Practice
1	Health and safety of my employees is important to me.	MC
2	I remember the last time my full-time supervisor personally did something to encourage safety in my work area.	RE
3	Hub management is committed to safety.	MC
4	I know what my work areas safety goals are.	ED
5	I routinely discuss my employees safety record with them.	CF
6	Employees are mainly responsible for their own safety, not me.	PC
7	Management will act upon employee concerns regarding safety issues.	MC
8	I have adequate training in health and safety.	TR
9	Health and safety committee members are available when I need them.	SE
10	I remember clearly the last time I personally did something to encourage safety in my work area.	RE
11	My employees have the proper tools and equipment available to perform their job safely.	PC
12	My full-time supervisor is knowledgeable about the health and safety procedures.	ED
13	Health and Safety Committee activities and meetings should be paid for (on the clock).	EI
14	Health and Safety is about filling out paperwork.	SE
15	I know and understand the safe work methods for my work area.	ED
16	If I am not sure about a safety rule or regulation, someone is available to explain it to me.	TR
17	I understand the cost associated with injuries.	ED

Number	Survey Statement	Management Practice
18	Management clearly wants a safe working environment.	MC
19	Safety performance results are included in my annual salary increase.	RE
20	Safety is discussed every day at my pre-sort meetings.	CF
21	My full-time supervisor and manager are sometimes more concerned about performance than safety.	MC
22	I regularly attend safety committee meetings.	EI
23	Management does not knowingly compromise safety concerns for productivity.	MC
24	If I see an unsafe condition but it is not in my work area, I don't leave it alone.	EI
25	I feel that I have enough time to work on safety during my operation.	PC
26	I know how to contact my safety committee member if I need them.	SE
27	I feel I have an impact on the hub's overall safety performance results.	RE
28	I understand all the benefits of having a safe work area.	ED
29	Injuries and near-misses are part of the job.	PC
30	Enforcement of discipline for safety rule violations are administered consistently.	CF
31	Safety performance is included in my Quality Performance Review (QPR).	RE
32	I feel my employees can do my job productively without compromising safety.	TR
33	I feel comfortable about correcting unsafe behaviors with my employees.	EI
34	I feel that I have had sufficient training for me to do my job safely.	TR
35	Safety is the first item discussed at every meeting.	CF
36	Safety is never compromised for the sake of getting the job done.	PC
37	Regular safety activities are performed by my full-time supervisor or manager.	EI
38	The safety program at UPS has increased my safety awareness off-the-job.	SE
39	UPS's health and safety program is effective.	SE

APPENDIX F
SURVEY PERCEPTION STATEMENTS CORRELATION TO SAFETY CULTURE STAGES

The perception survey is designed to address both management practices and the stages of safety culture. These charts depict the correlation between the survey statements and the safety culture stages.

Safety Culture Stages (Refer to Appendix A, Characteristics of Safety Culture):

Stage	Safety Culture	
I	Safety solely based on rules and regulations	Survey Statements: 4, 6, 9, 12, 13, 14, 17, 21, 22, 24, 25, 29, 34
II	Good safety performance becomes an organizational goal	Survey Statements: 2, 3, 5, 8, 10, 11, 15, 16, 18, 20, 33, 35, 39
III	Safety performance can always be improved	Survey Statements: 1, 7, 19, 23, 26, 27, 28, 30, 31, 32, 36, 37

Number	Survey Statement	Safety Culture Stage
1	Health and safety of my employees is important to me.	III
2	I remember the last time my full-time supervisor personally did something to encourage safety in my work area.	II
3	Hub management is committed to safety.	II
4	I know what my work areas safety goals are.	I
5	I routinely discuss my employees safety record with them.	II
6	Employees are mainly responsible for their own safety, not me.	I
7	Management will act upon employee concerns regarding safety issues.	III
8	I have adequate training in health and safety.	II
9	Health and safety committee members are available when I need them.	I
10	I remember clearly the last time I personally did something to encourage safety in my work area.	II
11	My employees have the proper tools and equipment available to perform their job safely.	II
12	My full-time supervisor is knowledgeable about the health and safety procedures.	I
13	Health and Safety Committee activities and meetings should be paid for (on the clock).	I
14	Health and Safety is about filling out paperwork.	I
15	I know and understand the safe work methods for my work area.	II
16	If I am not sure about a safety rule or regulation, someone is available to explain it to me.	II
17	I understand the cost associated with injuries.	I

Number	Survey Statement	Safety Culture Stage
18	Management clearly wants a safe working environment.	II
19	Safety performance results are included in my annual salary increase.	III
20	Safety is discussed every day at my pre-sort meetings.	II
21	My full-time supervisor and manager are sometimes more concerned about performance than safety.	I
22	I regularly attend safety committee meetings.	I
23	Management does not knowingly compromise safety concerns for productivity.	III
24	If I see an unsafe condition but it is not in my work area, I don't leave it alone.	I
25	I feel that I have enough time to work on safety during my operation.	I
26	I know how to contact my safety committee member if I need them.	III
27	I feel I have an impact on the hub's overall safety performance results.	III
28	I understand all the benefits of having a safe work area.	III
29	Injuries and near-misses are part of the job.	I
30	Enforcement of discipline for safety rule violations are administered consistently.	III
31	Safety performance is included in my Quality Performance Review (QPR).	III
32	I feel my employees can do my job productively without compromising safety.	III
33	I feel comfortable about correcting unsafe behaviors with my employees.	II
34	I feel that I have had sufficient training for me to do my job safely.	I
35	Safety is the first item discussed at every meeting.	II
36	Safety is never compromised for the sake of getting the job done.	III
37	Regular safety activities are performed by my full-time supervisor or manager.	III
38	The safety program at UPS has increased my safety awareness off-the-job.	III
39	UPS's health and safety program is effective.	II



UNIVERSITY OF
CENTRAL
MISSOURI

APPENDIX G
APPROVAL FROM HUMAN
SUBJECTS REVIEW COMMITTEE

Human Subjects Protection Program
Ward Edwards 1800
Warrensburg, MO 64093
Office 660-543-4621
FAX 660-543-4778
www.ucmo.edu

August 16, 2007

THOMAS HEITERT
6175 MISTY MEADOW DRIVE
HOUSE SPRINGS MO 63051

Dear Mr. Heitert,

Your research project, "Part-time management perceptions of the current safety culture in the operations organization at United Parcel Service" was approved by the Human Subjects Review Committee on August 16, 2007. This approval is valid through August 16, 2008. Your informed consent form has also been approved until August 16, 2008.

Please use copies of the approved, stamped informed consent form in your research. Any modifications to the consent form must be approved in advance by the committee. You may not use the consent form past the stamped expiration date.

Please note that you are required to notify the committee in writing of any changes in your research project and that you may not implement changes without prior approval of the committee. You must also notify the committee in writing of any change in the nature or the status of the risks of participating in this research project.

Should any adverse events occur in the course of your research (such as harm to a research participant), you must notify the committee in writing immediately. In the case of any adverse event, you are required to stop the research immediately unless stopping the research would cause more harm to the participants than continuing with it.

At the conclusion of your project, you will need to submit a completed Project Status Form to this office. You must also submit the Project Status Form if you wish to continue your research project beyond its initial expiration date.

If you have any questions, please feel free to contact me at the number above.

Sincerely,

Joseph B. Vaughn, Ph.D.
Interim Assistant Provost for Research and
Dean of The Graduate School

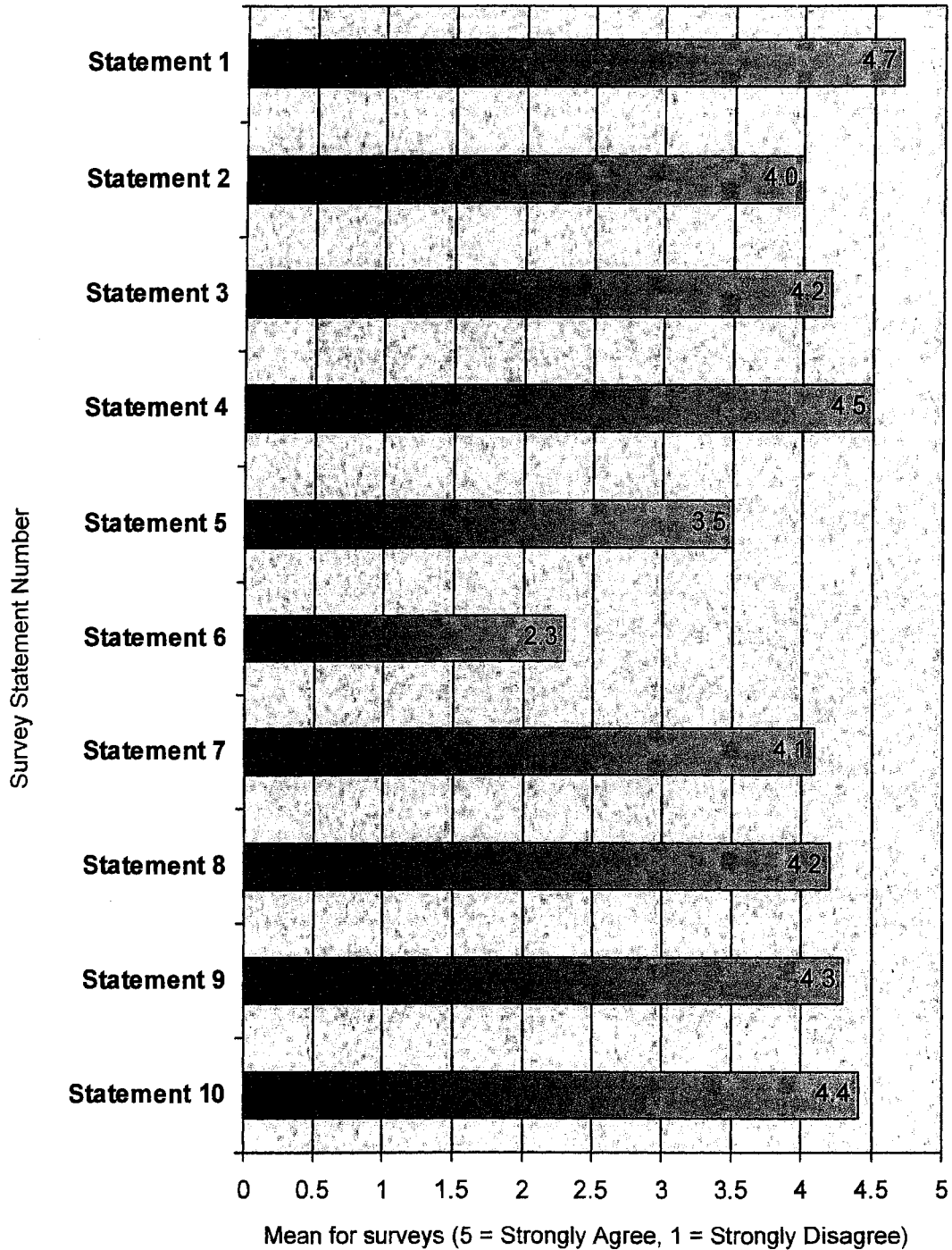
Approved Co-Investigators: None

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pc: Omer Frank, HUM 329D

APPENDIX H

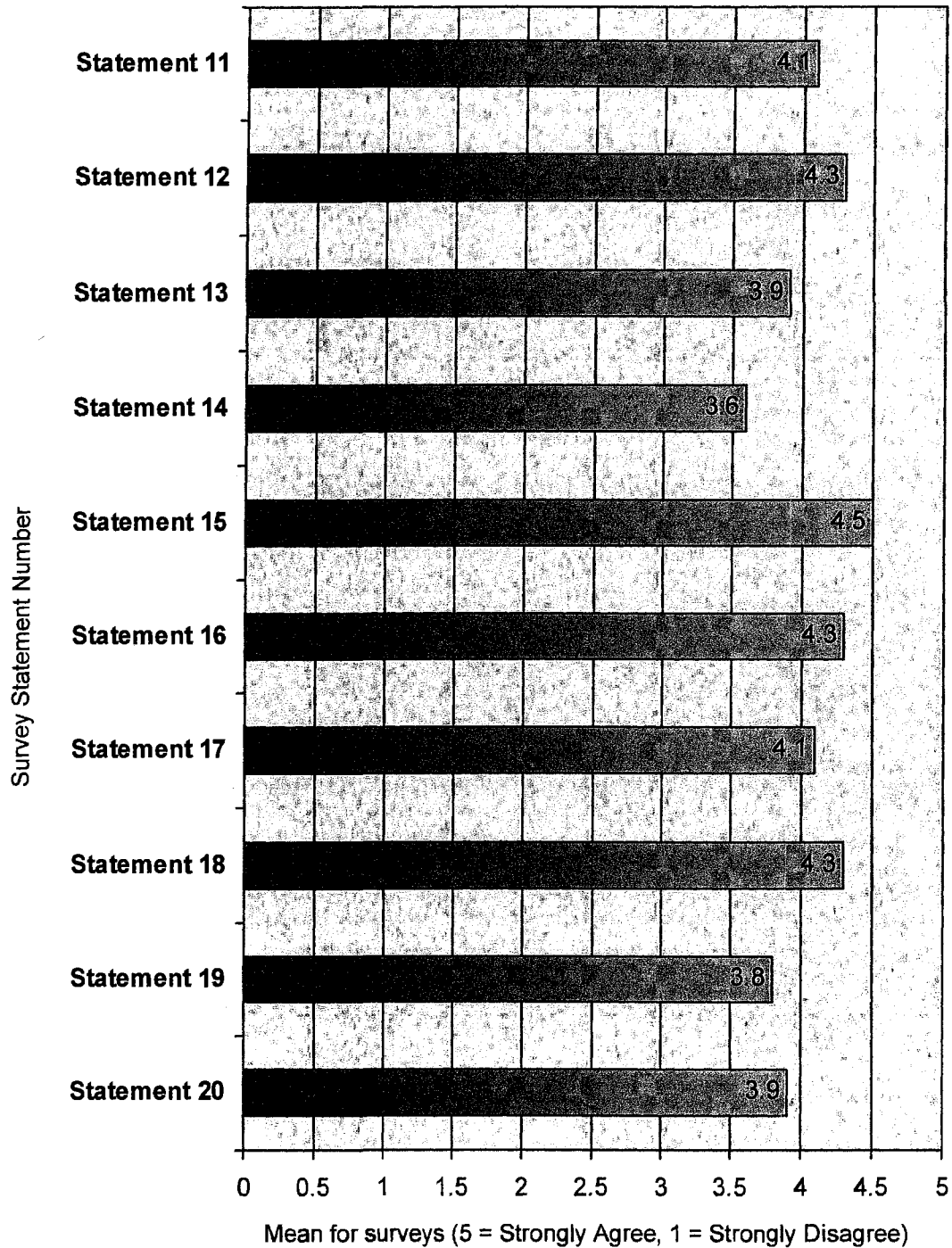
RESULTS: MEAN SCORE PER SURVEY STATEMENT



Refer to Appendix E, Survey Perception Statements Correlation to Management Practices and Appendix F, Survey Perception Statements Correlation to Safety Culture Stages for a numerical listing for each survey statement.

APPENDIX H

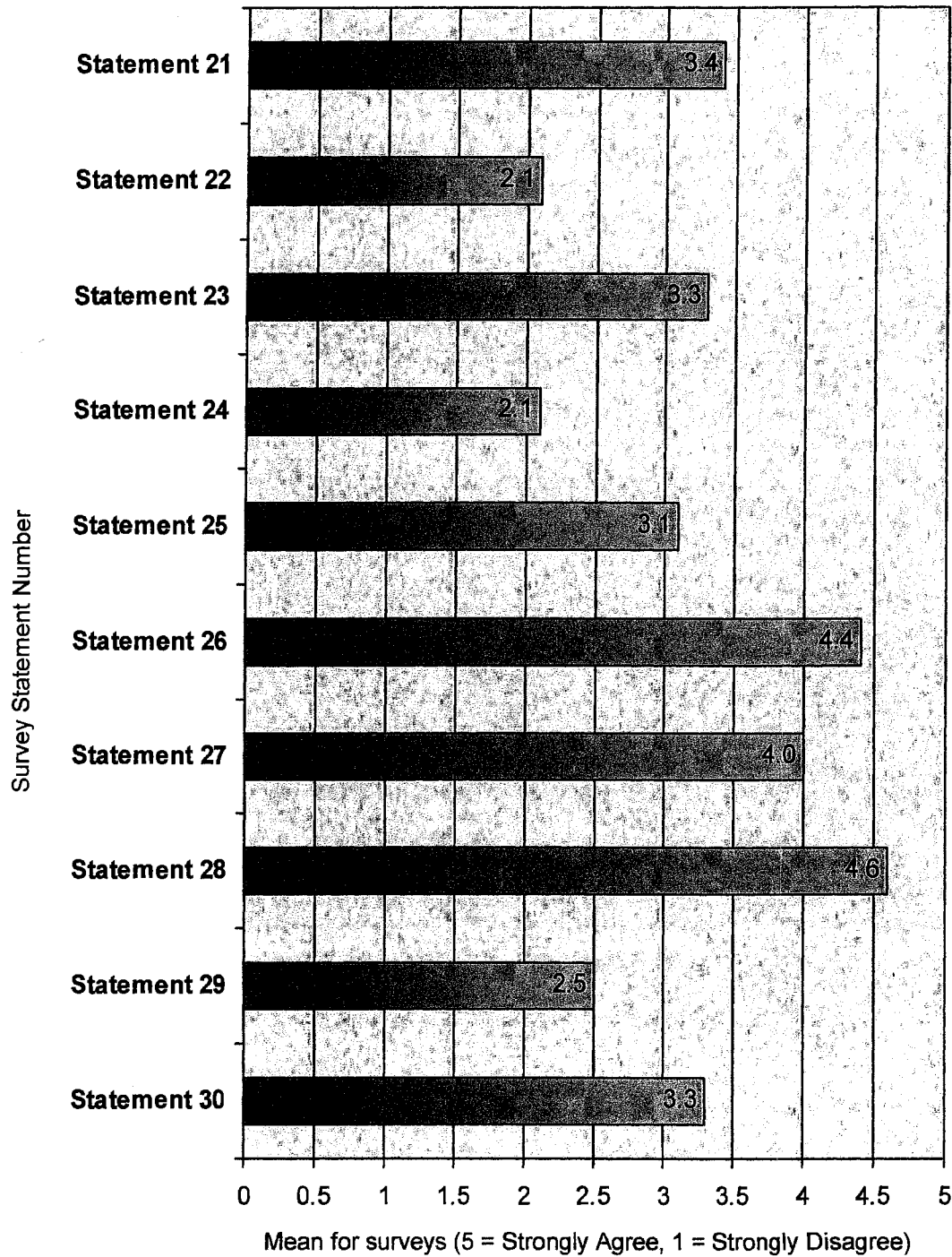
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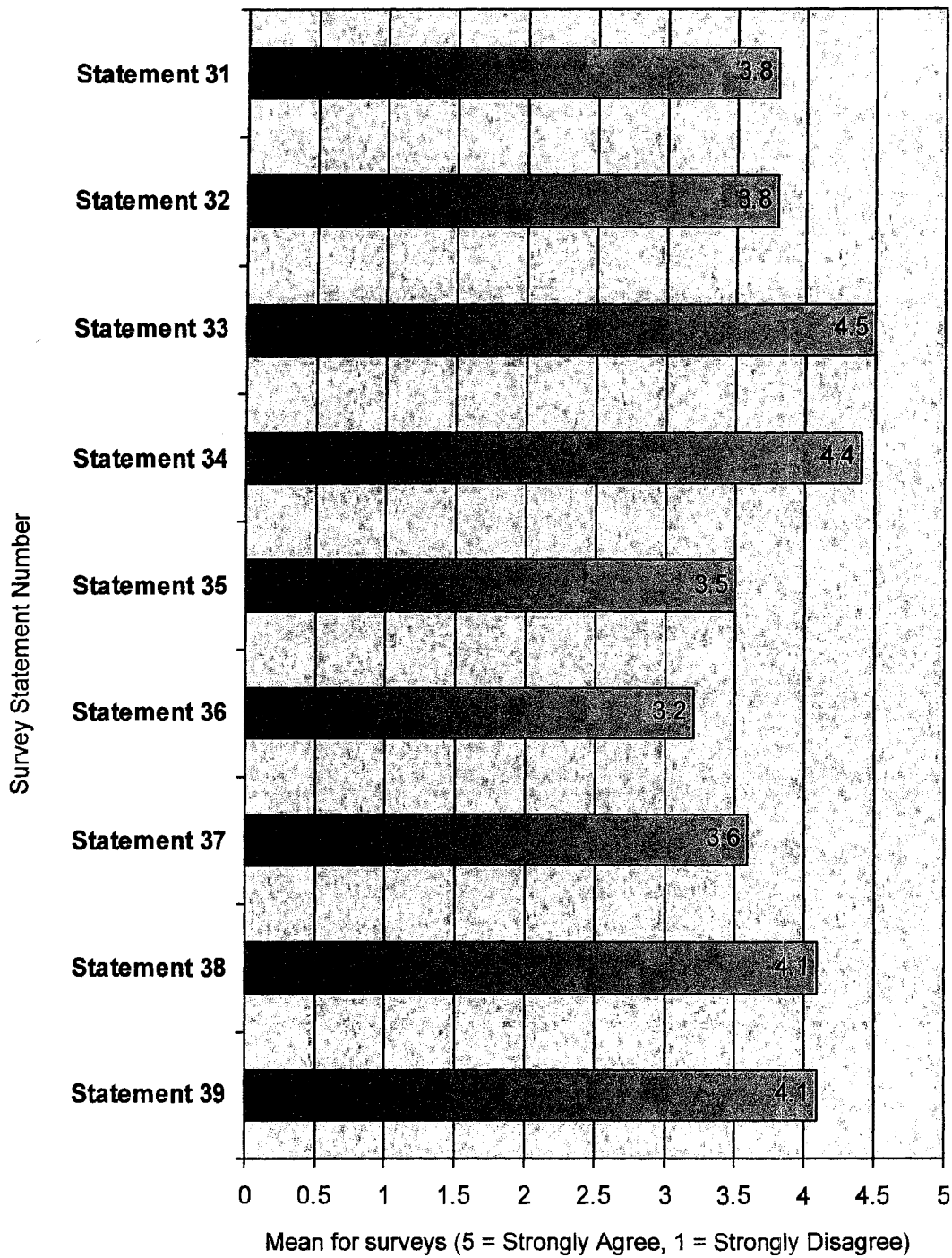
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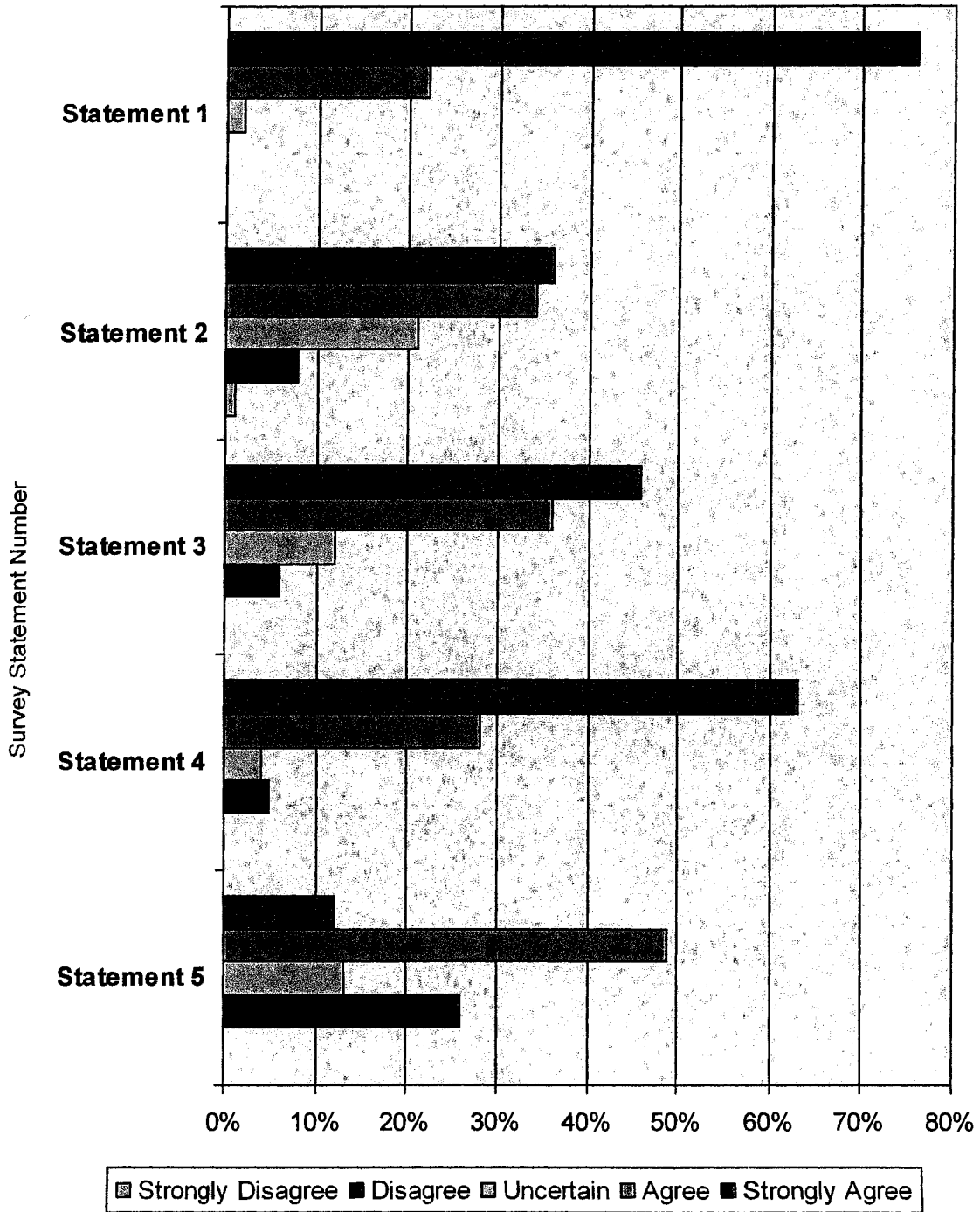
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APPENDIX I

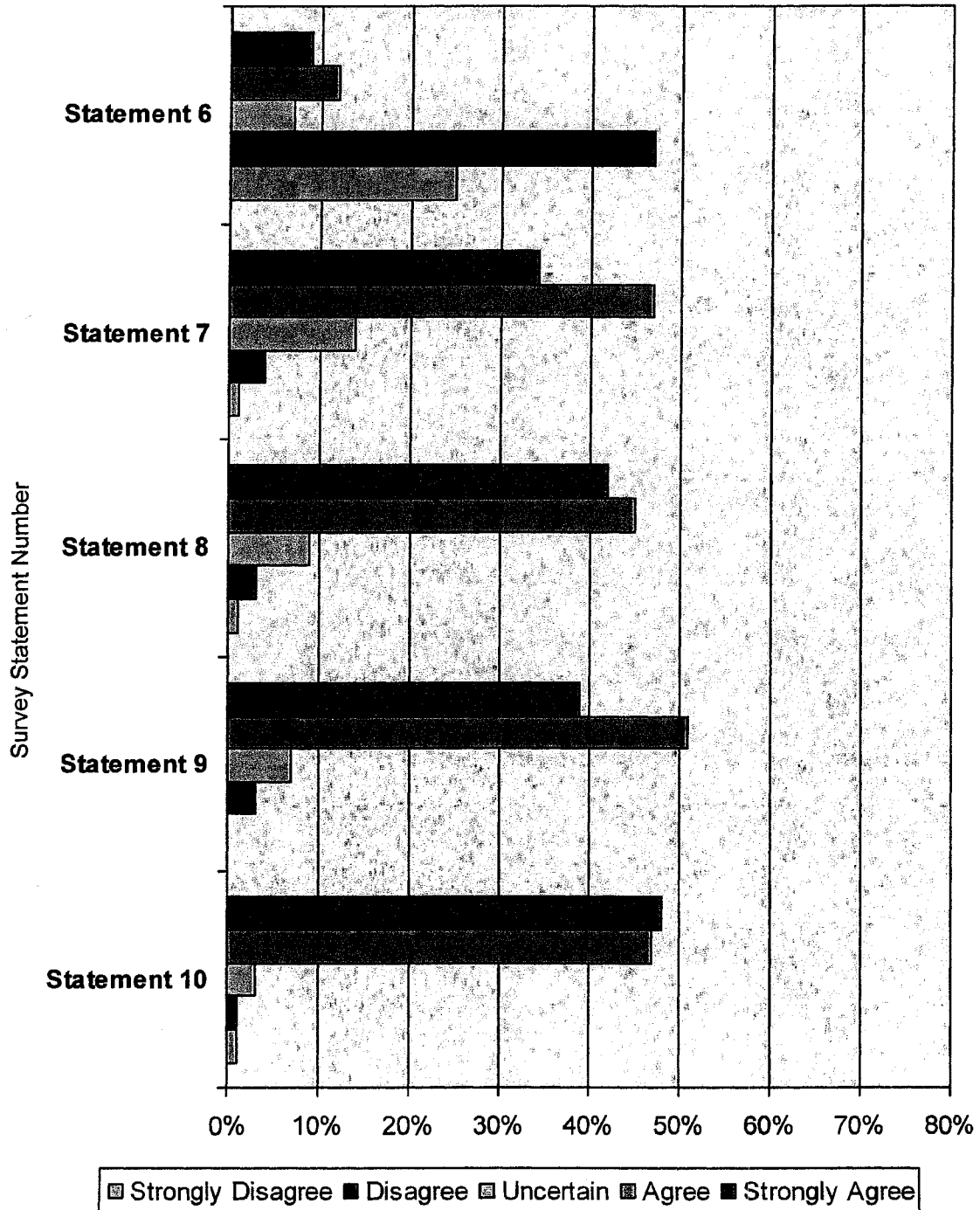
RESULTS: SURVEY PERCENTAGES OF LIKERT SCALE STATEMENTS



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APPENDIX I

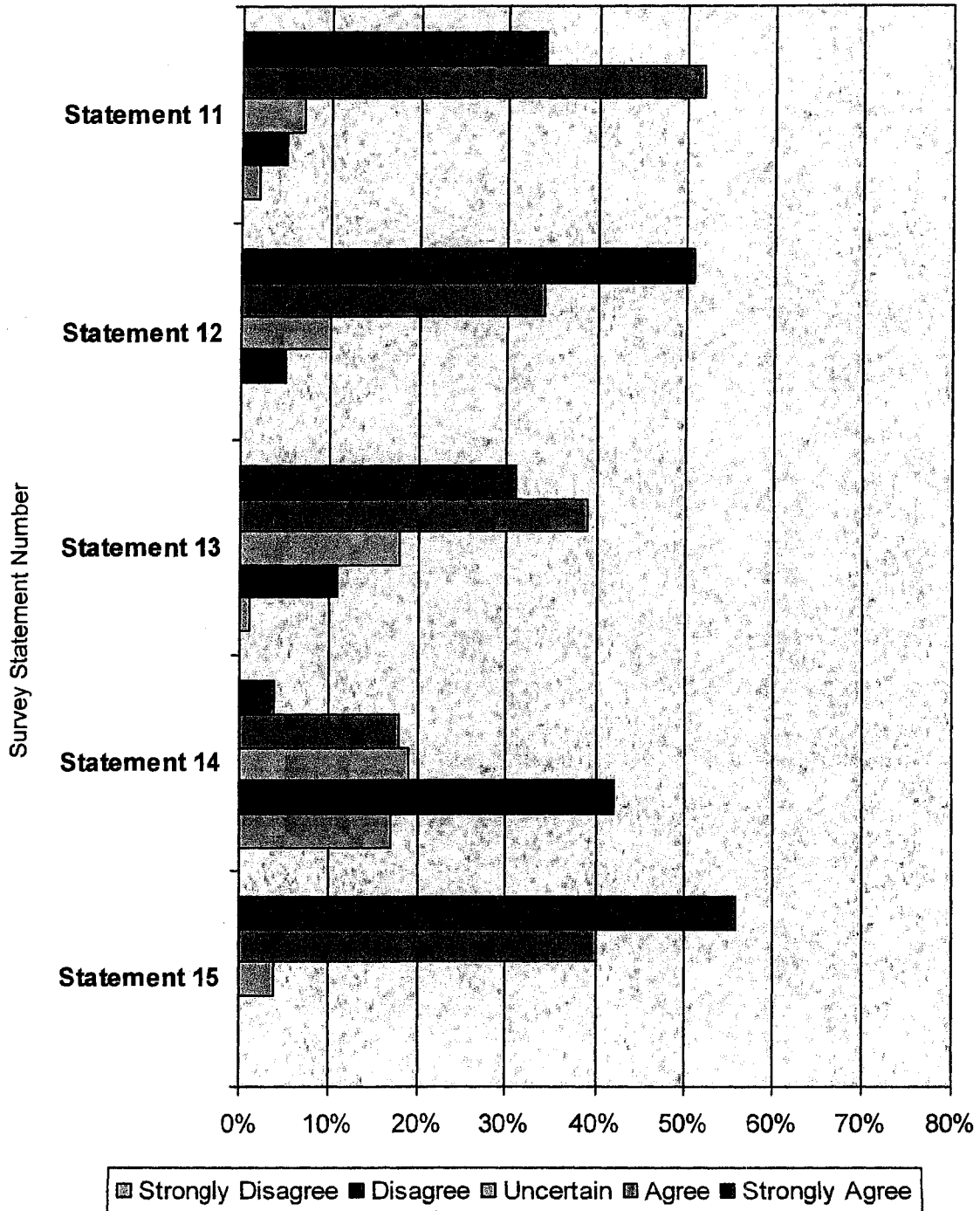
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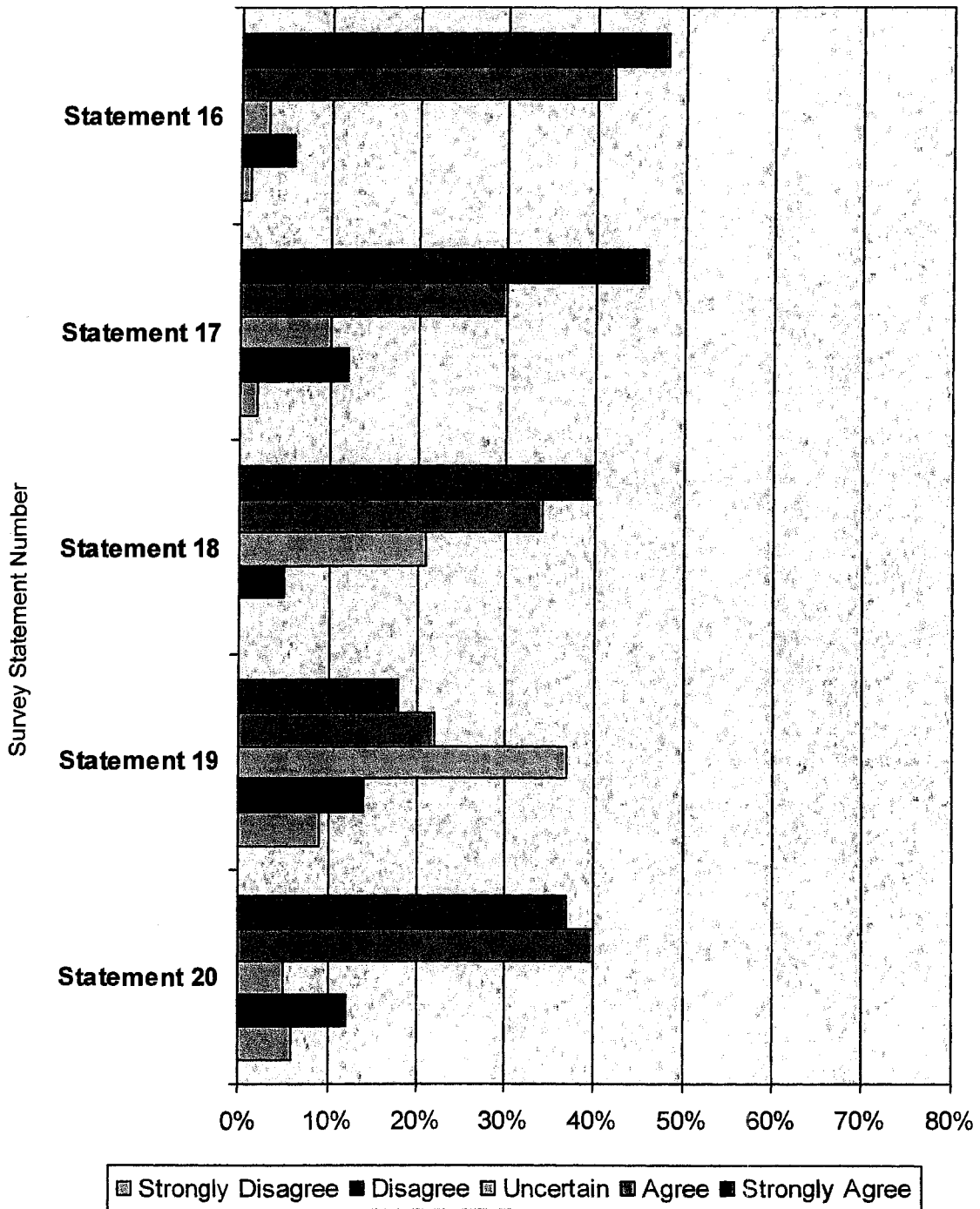
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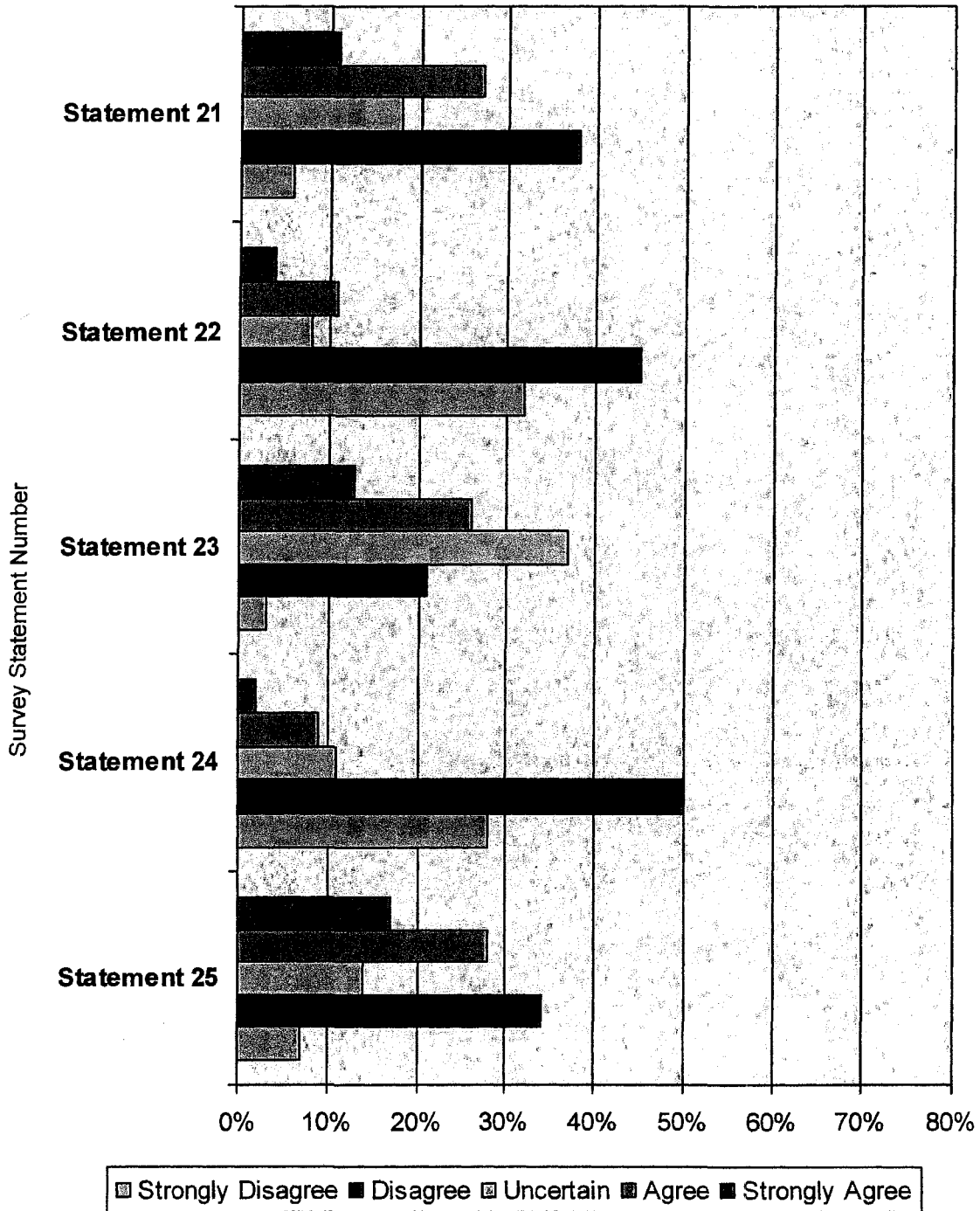
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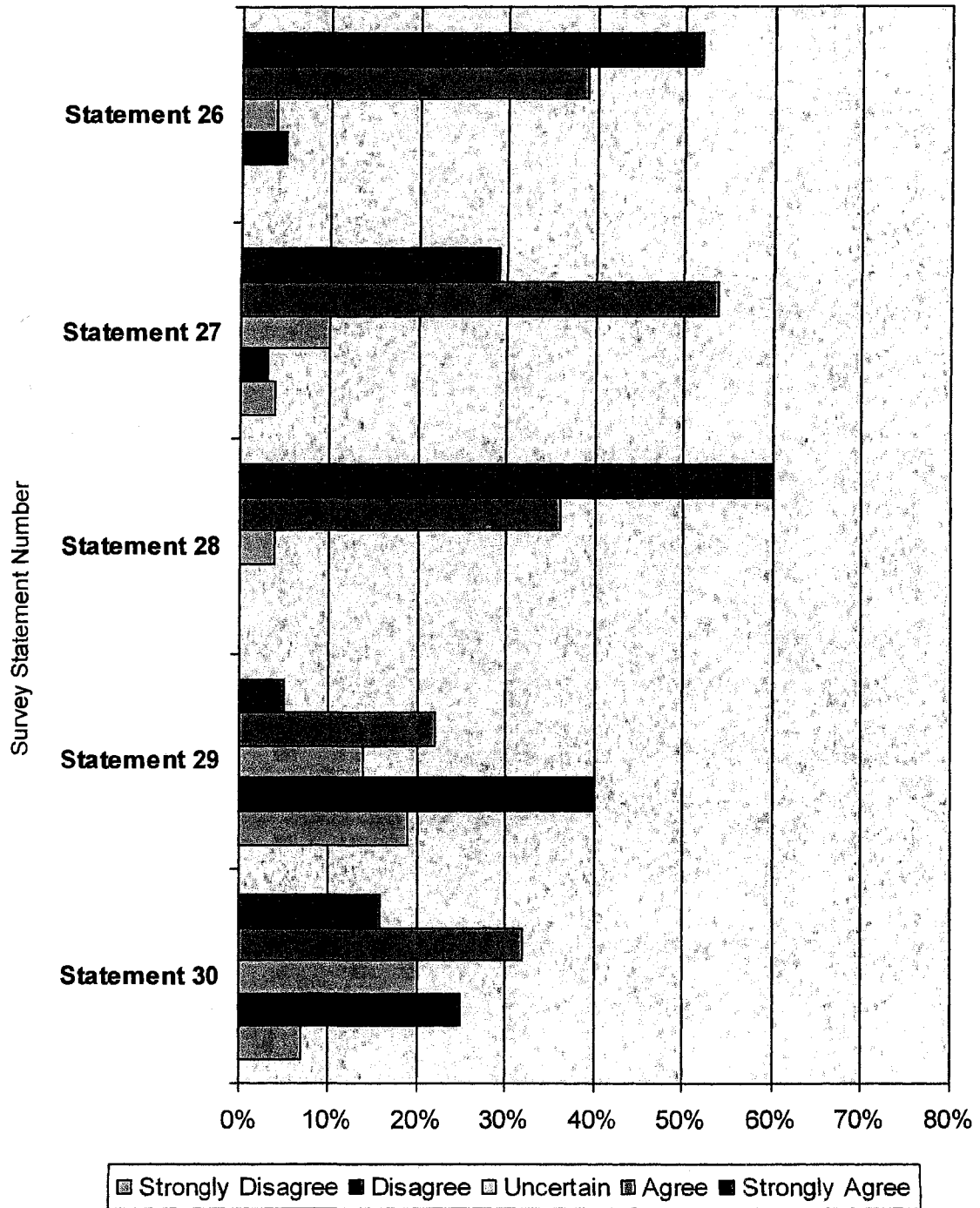
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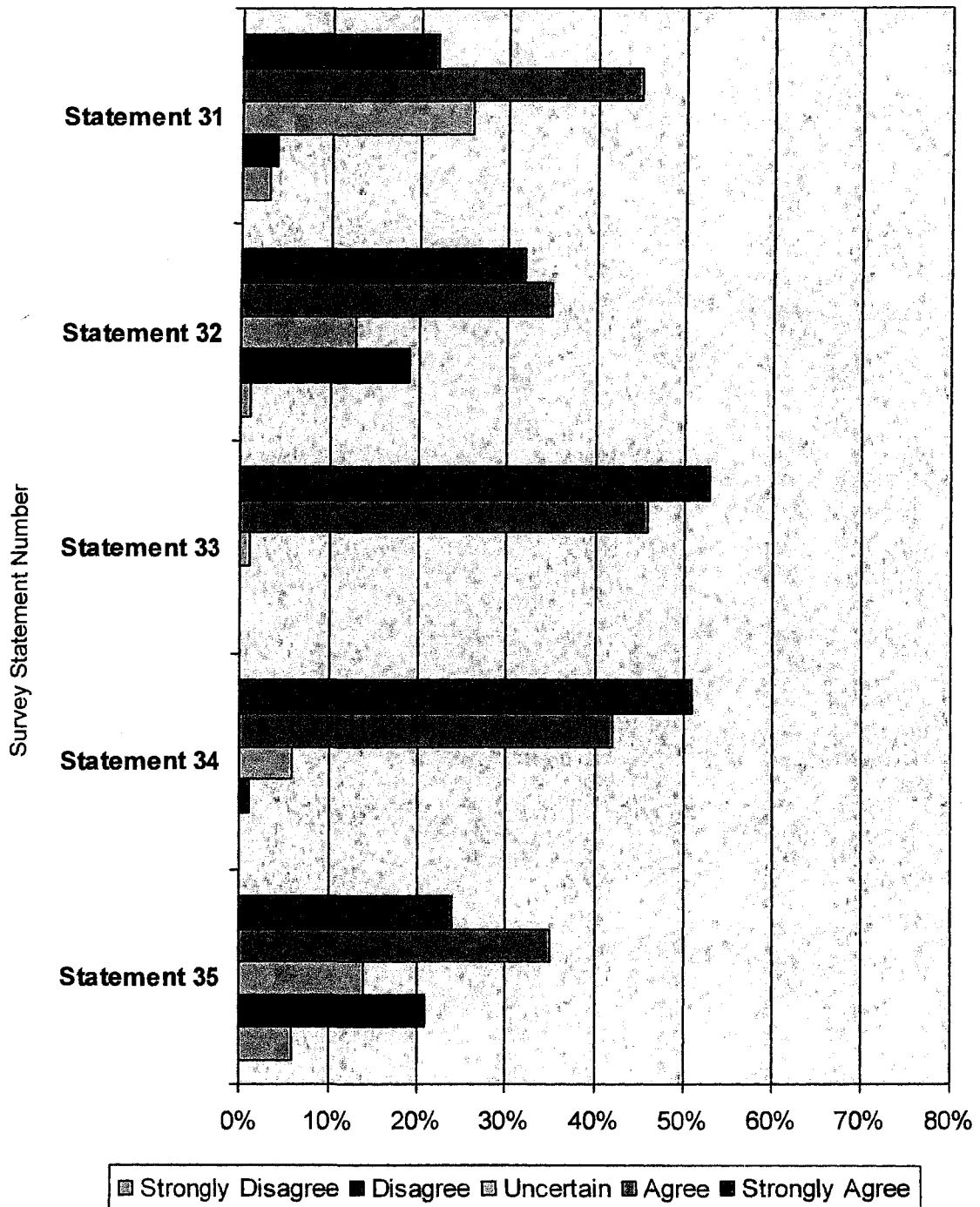
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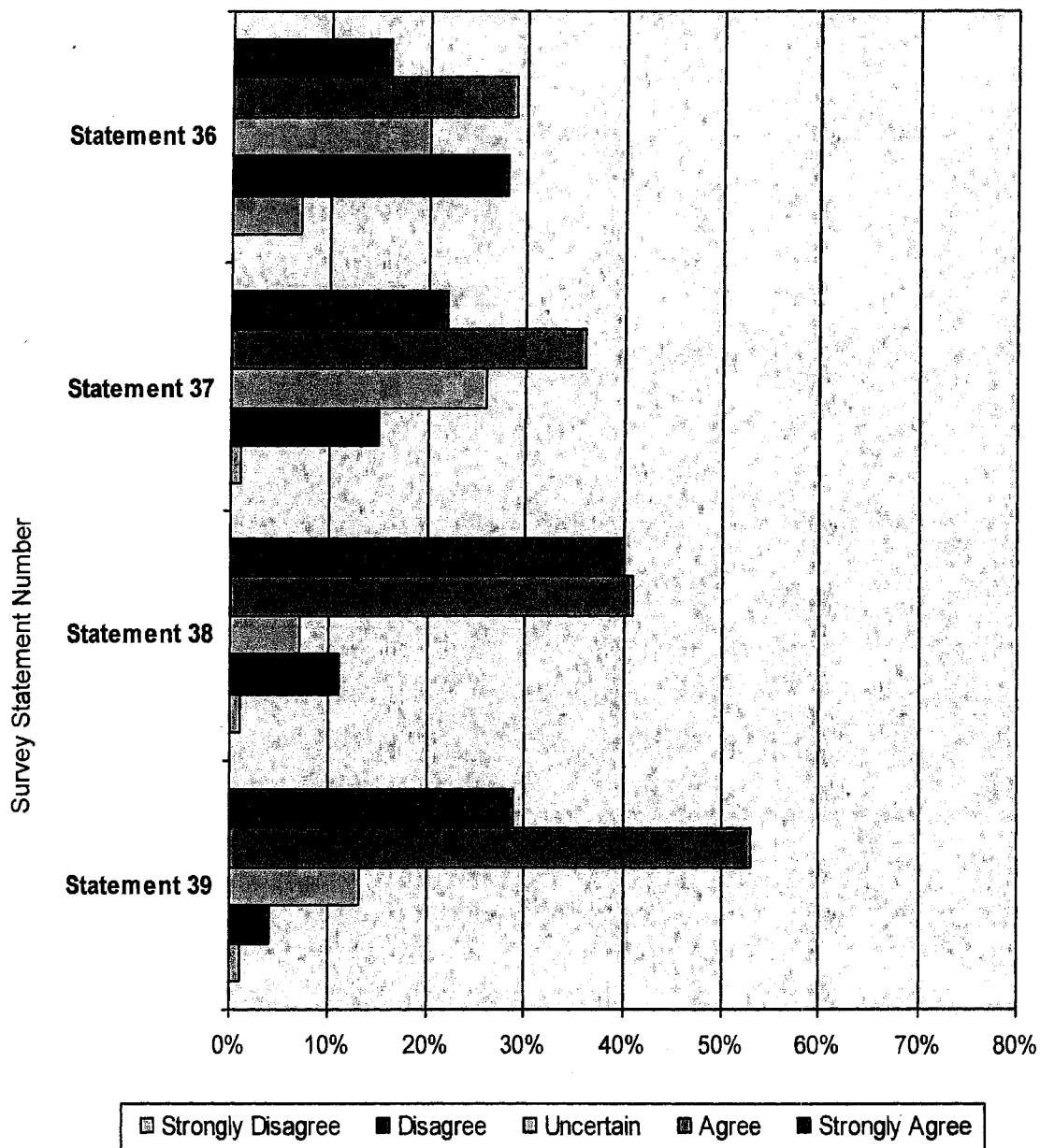
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