AN ANALYSIS OF
FITNESS, STRESS AND JOB PERFORMANCE
CONCERNS OF GREENSBORO, NORTH CAROLINA AND WESTERN NEW YORK
POLICE OFFICERS.

BY

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Thesis submitted to the Faculty of the Graduate school of the State University of New York College at Brockport in partial fulfillment of the requirements for the degree of Master of Science

1993

STATE UNIVERSITY OF NEW YORK

COLLEGE AT BROCKPORT

BROCKPORT, NEW YORK

DEPARTMENT OF PHYSICAL EDUCATION AND SPORT

Title of Thesis: An Analysis of Fitness, Stress and Job Concerns of Greensboro, North Carolina and Western New York Police Officers

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ABSTRACT

COMPLETED RESEARCH IN HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE
State University of New York, College at Brockport
Brockport, New York

Judith L. Jensen
Institutional Representative

ZAPATA, ANTHONY D. An Analysis Of Fitness, Stress and Job Concerns of Greensboro, North Carolina and Western New York Police Officers. M.S., in Ed. 1993; 126pp. (S. Mookerjee)

Police Officers who have to handle stress daily, regardless of years on the force, should be in good physical condition to meet the psychological and physical stress challenges of police work. Police officers (N = 245) participated in the study. The officers consisted largely of male uniformed officers between the ages of 26-30. Data were collected using a seventy-one item police performance-fitness survey instrument and analyzed in relation to a Time on the Job (T.O.J.) variable for 1) 1 to 5, 2) 6 to 10, 3) 11 to 15, and 4) 15 + years on the job. The study included model fitness officers from Greensboro, N.C. and survey officers from Western New York (WNY). The questionnaire was developed to identify if physical fitness is of concern to the officers surveyed, if officers report physical fitness relates to their stress management and job performance, if model officers as compared to survey officers differ significantly in response to the survey questions and what the surveyed officers report their departments are doing for them in relation to physical fitness. The study lasted approximately two years. The level of statistical significance was set at ($P < .05$) for chi-square values. Ninety-three percent of the officers surveyed stated they wanted to be involved in fitness programs. Yet, only 2% of the WNY officers reported that their departments require periodic fitness test or standards after graduation from the academy. These responses were statistically significant for all T.O.J. groups with the exception of the third group. Of the officers involved in fitness programs, 67% felt it improved their job performance. This was statistically insignificant ($P > .05$) for all comparisons. Final Communality estimates totals ranged between 3.50 and 3.96 showing that when sample questions from the survey were categorized according to stress, diet, department, personal fitness, fitness performance and health for factor analysis, overall, regardless of T.O.J., there was little significant difference and that the model and survey groups were more alike than different in their responses to categorized questions. The study reveals that physical fitness is recognized by model and survey officers, but is not being promoted by Western New York Police Departments.

DEDICATION

To my mother Ravenetta

For your everlasting support, understanding
and inspiration.

ACKNOWLEDGEMENTS

I would like to take this opportunity to commend those individuals who have contributed to the completion of this study. To my Graduate committee, I thank Dr. Swapan Mookerjee, Dr. "Lefty" McIntyre and Dr. Gregory Kenney. Their knowledge and guidance was inspirational.

A very special thanks goes out to my computer analyst Marjorie A. Uschold who dedicated "unparalleled" time, effort and concern to the completion of this research. Thank you Marjorie!

An additional special thanks goes out to Roy A. Irving, Rochester Police Chief, who voluntarily showed interest for this project and provided crucial resources for its completion.

The following individuals were also integral to the study's conclusion: Sgt. Sherman Scott, Sgt. Paul Boccacino, Sgt. Tom Stiles, Sgt. Tom Beicher, Officer Ken Coniglio and Officer Joe Guelli. They all provided guidance and contributed ideas for this research.

Lastly, I would like to thank all of the Police Departments' Officers who took the time out of their busy schedules to complete the survey. It was a tremendous response. Thank you all!

ANTHONY D. ZAPATA, B.S., M.S.

1993

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CHAPTER I

INTRODUCTION

People who have to handle stressful situations on a daily basis, regardless of age or time on the job, have to be in good physical condition. This can be especially true in the highly psychologically and physiologically stressful occupation of law enforcement.

Jones (1989) states the age of death for the average white male is 73 years. The age of death for the average police officer is 57 to 58. What makes police officers so different from the rest of the population -- different enough to cost police officers 14 or 15 years of life?

Law enforcement itself has undergone enormous changes such as increased violence, less police power and budget cuts. All of which creates added stress to an already difficult occupation. In a survey conducted by the FBI, which contacted every department in the country and had a 90% return rate they asked, "what is the number one training need in your department?" Respondents listed everything from crime scene searches to fingerprint identification to DNA identifications. The number one answer was training in how to handle stress (Resse, 1989).

Stress is manifested in police work by such duties as emergency driving, citizen complaints, street disputes and domestic problems an officer faces along with the internal -- departmental pressure to appease a currently dissatisfied (with government and the law) public. Today's officers have witnessed increased violence in the street, as well as increased restraints on their power to enforce the law. One might correlate this to an officer going out to do the job handcuffed!

Escalation of recent restraints on policing come in light of community displeasure with such current issues as the Rodney King incident by police officers in Los Angeles. In many cities, efforts are being made to form community controlled

police departments with the power to supervise police budgets, conduct and discipline.

This might create added stress for the police officers, which in turn, may lead to poor performance if not "managed" properly. This is one contention of this study, that a physically fit officer might be able to handle job stressors better, resulting in more positive job performance.

> The highly acclaimed Perrier survey of fitness in America, conducted by Louis Harris and associates, shows that modern-day men and women strongly believe in the Greek concept "strong mind in a strong body." The survey found that those who have a deep commitment to exercise report feeling more relaxed, less tired and more disciplined. They also report having greater self-confidence, a sense of looking better, greater productivity in work and, in general, a strong sense of being at one with themselves (Nieman, 1989).
>
> Nieman (1989) goes on to state.In my study of 2,300 Los Angeles marathon runners who had been running an average of seven years, over 90% reported that energy levels were higher, stress was handled better, and sleep was improved compared to their pre-running years. Exercise is good for both the body and the brain. Through regular, active use of the body, one can discover a greater sense of well being, far greater vitality, and a calmer, more relaxed attitude towards daily pressures.

The preceding study serves as a representative case for the argument that there might be a relationship between stress, state of well being, behavior and performance. There is an argument for physically fit police officers because stress is evident in daily police work! In light of this, a case can be built that police work is physically and psychologically stressful and that police who have to handle stress,

(which is all police--either internally or with the public) regardless of age, should be in good physical condition as a "coping mechanism" for their occupational stressors.

The stress is "generally" the same for all uniformed police officers. The majority of police uniformed or plain-clothed experience internal (departmental) stress. This could be stress brought about by anything from constantly changing procedures and expectations, to an over demanding supervisor. For uniformed patrolmen, the stress is basically the same although it may be presented at different levels in different departments. For example, in rural areas, there may not be as high a work load or danger, but back-up is sparse. This may create added stress in itself. In urban areas, the back-up is usually sufficient, but the workload is usually higher and the calls more dangerous. The key to stress manifested in police work is how it is managed.

Binney (1988) suggested physical well being and stress management of an individual can be achieved by recognizing how fit one is initially, diet, exercise, coping methods, and a willingness to change lifestyle. In this study, physical wellness is referred to as a dynamic state of health and fitness in which an individual progresses towards a higher level of performance in achieving an optimum balance between internal and external environments (Mosby's Medical and Nursing Dictionary, 1986).

In light of the stress produced by daily police work, an officer is required to serve the community in an unbiased professional manner. Most of the time reactions to stressors have to be held inside. The officer is not to show his or her feelings and he or she must not overreact or underreact! Gilbert, Price and Whiteside (1988) state "The characteristics of the best officers on the force are a partnership with the leader, motivation to do the job, proper compartment, dependability, sense of humor, positive work relations and a tendency to speak up. The very best officers project a positive image of themselves, their work unit and

department to the public." These are often the personality characteristics of new officers who have not been "stressed" by the public or department.

Stress

But what exactly is stress? Since stress means many different things to many different people, that is not an easy question to answer. Indeed stress has been described as one of the most imprecise terms in the dictionary. One way to define stress is to call it the force acting on you that causes you discomfort or strain. This is a stimulus definition of stress because it suggest that stress is the stimulus of force which acts on you, affecting you in some way, (Matteson & Ivancevich, 1982).

Matteson & Ivancevich (1982) go on to also state that instead of describing stress in terms of being a stimulus, we can view it as the response we make to a stimulus. Thus, stress becomes the physiological or psychological response you make to an external event or condition caused by a stressor.

In the University of Cal Berkeley letter (1990), stress has never had an adequate definition, beyond such vague generalizations as "stress is how people respond to demands." "Stressors" have been defined as everything from wars and famine, job loss, family arguments, and encounters with the IRS.

Binney (1988) states, the way in which stress manifests itself varies from one individual to another. The body's first reaction to any potentially harmful demand (such as issuing an unwanted ticket, controlling a domestic problem or apprehending a fleeing felon) is to prepare for action. It gets ready to face danger (fight) or to run away (flight).

An officer is taught not to run away. There is a duty to be done! In light of this, he or she must be cognizant to what he or she is "capable" of doing mentally and physically and then what he or she is going to do and if he or she can cope with the decision. For the purpose of this study stress can be referred to as a mentally or

emotionally disruptive or disquieting influence resulting in a particular bodily and or performance reaction.

In regard to fight or flight, experience plays a great part in police work. For example, in a rookie, the enthusiasm is very high. Emotional displays resulting from stressors are very common. The rookie is quick to argue or fight with an noncompliant person. The veteran though has observed many citizen complaints and much discipline. Because of this, his enthusiasm may be lower and he becomes a much better "talker" and "listener" than an "arguer" or "fighter." Neither flees as they are taught, but they may perceive and react to the situation differently.

In closing, the definitions of stress are varied and not consistent. Yet, the underlying theme of stress seems to be that it is derived from an external event and that the response to that event will be either physiological (the body always reacts physiologically to stress, even if it is only to increase the HR and modify respiration) or psychological and distinct to the individual.

The preceding serves as an example of some problems faced by the average law enforcement officer. These are daily problems created by the internal and external stressors of police work. It is all too often that this unmanaged stress leads to poor health and subsequent performance in police work.

Despite the seriousness of this problem, police performance as it relates to fitness has received little systematic examination from the scientific community. The literature is distinctly lacking in investigative inquiries that study an officer's fitness and how it relates to his/her performance. The need to understand this relationship extends beyond the clinical analysis of laboratory study. Therefore, a study of what police officers themselves report concerning fitness, stress and performance, should be valuable as a means of further understanding police behaviors.

The present study provided a description of the attitudes of 245 U.S. police officers who completed a survey on their reported stress, fitness and job

performance. Their responses contributed insight into positive or negative relationships between the preceding. It also provided insight into responses of a model fitness department as compared to survey group. There is an attempt to determine if the model and survey groups hold similar kinds of attitudes.

There has been no known study that provided an opinion inquiry derived from such a vast population of police officers. The precipitating factors identified by these officers that prove or disprove a relationship between an officer's fitness and stress and performance, provides a foundation for the understanding and advancement of the study of physical fitness as it relates to stress, and job performance of police officers.

Statement of the Problem

Police who have to handle stress, regardless of years on the job or location of assignment, should be in good physical condition to meet the challenges of police work.

Nature of Information Sought

This study was conducted to inquire if physical fitness "is" a "concern" to the majority of police officers surveyed. It also attempted to determine if they feel fitness relates to their stress and job performance. Finally, it attempted to determine if a model fitness department differs significantly in survey questionnaire responses from a survey group of Western New York police officers on stress, physical fitness and job performance.

Justification of the Study

Regardless of age, time on the job or work location, the majority of the 245 police officers surveyed reported that police work is stressful, that stress can affect

their performance, and that overall, they and their departments "are not" involved in fitness as a coping mechanism.

Fitness has long been identified as one coping mechanism for stress management. The highly acclaimed Perrier Survey of Fitness in America, conducted by Louis Harris and Associates, found that those who have a deep commitment to exercise reported feeling more relaxed, less tired and more disciplined. They also reported having greater self confidence, sense of looking better, greater productivity in work and, in general, a strong sense of being at one with themselves (Nieman, 1989). Among the findings uncovered by the NWL (Northwestern National Life) survey of 600 full time employees was that 69% of those surveyed said that high stress levels reduced their productivity on the job, and 17% said stress had caused them to miss one or more days of work in 1990 (Walker, 1991).

In light of this, there is an argument for fitness in police work; because as the police themselves report, stress is evident in daily police work. As yet, a clear understanding between stress, fitness and performance in police work does not exist. To the writer's knowledge, there has been no study regarding this.

It is the belief of the writer that more efforts should be made to detect if those factors are interrelated. Police-community relations are a growing concern today. The concern lies mostly with the performance of the police. The public is dissatisfied with negative police behavior. As stated, the police report their work as stressful. Secondly, the FBI states the number one request by police is training in stress management. Finally, fitness has been identified as a coping mechanism that is not being used by the officers or their departments in this highly stressful occupation.

As an educator, currently in the field of police work, I see a need for a closer evaluation of officers' fitness and how it relates to stress management and job performance. The survey shows that 26% of all the officers survey hold their stress inside. Once the King beating started, did stress play a part? Were the officers

releasing "built up" stress on Mr. King? Could this be an example of the potential behavior of the 26% of police officers surveyed who report holding their stress inside?

A major objective of this study was to observe the idfferences of responses of a model fitness department officers vs. a survey group of officers in relation to stress, fitness and job performance questions and to further make recommendations based on the results of the study.

A possible consequence of this investigation may be that data is provided that will contribute awareness of a need for change when considering fitness participation vs. stress levels and job performance in police work. Awareness by Departments of the physical fitness concerns of their officers as they relate to stress management and job performance is a desired contribution of this study. This being for betterment of the officers, the department and the public they serve.

Deliminations of the Study

This study was delimited to a sample of 245 police officers, 172 of which were Western New York Officers (Survey Group) and 73 which were Greensboro, North Carolina Officers (Model Group). There was a disproportionate number of male (211) to female (30) officers participating. (some omitted recording their gender).

Limitations of Study

This study is an investigation of the attitudes of police officers who completed a survey questionnaire concerning police performance, fitness and stress. Specifically, data was collected from 13 police agencies. Additional distribution of surveys included a highly regarded fitness oriented department. That department was Greensboro, North Carolina. The research was limited to 4 urban areas, 5

suburban areas and 6 rural areas. It did not include a large city such as New York, Los Angeles or Chicago.

Additional limitations of the study include a self-report survey open to "possible" false reporting. The study shows a disproportionate view of men to women as 86% of respondents were male and 12% women. It also showed a disproportionate view of full-time uniformed police officers as they represent 71% of the surveys respondents. There was no attempt to analyze the interrelations of responses or to explore the personal backgrounds of the respondents. The survey also failed to differentiate between responses of officers in specialized units such as S.W.A.T., Tactical or SCUBA squads.

Definition of Terms

Auspices - Protection or support (American Heritage Dictionary, 1985).

Control Group - A standard of comparison for checking or verifying the results of a study against a model group (American Heritage Dictionary, 1985). In this study Greensboro, North Carolina.

Delimitations - Established limits or boundaries (American Heritage Dictionary, 1985).

Ectomorphic - Human body characterized by being lean in build (American Heritage Dictionary, 1985).

Endomorphic - Human body characterized by obesity (American Heritage Dictionary, 1985).

Mesomorphic - Human body characterized by powerful musculature (American Heritage Dictionary, 1985).

Mortality - Frequency of numbers of deaths in proportion to a population; death rate (American Heritage Dictionary, 1985).

Physical wellness - A dynamic state of health and fitness in which an individual

progressed towards a higher level of performance achieving an optimum balance between internal and external environments (Mosby's Medical and Nursing Dictionary, 1986).

Relation - Logical or natural association between two or more things (American Heritage Dictionary, 1985).

Sample - A set of elements drawn from and analyzed to estimate the characteristics of a population (American Heritage Dictionary, 1985).

Stress - A mentally or emotionally disruptive or disquieting influence resulting in a particular bodily and or performance reaction (American Heritage Dictionary, 1985).

CHAPTER II

REVIEW OF THE LITERATURE

Review of Literature

Despite the current and pressing issue of police stress, little systematic attention has been given to the benefits of a physically fit officer on stress reduction and its subsequent positive or negative effects on job performance in police work. A search of the literature on this topic showed that little data based research has been reported or published showing attitudes of police officers concerning relationships between stress, physical fitness and their job performance. Additionally, little research has been done to observe the "average" police department in comparison to a highly regarded fitness department. The following chapter contains a review of studies in the area of stress, physical fitness and job productivity relating to law enforcement.

In researching this study, the writer observed that there is an abundance of studies concerning performance of police. These studies fall primarily into the realm of complaints against the police, police abuse, police brutality and police stress. There is very little research on physical fitness in regards to those involved in law enforcement as it relates to stress and job performance that a writer could use as a model.

In regards to research on fitness, the concerns lie mostly with corporate endeavors and how it benefits their productivity. Writing on stress and stress management are primarily concerned with white collar workers although police stress is widely recognized. What the officers want or need to know concerning a relationship between job performance, stress and physical fitness has been given little consideration and less press. In regard to a direct model or study to follow concerning police physical fitness and performance "as reported by police," the writer found nothing.

In reviewing the literature for the research, the relied heavily on the advice of Joan Mahoney, M.A., who is currently working on her PhD from University of Buffalo. She has conducted a major police attitudinal study and has referred several excellent references to help in constructing the survey questionnaire.

In looking at Mahoney's references and what was researched, the author relied heavily on two sources for the survey's construction. The author used Survey Questions by Converse and Presser, which is a book on handcrafting the standard questions. It gave in-depth illustrations to models of questionnaires such as the "Self-report Questionnaire", which was used. The writer was also referred to the Experience of Work, better known as "The Cook Book," a compendium and review of approximately 250 survey measures and their use. Both assisted in finding a scale well documented and best suited for the content sought in the survey questionnaire.

Opinion Surveys

The drawback of the self-report survey is that it is open to false reporting without a mechanism to detect such. The author of an opinion survey must put total confidence in the respondent to answer the questions honestly. With the extremely high workload of police officers, the author must be aware that there may have been respondents who "filled in the blanks just to complete the survey."

This opinion survey shows individual opinions written down by the officers. There is little factual data other than the profile section of the survey which shows age, sex, rank etc.

The Stress Problem

Neiman (1989) states, For a long time researches have known that psychological states relating to stress can have a profound effect on one's physical health. Denial, depression, inflexibility conformity, lack of social ties, hostility, high levels of anxiety and dissatisfaction, repressed feelings of loss, and many life changing events have in major studies, been associated with increased risk of infection, cancer and heart disease.

Jones (1989) adds, Medical research has established that cops are in the top three ranks for heart disease, diabetes, and suicide. Such social researchers as Dr. William Kroes believe that stress may be the paramount problem facing policemen today.

If this was true in 1976, how much more true is it today? With each passing year, the nature of our society makes life more difficult and stressful. Then add the increasing stress we experience as cops doing the job. It is likely that stress kills more cops each year than criminals do. The leading cause of death among police officers is heart disease. Many of our co-workers have ulcers, hypertension, or other medical problems. Our divorce rate is higher than the national norm, in some studies more than three times a high. Divorce rates of more than 70 percent within the first three years on the force in several departments. Alcoholism is widespread. And, of course, our suicide rate is higher than that of most occupations.

Walker (1991) adds, The figures, she says, are staggering. Among the findings uncovered by the NWNL survey of 600 full-time employees:

*Almost half (46 percent) of American workers felt highly stressed in 1991, and one-fourth believes they were suffering from stress-related illnesses.

*Sixty-nine percent of those surveyed said that high stress levels reduced their productivity on the job, and 17 percent said that stress had caused them to miss one or more days of work in 1990.

*While workplace stress caused 14 percent of respondents to quit or change jobs in the past two years, 35 percent of employees who had been at a job for less than two years said they had quit their previous job.

Neiman (1989) states, During the past 25 years, a large number of studies have shown that life events of all types (marriage, divorce, buying a house, losing one's job, moving to a new location, surgery for health problems, etc.) are significant stressors, leading to predictable physical and psychological health problems.

Several recent studies have shown, however, that such life stress has less negative impact on the health of physically active individuals.

Nieman (1989) adds, In a four-year study of 278 managers from 12 different corporations, for example, it was found that corporate managers who were active experienced less health problems from the stress they experienced than inactive managers. Because it is not always practical or even possible to avoid many stressful life events, regular aerobic exercise may be one way to reduce the impact of stress on health."

Many other studies have shown the value of physical activity for improved psychological health. Researchers at Duke University showed that after 10 weeks of walking and jogging 135 minutes a week, exercising adults showed decreased anxiety, depression, and fatigue, with elevated vigor. Dr. Carlyle

Folkins of the University of California at Davis has shown that regular exercise by policemen and firemen is associated with decreased anxiety and depression.

Neiman (1989) goes on to say, The high acclaimed Perrier Survey of Fitness in America, conducted by Louis Harris and associates, shows that modern-day men and women strongly believe in the Greek concept of a strong mind in a strong body. The survey found that those who have a deep commitment to exercise reported feeling more relaxed, less tired, and more disciplined. They also reported having greater self-confidence, a sense of looking better, greater productivity in work and, in general, a stronger sense of being at one with themselves.

In my study of 2,300 Los Angeles marathon runners who had been running an average of seven years, over 90 percent reported that energy levels were higher, stress was handled better, and sleep was improved compared to their pre-running years.

In response to the stress related problem, the Greensboro, North Carolina Police Department has devised a "wellness menu" for its officers . An officer is expected to be able to respond to emergency stress at a movements notice with effective behavior. Basic physical and mental health is important for this behavior (Spitler, Jones, Wade & Williams, 1987).

Spitler, et al (1987), The Greensboro Police Department, Greensboro, North Carolina, recently sought to initiate a wellness program for their officers, leading what appears to be a developing trend in police departments across the country. The days of height/weight charts and strictly pre-employment physical assessments are ending for the law enforcement field. Gross measures of body composition do not necessarily provide enough health or fitness information about the officer, nor will data collected during his or her early career years be representative of an incumbent officer's current health status.

The new goal and the critical concept in this wellness philosophy for law enforcement agencies, is the prevention of injury and disease by shifting the responsibility of health care from medical treatment to individual action. This follows a concept of the wellness movement which stresses not treating medicine as a "god," but as a "partner" with the individual in promoting physical wellness. In concordance with this, 44% of the officers surveyed in this study felt the individual should be liable for lacking physical capabilities to perform the job.

Spitler, et al (1987) add, Preventative health and fitness habits should be identified then pursued. The officer should then, theoretically, be at a decreased risk for occupational injury or disease. In spite of, or perhaps because of, the overabundance of literature on health and physical fitness, the Department was overwhelmed in making rational, cost-effective decisions in establishing a total wellness program. The first of these decisions involved defining what was to be meant by total wellness in law enforcement. The Greensboro Police Department adopted and defined total wellness as: 1. the ability to carry out assigned daily tasks effectively; 2. the ability to meet task-oriented emergencies without extreme fatigue or injury; and 3. the ability to pursue and enjoy leisure time activities. The Wellness Menu would involve two main features: a basic health status feature and a performance feature.

The Greensboro Police Department proposes a Wellness Menu which incorporates an officers assessment of job performance along with health and physical fitness evaluation and preventative action.

Hobbs New Mexico Police

Fitness for Life by Arters and Aaron (1989) concerns another top police agency in New Mexico which is also a national leader in police fitness. The department's

motto for wellness is a belief that the first step in changing life-style habits for improved physical fitness is "education." This is a theme that is prevalent in several of the articles researched and is included as a question in the survey.

This New Mexico Department goes as far as to provide physical wellness incentives such as rewards with time and pay. On the other hand, punishment for improper maintenance of physical wellness runs from pay loss to time loss to possible termination. It is becoming increasingly obvious that physical wellness does play a critical role in job performance for all aspects of law enforcement. They go on to state that poor physical condition will no longer be a deadly adversary for its officers (Arters & Aaron, 1990).

The Federal Bureau of Investigations

In continuing with research of the literature, the author regrets not having been able to contact an outstanding fitness/wellness agency, that being the FBI. An excellent business like appearance, good health, and the capacity to perform duties properly are the goals of the FBI (Slahor 1990).

> Slahor (1990) states, A special agent "must" be a person of good health and fitness. They believe fitness has a direct relation to how we work, play and face life. The FBI is so serious about its physical wellness for its officers that the special agent is taught how to proceed with conditioning in order to meet the fitness test and rating scales which will be used to determine whether the individual "stays" in the training program. For a law enforcement officer a strong motivation can be the realization that his/her life could well depend on whether or not he/she is physically fit.

The "Pre-Quantico Kit" booklet goes on to describe the objectives of the FBI's fitness philosophy and program:

1. to increase muscular strength, flexibility and cardiovascular endurance so as to assist the SA in meeting the demands of the job;
2. to prevent cardiovascular disease and related ailments through early detection of danger signals;
3. to educate all employees of the FBI in attainment and maintenance of personal wellness standards;
4. to establish a personalized wellness prescription for each SA;
5. to reduce incidence of lower back pain, obesity, high blood pressure and other law enforcement-related ailments; and
6. to increase the ability to cope with the inherent stress-related ailments of the law enforcement profession through physical fitness and positive lifestyle modifications in order to enjoy life to the fullest.

Fitness and Agility Requirements by Philips (1990) provided an excellent article on legal issues concerning officers physical wellness, its relation to job performance and duties.

Philips (1990) states, In Gray v. City of Florissant, 588 S.W. 2d 722 (Mo. Ct. App. 1979), a city police officer working without the protection of a collective bargaining agreement challenged newly-imposed physical fitness standards. The plaintiff, John Gray, had been a city police officer for almost nine years before the police department promulgated specific minimum-maximum weight regulations for all commissioned personnel as part of its Manual of Policies and Procedures.

Officer Gray was informed that his weight exceeded the allowable maximum for his height and that he would have 90 days in which to comply with the regulation. Seven months later, Officer Gray received notice that he would lose six recreational days because of his failure to comply with the

regulation. He appealed to the City Personnel Commission, which, after a hearing, sustained the Police Chief's disciplinary order.

On appeal, Officer Gray unsuccessfully challenged the rule as unconstitutional and as having been arbitrarily and capriciously applied to him. The Missouri Court of Appeals for the Eastern District applied a rational relationship standard and concluded that, under such a standard, a regulation that rationally relates to conceivable, legitimate regulatory goals and that does not offend due process is deemed constitutional.

Philips (1990) adds, In the State Fraternal Order of Police v. State of Ohio, the Ohio Supreme Court considered whether Ohio law required that State Highway Patrol officers be allotted on-duty time or be paid overtime for time spent exercising in order to meet and maintain newly-imposed physical fitness requirements. State Fraternal Order of Police v. State of Ohio, 446 N.E. 2d 157 (Ohio 1983). The court held that it is not unreasonable that the patrolmen be required to maintain.....fitness on their own time...[and] that the state is not obligated to compensate the officers for their time in maintaining such required physical fitness. State Fraternal Order of Police, supra, 446 N.E. 2d AT 162. The court reasoned as follows: The physical fitness standards of the patrol are not remote unrelated rules for the sound operation of this state police force. The physical demands upon the state patrolmen are many. Not only is there the necessity for physical fitness in the normal police routines of highway traffic control, but also there are the more physically demanding duties involving confrontation with criminals operating intrastate or those who might be fleeing interstate. Additionally, there are the wide and varied and often physically taxing duties, including riot control among others... The need for the basic standards of maintaining physical condition and fitness for continuance of service in the patrol is obvious. Physical soundness of the

patrolmen not only serves the state and its citizens well by way of having the officers fit to respond to a particular problem, but also...serves the officers well in the sense of self-protection.

Philips (1990) concludes,Any rule promulgated that prescribes fitness/agility requirements must, in fact, be related to the performance of the functions performed by law enforcement officers. An employer may not simply impose a set of standards that seek to require that every officer be a perfect physical specimen. It is believed that most courts will require that there be a relationship between the standards and the position. Persons challenging newly imposed standards should argue that the burden should be on the employer to demonstrate the need for and relationship between the standards and the job.

Horowitz and Baker (1987) state, few would argue that as a result of hazardous duty, job boredom, rotating work shift and role pressures, law enforcement officers are exposed to excessive levels of stress that may have a significant impact on their productivity in the form of performance.

The preceding articles and book reviews present informative reading, but they come primarily from departments or authors with an interest in physical fitness. In reviewing an article called Characteristics of the Best Officer on the Force by Gilbert, Price and Whiteside, (1988) one finds that there is no mention of physical fitness amongthe eight characteristics given as determining traits of the "best" police officers on the force! Those characteristics are:

1. Partnership with the leader
2. Technical competence
3. Motivation to do the job
4. Proper comportment
5. Dependability

6. Sense of humor
7. Positive working relations
8. Tendency to speak up

This is a general article unrelated to police fitness and may give a better perspective of the slight importance given to fitness in law enforcement.

CHAPTER III

PROCEDURES

Nature of the Information Sought

This study was conducted to inquire if physical fitness "is" a concern to the majority of officers surveyed. Secondly, it attempted to inquire if they felt fitness relates to stress management and job performance. Thirdly, it attempted to determine if a model fitness department reported statistically significant differences vs. the survey group (WNY Police Officers) on fitness, performance and stress concerns.

Subject Selection

The police performance/fitness surveys were sent to Western New York (survey) and the Greensboro, North Carolina (model) Police Departments. A brief profile of the Departments used, shows that there are approximately 77,000 New York State police personnel which averages out to about 48.4% of the total justice employment (courts etc.). In North Carolina there are in contrast approximately 16,000 police personnel or about 49.4% of their justice employment.

A comparison of several cities used in the study shows that Rochester, New York has a approximately 650 uniformed officers with a base salary of approximately $37,000 (not including overtime pay). Buffalo, New York carries approximately 1,011 uniformed officers with a base salary of $31,000. Greensboro, North Carolina, the studies model group, has approximately 451 uniformed police officers with a base wage of $33,000. The largest Department participating in the survey was Buffalo, New York (1,011 officers). The smallest Department was Ogden, New York. It reported having 12 officers.

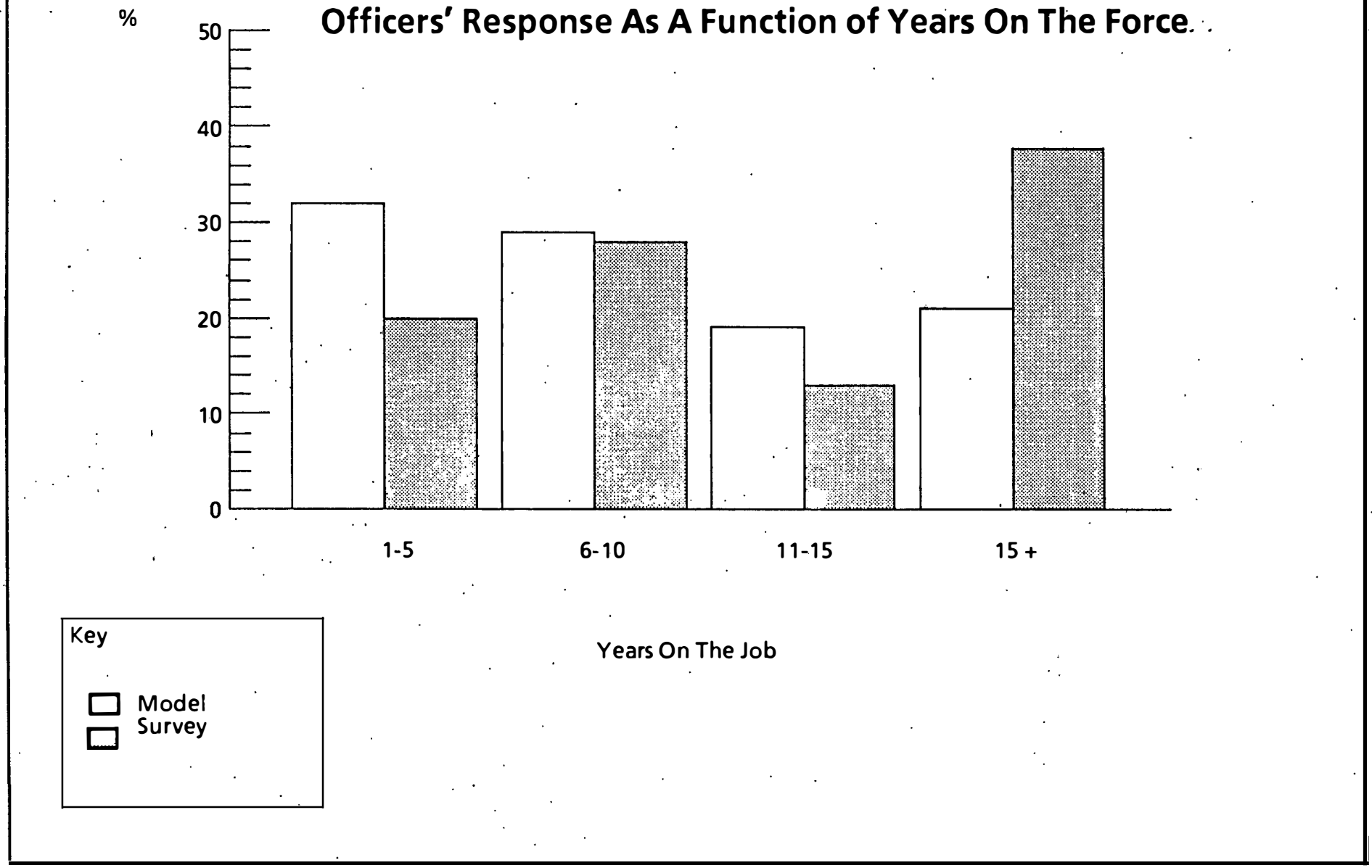
Seven hundred fifty surveys were sent out to a total of 15 police departments. The surveys were to be filled out by any male or female police officer to whose

department the surveys were sent. Of the 15 police departments where surveys were sent, 14 included departments in Western New York. The remaining department was Greensboro, North Carolina. This department was selected for several reasons. One, it was noted in several readings as a leader in physical fitness standards for its police officers. Second, in reviewing its programs in comparison to other top physical fitness departments, its program was the best. And last, it was highly recommended by other police officers and departments involved in fitness, physical education and health as a model department for fitness standards. Although officers from the Western New York Survey Group may participate in fitness, the writer chose Greensboro as a model fitness department because of the aforementioned reasons and its fitness requirements and incentive programs. It is likely that there are many Western New York officers involved in fitness, but it is more likely that officers from Greensboro where fitness is a requirement and there are incentives will be more knowledgeable and participatory in fitness than survey officers. Greensboro has an excellent reputation for fitness as was researched by this writer. There were no Western New York departments that even showed consistent requirements or incentives for their officers. Several urban, suburban, and rural departments were picked randomly for representation of different sized departments.

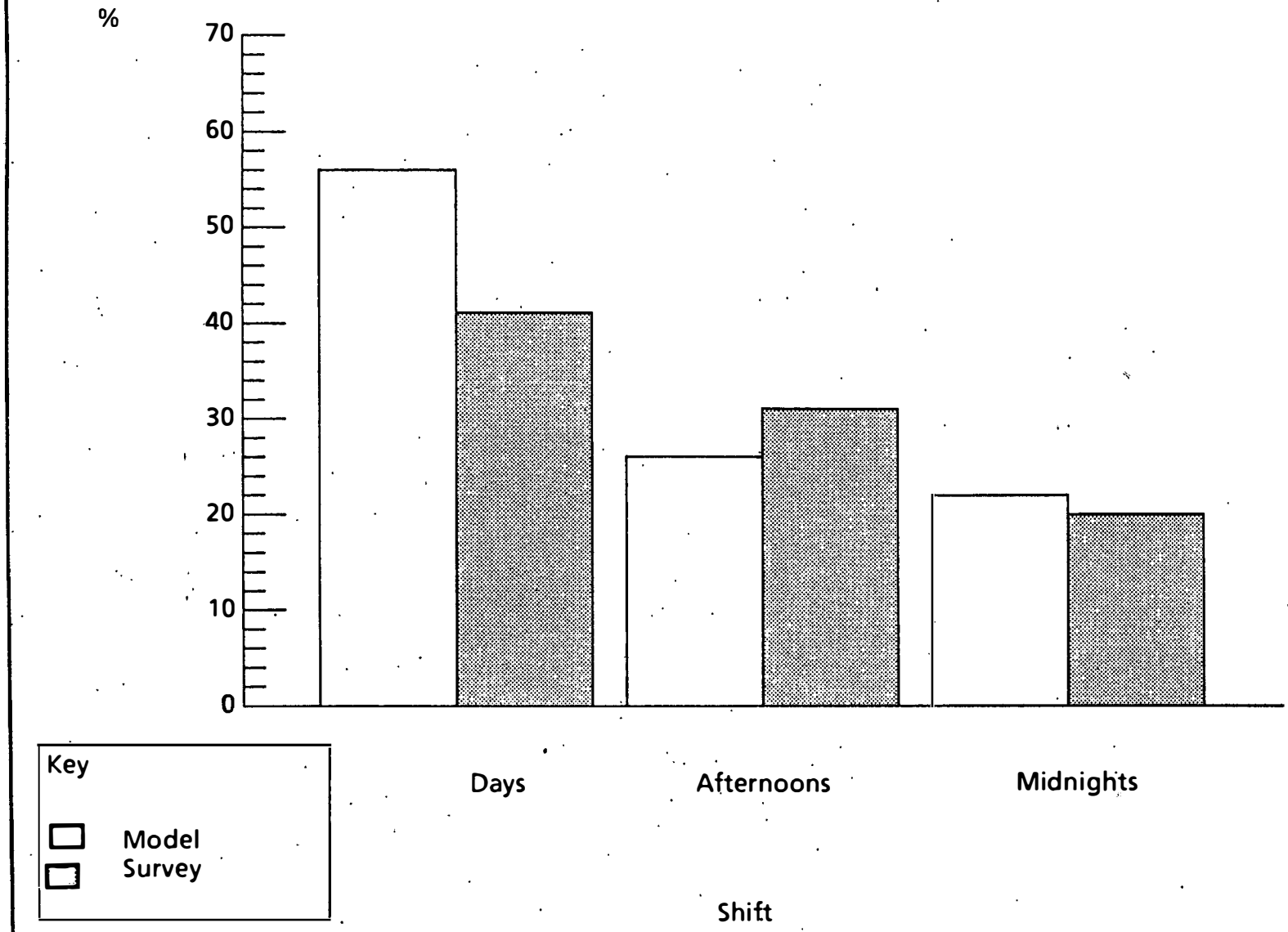
Two hundred forty-five officers surveys were included in the study. Eighty-three surveys were returned too late for processing. Of the officers returning survey questionnaires, 73 police officers participated in the model group (Greensboro, NC). One hundred seventy-two police officers participated in the survey group (WNY). Twelve WNY Police Departments and the Greensboro Police Department actually participated in completing the surveys. The model group number of participating officers was pre-determined with that departments staff as a number of those who

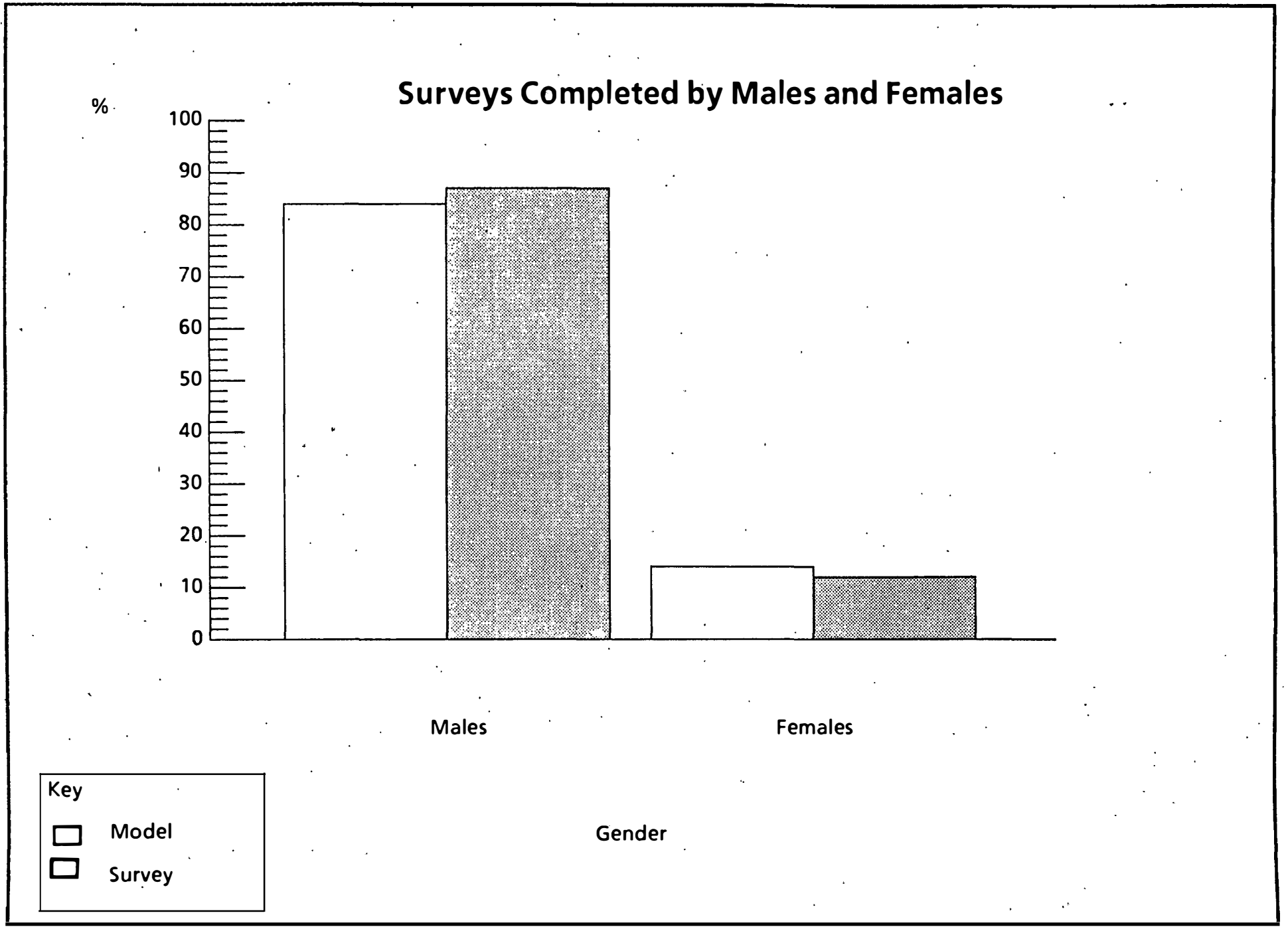
would be able and most likely to complete the surveys. The Survey Group number was determined by a cut off date of April 27, 1992.

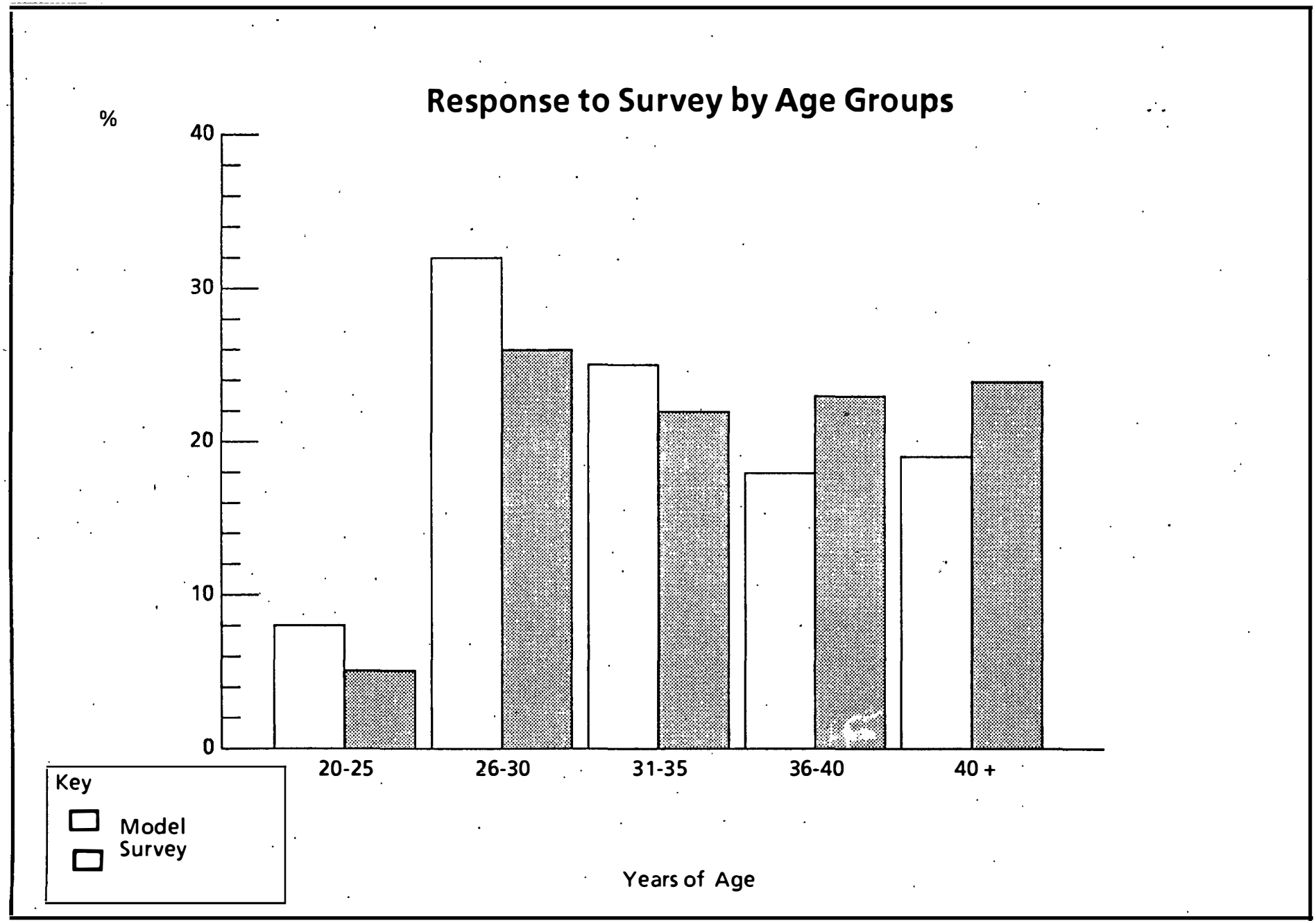
The following graphs better depict the characteristics of the model and survey officers participating in the study.


Officers' Response As A Function of Years On The Force
%
50
40
30
20
10
0
1-5
6-10
11-15
15 +
Years On The Job
Key
Model
Survey

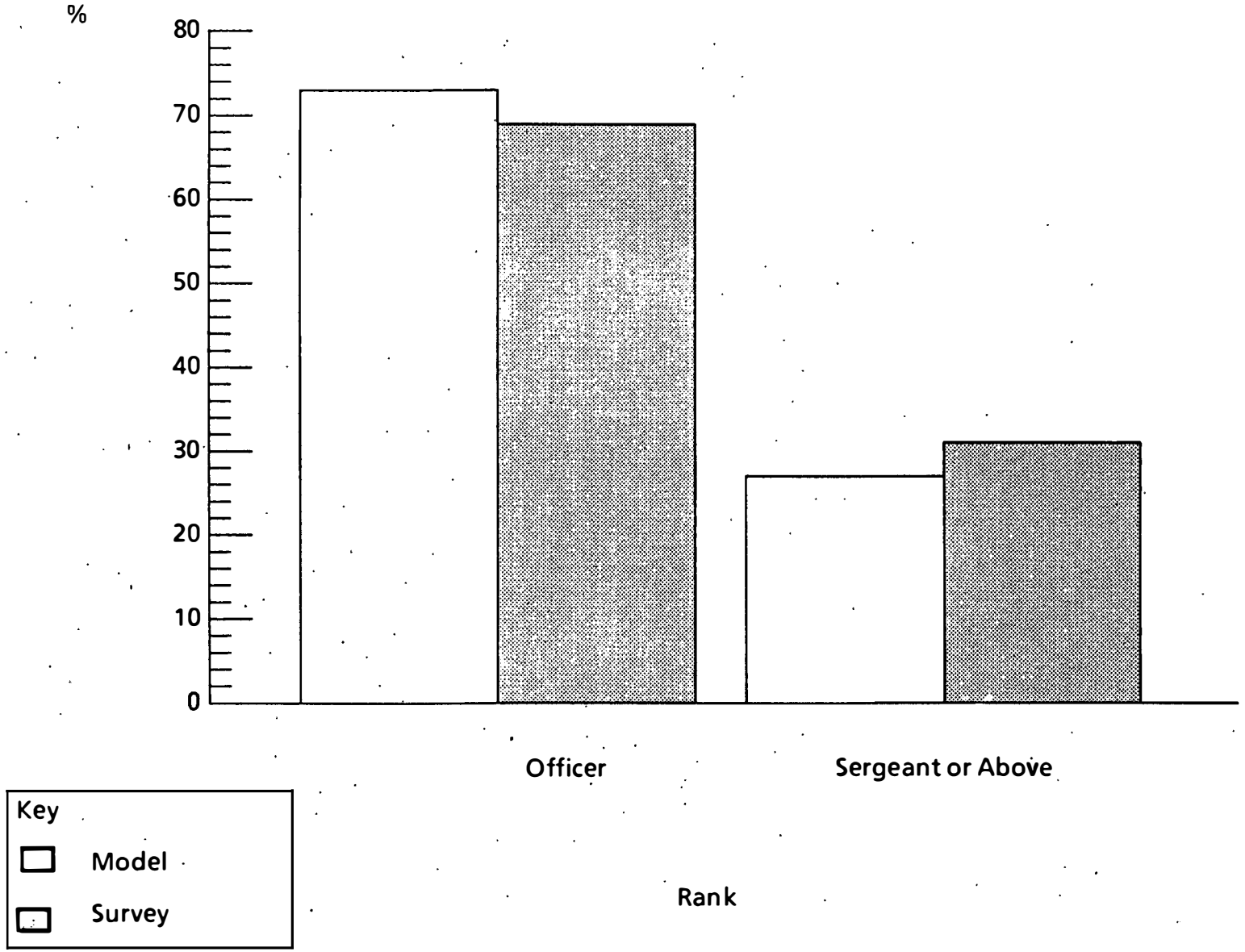
Officers' Work Shift

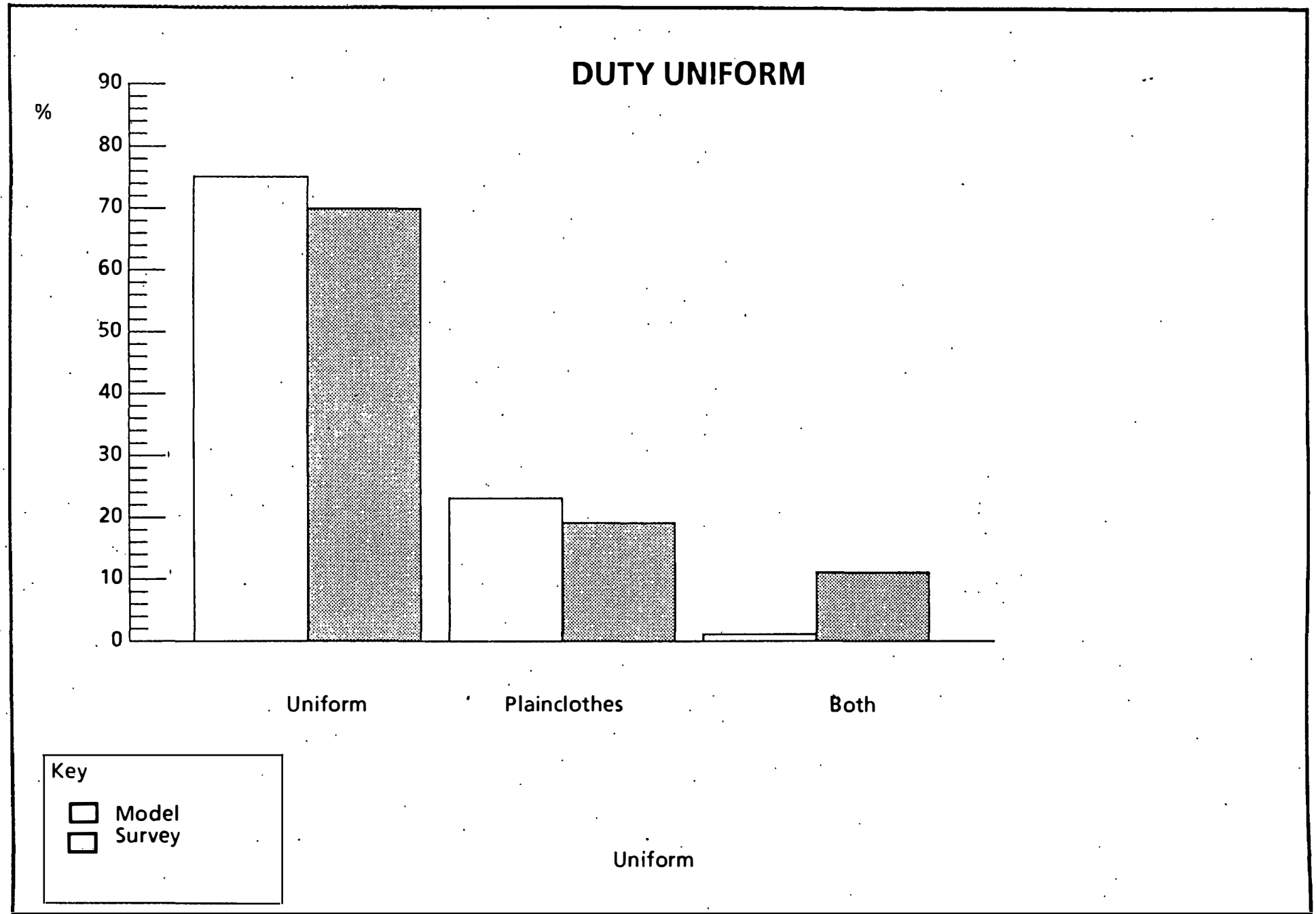



Surveys Completed by Males and Females
%
100
90
80
70
60
50
40
30
20
10
0
Males
Females
Key
Model
Survey
Gender


Response to Survey by Age Groups
%
40
30
20
10
0
20-25
26-30
31-35
36-40
40 +
Key
Model
Survey
Years of Age

Responses to Survey by Rank




DUTY UNIFORM
%
90
80
70
60
50
40
30
20
10
0
Uniform
Plainclothes
Both
Key
Model
Survey
Uniform

Instrument Development

The questions for the self-report survey/questionnaires for comparisons among police stress, performance and fitness were originally developed by police officers from what the writer calls "brainstorming response sheet" (Pilot Study). This sheet asked the police respondent to list 5-10 concerns they had about police performance and stress and their relation to police physical fitness. Approximately 70 random officers participated in this. The concerns were then ranked according to frequency of observance. For the purpose of this study, the questions asked by the police that appeared most frequently were included as a list of the thirteen most important (or sample) questions (Page 99). Due to the large number of respondents and questions, for Chi-Square Analysis, only a sample of the data was used which included the thirteen most frequently asked questions from the brainstorm sheet.

From the most frequently written concerns on the brainstorming sheet, including 71 questions relating to police performance fitness and stress were used to construct the survey instrument. The instrument developed was entitled the Police Performance Fitness Survey. The questions were multiple choice, yes-no, true-false, scale and fill-in the blanks. The questions were randomly arranged so as not to follow a pattern or lead on the respondent.

Several demographic variables that might have an affect on stress, fitness, and performance were also included in the questionnaire. These included (in order of importance as stated by officers) the officers time on the job (in years), work shift, sex, age, rank, work setting, uniform and build. The complete questionnaire is illustrated. (in Appendix E). Due to the abundance of data presented, the major analyses and comparisons were made from the time on the job variable since it was ranked first in importance by the officers.

The questionnaire was given to a sample of 10 officers to see how long it took them to complete. It took an average of 15-20 minutes. Included with the survey

was a cover letter stating the purpose of the study, directions, content and author contact information (See Appendix E).

Data Distribution and Collection

Seven hundred fifty surveys were distributed to 15 police departments in WNY and the model group in Greensboro, NC. An average of 50 surveys were sent out to each department (considering size of department). Three hundred twenty-eight surveys were returned from 13 police departments for an average return of 25.2 surveys per department. The survey questionnaires were mailed to 10 of the departments included in the study. The remaining 5 departments received the surveys hand delivered. The survey questionnaires were sent out to 4 urban departments, 5 suburban departments and 6 rural departments. All surveys were sent or delivered bulk to predetermined contacts in the department who were primarily supervisors. Actual officer dissemination and collection was determined by department. Included were instructions on how to complete and return the survey. Also included were instructions to each Department to return them, as a Department group, in the provided self-addressed envelope to the writer's home (postage paid).

One rural department and one suburban department failed to respond back with any surveys. Thus, 55 surveys were originally lost to attrition; an average of .07% of the surveys. Forty-seven percent of surveys were returned (750 - 55 = 695 then 328 ÷ 695 = .47). Twenty-five percent of the surveys received (83 ÷ 328 = .25) were unable to be used due to deadlines.

ORGANIZATION AND ANALYSIS OF DATA

Introduction

The purpose of this investigative inquiry was to determine if fitness is a concern of the officers surveyed. It also attempted to inquire if officers feel fitness is related to their stress management and job performance. Finally, it attempted to determine if a model fitness department officers reported "significant" differences in responses to survey questions as compared to the survey group of police officers. The analysis was done using SAS and SAS/STAT softwares. The level of significance was set at ($P<.05$).

There is a substantiated argument for fitness in law enforcement. Slahor (1990) stated, the FBI emphasizes that physical fitness is often the factor the spells the difference between success and failure in law enforcement - even life and death. It is seen as necessary to enhance the safety of fellow special agents, other law enforcement officers and innocent citizens.

The approach utilized in this study represents one of the first known attempts to gather information on police opinions about stress, fitness and performance and how they interrelate while looking at such variables as an officer's time on the job, work shift, gender, age, rank, work setting, uniform, and build. It is also the first known study to the writer's knowledge that observes the preceding in regards to a comparison of differences between model fitness officers and survey officers. It was anticipated that this approach might yield some meaningful insight and direction into the study of the affects of fitness programs on police stress and performance. It is hoped that the study will make Western New York departments aware that the officers appear concerned about fitness but, implementation of fitness programs by departments is lacking.

Data Analysis

Chi-Square Analysis was conducted to determine the probability of significant difference between model and survey responses on a sample of the true and false questions. (Tables 1-4 and Appendix G). A factor analysis was performed on six categories of questions from a sample of true and false questions. The categories were listed as follows in order of importance as ranked by officers; (1) stress and behavior (2) department, (3) health, (4) dietary (5) fitness performance and (6) fitness beliefs. Raw data retrieved from the survey respondents was recorded as percentages of responses for the survey and model groups. Proportional percentages of the raw data for the model group in proportion to the survey-group is also given in the Raw Data Summary. Demographic information is also broken down into percentages of responses to show the makeup of the officers completing surveys. (see Appendix F).

Comparison

An analysis of true and false questions using only the time on the job variable was conducted. That is 1-5, 6-10, 11-15, and 15 + groupings for years of service in law enforcement.

Data Analysis

Raw Data Summary

Data retrieved from the Police officers on the Survey Questionnaire was analyzed using the SAS/SAT softwares by (1) percentages of responses for the raw data, (2) Chi-Square Values of significant difference, and (3) Factor analysis (final communality estimate totals). The results for these statistics will be presented in Chapter IV. All raw scores for this study were originally recorded on a computer spreadsheet. Using a spreadsheet each answer was given a score of one. When all

surveys were tallied, each column was automatically totaled. The total of each column's responses were divided by the total number of surveys for that group to give the percentage of positive replies for each column.

The proportional number of model to survey responding to, and the proportional percentage for each question on the survey, is presented on the data summary sheets (Appendix I).

Due to time limitations, cost, and the amount of data collected, the writer eliminated all but true and false questions for analysis using chi-square values and factorals (factor analysis). The questions used that comprised the six categories used for factor analysis were true and false questions also! They were categorized as questions of stress and behavior, diet, department, fitness, performance and health. These categories were also ranked respectively by officers by importance to them. Multiple-choice, yes-no, scale and fill -in-the-blank questions were analyzed by percentages and appear in the data summary Appendix I. These type questions were included because they could not be covered under a true and false format and they were some of the most frequently raised questions on the original "Brainstorm Response Sheet" that the writer did not want to omit in the study.

The time on the job variable was also the only demographical variable analyzed in relation to the questions sampled due to the vastness of the data gathered. Time on the job as stated was observed by officers in the Pilot Study to be the most important variable for an officer.

INTERPRETING THE STATISTICAL DATA

Chi-Square

Percentages for the true/false question pertaining to groupings can be depicted more accurately on the frequency chart and calculation of Chi-Square Values (Appendix H).

The Pearson Chi-Square statistic involve the differences between the observed and expected frequencies. The alternative hypothesis for this statistic is one of general association.

Chi-Square. The chi-square statistic was used to analyze whether there was a significant difference between the response of the model and survey groups. The true and false responses were ideal for the calculation of the chi-square values since a 2 by 2 matrix was easily obtainable with model and survey as rows and true and false as columns.

Due to the large sample of respondents, only a subset of the data with true/false questions (thirteen questions deemed most important by officers) were used, and chi-square values calculated for each of the questions. The probability has to be less than 0.05 ($P<.05$) for there to be a significant difference. A value closer to 1.0 shows more probability of a significant differences between the model and survey groups. Refer to chi-square tables one through four. Separate analysis was done for respondents with 1-5 years, 6-10 years, 11-15 years and 15 + years on the job.

To see how one can interpret the statistical results, let us take a few examples (see Table 1-4).

Example 1. Question 10, 1-5 years on the job. The probability of chi-square is 0.783 ($p>.05$). The probability of a significant difference is 0.217 (1-0.793).

Therefore, there is not a significant difference between the model and survey groups for the question, "Does the out of shape/unhealthy officers create added stress when dealing with violent suspects." Because ($p > .05$) and the value is not close to one.

Example 2. Question 2, 11-15 years on the job. The chi-square probability value is 0.000 (the value is rounded to three decimal places, the actual value is approximately 0). Therefore, there is a very significant difference for this question between the two groups. Looking at the actual question, "Does your department have a gym, or provide access to, or information on one?" may help explain why.

Factor Analysis

All true and false questions were grouped into six categories.

Questions of:

1. Stress and behavior
2. Diet
3. Department
4. Fitness
5. Performance
6. Health

Factor analysis was used to show commonalities, and differences between the model and survey groups in relation to six categories of questions.

The factor analysis produces a final communality estimate. The highr this final estimate is, the higher the disparity between the model and the survey group for that category of questions. (See Tables 5-7.

Let us review factor analysis.

Harman (1960) states, In the analysis of a body of observed data, a simplified mathematical theory (or model) is frequently postulated. The simplest

mathematical model is a linear one--and that is the fundamental assumption underlying all of the present day factor analyses methods.

CHAPTER IV

RESULTS AND DISCUSSION

One of the goals of the study was to determine if fitness was a concern among the officers surveyed. Another goal was to inquire if officers felt that stress and performance can be affected by fitness. A third goal was to determine what departments do for the officers in relation to fitness. These inquiries are supported by the percentage and proportional findings of the survey (Appendix I) along with the following:

1. Of the officers involved in a fitness program, 67% felt it improved their job performance.
2. 93% of the officers surveyed stated they wanted to be involved in fitness programs.
3. 83% of the officers stated they would feel less stress in potentially violent situations if they were in better physical shape (strength and cardiorespitory).
4. 76% of surveyed (WNY) officers felt their academy experience did not inspire them to continue with fitness training.
5. 92% of the officers reported they would use a fitness center provided by their department.
6. 2% of the survey (WNY) officers have departments that require periodic fitness tests or standards.
7. 45% of the model officers reported having seen awards given for fitness attainment compared to only 9% of survey officers.
8. 90% of officers felt officers should maintain adequate fitness even if they hated to do so.
9. 92% of officers felt an officer's poor physical appearance caused negative public opinion regardless if he or she was capable of doing the job.

10. 95% of officers of those surveyed felt there was a relationship between physical wellness and longevity after retirement. 39% believe physical wellness is related to citizen complaints.
11. 80% of the survey group officers reported taking no medical exams since leaving the academy compared to 47% for the model group. 70% of the officers in proportion reported taking no medical exams since leaving the academy.
12. 47% of officers stated they have always been involved in fitness pursuits.
13. 89% of the officers surveyed stated being happy with their job performance. 41% reported being happy with their fitness level. 47% reported being happy with their diet.
14. 72% of officers surveyed referred to the question concerning smoking as not applicable.
15. 59% of the policemen and women surveyed reported getting irritated and annoyed over things they shouldn't.
16. 35% of officers surveyed stated they participated in physical activity daily.
17. 54% of officers surveyed in proportion stated they felt they were overweight. 45% for the model group and 58% for the Western New York Officers. 8% combined felt that they were underweight.
18. Regular eating habits of three meals a day with special attention to breakfast occurred for only 29% of the officers surveyed.
19. 49% of officers reported receiving feedback for job performance compared to 24% for appearance. 72% of officers stated fitness was not a topic of discussion among police.
20. Since joining the police force, 43% of the respondents stated their "psyche" about fitness is seemingly more important now. 8% remain unconcerned.

21. Officers with 15 + years service on the police force responded to the survey the most with a response rate of 33%! In contrast officers for the model group in the 1-5 year on the job category responded most for that group. 45% of the officers in proportion responding worked days and 20% midnights.
23. 86% of those who responded were male and 14% female officers.
24. The age least likely to fill out the survey was the 20-25 years of age group with a response of 6%.
25. 30% of the respondents held the rank of sergeant or above.
26. 60% of those surveyed worked in an urban environment, 28% in the suburbs and 12% in a rural setting.
27. 81% surveyed stated they were interested in health and mortality statistics in police work.
28. 73% of the officers stated they had never observed or filled out a survey that observed police performance in relation to fitness.
29. 74% of the officers stated that a survey of this nature did interest them.

Chi-Square

A goal of this study was to determine if the model fitness officers differed from the survey (Western New York) officers in their responses to the survey. For this analysis the writer used the chi-square model which enabled the probability of a significant difference between the model and survey groups on a particular question to be determined.

In relation to the sample selected (true and false questions for time on the job groups), let us observe some findings from the survey. (Refer to Appendix G for questions and Tables 1-4).

Chi-Square Findings

When observing the following examples, the findings are a function of time on the force for both the model and survey groups. The findings compare the model to the survey group. (1) For question #17: Do you believe officers are sometimes reluctant to do the job because they are not physically prepared to handle certain tasks? The 1 to 5 years on the job and 11 to 15 years on the job groups differed significantly ($P < .05$) (Table 1 and 3). The 6 to 10 and 15 + years on the job groups showed no statistical difference for this question as ($P > .05$) (see Table 2 and 4). This shows that the model as compared to the survey, respond with significant difference ($P < .05$) in relation to question #17 for both the 1 to 5 years on the job group and the 11 to 15 years on the job group. There is not a statistically significant difference ($P > .05$) in response between the model and survey groups surveyed for the 6 to 10 and 15 + years on the job groups for question #17.

For the following refer to the bar graph on page #56.

(2) For the sampled questions, the 1 to 5 years on the job group overall showed more significance in differences ($P < .05$) in responses to questions for the model vs. survey groups than any other time or the job group. 33% of the sample questions showed statistically significant difference ($P < .05$) when model was compared to survey.

The 15 + and 6 to 10 years time on the job groups showed the least overall statistically significant difference ($P > .05$) between the model and survey groups for its responses to the sample questions as only 11% of questions sampled showed significant difference ($p < .05$). This also shows that the 15 + and 6 to 10 years on the job groups overall appear to agree more closely with each other on the sample questions regardless if they are in the model or survey group.

(3) Two questions in the sample questions used showed very significant

differences when model was compared to survey with values of ($p < .05$) for 1 to 5 and 6 to 10 years on the job groups.

They are:

1. Does your department have periodic fitness tests or standards you must maintain? (Question #2 on the Survey)
2. Have you ever observed a policeman receive a reward for fitness? (Question #60.1 on the survey)

If one observes Appendix I (raw data) and then Tables 1-4 (chi-square values), one will find that the model group in comparison to the survey group largely states "true" to the above questions and the models states largely "false" and that. It shows statistical difference ($P < .05$) between the model and survey groups.

From this one could conclude that there is a significant difference between the model and survey groups on questions 1 and 2 above for all years on the job groups with the exception of the 11 to 15 years on the job group who has a value of ($p > .05$) for question #1 and #2 above. This shows statistical insignificance for this question when the model group is compared to the survey group.

For the sample of questions used from the questionnaire that showed values of significant difference ($P < .05$) the 1 to 5 and 11 to 15, groups finished 1st and 2nd, respectively when the percentage of questions with ($P < .05$) from the sample questions were tallied. The 6 to 10 and 15 + years on the job ranked third (tie) in relation to percent of questions in the sample that showed values that have statistically significant differences ($P < .05$) in response between model and survey groups. For the frequency chart and calculation of chi-square values see Appendix H.

Let it be noted also that the validity for chi-square statistics is noted by sample size. The larger the sample the more valid the chi-square test for statistical significance of difference will be.

Table 1

Chi-Square Value

1 to 5 years on the job

Police Performance/ Fitness Survey Question	Probability of Chi-Square	Probability of Significant Difference Between model and survey officers
2	0.000	*1
5	0.987	0.013
9	0.761	0.24
10	0.783	0.217
17	0.028	*0.97
40	0.705	0.295
41	0.213	0.787
44	0.000	*1
58	0.042	*0.958
60	**None	None
69	0.749	0.251
70	0.097	0.903
71	0.458	0.542

-- The closer the value of the probability of significant difference is to one, the more significant difference between model and survey

* Signifies question with probability of significant difference ($p < .05$)

-- Refer to Appendix E for survey question

** Row or column sum zero. No statistics computed for this table.

Table 2

Chi-Square Value

6 to 10 years on the job

Police Performance/ Fitness Survey Question	Probability of Chi-Square	Probability of Significant Difference Between Model and Survey Officers
2	0.000	*1
5	0.136	0.864
9	0.246	0.754
10	0.860	0.14
17	0.711	0.289
40	0.178	0.822
41	0.348	0.652
44	0.531	0.469
58	0.082	0.918
60	0.000	*1
69	0.434	0.566
70	0.860	0.14
71	0.268	0.732

-- The closer the value of the probability of significant difference is to one, the more significant difference between model and survey

* Signifies question with probability of significant difference ($p < .05$)

-- Refer to Appendix E for survey question

Table 3

Chi-Square Value

11 to 15 years on the job

Police Performance/ Fitness Survey Question	Probability of Chi-Square	Probability of Significant Difference Between Model and Survey Officers
2	0.105	0.895
5	0.270	0.73
9	0.159	0.841
10	0.412	0.588
17	0.008	*0.992
40	0.163	0.837
41	0.274	0.726
44	0.234	0.766
58	0.639	0.361
60	0.272	0.728
69	0.502	0.498
70	0.057	*0.943
71	0.639	0.361

-- The closer the value of the probability of significant difference is to one, the more significant difference between model and survey

* Signifies question with probability of significant difference ($p < .05$)

-- Refer to Appendix E for survey question

Table 4

Chi-Square Value

15 + years on the job

Police Performance/ Fitness Survey Question	Probability of Chi-Square	Probability of Significant Difference Between Model and Sruvey Officers
2	0.000	*1
5	0.775	0.225
9	0.858	0.142
10	0.126	0.874
17	0.876	0.124
40	0.751	0.249
41	0.941	0.059
44	0.498	0.502
58	0.332	0.668
60	0.004	*0.996
69	0.797	0.203
70	0.179	0.821
71	0.293	0.707

-- The closer the value of the probability of significant difference is to one, the more significant difference between model and survey

* Signifies question with probability of significant difference ($p < .05$)

-- Refer to Appendix E for survey question

Findings

A goal of this study was to observe differences between a model fitness group and a survey group of police officers on responses to a survey questionnaire concerning officers' fitness, stress and performance.

According to chi-square analysis, (to determine probability of significant difference between the model officers and the survey officers on a sample of questions from the survey), ~~moderate~~ significant differences between the model and the survey groups officers was observed regardless of their time on the job. The 1-5 years on the job group showed the greatest difference overall in their responses when the model officers were compared to the survey officers on this sample of questions. (See Appendix G and next page).

Percentage of Statistically Significant Responses for the Chi-Square Sample Questions. (Model Group As Compared to Survey group)

Key

Shows percentage of responses for the sampled questions for each time on the job group that showed statistical significant difference ($P < .05$) when the model officers were compared to the survey officers. (Ex. 1-5 time on the job group: 31% of the thirteen sampled questions showed statistically significant difference when model was compared to survey group)

Factor Analysis

The chi-square statistic was used to analyze whether there was a significant difference between the response of the model and survey groups on sample of questions. The true and false responses were ideal for the calculation of the chi-square values since a 2 by 2 matrix was easily obtainable with Model and Survey as rows and true and false as columns. The analysis was done on the computer using SAS and SAS/STAT softwares.

To analyze the differences between the model and survey groups when sampled questions were categorized, the author used a Factor Analysis model (See pg. 43).

There were 6 categories of questions used in this analysis, they were:

1. Stress and behavior
2. Department
3. Health
4. Diet
5. Fitness performance
6. Fitness beliefs

A bar graph, showing the six categories ranked respectively ranked by a randomly selected group of officers from most to least important, follows on page 59. The graph uses the variable "Time on the Job" and is broken down into four Time on the Job groupings (1-5, 6-10, 11-15 and 15 + Years or Time on The Job). These groupings are designated by different textures of the graph bars. The final communality estimate totals (F.C.E.T.) for each of the six categories can be observed to the left of the scale numbered one through five. The higher the F.C.E.T. (Factor 1), the more the model and the survey group officers differentiate in regards to that category of questions. The F.C.E.T. all fall between the numbers three and four on the scale.

This is due to the number of participants in the analysis. Refer to tables five through seven for final communality estimate totals derived from the factor analysis performed on the six categories of questions.

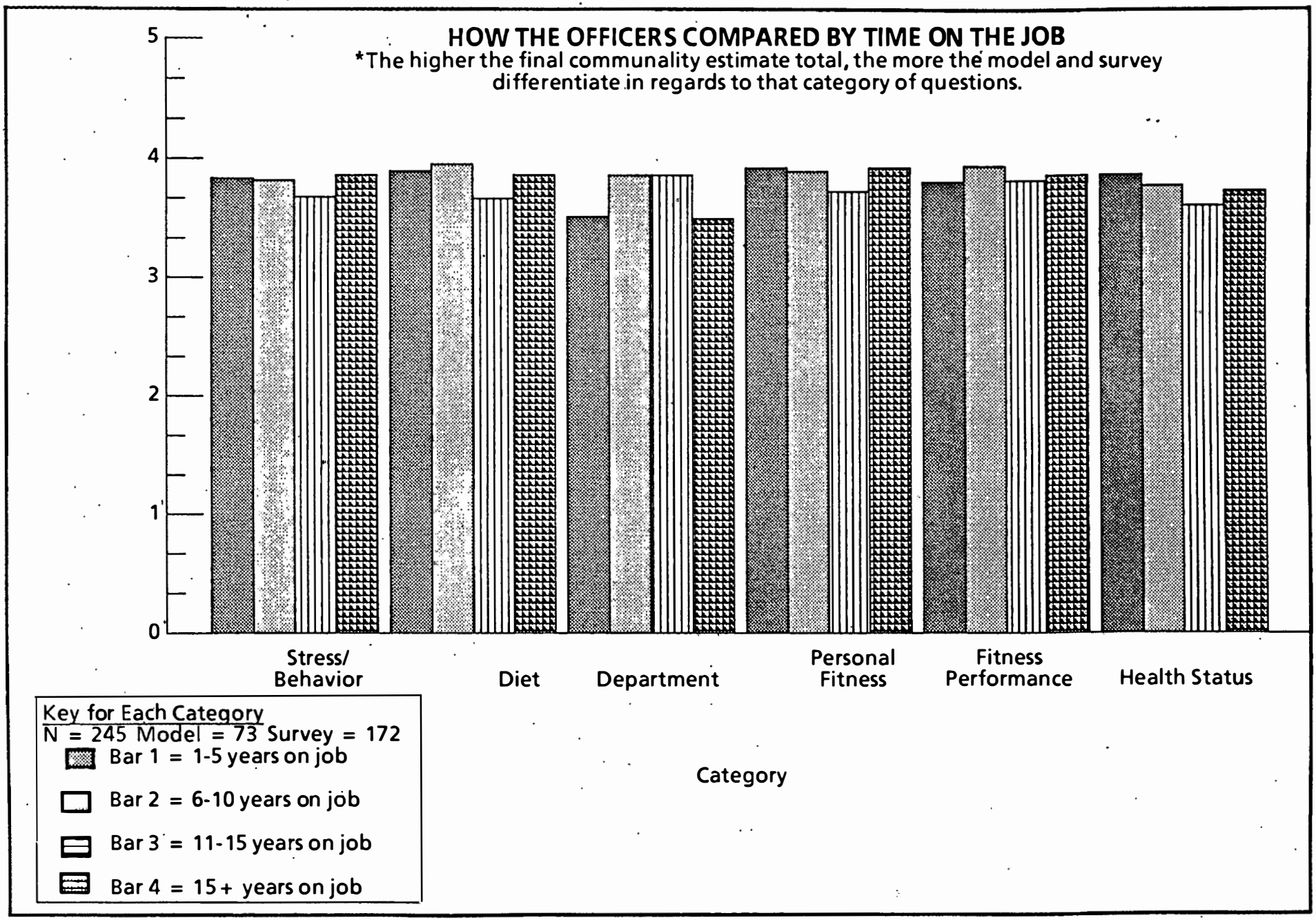

HOW THE OFFICERS COMPARED BY TIME ON THE JOB
*The higher the final communality estimate total, the more the model and survey differentiate in regards to that category of questions.
5
4
3
2
1
0
Stress/ Behavior
Diet
Department
Personal Fitness
Fitness Performance
Health Status
Category
Key for Each Category
N = 245 Model = 73 Survey = 172
Bar 1 = 1-5 years on job
Bar 2 = 6-10 years on job
Bar 3 = 11-15 years on job
Bar 4 = 15+ years on job

Table 5
Final Communality Estimate Total
By Category

Category	T.O.J	MT	MF	ST	SF	Factor 1
SB	1-5 Years	12.8 ± 7.8	10.4 ± 8.0	20.5 ± 11.1	14.2 ± 11.4	3.83
SB	6-10 Years	13.9 ± 6.2	6.8 ± 6.0	50.7 ± 14.1	17.8 ± 13.5	3.82
SB	11-15 Years	8.6 ± 4.4	5.0 ± 4.7	13.9 ± 5.7	8.6 ± 5.7	3.68
SB	15 + Years	9.6 ± 4.6	5.4 ± 4.6	39.2 ± 16.6	25.4 ± 16.6	3.87
DI	1-5 Years	10.8 ± 5.4	12 ± 5.6	20.7 ± 8.1	14 ± 7.8	3.89
DI	6-10Years	13.2 ± 6.0	7.7 ± 6.0	27.7 ± 9.0	21.3 ± 9.0	3.96
DI	11-5 Years	7.6 ± 3.6	6.1 ± 3.2	11.1 ± 4.2	11.9 ± 4.2	3.67
DI	15 + Years	9.2 ± 3.3	5.8 ± 3.2	32.7 ± 12.1	31.4 ± 12.2	3.87
Dpt	1-5 Years	14.1 ± 5.4	8.6 ± 5.2	16.4 ± 10.9	17.9 ± 10.6	3.51
Dpt	6-10 Years	6.2 ± 4.2	7.8 ± 4.2	9.1 ± 7.3	13.9 ± 7.3	3.86
Dpt	11-15 Years	6.2 ± 4.2	7.8 ± 4.2	9.1 ± 7.3	13.9 ± 7.3	3.86
Dpt	15 + Years	6.7 ± 4.1	8.1 ± 4.2	22.5 ± 21.1	41.9 ± 20.9	3.51

Mn ± SD

*The higher the number under factor 1 (last column), the more the model and survey differentiate in that category of questions

Key

Time on Job (years)
1-5 years (N = 58)
6-10 years (N = 70)
11-15 years (N = 37)
15 years + (N = 80)

Category
SB = Stress and Behavior
DI = Diet
DPT = Department
PF = Personal Fitness
FP = Fitness Performance

MT = Model True
MF = Model False
ST = Survey True
SF = Survey False
HS = Health Status

Table 6
Final Communality Estimate Totals
By Category

Category	T.O.J	MT	MF	ST	SF	Factor 1
PF	1-5Years	15.6±6.6	7.2±6.8	23.6±11.3	11.3±11.4	3.92
PF	6-10 Years	14.5±6.4	6.1±6.2	34.1±14.5	14.8±14.5	3.90
PF	11-15 Years	9±5.3	4.9±5.3	15.3±6.5	7.4±6.6	3.72
PF	15+ Years	11±4.6	3.9±4.4	43±18.9	21.4±18.7	3.92
FP	1-5 Years	15.6±7.5	7.3±7.5	24.4±10.6	10.4±10.6	3.81
FP	6-10 Years	14.6±6.0	6.3±6.0	31.1±14.6	17.5±14.3	3.94
FP	11-15 Years	9.2±3.5	4.4±3.7	13.4±6.2	9.2±6.1	3.82
FP	15+ Years	10±4.4	5±4.4	42.4±15.9	21.3±15.9	3.87
HS	1-5Years	5.7±4.7	17.2±4.7	11±7.4	23.4±7.4	3.86
HS	6-10 Years	6.3±4.5	13.7±4.5	18±11.0	30.2±11.0	3.78
HS	11-15 Years	3.5±3.3	10.2±3.3	8.3±4.2	14.3±4.1	3.60
HS	15+ Years	4.6±3.0	9.7±3.1	22±10.8	42.5±11.0	3.72

Mn± SD

* The higher the number under factor 1 (last column), the more the model and survey differentiate in that category of questions

Key
T.O.J. = Time on Job (years)
1-5 years (N = 58)
6-10 years (N = 70)
11-15 years (N = 37)
15 years + (N = 80)

Category
SB = Stress and Behavior
DI = Diet
DPT = Department
PF = Personal Fitness
FP = Fitness Performance

MT = Model True
MF = Model False
ST = Survey True
SF = Survey False
HS = Health Status

Table 7
Final Communality Estimate Total
By Time On The Job

Time on the Job	Category	Factor 1
N = 58 /1-5 Years	SB	3.83
N = 58 /1-5 Years	DI	3.89
N = 58 /1-5 Years	DPT	3.51
N = 58/ 1-5 Years	PF	3.92
N = 58 /1-5 Years	FP	3.81
N = 58 /1-5 Years	HS	3.86
N = 70 /6-10 Years	SB	3.82
N = 70 /6-10 Years	DI	3.96
N = 70 /6-10 Years	DPT	3.73
N = 70 /6-10 Years	PF	3.90
N = 70 /6-10 Years	FP	3.94
N = 70 /6-10 Years	HS	3.78
N = 37 /11-15 Years	SB	3.68
N = 37 /11-15 Years	DI	3.67
N = 37 1/1-15 Years	DPT	3.86
N = 37 /11-15 Years	PF	3.72
N = 37 1/1-15 Years	FP	3.82
N = 37 /11-15 Years	HS	3.60
N = 80/15 + Years	S/B	3.87
N = 80 15 + Years	DI	3.87
N = 80 15 + Years	DPT	3.5
N = 80 15 + Years	PF	3.92
N = 80 15 + Years	FP	3.90
N = 80 15 + Years	HS	3.70

Categories
SB = Stress and Behavior
DI = Diet
DPT = Department
PF = Personal Fitness
FP = Fitness Performance
HS = Health Status

Factor 1 = Final communality estimate. The higher the number in this column, the more the model and survey groups differentiate in that category of questions.

Findings

The higher the number of the final communality estimate total F.C.E.T. (Factor 1) the more the model vs. the survey group differentiates in relation to that particular category.

Whether grouped together under a category such as "Diet" (see Table 5, 6) or grouped according to "Time on the Job" (see Table 7), the final communality estimate totals were similar.

There was no substantial difference between the model group police officers or the survey group police officers when the questions of fitness, stress an performance from the survey are categorized in the manner they were. (i.e. randomly selected true and false questions that apply to the category they were placed in).

If one were to take the "averages" of the final communality estimate totals for each grouping whether it be by "Time on the Job" or a category such as "Diet" (Tables 5, & 6, 7 respectively), it would show that the two groups did not differ.

For example Table 6 shows that by taking the "average" of the final communality estimate totals for fitness performance, one gets a final communality estimate total average of 3.867 (3.81 + 3.94 + 3.82 + 3.87 = 3.86 Av.). This represents the highest (F.C.E.T.A.) final communality estimate total average for each of the six categories. Thus, one could say that the category of fitness performance shows the greatest difference (F.C.E.T.A.) between the model police officers and the survey police officers. Personal fitness was second with an F.C.E.T.A. of 3.865. Diet had a F.C.E.T.A. of 3.84, stress and behavior 3.8, and health status 3.74. The department category of responses between the model and survey officers showed the little differentiation with a 3.68 ave. Still if one considers the F.C.E.T. Averages overall, there is little difference between groups. The rank order of categories based on least to most differentiation between model and survey is as follows:

1. Department
2. Health
3. Stress and behavior
4. Diet

5. Personal fitness
6. Fitness performance

Discussion

It was contended that a group of model fitness officers would report that their fitness levels were higher, their stress levels lower and their performance better as compared to a survey group of police officers believed to be lacking in fitness requirements.

The FBI stated that in a national survey that included nearly all U.S. law enforcement agencies, the number one concern of officers was their stress and how to manage it. Eighty-three percent of those surveyed in this study believed they would feel less threatened in potentially violent situations if they were in better physical shape. The study showed that many officers reported that fitness does relate to their stress reduction and job performance. Proportionally, sixty-seven percent of those involved in fitness actually felt it improved their performance.

Ninety-three percent of the officers surveyed stated they wanted to be involved in fitness pursuits. Yet, only twenty percent overall report having observed an officer receive a reward for good fitness attainment. Where is the incentive?

Seventy-two percent of the officers reported that fitness is not a topic of discussion amongst police officers. Eighty-six percent reported their department does not have periodic fitness test or standards they must maintain. Seventy percent of the officers report taking no medical exams since leaving the academy.

The attitude of fitness found in this study can be summed up as the officer having an overwhelming concern for fitness but that impetus from their departments is slight. The officers reported that they are being stressed and that it affects their job performance. Those who do maintain a fitness program reported that their fitness helps with stress reduction and promotes better job performance.

Overall the study showed that there are relatively moderate differences between the model and survey officers on their responses to questions of stress, fitness and performance. The difference lies primarily in the emphasis given to fitness by a department and what is actually provided to the officers by them. For example, the study shows that only two percent of the survey officers report having departments that require periodic fitness test or standards. Also, forty-five percent of the model officers report having seen awards given for fitness attainment compared to only nine percent of the survey officers.

Although department seems to be the greatest difference between the model and survey groups, even it is slight. The emphasis given and the actual implementation of requirements seems to be the difference. In Western New York the departments initial impression on the officer, the academy, appears to be doing little to inspire the officers to continue with fitness. Seventy-six percent of the survey officers report that their academy fitness training did not inspire them to continue with fitness pursuits. Follow-up also appears to be poor, as eighty percent of the survey group report taking no medical exam since leaving the academy. The study appears to show that Western New York departments are generally concerned with getting officers through the academy and onto the street. Health related requirements are stringent in the academy, but are all but forgotten once an officer hits the streets. An officer comments, "You had to meet certain requirements when you took the job so why not once your on the job".

The review of literature supports the contention that police work is stressful, and that fitness can relate to stress reduction and job performance. It also shows that some fitness programs are being implemented in police departments with reward incentives along with punishments but that they are still lacking. With only two percent of Western New York (WNY) survey officers reporting requirements by their departments for fitness evaluations and standards, it is surely lacking. One

might say that WNY departments and their emphasis on the fitness of their officers "Do not" go hand in hand. "Individually" the interest is there. One WNY officer states, "I would pass on a years raise for the use of a health club."

The evident lack of interest in officers fitness by their departments, primarily survey (WNY) officers, are supported by the findings in this study. The findings correlate to what Gilbert in his Characteristics of the best officers on the force states. In his article these characteristics are a partnership with the leader, technical competence, motivation to do the job, proper comportment, dependability, sense of humor, positive working relations, and a tendency to speak up. Although good fitness attainment by officers could actually supplement most of these characteristics, it is not mentioned; which sadly is the case when police stress and job performance or factors relating to them are discussed.

CHAPTER V

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Summary

This study was designed to observe how survey (Western New York Police Officers) as compared to the model officers differ in response to questions of police stress, fitness and performance. It was also designed to observe if there is a general concern for fitness amongst officers.

Due to the larger number of the officers taking the survey and the data accumulated, only a sample of the questions was used for analysis. This study shows only a slight percentage of what can be done with the data brought forth.

The study included two groups. The survey group consisted of 172 Western New York Police Officers who volunteered to complete the survey questionnaire. The model group consisted of 73 Greensboro, North Carolina Police Officers who volunteered to complete the survey. The groups were given two weeks to complete the survey (April 14-27, 1992). The questions for the survey were devised by 70 randomly picked officers who completed a "brainstorm sheet."

An unrelated group of 10 police officers was administered the questionnaire to determine length of time it took to fill it out and the clearness of the questions. The survey and model groups were administered a 71 questions survey questionnaire that consisted of multiple choice, true/false, scale and fill-in the blank questions. Only true and false responses were used for statistical analysis. Dissemination of the survey once they reached the participating departments was random and determined by a previously contacted supervisor.

Thirteen of 15 departments surveyed completed the surveys and returned them. Two hundred forty-five surveys were filled out by police officers and were used in the study. Eighty-three were returned too late to be used. Fifty-five of 750

surveys were never returned. Three hundred twenty-eight total surveys were completed and returned for a 47% rate of return (750 - 55 = 695 ÷ 328 = .47).

Data was analyzed on a sample of the survey's true and false questions. The true and false responses were ideal for the calculation of the chi-square values of statistically significant differences since a 2 x 2 matrix was easily obtainable with model and survey as rows and true and false as columns. This was done to determine statistically significant differences of responses between the model and survey groups on sample questions.

Factor analysis was used to show commonalities and differences between the model and survey groups in relation to 6 categories of questions.

The factor analysis produces a final communality estimate. The higher this final estimate is, the higher the disparity between the model and the survey group for that category of questions.

The study originally recorded data by tallying on a computer spreadsheet. It presented the raw scores and percentages of response to the survey questions for the model and survey groups in all categories for time on the job and overall respondents. It also provided proportional raw scores and percentages for them (see See Appendix I).

This study was conducted to inquire if physical fitness is a concern for the officers surveyed. It also attempts to inquire if the officers feel their fitness relates to their stress and job performance. Thirdly, it attempts to determine if there are significant differences in response to a sample of the survey questions when the model officers are compared to the survey officers.

Conclusions

Several statistical tools were used to determine percentages, proportional percentages, probability of significant difference and final communality estimate

totals (F.C.E.T.). Among the statistical tools used were the chi-square and factor analysis models.

Findings

1. Percentages based on the raw data show an overwhelming concern among the surveyed police officers (both model and survey) for fitness. The research shows that officers report that they believe that fitness does affect their management of stress and their performance of duties.

2. Regardless of time on the job, the majority of officers see a need for fitness amongst police officers. Surprisingly, the significance of difference between the model fitness group (Greensboro, N.C. Police) and the survey police group (Western New York Police Officers) was minimal for categorized or individual questions. If there was a difference, it was slight!

3. Also of interest was that the "department" category of questions showed the "least" differentiation of responses between the model and survey officers. The greatest differentiation between the two groups seemed to lie within the categories relating to "personal" fitness.

5. Regardless of the category analyzed, the questions asked, or the time on the job group observed, the differences in response between the model and survey groups were relatively insignificant.

6. What is significantly different between the model and survey groups is the periodic fitness test or standards that must be maintained. Forty percent of the surveyed model group officers state they have periodic fitness test or have to maintain fitness standards. Ninety-seven percent of the surveyed Western New York officers state there are no fitness test or fitness standards they must maintain.

7. As stated, Regardless of time on the job (T.O.J.), the majority of officers see a need for fitness amongst police officers. Also regardless of T.O.J. group, a significant difference between the survey and model groups was not observed.

8. The final communality estimate totals (F.C.E.T.) of the factor analysis also showed minimal differentiation in response to categories of questions between the survey and model groups.

9. If one is to average the final communality estimate totals for each category - for a particular time on the job group - little difference is evident. The 6-10 T.O.J. group showed the greatest differentiation between the survey and model groups with an average F.C.E.T.A. of 3.855. The 1-5 T.O.J. group average was 3.803, the 15 + T.O.J. group 3.793 and the 11-15 T.O.J. group showed the least difference with 3.75 average.

This could be interpreted as the officers with the greater amount of time on the job differentiating less on categorized questions when the survey group is compared to the model group, even though the difference is slight.

Recommendations

The researcher makes the following recommendations for future research.

1. Perform a similar study on officers from large cities such as New York, Chicago, or Los Angeles for comparison.
2. Control those participating in the survey to include those interested in fitness and those who are not interested and observe the response rate of survey return for both.
3. Perform separate studies on male and female officers.
4. Perform the study on urban vs. rural departments.
5. Perform the study on different agencies such as Federal, State and Local.

6. Perform follow-up study in several years and analyze responses as compared to this study.
7. Observe and compare additional factors such as age, work shift, gender, work setting, uniform, body type, and rank to the responses of the survey.
8. Research in the area of police fitness as it relates to stress and performance of police is greatly needed and should be continued.
9. Observe fitness, stress and performance attitudes of other populations such as the military or corporate world and correlate them to the law enforcement findings.

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APPENDICES

APPENDIX A

INITIAL CONTACT LETTER

City of Rochester

Civic Center Plaza
Rochester, New York 14614

Hello!

I am writing this letter in regards to an upcoming survey I would like your department to be included in. My name is Anthony (Tony) Zapata. I am a member of the Rochester Police Department's Tactical Unit. I have been with the department for four years. I'm preparing my thesis in conclusion of my masters degree at S.U.N.Y. Brockport. As part of my thesis, which will concern the relations between police performance, stress and physical fitness, I need to conduct a written survey.

I plan to conduct this survey in the late winter or early spring of 1992. The survey will include questions pertaining to police officers beliefs concerning job performance in relation to their actual physical well being. The survey, which is voluntary, will select participants from various department in Western New York and a model fitness department. All gathered information will be "coded" to insure STRICT CONFIDENTIALITY OF PARTICIPANTS. Your department and individuals remain anonymous throughout the whole process. Any materials requested will be provided to you for your review if so desired to INSURE YOUR CONFIDENTIALITY.

Thank you for your cooperation. Approval and participation by your department in this survey would be "greatly appreciated"! If there is any restructuring deemed appropriate by your department, I am open to suggestions. Your response would be appreciated if returned by November 25, 1991. Enclosed is an example of questions and findings that you could use as a reference to the content of my survey. Please do not forget to include the approximate number of members in your department.

Anthony D. Zapata

City of Rochester

Civic Center Plaza
Rochester, New York 14614

Examples

1. Are you currently involved in "any" type of physical training, athletics, or sports?
   Yes_____ No_____ Somewhat _____
2. What best describes your meal of choice?
   A. Home cooked B. McDonalds C. Perkins
3. At the end of your shift, how do you often feel?
   A. Energetic B. Sluggish C. Tired
4. How many times (approximately) were you absent from work due to a minor illiness _____?
5. Physically, what is the most challenging?
   A. Running after suspects B. Jumping fences C. Controlling resisters
6. Do you eat Breakfast on a regular basis?
   Yes_____ No_____

City of Rochester

Civic Center Plaza
Rochester, New York 14614

RESPONSE SHEET

Please respond by checking the appropriate response.

_____My department will participate in the aformentioned survey.

_____Please send more information concerning the aformentioned survey as my department is interested in participating.

_____Sorry, my department will not participate in the aformentioned survey.

The approximate number of members in my department is_____.

Please return your response in the addressed envelope provided by November 25, 1991. Any questions, please feel free to call me at (716) 254-2774 (days) or (726) 428-6714 (evenings)

APPENDIX B

BRAINSTORM RESPONSE SHEET

Please list ANY 5-10 questions/concerns you would like to "know" or address regarding job related police performance either positive or negative as it relates to stress or fitness, in relation to physical wellness,

Example: Why do police react to _____ this way?
What causes that reaction?

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

APPENDIX C

INTERMITTENT CONTACT LETTER

State University of New York
COLLEGE AT BROCKPORT
Brockport, New York 14420

April 1, 1992

Hello,

I am writing this letter in regards to my upcoming survey concerning police performance and its relation to physical wellness. The survey, which you stated you would like to participate in, is under construction. It will probably be ready by mid April. Again, thank you for your participating. I will be contacting you soon. Any questions feel free to call me at 716-254-2774 (H) or 716-646-5271(Pg.).

Sincerely,

Anthony D. Zapata

APPENDIX D

SURVEY COVER NOTE

April 14, 1992

Dear Sir,

Enclosed are the police physical fitness/performance surveys I've been writing you about that your Department agreed to participate in. Thank you again for participating. Please return the surveys as a group in the self-addressed envelope to me by April 27, 1992. If you have any questions, please feel free to call me at (H) 716-254-2774, (W) 428-6714, or (pager) 464-5271 any time.

Sincerely,

Anthony D. Zapata

APPENDIX E

SURVEY COVER LETTER

&

SURVEY QUESTIONNAIRE

POLICE PERFORMANCE/FITNESS SURVEY

Thank you for taking the time to complete the attached questionnaire. All responses will be kept in strict confidence. Your identity remains anonymous throughout the process. Please do not put your name on any pages.

The data gathered from police respondents here in Western New York will be correlated to such factors as age, time on the job, work shift, gender and work setting. It will also compare the responses of WNY officers to the Greensboro, North Carolina Police Department (model). This Department is a leader in physical fitness standards for its officers. The study looks broadly at views concerning the relationship between police stress, fitness and performance in WNY police officers as reported by themselves.

The questions asked on the attached questionnaire take several forms, some are multiple choice or true/false, others asked you to respond on a scale of one to ten with description given as to what the numbers mean. There are also a few fill in the blank questions. Yes/No

Please read all of the questions carefully. It is extremely important to the study that the responses are honest and that you respond to each question if possible.

The questionnaire looks long, but it actually only takes about 15 minutes to complete. Please return your questionnaire to the provided large envelope which will be returned to me for analysis.

Thank you for your cooperation. If you have any questions or problems regarding this survey or study, please call me at (H) 716/254-2774 or (Pager) 716/464-5271. I respectfully request your cooperation in this study.

A.D. Zapata

I am currently a Western New York Police Officer. The research is being conducted in requirement for a Masters Degree in Education from the State University College at Brockport. It is being conducted under the auspices of S.U.N.Y. Brockport and is independent of any police departments or other organizations beliefs, ideas, or benefit.

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

1. Would you use a well equipped physical training center supplied by your Department? True False

2. Does your Department have periodic fitness tests or standards you must maintain? True False

3. Does your Department have a gym, or provide access to, or information on one? True False

4. To the best of your recollection, what was the approximate rating you received on your last performance evaluation, on a scale of 1 to 10, 1 being low and 10 high: 1 2 3 4 5 6 7 8 9 10 N/A
   - When was it given? Year given . . . 19____
   -To the best of your recollection, what was the approximate rating you received on your last fitness examination, on a scale of 1 to 10, 1 being low and 10 high: 1 2 3 4 5 6 7 8 9 10 N/A
   -When was it given? Year given . . . 19 ____

5. If you were in better physical shape, would you feel less threatened in potentially violent/stressful situations? True False

6. Do you feel more apt to be abusive towards a fellow officer or citizen during job performance if you are: A) Mentally unprepared, B) Physically unprepared, c) Both A & B, D) Neither A nor B A B C D
   -How does your physical wellness contribute to force applied during arrest situations? A) Positively, B) Negative, C) No effect A B C

7. Do you belief there is a relationship between on duty police injuries and the physical fitness of the said officer? True False

8. What best describes the reason an officer would not strive to be in the best physical condition possible? A) not enough time, B) lack of available facilities, C) money to join a health club, D) boring and uninteresting A B C D

9. Does an officer's poor physical appearance cause negative public opinion whether he/she is capable of performing the job correctly? True False

10. Does the out of shape/unhealthy officer create added stress to you when dealing with violent suspects? True False

11. What do you feel is the number one cause of absenteeism in your Department? _____

12. Has your Department provided enough education and counseling on work stress and effective coping methods in relation to physical well being or fitness? True False

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

13. Do you believe there is a relationship between physical fitness and longevity after retirement? True False
-Do you believe there is a relationship between physical wellness and citizens complaints? True False

14. In your opinion, what is your Department's concern about what they will do to provide for and maintain physically fit officers? A) positive, B)"so-so," C) negative, D) uncaring, E) contemplating A B C D E

15. What is your supervisor's feeling on physical appearance? A) Caring, B) Neutral, C) Uncaring A B C
-What is your feeling on physical appearance? A) Caring, B) Neutral, C) Uncaring A B C

16. Do you believe rewards or incentives should be given for good fitness maintenance as is given for good job performance? True False

17. Do you believe officers are sometimes "reluctant" to do the job because they are not physically prepared to handle certain tasks? True False

18. If applicable, what would you say best describes your Department's reason for not providing for on going fitness? A) not enough time, B) no requirements to do so, C) not enough money, D) lack of interest, E) just don't care A B C D E

19. Does your Department "now" have more or less of a requirement for "fit" officers since you left the Academy? A) more, B) less, C) no change A B C

20. What do you believe is the percentage of out of shape/ill-fit officers on your Department? A) 10%, B) 25%, C) 35%, D) 50%, E) over 50% A B C D E

21. What appears to be most important to citizens? A) appearance, B) intellect, C) behavior A B C
-What appears to be most important to your Department? A) appearance, B) intellect, C) behavior A B C
-What is most important to yourself? A) appearance, B) intellect, C) behavior A B C

22. Who should be liable for an officer not being able to physically perform duties after he has graduated from the Academy? A) Officer, B) Immediate supervisor, C) Department, D) City, E) Shouldn't be a liability issue A B C D E

23. Do you feel diet, exercise, stress and performance are related? True False
-Which is the least important to you? A) diet, B) exercise, C) stress, D) performance A B C D

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

24. Besides the obvious strength and endurance gains, do you feel fitness ultimately effects your performance? True False

25. If by exam you were found to be in poor physical health due to job related stress, what would you choose to do first? A) change eating behavior, B) change exercise behavior, C) both A and B, D) continue as you are and just slow down, E) none of the above A B C D E

26. Who would you likely take your stress out on duty? A) fellow officer, B) citizen, C) Supervisor, D) hold inside A B C D

27. If applicable, in your current or prior fitness routine if you stopped training, which best describes why? A) time, B) too boring, C) too strenuous, D) too costly, E) too tiring, F) other (what) _____ A B C D E F

28. Did you Academy fitness training inspire you to continue with fitness? True False

29. On a scale of 1 to 10, 1 being low and 10 high, how do job stressors affect each:
A) sleeping habits 1 2 3 4 5 6 7 8 9 10
B) eating habits 1 2 3 4 5 6 7 8 9 10
C) drinking (alcohol) habits 1 2 3 4 5 6 7 8 9 10

30. Does your stress at times cause your eating and drinking (alcohol) habits to increase to a point where you become uncaring about your health or performance? Yes No Somewhat

31. Do you know about eating right? Yes No Somewhat

32. What best describes your Department's work-out facility/ A) dungeon, B) below acceptable, C) fair, D) good, E) excellent, F) none A B C D E F

33. If applicable, which best describes the reason why you drink coffee? A) calms nerves, B) taste, C) caffeine to keep awake, D) Habit, E) not applicable, F) other A B C D E F
-If applicable, at what rate has this Increased (Inc) or Decreased (Dec) since leaving the Academy? A) 25% B) 50%, C) 75%, D) 100%, E) not applicable Inc Dec
A B C D E

34. If applicable, which best describes the reason why you smoke? A) calms nerves, B) taste, C) nicotine to keep awake, D) Habit, E) not applicable, F) other A B C D E F
-If applicable, at what rate has this Increased (Inc) or Decreased (Dec) since leaving the Academy? A) 25% B) 50%, C) 75%, D) 100%, E) not applicable Inc Dec
A B C D E

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

35. Which best describes your "psyche" about fitness since joining the police force? A) unconcerned, B) seemingly less important now, C) seemingly more important now, D) strong concern — A B C D

36. Which best describes your on duty diet? A) donut shop, B) fast-foot restaurant, C) sit-down restaurant, D) home (brown bag) — A B C D
-Why do you chose this diet? A) time limitations, B) preference, C) cost, D) atmosphere, E) other — A B C D E

37. How many medical exams has your Department required you to take since the Academy? 0 1 2 3 4 5 6 7 8 9 10

38. On a scale of 1 to 10, 1 being low and 10 high, how fit are you to do today's policing? 1 2 3 4 5 6 7 8 9 10
-What is your job performance level? 1 2 3 4 5 6 7 8 9 10

39. On a scale of 1 to 10, 1 being low and 10 high, stress affects my performance: 1 2 3 4 5 6 7 8 9 10

40. If applicable, do you believe your current fitness program assists you in dealing with daily stressful situations in police work? — True False

41. Do you agree that your fitness does improves your job performance positively? — True False

42. If applicable, after you took up a fitness program, did you feel that it improved, hindered, or did not effect your job performance? A) improved, B) hindered, C) no effect, D) never have been in a fitness program E) not applicable — A B C D E

43. Which does stress effect the most for you: A) physical condition, B) dietary habits, C) performance, D) other — A B C D

44. I want to be involved in fitness. — True False

45. Approximately how far could you run pursuing a fleeting suspect in full gear before you begin to tire? A) 1/2 block, B) 1 block, C) several blocks, D) several blocks plus, E) I honestly couldn't run a 1/2 block — A B C D E

46. While on duty, do you often feel you push yourself past your physical limits sometimes resulting in poor job performance? — True False

47. Do you feel your diet compliments your work requirements — True False

48. Are you happy with your job performance? — True False
Are you happy with your fitness level? — True False
Are you happy with your diet? — True False
Does what you eat affect how you feel? — True False
Does what you eat affect how you perform? — True False
Do you believe: You are what you eat? — True False

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

49. Last year, approximately how many times were you absent from work for a minor ailment you could have gone in with? A) 0 days, B) 1-3 days, C) 4-5 days, D) 6-7 days, E) 8 + days — A B C D E

50. Last year, how many of these days do you believe were related to elevated levels of poor fitness, diet, stress, or fatigue? A) 0 days, B) 1-3 days, C) 4-5 days, D) 6-7 days, E) 8 + days — A B C D E

51. Out of approximately ___?___ footchases I was in last year, I caught the suspect A) 0 time, B) 1/4 time, C) 1/2 time, — #_____
-Last year, out of approximately ?___ confrontations with resisting suspects, I felt in total physical control: — #_____
A) 0 time, B) 25% time, c) 50% time, d) 75% time, E) more than 75% time — A B C D E

52. I honestly get nervous and feel stress A) 0%, B) 10%, C) 20%, D) 30%, E) 40%, F) 50%, G) 50% + of the time when performing my job. — A B C D E F G

53. Have you ever got into a police vehicle accident on duty time due to fatigue? — True False

54. What single food do you eat most frequently while on duty? _____
-What beverage do you drink most frequently? _____

55. What best describes your outlet for built up stress and frustration? A) verbal, B) physical, C) avoidance, D) none — A B C D

56. I exercise to control stress. — True False

57. If you had to choose a partner to work with to do "today's" policing, which would you choose? A) unfit, good decision maker, B) physically fit, below average decision maker, C) other — A B C
-For a partner, which would you choose from this group? A) smart female, B) strong female, C) smart male, D) strong male — A B C D

58. Have you ever suffered a preventable injury that you felt could have been avoided if you attained a better fitness level prior? — True False

59. My Department consists primarily of officers who are: A) intellectually inclined, B) physically inclined, C) Both A & B, D) neither A nor B — A B C D

60. Have you ever observed a policeman receive a reward for fitness? — True False
-Have you ever observed a policeman receive a reward for performance? — True False

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

61. If provided for on duty time, What would be the program most suitable/pleasing to you: A) calisthenics, B) weights, C) aerobics, D) running, E) none — A B C D E

62. Even if you hate to remain fit, do you feel officers "should" maintain proper physical wellness? — Yes No Somewhat
-What do you feel you need to work on the most concerning physical fitness to help improve your job performance?

---

63. My job performance tends to directly affect my health. — True False
If I had a difference job, my health would probably improve. — True False
Problems associated with my job keep me awake at night. — True False
I am often bothered by acid indigestion or heartburn. — True False
I sometimes feel weak all over. — True False
I have a hard time getting to sleep or staying asleep. — True False
I get irritated or annoyed over things I shouldn't. — True False
I may now have a medical problem but I am afraid to see a doctor or notify my Department. — True False
I would consider myself in good or excellent health. — True False
I would consider myself in fair health. — True False
I do not have very good health. — True False
I wake up with stiffness or aching joints or muscles. — True False
I seem to tire quickly. — True False
I have "always" been involved in some sort of fitness pursuit. — True False

64. Participation in physical activities for me is A) daily, B) weekly, C) monthly, D) seldom, E) none. — A B C D E
-Participation in a vigorous exercise program for me is A) daily, B) 3x week, C) weekly, D) seldom, E) none. — A B C D E
-Do you feel you're overweight? — True False
-Do you feel you're underweight? — True False
-Do you eat a wide variety of foods, something from each of the following 5 food groups?
1) meat, fish, poultry, dried legumes, egg or nuts,
2) milk or milk products, 3) bread or cereals,
4) fruits, 5) vegetables

A) each day, B) 3x week, C) seldom, D) never — A B C D

65. Seven simple health habits are associated with longer and healthier life, which do you observe?
1. Regular eating habits of 3 meals a day with particular attention to breakfast. — True False
2. Not eating between meals. — True False
3. Moderate amount of exercise or physical activity. — True False
4. Sleep seven to eight hours every night. — True False
5. No smoking. — True False
6. Moderate use of alcohol. — True False
7. No significant deviations above your ideal weight — True False

POLICE PERFORMANCE/FITNESS SURVEY

(Circle letter/word/number, or fill-in as required)

66. I receive a high degree of feedback concerning:
- My performance — True False
- My physical appearance — True False
- Fitness is often a topic of discussion amongst police. — True False

67. The number of years on the job is?
A) 1-5, B) 6-1-, C) 11-15, D) 15 + — A B C D
-Do you work: A) days, B) afternoons, C) midnights
D) afternoons/nights — A B C D
-Gender: A) male, B) female — A B
-your age is: A) 20-25, B) 26-30, C) 31-35,
D) 36-40, E) 40 + — A B C D E
-I hold the rank of sergeant or above. — Yes False

68. I work in the following setting: A) urban, B) suburban,
C) rural — A B C
-I work primarily: A) plain clothes, B) uniform,
C) both A and B — A B C
-I consider myself: A) ectomorphic (think build),
B) mesomorphic (medium to muscular build), C) endomorphic
(slightly to obese build) — A B C

69. Does it interest you to know about job related health and mortality statistics in police work? — True False

70. Have you ever heard of or filled out a survey that observes police performance in relation to one's physical wellness? — True False

71. Does a fitness/performance survey like this interest you in any way? — True False

OPTIONAL:

Do you have any questions or concerns regarding Police Performance in relations to physical fitness or about this Survey/Study?

_____

_____

_____

_____

_____

APPENDIX F

SURVEY DEMOGRAPHICS

OFFICERS COMMENTS

DEMOGRAPHICS

The characteristics of the surveyed population of officers used in this study are as follows:

1. 32% of model group officers had 1 to 5 years on the job.
   29% had 6 to 10 years.
   19% had 11 to 15 years.
   21% had 15 + years.

2. 20% of the survey group officers had 1 to 5 years on the job.
   28% had 6 to 10 years.
   13% had 11 to 15 years.
   38% had 15 + years.

3. 56% of model group officers worked days.
   26% worked afternoons.
   22% worked midnights.

4. 41% of survey group officers worked days.
   31% worked afternoons.
   20% worked midnights.

5. 84% of the model group were males.
   14% were females.

6. 87% of the survey group were males.
   12% were females.

7. 8% of the model group were 20-25 years old.
   32% were 26-30.
   25% were 31-35.
   18% were 36-40.
   19% were 40 + .

8. 5% of the survey group were 20-25 years old.
   26% were 26-30.
   22% were 31-35.
   23% were 36-40.
   24% were 40 + .

9. 27% of the model group were Sergeants or above.
   73% were Officers.

10. 31% of the survey group were Sergeants or above.
    69% were Officers.

11. All model group Officers work in urban Greensboro, NC.

12. 59% of the survey group work in an urban area.
    34% work in a suburban area.
    7% work in a rural area.

13. 23% of the model group work plain-clothes.
    73% work uniform.
    1% work plain-clothes and uniform.

14. 19% of the Survey group work plain-clothes.
    70% work uniform.
    11% work plain-clothes and uniform.

OFFICERS COMMENTS

"It is all relative. The less you exercise, the more you eat, and the more your performance decrease. Every department should provide the facility for officers to improve themselves and set minimum standards."

"I would like to see the results of this survey sent to the Union Presidents of the Department and not to the Stars and Bars so the rank and file will know how other cops feel. Good luck on your Masters!"

"Fitness has never really been a concern from the bosses of my Department. My lack of interest stems mainly from time constraints and interesting ways to exercise."

"I belong to a gym but don't go as much as I should due to time constraints. I feel better mentally/physically when I go."

"I would like to see the results of this survey. Having 1 or 2 hours a week while working (come in early-leave early) would be very helpful for people in our positions."

"Cannot understand why between the State Police and our union, they can't come up with a program of exercise for all members--neither or above CARE at all about physical fitness. I would pass on a years raise for use of health club. There are numerous State facilities available to use: State Colleges, high schools. We have totally unfit tempers on the job but, no one cares. Some day someone will get hurt or die because of it."

"Department gym is 20 miles away. Irregular rotation."

"A good physical fitness program should be incorporated into all law enforcement agencies, complete with incentive rewards and recognition for meeting or exceeding set standards. On duty time should be provided in order to require participation. It is incumbent upon all police officers to remain physically fit. Their survival may depend upon it!"

"Would you like to know of Agencies surveyed that have programs of fitness, rewards for fitness, offer time on duty for fitness or provide gym facilities off duty."

"Too often, as officers retire from 30 + years of service it seems their health deteriorates rapidly and in many cases death occurs. Are there any studies or medical journals which may explain this (seeming) phenomenon. I've read theories relating it with ineffective ways of dealing with stress and the 'adrenaline surge' with no release."

"I believe it's good. It is making me think about how much more I should be working on getting more fit for myself and my partner."

"Would like to know life expectancy for retired fit officers vs. unfit officers."

"Please send the results of this survey/study to our Department."

"Send us results please, and good luck!"

"I'm hoping that when my youngest child (1 year old) begins school I'll be able to get off my lazy --- and begin a proper exercise program again. I believe mandatory physical training is necessary to improve job performance and would welcome it."

"For the past 4 months, I've had the chance to work out (gym) after work, this in a small way has lowered my stress level a lot. I think all departments should have some type of physical training program in-place."

"Will we get to see the result of this survey? Maybe a survey like this may push the department in getting (investing) into a better gym (facility) for the members of the department. I believe there should be a physical fitness requirement to be upheld and a physical fitness test should be administered at least once a year in our department."

"Police departments should require a physical fitness test once a year for a required age group."

"Excessive work load, long and changing hours that are demanded by the department often make it impossible to obtain adequate sleep, a healthy diet, or to maintain an exercise program. The department gives lip service to the idea of helping officers maintain good physical fitness but then overworks and stresses the officers until they are used-up and burnt-out."

"I would hope this could be used to convince the Department to provide much needed facilities and equipment for physical fitness training."

"I hope some good comes from your survey and that departments listen to the results!"

"I feel I am in fair physical shape (about 5 lbs overweight), but I should exercise regularly. Recreational activities generally seem good for stress reduction (fishing, woodworking, playing ball with my kids).

"I have long felt that a police officer should be mandated to maintain a certain level of physical conditioning. You had to meet certain requirements when you took the job so why not once your on the job!"

"I believe that stress is a more important factor in job performance than physical condition."

"How long does the average officer who engages in a regular exercise program live after retirement compared to officers who doesn't regularly exercise."

"I would be interested in the results of your survey/and thesis."

"The department should be obligated to conduct complete physical exams with blood workups on every sworn officer yearly. This is the first and most important step in beginning a physical fitness program. Many people think because they don't feel bad or aren't sick a lot, that they are in good physical condition. Also, early detection for other medical problems is very important in minimizing the severity of the disorder."

"Years ago we got a substantial discount to join a racquetball club/league. I would like to see that again/or how about the Department/City pick up 1/2 join the YMCA etc."

"Will we ever get an updated weight room/gym? Can we get access to a nutritionist for diet planning? Will the Department provide it for us or will it cost the individual?

"Fitness is very important to the active, productive police officer."

"Fitness does relate to my on the job stress reduction and job performance. It helps both!"

APPENDIX G

CHI-SQUARE

13 SAMPLES QUESTIONS

13 CHI-SQUARE QUESTIONS ANALYZED

Survey Question #

2.	Does your Department have periodic fitness tests or standards you must maintain?	True	False
5.	If you were in better physical shape, would you feel less threatened in potentially violent/stressful situations?	True	False
9.	Does an officer's poor physical appearance cause negative public opinion whether he/she is capable of performing the job correctly?	True	False
10.	Does the out of shape/unhealthy officer create added stress to you when dealing with violent suspects?	True	False
17.	Do you believe officers are sometimes "reluctant" to do the job because they are not physically prepared to handle certain tasks?	True	False
40.	If applicable, do you believe your current fitness program assists you in dealing with daily stressful situations?	True	False
41.	Do you agree that your fitness improves your job performance positively?	True	False
44.	I want to be involved in fitness.	True	False
58.	Have you ever suffered a preventable injury that you felt could have been avoided if you attained a better fitness level prior?	True	False
60.	Have you ever observed a policeman receive a reward for fitness?	True	False
69.	Does it interest you to know about job related health and mortality statistics in police work?	True	False
70.	Have you ever heard of or filled out a survey that observes police performance in relation to one's physical wellness?	True	False
71.	Does a wellness/performance survey like this interest you in any way?	True	False

APPENDIX H

SAS AND SAS/STAT SOFTWARE COMPUTATIONS

FOR

CHI-SQUARE AND FACTOR ANALYSIS

FREQUENCY CHART AND CALCULATION OF CHI-SQUARE VALUES

1 TO 5 YEARS ON THE JOB

TABLE 1 OF GROUP BY RESPONSE

CONTROLLING FOR QUESTION-10

Group Frequency Percent Row Pct Col Pct	Response		
	F	T	Total
MODEL	8 14.55 34,78 44.44	15 27.27 65.22 40.54	23 41.82
SURVEY	10 18.18 31.25 55.56	22 40.00 68.75 59.45	32 58.18
TOTAL	18 32.73	37 67.27	55 100.00

STATISTICS FOR TABLE 1 OF GROUP BY RESPONSE

CONTROLLING FOR QUESTION-10

Statistic	DF	Value	Prob
Chi-Square	1	0.076	0.783

Sample Size - 55

STRESS AND BEHAVIOR
6 - 10 years on the job
Simple Component Analysis

MEANS AND STANDARD DEVIATIONS FROM 10 OBSERVATIONS

	MODEL T	MODEL F	SURVEY T	SURVEY F
MEAN	13.9	6.8	30.7	17.8
STD DEV	6.22629	6.03324	14.0716	13.5466

CORRELATIONS

INITIAL FACTOR METHOD: PRINCIPAL COMPONENTS

	MODEL T	MODEL F	SURVEY T	SURVEY F
MODEL T	1.00000	-0.99739	0.91652	-0.91450
MODEL F	-0.99739	1.00000	-0.91692	0.91439
SURVEY T	0.91652	-0.91692	1.00000	-0.99941
SURVEY F	-0.91450	0.91439	-0.99941	1.00000

PRIOR COMMUNALITY ESTIMATES: ONE
EIGENVALUES OF THE CORRELATION MATRIX

TOTAL = 4 AVERAGE = 1

	1	2	3	4
EIGENVALUE	3.829566	0.167252	0.002641	0.000541
DIFFERENCE	3.662314	0.164611	0.002100	
PROPORTION	0.9574	0.0418	0.0007	0.0001
CUMULATIVE	0.9574	0.9992	0.9999	1.0000

1 FACTORS WILL BE RETAINED BY THE MINEIGEN CRITERIONFACTOR PATTERN

	FACTOR1
MODEL	0.97816
MODEL F	0.97823
SURVEY T	0.97932
SURVEY F	0.97815

VARIANCE EXPLAINED BY EACH FACTOR
FACTOR 1
3.829566

FINAL COMMUNALITY ESTIMATES: TOTAL = 3.829566

MODEL T	MODEL F	SURVEY T	SURVEY F
0.956789	0.956938	0.959058	0.956781

APPENDIX I

RAW DATA SUMMARY

OF

SURVEY RESPONSES

KEY TO RAW DATA SUMMARY

Line 1	Q.	1	1	2	2	3	3
Line 2	A.	True	False	True	False	True	False
Line 3	MODEL GROUP						
Line 4	73	69	4	29	44	43	30
Line 5		95%	5%	40%	60%	59%	41%
Line 6	SURVEY GROUP						
Line 7	172	156	15	3	167	85	85
Line 8		91%	9%	2%	97%	49%	49%
Line 9	MODEL AND SURVEY GROUP						
Line 10	104	95	8	14	90	54	49
Line 11	%	92%	8%	13%	86%	52%	47%

Description

Line 1 =	Question numbers and part
Line 2 =	Answer
Line 3 =	Model Group
Line 4 =	Number of surveys answering that question
Line 5 =	Percentage of surveys that answered that question
Line 6 =	Survey Group
Line 7 =	Number of surveys answering that question
Line 8 =	Percentage of surveys that answered that question
Line 9 =	Model and Survey Group
Line 10 =	Proportional number surveyed that answered that question for Model and Survey Groups
Line 11 =	Proportional percentage of the Model and Survey Groups answering that question

Category:		Time on the job response
67.1A	=	1 to 5 years on the job
67.1B	=	6 to 10 years on the job
67.1C	=	11 to 15 years on the job
67.1D	=	15 + years on the job

Q.	1	1	2	2	3	3	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.2	4.2
A.	True	False	True	False	True	False	1	2	3	4	5	6	7	8	9	10	N/A	92	91
MODEL GROUP																			
73	69	4	29	44	43	30	0	0	0	0	4	3	11	15	24	8	7	25	32
	95%	5%	40%	60%	59%	41%	0%	0%	0%	0%	5%	4%	15%	21%	33%	11%	10%	34%	44%
SURVEY GROUP																			
172	156	15	3	167	85	85	0	0	0	0	6	15	21	44	29	8	40	57	45
	91%	9%	2%	97%	49%	49%	0%	0%	0%	0%	3%	9%	12%	26%	17%	5%	23%	33%	26%
MODEL+SURVEY GROUP																			
104	95	8	14	90	54	49	0	0	0	0	4	8	14	25	22	7	20	35	33
%	92%	8%	13%	86%	52%	47%	0%	0%	0%	0%	4%	7%	13%	24%	22%	7%	19%	33%	31%
67.1A 1 TO 5 YEARS ON THE JOB																			
MODEL GROUP																			
23	23	0	11	12	17	6	0	0	0	0	1	1	7	4	5	1	3	11	8
	100%	0%	48%	52%	74%	26%	0%	0%	0%	0%	4%	4%	30%	17%	22%	4%	13%	48%	35%
SURVEY GROUP																			
35	32	3	1	34	23	12	0	0	0	0	2	7	4	11	2	2	5	14	6
	91%	9%	3%	97%	66%	34%	0%	0%	0%	0%	6%	20%	11%	31%	6%	6%	14%	40%	17%
MODEL+SURVEY GROUP																			
38	36	2	8	30	26	12	0	0	0	0	2	5	7	10	5	2	5	16	9
%	95%	5%	21%	79%	69%	31%	0%	0%	0%	0%	5%	14%	19%	26%	12%	5%	14%	43%	24%
67.1B 6 TO 10 YEARS ON THE JOB																			
MODEL GROUP																			
21	20	1	11	10	12	9	0	0	0	0	2	1	2	6	8	2	0	5	11
	95%	5%	52%	48%	57%	43%	0%	0%	0%	0%	10%	5%	10%	29%	38%	10%	0%	24%	52%
SURVEY GROUP																			
49	44	4	1	47	16	33	0	0	0	0	0	6	6	13	7	2	11	16	13
	90%	8%	2%	96%	33%	67%	0%	0%	0%	0%	0%	12%	12%	27%	14%	4%	22%	33%	27%
MODEL+SURVEY GROUP																			
30	27	2	5	24	12	18	0	0	0	0	1	3	3	8	6	2	5	9	10
%	91%	7%	17%	81%	40%	60%	0%	0%	0%	0%	3%	10%	11%	27%	21%	6%	16%	30%	34%
67.1C 11 TO 15 YEARS ON THE JOB																			
MODEL GROUP																			
14	13	1	3	11	6	8	0	0	0	0	1	1	1	3	7	0	1	5	5
	93%	7%	21%	79%	43%	57%	0%	0%	0%	0%	7%	7%	7%	21%	50%	0%	7%	36%	36%
SURVEY GROUP																			
23	21	2	1	22	11	12	0	0	0	0	0	0	4	7	5	2	4	9	8
	91%	9%	4%	96%	48%	52%	0%	0%	0%	0%	0%	0%	17%	30%	22%	9%	17%	39%	35%
MODEL+SURVEY GROUP																			
23	21	2	2	20	10	12	0	0	0	0	1	1	3	6	7	1	3	9	8
%	92%	8%	11%	89%	46%	54%	0%	0%	0%	0%	3%	3%	14%	27%	32%	5%	14%	38%	35%
67.1D 15+ YEARS ON THE JOB																			
MODEL GROUP																			
15	13	2	4	11	8	7	0	0	0	0	0	0	1	2	4	5	3	4	8
	87%	13%	27%	73%	53%	47%	0%	0%	0%	0%	0%	0%	7%	13%	27%	33%	20%	27%	53%
SURVEY GROUP																			
65	59	6	0	64	35	28	0	0	0	0	4	2	7	13	15	2	20	18	18
	91%	9%	0%	98%	54%	43%	0%	0%	0%	0%	6%	3%	11%	20%	23%	3%	31%	28%	28%
MODEL+SURVEY GROUP																			
18	17	2	1	17	10	8	0	0	0	0	1	0	2	3	4	2	5	5	6
%	90%	10%	5%	94%	54%	44%	0%	0%	0%	0%	5%	3%	10%	19%	24%	9%	29%	28%	32%

Q.	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
A.	90	89	88	87	86	85	84	83-	1	2	3	4	5	6	7	8	9	10	N/A
IODEL GROUP																			
73	2	2	0	0	0	0	0	3	0	0	0	1	7	5	12	8	9	6	21
	3%	3%	0%	0%	0%	0%	0%	4%	0%	0%	0%	1%	10%	7%	16%	11%	12%	8%	29%
URVEY GROUP																			
172	8	1	0	1	1	6	0	2	0	0	1	0	9	5	14	22	12	10	83
	5%	1%	0%	1%	1%	3%	0%	1%	0%	0%	1%	0%	5%	3%	8%	13%	7%	6%	48%
IODEL+SURVEY GROUP																			
104	4	1	0	0	0	3	0	2	0	0	0	0	7	4	11	13	9	7	44
%	4%	1%	0%	0%	0%	2%	0%	2%	0%	0%	0%	0%	7%	4%	11%	12%	9%	7%	42%
7.1A	1 TO 5 YEARS ON THE JOB																		
IODEL GROUP																			
23	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	3	5	0	6
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	9%	17%	13%	22%	0%	26%
URVEY GROUP																			
35	4	1	0	1	0	0	0	0	0	0	0	0	3	2	4	7	4	4	6
	11%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	9%	6%	11%	20%	11%	11%	17%
IODEL+SURVEY GROUP																			
38	3	1	0	1	0	0	0	0	0	0	0	0	3	3	5	7	6	3	8
%	7%	2%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	9%	7%	14%	17%	16%	7%	21%
7.1B	6 TO 10 YEARS ON THE JOB																		
IODEL GROUP																			
21	1	1	0	0	0	0	0	2	0	0	0	1	2	1	4	3	2	3	4
	5%	5%	0%	0%	0%	0%	0%	10%	0%	0%	0%	5%	10%	5%	19%	14%	10%	14%	19%
URVEY GROUP																			
49	4	0	0	0	1	2	0	0	0	0	0	0	1	1	5	5	5	3	24
	8%	0%	0%	0%	2%	4%	0%	0%	0%	0%	0%	0%	2%	2%	10%	10%	10%	6%	49%
IODEL+SURVEY GROUP																			
30	2	0	0	0	0	1	0	1	0	0	0	0	1	1	4	3	3	3	12
%	7%	1%	0%	0%	1%	3%	0%	3%	0%	0%	0%	1%	4%	3%	13%	11%	10%	9%	40%
7.1C	11 TO 15 YEARS ON THE JOB																		
IODEL GROUP																			
14	1	1	0	0	0	0	0	1	0	0	0	0	2	1	1	1	2	1	5
	7%	7%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	14%	7%	7%	7%	14%	7%	36%
URVEY GROUP																			
23	0	0	0	0	0	0	0	0	0	0	1	0	1	2	4	3	0	1	10
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	4%	9%	17%	13%	0%	4%	43%
IODEL+SURVEY GROUP																			
23	1	1	0	0	0	0	0	1	0	0	1	0	2	2	3	2	1	1	9
%	3%	3%	0%	0%	0%	0%	0%	3%	0%	0%	3%	0%	8%	8%	14%	11%	5%	5%	41%
7.1D	15+ YEARS ON THE JOB																		
IODEL GROUP																			
15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	1	0	2	6
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	7%	20%	7%	0%	13%	40%
URVEY GROUP																			
65	0	0	0	0	0	4	0	2	0	0	0	0	4	0	1	7	3	2	43
	0%	0%	0%	0%	0%	6%	0%	3%	0%	0%	0%	0%	6%	0%	2%	11%	5%	3%	66%
IODEL+SURVEY GROUP																			
18	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	2	1	1	11
%	0%	0%	0%	0%	0%	5%	0%	3%	0%	0%	0%	0%	6%	1%	5%	10%	4%	5%	61%

LICE PERFORMANCE/WELLNESS SURVEY — SUMMARY 5/1/92

Q.	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	5	5	6.1	6.1	6.1	6.1	6.2	6.2	6.2
A.	92	91	90	89	88	87	86	85	84	83-	True	False	A	B	C	D	A	B	C
DEL GROUP																			
73	9	18	6	4	3	3	1	1	0	3	63	10	21	0	26	25	45	4	17
	12%	25%	8%	5%	4%	4%	1%	1%	0%	4%	86%	14%	29%	0%	36%	34%	62%	5%	23%
RVEY GROUP																			
172	6	10	6	10	8	8	2	6	1	14	140	30	27	4	57	82	111	6	50
	3%	6%	3%	6%	5%	5%	1%	3%	1%	8%	81%	17%	16%	2%	33%	48%	65%	3%	29%
DEL+SURVEY GROUP																			
104	6	12	5	6	5	5	1	3	0	7	86	17	20	2	35	45	66	4	28
	6%	11%	5%	6%	4%	4%	1%	3%	0%	7%	83%	16%	20%	2%	34%	44%	64%	4%	27%

.1A 1 TO 5 YEARS ON THE JOB

DEL GROUP																			
23	5	7	1	1	2	0	0	0	0	0	21	2	9	0	6	8	17	1	4
	22%	30%	4%	4%	9%	0%	0%	0%	0%	0%	91%	9%	39%	0%	26%	35%	74%	4%	17%
RVEY GROUP																			
35	2	2	2	5	8	4	0	0	0	0	32	3	6	0	14	14	23	0	11
	6%	6%	6%	14%	23%	11%	0%	0%	0%	0%	91%	9%	17%	0%	40%	40%	66%	0%	31%
DEL+SURVEY GROUP																			
38	5	6	2	4	7	3	0	0	0	0	35	3	10	0	13	14	26	1	10
	12%	16%	5%	10%	17%	7%	0%	0%	0%	0%	91%	9%	26%	0%	34%	38%	69%	2%	26%

.1B 6 TO 10 YEARS ON THE JOB

DEL GROUP																			
21	1	8	3	0	1	1	0	1	0	2	20	1	6	0	7	8	15	1	2
	5%	38%	14%	0%	5%	5%	0%	5%	0%	10%	95%	5%	29%	0%	33%	38%	71%	5%	10%
RVEY GROUP																			
49	1	3	1	3	0	2	1	5	1	3	40	9	7	1	16	25	33	1	15
	2%	6%	2%	6%	0%	4%	2%	10%	2%	6%	82%	18%	14%	2%	33%	51%	67%	2%	31%
DEL+SURVEY GROUP																			
30	1	5	2	1	0	1	0	3	0	2	26	4	6	0	10	14	21	1	7
	3%	16%	6%	4%	1%	4%	1%	9%	1%	7%	86%	14%	19%	1%	33%	47%	69%	3%	24%

.1C 11 TO 15 YEARS ON THE JOB

DEL GROUP																			
14	3	0	1	1	0	1	1	0	0	1	10	4	3	0	7	4	7	2	4
	21%	0%	7%	7%	0%	7%	7%	0%	0%	7%	71%	29%	21%	0%	50%	29%	50%	14%	29%
RVEY GROUP																			
23	1	2	0	1	0	1	1	0	0	6	19	3	5	1	7	10	15	1	7
	4%	9%	0%	4%	0%	4%	4%	0%	0%	26%	83%	13%	22%	4%	30%	43%	65%	4%	30%
DEL+SURVEY GROUP																			
23	2	1	1	1	0	1	1	0	0	4	18	4	5	1	9	9	13	2	7
	11%	5%	3%	5%	0%	5%	5%	0%	0%	19%	78%	19%	22%	3%	38%	38%	59%	8%	30%

.1D 15+ YEARS ON THE JOB

DEL GROUP																			
15	0	3	1	2	0	1	0	0	0	0	12	3	3	0	6	5	6	0	7
	0%	20%	7%	13%	0%	7%	0%	0%	0%	0%	80%	20%	20%	0%	40%	33%	40%	0%	47%
RVEY GROUP																			
65	2	3	3	1	0	1	0	1	0	5	49	15	9	2	20	33	40	4	17
	3%	5%	5%	2%	0%	2%	0%	2%	0%	8%	75%	23%	14%	3%	31%	51%	62%	6%	26%
DEL+SURVEY GROUP																			
18	0	1	1	1	0	0	0	0	0	1	14	4	3	0	6	9	11	1	6
	3%	8%	5%	4%	0%	3%	0%	1%	0%	6%	76%	22%	15%	3%	32%	47%	58%	5%	30%

Q.	7	7	8	8	8	8	9	9	10	10	12	12	13.1	13.1	13.2	13.2	14	14	14
A.		True	False	A	B	C	D	True	False	True	False	True	False	True	False	True	False	A	B	C
DEL GROUP																				
73	70	3	42	15	6	17	70	3	54	19	27	46	69	4	31	42	7	36	3
	96%	4%	58%	21%	8%	23%	96%	4%	74%	26%	37%	63%	95%	5%	42%	58%	10%	49%	4%
RVEY GROUP																			
172	151	20	93	39	31	40	156	17	127	41	53	118	164	7	65	104	8	49	13
	88%	12%	54%	23%	18%	23%	91%	10%	74%	24%	31%	69%	95%	4%	38%	60%	5%	28%	8%
DEL+SURVEY GROUP																			
104	94	10	57	23	16	24	96	8	77	25	34	70	99	5	41	62	6	36	7
	90%	9%	55%	22%	15%	23%	92%	8%	74%	24%	33%	67%	95%	4%	39%	60%	6%	35%	7%
.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	22	1	14	2	2	5	22	1	15	8	14	9	21	2	7	16	3	11	1
	96%	4%	61%	9%	9%	22%	96%	4%	65%	35%	61%	39%	91%	9%	30%	70%	13%	48%	4%
IRVEY GROUP																			
35	32	3	18	7	8	9	34	1	22	10	18	17	35	0	16	19	2	3	4
	91%	9%	51%	20%	23%	26%	97%	3%	63%	29%	51%	49%	100%	0%	46%	54%	6%	9%	11%
DEL+SURVEY GROUP																			
38	35	3	21	6	7	9	37	1	24	12	21	17	37	1	15	23	3	9	3
	93%	7%	55%	16%	17%	24%	97%	3%	64%	31%	55%	45%	97%	3%	40%	60%	9%	24%	9%
.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	20	1	13	5	1	2	21	0	15	6	6	15	21	0	9	12	0	13	1
	95%	5%	62%	24%	5%	10%	100%	0%	71%	29%	29%	71%	100%	0%	43%	57%	0%	62%	5%
IRVEY GROUP																			
49	44	5	24	12	7	10	46	3	36	13	11	38	48	1	14	34	3	21	4
	90%	10%	49%	24%	14%	20%	94%	6%	73%	27%	22%	78%	98%	2%	29%	69%	6%	43%	8%
DEL+SURVEY GROUP																			
30	27	3	16	7	3	5	29	1	22	8	7	23	30	0	10	20	1	15	2
	91%	9%	53%	24%	11%	17%	96%	4%	73%	27%	24%	76%	99%	1%	33%	66%	4%	49%	7%
.1C	11 TO 15 YEARS ON THE JOB																		
DEL GROUP																			
14	13	1	8	5	3	4	14	0	10	4	5	9	13	1	6	8	0	7	1
	93%	7%	57%	36%	21%	29%	100%	0%	71%	29%	36%	64%	93%	7%	43%	57%	0%	50%	7%
IRVEY GROUP																			
23	21	2	15	3	6	5	20	3	20	2	9	14	21	2	7	16	0	8	1
	91%	9%	65%	13%	26%	22%	87%	13%	87%	9%	39%	61%	91%	9%	30%	70%	0%	35%	4%
DEL+SURVEY GROUP																			
23	21	2	14	5	5	5	21	2	18	4	9	14	21	2	8	15	0	9	1
	92%	8%	62%	22%	24%	24%	92%	8%	81%	16%	38%	62%	92%	8%	35%	65%	0%	41%	5%
.1D	15+ YEARS ON THE JOB																		
DEL GROUP																			
15	15	0	7	3	0	6	13	2	14	1	2	13	14	1	9	6	4	5	0
	100%	0%	47%	20%	0%	40%	87%	13%	93%	7%	13%	87%	93%	7%	60%	40%	27%	33%	0%
IRVEY GROUP																			
65	54	10	36	17	10	16	56	10	49	16	15	49	60	4	28	35	3	17	4
	83%	15%	55%	26%	15%	25%	86%	15%	75%	25%	23%	75%	92%	6%	43%	54%	5%	26%	6%
DEL+SURVEY GROUP																			
18	16	2	10	5	2	5	16	3	15	4	4	14	17	1	9	9	2	5	1
	86%	12%	54%	25%	12%	28%	86%	15%	79%	21%	21%	78%	93%	6%	46%	51%	9%	28%	5%

Q.	14	14	15.1	15.1	15.1	15.2	15.2	15.2	16	16	17	17	18	18	18	18	18	19	19
A.	D	E	A	B	C	A	B	C	True	False	True	False	A	B	C	D	E	A	B
MODEL GROUP																			
73	23	4	35	31	7	57	14	1	52	21	37	36	9	19	31	13	6	17	23
	32%	5%	48%	42%	10%	78%	19%	1%	71%	29%	51%	49%	12%	26%	42%	18%	8%	23%	32%
SURVEY GROUP																			
172	80	22	73	73	25	139	29	2	116	54	103	67	10	43	76	27	28	18	46
	47%	13%	42%	42%	15%	81%	17%	1%	67%	31%	60%	39%	6%	25%	44%	16%	16%	10%	27%
MODEL+SURVEY GROUP																			
104	44	11	46	44	14	83	18	1	71	32	59	44	8	26	45	17	14	15	29
%	42%	11%	44%	42%	13%	80%	18%	1%	69%	31%	57%	42%	8%	25%	44%	16%	14%	14%	28%
67.1A 1 TO 5 YEARS ON THE JOB																			
MODEL GROUP																			
23	6	2	14	7	2	20	3	0	13	10	7	16	4	8	9	0	0	5	6
	26%	9%	61%	30%	9%	87%	13%	0%	57%	43%	30%	70%	17%	35%	39%	0%	0%	22%	26%
SURVEY GROUP																			
35	20	6	15	15	4	33	2	0	23	12	21	14	2	10	13	6	6	0	16
	57%	17%	43%	43%	11%	94%	6%	0%	66%	34%	60%	40%	6%	29%	37%	17%	17%	0%	46%
MODEL+SURVEY GROUP																			
38	17	5	19	14	4	35	3	0	24	14	18	20	4	12	14	4	4	3	14
%	45%	14%	50%	38%	10%	91%	9%	0%	62%	38%	48%	52%	10%	31%	38%	10%	10%	9%	38%
67.1B 6 TO 10 YEARS ON THE JOB																			
MODEL GROUP																			
21	7	0	7	12	2	18	2	1	16	5	13	8	0	5	9	4	2	3	10
	33%	0%	33%	57%	10%	86%	10%	5%	76%	24%	62%	38%	0%	24%	43%	19%	10%	14%	48%
SURVEY GROUP																			
49	17	4	22	18	9	43	6	0	33	16	28	21	3	10	22	5	12	3	11
	35%	8%	45%	37%	18%	88%	12%	0%	67%	33%	57%	43%	6%	20%	45%	10%	24%	6%	22%
MODEL+SURVEY GROUP																			
30	10	2	12	13	5	26	3	0	21	9	18	12	1	6	13	4	6	3	9
%	34%	6%	41%	43%	16%	87%	11%	1%	70%	30%	59%	41%	4%	21%	44%	13%	20%	9%	30%
67.1C 11 TO 15 YEARS ON THE JOB																			
MODEL GROUP																			
14	5	1	8	6	0	11	3	0	12	2	7	7	3	3	6	4	2	3	6
	36%	7%	57%	43%	0%	79%	21%	0%	86%	14%	50%	50%	21%	21%	43%	29%	14%	21%	43%
SURVEY GROUP																			
23	13	1	7	13	3	12	9	1	12	10	10	12	1	5	9	7	3	3	6
	57%	4%	30%	57%	13%	52%	39%	4%	52%	43%	43%	52%	4%	22%	39%	30%	13%	13%	26%
MODEL+SURVEY GROUP																			
23	11	1	9	12	2	14	7	1	15	7	10	12	2	5	9	7	3	4	7
%	49%	5%	41%	51%	8%	62%	32%	3%	65%	32%	46%	51%	11%	22%	41%	30%	14%	16%	32%
67.1D 15+ YEARS ON THE JOB																			
MODEL GROUP																			
15	5	1	6	6	3	8	6	0	11	4	10	5	2	3	7	5	2	6	1
	33%	7%	40%	40%	20%	53%	40%	0%	73%	27%	67%	33%	13%	20%	47%	33%	13%	40%	7%
SURVEY GROUP																			
65	30	11	29	27	9	51	12	1	48	16	44	20	4	18	32	9	7	12	13
	46%	17%	45%	42%	14%	78%	18%	2%	74%	25%	68%	31%	6%	28%	49%	14%	11%	18%	20%
MODEL+SURVEY GROUP																			
18	8	3	8	8	3	14	4	0	14	5	12	6	1	5	9	3	2	4	3
%	44%	15%	44%	41%	15%	74%	22%	1%	74%	25%	67%	31%	8%	26%	49%	17%	11%	22%	17%

Q.	19	20	20	20	20	20	21.1	21.1	21.1	21.2	21.2	21.2	21.3	21.3	21.3	22	22	22	22
A.	C	A	B	C	D	E	A	B	C	A	B	C	A	B	C	A	B	C	D
MODEL GROUP																			
73	32	7	13	22	18	12	14	5	56	14	11	50	17	25	46	37	1	19	6
	44%	10%	18%	30%	25%	16%	19%	7%	77%	19%	15%	68%	23%	34%	63%	51%	1%	26%	8%
SURVEY GROUP																			
172	107	17	24	34	48	48	27	14	131	18	26	135	28	78	85	72	7	59	18
	62%	10%	14%	20%	28%	28%	16%	8%	76%	10%	15%	78%	16%	45%	49%	42%	4%	34%	10%
MODEL+SURVEY GROUP																			
104	59	10	16	24	28	25	17	8	79	14	16	79	19	44	56	46	3	33	10
%	57%	10%	15%	23%	27%	24%	17%	8%	76%	13%	15%	76%	18%	42%	53%	44%	3%	32%	10%

67.1A 1 TO 5 YEARS ON THE JOB

MODEL GROUP																			
23	12	3	4	10	3	3	5	3	15	5	4	16	5	9	12	14	0	3	1
	52%	13%	17%	43%	13%	13%	22%	13%	65%	22%	17%	70%	22%	39%	52%	61%	0%	13%	4%
SURVEY GROUP																			
35	18	2	9	4	9	10	6	3	26	2	5	28	6	16	17	17	2	7	1
	51%	6%	26%	11%	26%	29%	17%	9%	74%	6%	14%	80%	17%	46%	49%	49%	6%	20%	3%
MODEL+SURVEY GROUP																			
38	20	3	9	9	8	9	7	4	27	5	6	29	7	16	19	20	1	7	1
%	52%	9%	22%	24%	21%	22%	19%	10%	71%	12%	16%	76%	19%	43%	50%	53%	3%	17%	3%

67.1B 6 TO 10 YEARS ON THE JOB

MODEL GROUP																			
21	8	1	4	3	9	3	4	1	18	5	4	12	5	8	14	10	1	5	2
	38%	5%	19%	14%	43%	14%	19%	5%	86%	24%	19%	57%	24%	38%	67%	48%	5%	24%	10%
SURVEY GROUP																			
49	35	5	3	12	16	13	10	3	36	7	5	38	6	23	23	24	2	19	5
	71%	10%	6%	24%	33%	27%	20%	6%	73%	14%	10%	78%	12%	47%	47%	49%	4%	39%	10%
MODEL+SURVEY GROUP																			
30	18	3	3	6	11	7	6	2	23	5	4	21	5	13	16	15	1	10	3
%	61%	9%	10%	21%	36%	23%	20%	6%	77%	17%	13%	71%	16%	44%	53%	49%	4%	34%	10%

67.1C 11 TO 15 YEARS ON THE JOB

MODEL GROUP																			
14	5	0	3	4	4	3	5	0	9	1	2	11	4	5	7	7	0	5	1
	36%	0%	21%	29%	29%	21%	36%	0%	64%	7%	14%	79%	29%	36%	50%	50%	0%	36%	7%
SURVEY GROUP																			
23	14	3	3	8	2	7	4	1	18	1	6	16	2	10	13	8	0	10	1
	61%	13%	13%	35%	9%	30%	17%	4%	78%	4%	26%	70%	9%	43%	57%	35%	0%	43%	4%
MODEL+SURVEY GROUP																			
23	12	2	4	7	4	6	5	1	16	1	5	16	4	9	12	9	0	9	1
%	51%	8%	16%	32%	16%	27%	24%	3%	73%	5%	22%	73%	16%	41%	54%	41%	0%	41%	5%

67.1D 15+ YEARS ON THE JOB

MODEL GROUP																			
15	7	3	2	5	2	3	0	1	14	3	1	11	3	3	13	6	0	6	2
	47%	20%	13%	33%	13%	20%	0%	7%	93%	20%	7%	73%	20%	20%	87%	40%	0%	40%	13%
SURVEY GROUP																			
65	40	7	9	10	21	18	7	7	51	8	10	53	14	29	32	23	3	23	11
	62%	11%	14%	15%	32%	28%	11%	11%	78%	12%	15%	82%	22%	45%	49%	35%	5%	35%	17%
MODEL+SURVEY GROUP																			
18	11	2	3	3	5	5	2	2	15	3	3	15	4	7	10	7	1	7	3
%	59%	12%	14%	19%	29%	26%	9%	10%	81%	14%	14%	80%	21%	40%	56%	36%	4%	36%	16%

	22	23.1	23.1	23.2	23.2	23.2	23.2	24	24	25	25	25	25	25	26	26	26	26	27
	E	True	False	A	B	C	D	True	False	A	B	C	D	E	A	B	C	D	A
EL GROUP																			
73	16	66	2	40	11	24	5	68	5	5	14	46	1	7	2	11	3	57	45
	22%	90%	3%	55%	15%	33%	7%	93%	7%	7%	19%	63%	1%	10%	3%	15%	4%	78%	62%
VEY GROUP																			
172	30	157	9	90	25	45	16	155	17	12	26	107	7	21	10	44	8	108	122
	17%	91%	5%	52%	15%	26%	9%	90%	10%	7%	15%	62%	4%	12%	6%	26%	5%	63%	71%
EL+SURVEY GROUP																			
104	20	95	5	55	15	29	9	95	9	7	17	65	3	12	5	23	5	70	71
	19%	91%	4%	53%	15%	28%	9%	91%	9%	7%	16%	62%	3%	11%	5%	22%	4%	67%	68%

1A 1 TO 5 YEARS ON THE JOB

EL GROUP																			
23	5	21	0	15	2	8	1	22	1	4	6	11	0	2	0	4	0	18	18
	22%	91%	0%	65%	9%	35%	4%	96%	4%	17%	26%	48%	0%	9%	0%	17%	0%	78%	78%
VEY GROUP																			
35	8	33	1	19	4	12	3	33	2	4	5	22	3	1	1	12	1	21	25
	23%	94%	3%	54%	11%	34%	9%	94%	6%	11%	14%	63%	9%	3%	3%	34%	3%	60%	71%
EL+SURVEY GROUP																			
38	9	35	1	22	4	13	3	36	2	5	7	22	2	2	1	11	1	26	28
	22%	93%	2%	59%	10%	34%	7%	95%	5%	14%	19%	57%	5%	5%	2%	28%	2%	67%	74%

1B 6 TO 10 YEARS ON THE JOB

EL GROUP																			
21	5	18	1	8	5	8	2	20	1	0	3	15	0	3	0	4	1	16	10
	24%	86%	5%	38%	24%	38%	10%	95%	5%	0%	14%	71%	0%	14%	0%	19%	5%	76%	48%
VEY GROUP																			
49	10	46	3	28	10	8	4	47	2	4	7	30	1	7	5	10	3	32	33
	20%	94%	6%	57%	20%	16%	8%	96%	4%	8%	14%	61%	2%	14%	10%	20%	6%	65%	67%
EL+SURVEY GROUP																			
30	6	27	2	15	6	7	3	29	1	2	4	19	0	4	2	6	2	21	18
	21%	91%	6%	51%	21%	23%	9%	96%	4%	6%	14%	64%	1%	14%	7%	20%	6%	69%	61%

1C 11 TO 15 YEARS ON THE JOB

EL GROUP																			
14	2	12	1	9	1	5	1	13	1	0	3	11	0	0	1	1	1	11	10
	14%	86%	7%	64%	7%	36%	7%	93%	7%	0%	21%	79%	0%	0%	7%	7%	7%	79%	71%
VEY GROUP																			
23	3	19	2	14	4	4	1	19	4	0	2	19	1	1	0	7	0	15	16
	13%	83%	9%	61%	17%	17%	4%	83%	17%	0%	9%	83%	4%	4%	0%	30%	0%	65%	70%
EL+SURVEY GROUP																			
23	3	19	2	14	3	5	1	19	3	0	3	18	1	1	1	5	1	16	16
	14%	84%	8%	62%	14%	24%	5%	86%	14%	0%	14%	81%	3%	3%	3%	22%	3%	70%	70%

1D 15+ YEARS ON THE JOB

EL GROUP																			
15	4	15	0	8	3	3	1	13	2	1	2	9	1	2	1	2	1	12	7
	27%	100%	0%	53%	20%	20%	7%	87%	13%	7%	13%	60%	7%	13%	7%	13%	7%	80%	47%
VEY GROUP																			
65	9	59	3	29	7	21	8	56	9	4	12	36	2	12	4	15	4	40	48
	14%	91%	5%	45%	11%	32%	12%	86%	14%	6%	18%	55%	3%	18%	6%	23%	6%	62%	74%
EL+SURVEY GROUP																			
18	3	17	1	9	2	6	2	16	3	1	3	10	1	3	1	4	1	12	13
	16%	93%	4%	46%	12%	30%	11%	86%	14%	6%	17%	56%	4%	17%	6%	21%	6%	65%	69%

Q.	27	27	27	27	27	28	28	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.2	29.2
A.	B	C	D	E	F	True	False	1	2	3	4	5	6	7	8	9	10	1	2
DEL GROUP																			
73	8	0	3	4	10	28	44	5	2	11	2	4	7	9	13	9	12	6	2
	11%	0%	4%	5%	14%	38%	60%	7%	3%	15%	3%	5%	10%	12%	18%	12%	16%	8%	3%
RVEY GROUP																			
172	17	1	9	2	17	40	130	21	1	10	5	22	7	10	39	23	33	21	3
	10%	1%	5%	1%	10%	23%	76%	12%	1%	6%	3%	13%	4%	6%	23%	13%	19%	12%	2%
DEL+SURVEY GROUP																			
104	11	0	5	3	11	29	74	11	1	9	3	11	6	8	22	14	19	11	2
	10%	0%	5%	2%	11%	28%	71%	11%	1%	9%	3%	11%	6%	8%	21%	13%	18%	11%	2%
.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	0	0	0	1	2	11	11	2	0	3	0	1	1	4	8	1	3	2	0
	0%	0%	0%	4%	9%	48%	48%	9%	0%	13%	0%	4%	4%	17%	35%	4%	13%	9%	0%
IRVEY GROUP																			
35	3	0	2	0	5	10	25	4	0	1	1	6	2	3	11	5	2	4	1
	9%	0%	6%	0%	14%	29%	71%	11%	0%	3%	3%	17%	6%	9%	31%	14%	6%	11%	3%
DEL+SURVEY GROUP																			
38	2	0	1	1	5	14	24	4	0	3	1	5	2	5	12	4	3	4	1
	5%	0%	3%	2%	12%	36%	62%	10%	0%	7%	2%	12%	5%	12%	33%	10%	9%	10%	2%
.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	2	0	2	1	5	12	9	3	0	3	0	1	1	3	2	4	5	1	1
	10%	0%	10%	5%	24%	57%	43%	14%	0%	14%	0%	5%	5%	14%	10%	19%	24%	5%	5%
IRVEY GROUP																			
49	4	0	3	0	6	13	36	8	0	4	1	2	2	3	14	4	10	6	0
	8%	0%	6%	0%	12%	27%	73%	16%	0%	8%	2%	4%	4%	6%	29%	8%	20%	12%	0%
DEL+SURVEY GROUP																			
30	3	0	2	0	5	11	19	5	0	3	0	1	1	3	7	3	6	3	0
	9%	0%	7%	1%	16%	36%	64%	16%	0%	10%	1%	4%	4%	9%	23%	11%	21%	10%	1%
.1C	11 TO 15 YEARS ON THE JOB																		
DEL GROUP																			
14	2	0	1	0	0	3	11	0	1	4	0	0	2	1	1	3	2	2	1
	14%	0%	7%	0%	0%	21%	79%	0%	7%	29%	0%	0%	14%	7%	7%	21%	14%	14%	7%
JRVEY GROUP																			
23	2	1	2	1	1	8	15	2	0	3	0	2	2	1	2	4	7	3	1
	9%	4%	9%	4%	4%	35%	65%	9%	0%	13%	0%	9%	9%	4%	9%	17%	30%	13%	4%
DEL+SURVEY GROUP																			
23	2	1	2	1	1	7	16	1	1	4	0	1	2	1	2	4	5	3	1
	11%	3%	8%	3%	3%	30%	70%	5%	3%	19%	0%	5%	11%	5%	8%	19%	24%	14%	5%
.1D	15+ YEARS ON THE JOB																		
DEL GROUP																			
15	4	0	0	2	3	2	13	0	1	1	2	2	3	1	2	1	2	1	0
	27%	0%	0%	13%	20%	13%	87%	0%	7%	7%	13%	13%	20%	7%	13%	7%	13%	7%	0%
JRVEY GROUP																			
65	8	0	2	1	5	9	54	7	1	2	3	12	1	3	12	10	14	8	1
	12%	0%	3%	2%	8%	14%	83%	11%	2%	3%	5%	18%	2%	5%	18%	15%	22%	12%	2%
DEL+SURVEY GROUP																			
18	3	0	0	1	2	3	15	2	0	1	1	3	1	1	3	3	4	2	0
	15%	0%	3%	4%	10%	14%	84%	9%	3%	4%	6%	17%	5%	5%	17%	14%	20%	11%	1%

Q.	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.2	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	30
A.	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	Yes
DDEL GROUP																			
73	7	8	10	5	8	10	8	9	18	8	8	3	7	7	1	4	9	6	3
	10%	11%	14%	7%	11%	14%	11%	12%	25%	11%	11%	4%	10%	10%	1%	5%	12%	8%	4%
JRVEY GROUP																			
172	7	9	24	13	21	30	22	22	56	9	10	4	20	5	13	12	15	23	20
	4%	5%	14%	8%	12%	17%	13%	13%	33%	5%	6%	2%	12%	3%	8%	7%	9%	13%	12%
DDEL+SURVEY GROUP																			
104	6	7	14	8	12	17	13	13	31	7	8	3	11	5	6	7	10	12	10
%	6%	7%	14%	7%	12%	16%	12%	13%	30%	7%	7%	3%	11%	5%	6%	7%	10%	12%	9%

7.1A 1 TO 5 YEARS ON THE JOB

DDEL GROUP																			
23	3	3	2	1	3	3	2	4	5	3	4	1	3	3	0	1	2	1	0
	13%	13%	9%	4%	13%	13%	9%	17%	22%	13%	17%	4%	13%	13%	0%	4%	9%	4%	0%
JRVEY GROUP																			
35	2	3	5	0	10	5	3	2	16	2	1	2	1	1	3	2	4	2	3
	6%	9%	14%	0%	29%	14%	9%	6%	46%	6%	3%	6%	3%	3%	9%	6%	11%	6%	9%
DDEL+SURVEY GROUP																			
38	3	4	5	1	9	5	3	4	14	3	3	2	3	3	2	2	4	2	2
%	9%	10%	12%	2%	22%	14%	9%	10%	36%	9%	9%	5%	7%	7%	5%	5%	10%	5%	5%

7.1B 6 TO 10 YEARS ON THE JOB

DDEL GROUP																			
21	1	1	4	2	1	4	4	2	6	1	1	1	2	2	0	1	3	2	2
	5%	5%	19%	10%	5%	19%	19%	10%	29%	5%	5%	5%	10%	10%	0%	5%	14%	10%	10%
JRVEY GROUP																			
49	2	2	5	6	4	11	7	5	10	2	4	1	8	2	5	5	3	6	6
	4%	4%	10%	12%	8%	22%	14%	10%	20%	4%	8%	2%	16%	4%	10%	10%	6%	12%	12%
DDEL+SURVEY GROUP																			
30	1	1	4	3	2	6	5	3	7	1	2	1	4	2	2	3	3	3	3
%	4%	4%	13%	11%	7%	21%	16%	10%	23%	4%	7%	3%	14%	6%	7%	9%	9%	11%	11%

7.1C 11 TO 15 YEARS ON THE JOB

DDEL GROUP																			
14	2	2	2	1	1	0	2	1	4	2	1	0	1	2	1	1	1	1	1
	14%	14%	14%	7%	7%	0%	14%	7%	29%	14%	7%	0%	7%	14%	7%	7%	7%	7%	7%
JRVEY GROUP																			
23	1	1	7	1	0	3	1	5	7	1	4	1	3	0	1	0	1	5	2
	4%	4%	30%	4%	0%	13%	4%	22%	30%	4%	17%	4%	13%	0%	4%	0%	4%	22%	9%
DDEL+SURVEY GROUP																			
23	2	2	5	1	1	2	2	4	7	2	3	1	2	1	1	1	1	4	2
%	8%	8%	24%	5%	3%	8%	8%	16%	30%	8%	14%	3%	11%	5%	5%	3%	5%	16%	8%

7.1D 15+ YEARS ON THE JOB

ODEL GROUP																			
15	1	2	2	1	3	3	0	2	3	2	2	1	1	0	0	1	3	2	0
	7%	13%	13%	7%	20%	20%	0%	13%	20%	13%	13%	7%	7%	0%	0%	7%	20%	13%	0%
URVEY GROUP																			
65	2	3	7	6	7	11	11	10	23	4	1	0	8	2	4	5	7	10	9
	3%	5%	11%	9%	11%	17%	17%	15%	35%	6%	2%	0%	12%	3%	6%	8%	11%	15%	14%
ODEL+SURVEY GROUP																			
18	1	1	2	2	2	3	3	3	6	1	1	0	2	0	1	1	2	3	2
%	4%	6%	11%	9%	12%	17%	14%	15%	32%	8%	4%	1%	11%	3%	5%	8%	12%	15%	11%

Q.	30	30	31	31	31	32	32	32	32	32	32	33.1	33.1	33.1	33.1	33.1	33.1	33.2	33.2
A:	No	SomW	Yes	No	SomW	A	B	C	D	E	F	A	B	C	D	E	F	Inc	Dec
DEL GROUP																			
73	57	12	62	1	9	6	6	24	13	1	23	0	16	15	20	26	0	18	3
	78%	16%	85%	1%	12%	8%	8%	33%	18%	1%	32%	0%	22%	21%	27%	36%	0%	25%	4%
RVEY GROUP																			
172	115	36	119	11	43	54	24	23	12	1	55	4	34	42	43	48	6	64	9
	67%	21%	69%	6%	25%	31%	14%	13%	7%	1%	32%	2%	20%	24%	25%	28%	3%	37%	5%
DEL+SURVEY GROUP																			
104	73	20	77	5	22	25	13	20	11	1	33	2	21	24	27	31	3	35	5
	70%	20%	74%	5%	21%	24%	12%	19%	10%	1%	32%	2%	20%	23%	26%	30%	2%	33%	5%

.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	18	4	19	0	4	2	0	10	6	1	4	0	5	6	1	12	0	3	1
	78%	17%	83%	0%	17%	9%	0%	43%	26%	4%	17%	0%	22%	26%	4%	52%	0%	13%	4%
RVEY GROUP																			
35	25	7	28	2	6	10	9	8	3	0	5	1	4	13	2	13	3	12	1
	71%	20%	80%	6%	17%	29%	26%	23%	9%	0%	14%	3%	11%	37%	6%	37%	9%	34%	3%
DEL+SURVEY GROUP																			
38	28	7	31	1	7	8	6	12	6	1	6	1	6	12	2	16	2	10	1
	74%	19%	81%	3%	17%	21%	16%	31%	16%	2%	16%	2%	16%	33%	5%	43%	5%	26%	3%

.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	16	3	19	0	2	2	2	7	4	0	6	0	5	6	4	6	0	6	0
	76%	14%	90%	0%	10%	10%	10%	33%	19%	0%	29%	0%	24%	29%	19%	29%	0%	29%	0%
RVEY GROUP																			
49	29	14	34	1	14	22	6	2	3	0	15	0	11	8	9	19	2	16	2
	59%	29%	69%	2%	29%	45%	12%	4%	6%	0%	31%	0%	22%	16%	18%	39%	4%	33%	4%
DEL+SURVEY GROUP																			
30	19	7	23	0	7	10	3	4	3	0	9	0	7	6	6	11	1	9	1
	64%	24%	76%	1%	23%	34%	11%	13%	10%	0%	30%	0%	23%	20%	19%	36%	3%	31%	3%

.1C	11 TO 15 YEARS ON THE JOB																		
DEL GROUP																			
14	12	1	11	0	2	1	0	5	1	0	7	0	4	1	5	5	0	5	0
	86%	7%	79%	0%	14%	7%	0%	36%	7%	0%	50%	0%	29%	7%	36%	36%	0%	36%	0%
RVEY GROUP																			
23	17	4	15	2	6	4	3	6	1	0	8	1	6	5	7	4	0	10	2
	74%	17%	65%	9%	26%	17%	13%	26%	4%	0%	35%	4%	26%	22%	30%	17%	0%	43%	9%
DEL+SURVEY GROUP																			
23	18	3	16	1	5	3	2	7	1	0	9	1	6	4	7	5	0	9	1
	78%	14%	70%	5%	22%	14%	8%	30%	5%	0%	41%	3%	27%	16%	32%	24%	0%	41%	5%

.1D	15+ YEARS ON THE JOB																		
DEL GROUP P																			
15	11	4	13	1	1	1	4	2	2	0	6	0	2	2	10	3	0	4	2
	73%	27%	87%	7%	7%	7%	27%	13%	13%	0%	40%	0%	13%	13%	67%	20%	0%	27%	13%
URVEY GROUP																			
65	44	11	42	6	17	18	6	7	5	1	27	2	13	16	25	12	1	26	4
	68%	17%	65%	9%	26%	28%	9%	11%	8%	2%	42%	3%	20%	25%	38%	18%	2%	40%	6%
DEL+SURVEY GROUP																			
18	13	3	13	2	4	4	2	2	2	0	8	0	3	4	8	3	0	7	1
	69%	19%	69%	9%	22%	24%	12%	11%	9%	1%	41%	3%	19%	22%	44%	19%	1%	38%	8%

Q.	33.3	33.3	33.3	33.3	33.3	34.1	34.1	34.1	34.1	34.1	34.1	34.2	34.2	34.3	34.3	34.3	34.3	34.3	35
A.	A	B	C	D	E	A	B	C	D	E	F	Inc	Dec	A	B	C	D	E	A
DEL GROUP																			
73	8	17	1	7	30	2	2	1	8	57	1	1	3	0	4	1	2	50	6
	11%	23%	1%	10%	41%	3%	3%	1%	11%	78%	1%	1%	4%	0%	5%	1%	3%	68%	8%
RVEY GROUP																			
172	22	26	28	14	66	9	2	2	28	120	2	20	11	8	12	5	10	109	14
	13%	15%	16%	8%	38%	5%	1%	1%	16%	70%	1%	12%	6%	5%	7%	3%	6%	63%	8%
DEL+SURVEY GROUP																			
104	13	18	12	9	41	5	2	1	15	75	1	9	6	3	7	3	5	67	8
	12%	18%	12%	9%	39%	4%	2%	1%	15%	72%	1%	9%	6%	3%	7%	2%	5%	65%	8%
.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	3	2	0	1	13	1	1	0	1	19	0	0	2	0	1	0	1	16	1
	13%	9%	0%	4%	57%	4%	4%	0%	4%	83%	0%	0%	9%	0%	4%	0%	4%	70%	4%
RVEY GROUP																			
35	3	5	5	2	17	1	0	0	5	27	0	4	0	2	1	2	1	26	1
	9%	14%	14%	6%	49%	3%	0%	0%	14%	77%	0%	11%	0%	6%	3%	6%	3%	74%	3%
DEL+SURVEY GROUP																			
38	4	5	3	2	20	1	1	0	4	30	0	3	1	1	1	1	1	28	1
	10%	12%	9%	5%	52%	3%	2%	0%	10%	79%	0%	7%	3%	3%	3%	3%	3%	72%	3%
.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	2	6	1	2	7	1	0	1	1	17	0	1	1	0	1	1	1	14	3
	10%	29%	5%	10%	33%	5%	0%	5%	5%	81%	0%	5%	5%	0%	5%	5%	5%	67%	14%
RVEY GROUP																			
49	6	6	6	1	25	1	1	0	7	36	0	6	0	4	4	0	0	32	3
	12%	12%	12%	2%	51%	2%	2%	0%	14%	73%	0%	12%	0%	8%	8%	0%	0%	65%	6%
DEL+SURVEY GROUP																			
30	3	5	3	1	14	1	0	0	3	23	0	3	0	2	2	0	0	20	3
	11%	17%	10%	4%	46%	3%	1%	1%	11%	76%	0%	10%	1%	6%	7%	1%	1%	66%	9%
.1C	11 TO 15 YEARS ON THE JOB																		
DEL GROUP																			
14	1	7	0	0	5	0	0	0	1	12	0	0	0	0	1	0	0	9	1
	7%	50%	0%	0%	36%	0%	0%	0%	7%	86%	0%	0%	0%	0%	7%	0%	0%	64%	7%
RVEY GROUP																			
23	6	3	5	2	4	3	0	1	3	13	0	2	2	0	2	1	1	12	4
	26%	13%	22%	9%	17%	13%	0%	4%	13%	57%	0%	9%	9%	0%	9%	4%	4%	52%	17%
DEL+SURVEY GROUP																			
23	4	6	3	1	5	2	0	1	2	15	0	1	1	0	2	1	1	13	3
	19%	27%	14%	5%	24%	8%	0%	3%	11%	68%	0%	5%	5%	0%	8%	3%	3%	57%	14%
.1D	15+ YEARS ON THE JOB																		
DEL GROUP																			
15	2	2	0	4	5	0	1	0	5	9	1	0	0	0	1	0	0	11	1
	13%	13%	0%	27%	33%	0%	7%	0%	33%	60%	7%	0%	0%	0%	7%	0%	0%	73%	7%
RVEY GROUP																			
65	7	12	12	9	20	4	1	1	13	44	2	8	9	2	5	2	8	39	6
	11%	18%	18%	14%	31%	6%	2%	2%	20%	68%	3%	12%	14%	3%	8%	3%	12%	60%	9%
DEL+SURVEY GROUP																			
18	2	3	3	3	6	1	0	0	4	12	1	2	2	0	1	0	2	12	2
	11%	17%	15%	16%	31%	5%	3%	1%	22%	66%	4%	10%	11%	3%	8%	3%	10%	62%	9%

Q.	35	35	35	36.1	36.1	36.1	36.1	36.2	36.2	36.2	36.2	36.2	37	37	37	37	37	37	37
A.		B	C	D	A	B	C	D	A	B	C	D	E	0	1	2	3	4	5	6
DEL GROUP																				
73	10	33	22	2	32	23	19	26	24	7	2	5	34	10	11	5	6	2	2
	14%	45%	30%	3%	44%	32%	26%	36%	33%	10%	3%	7%	47%	14%	15%	7%	8%	3%	3%
RVEY GROUP																			
172	34	73	51	9	54	47	59	58	49	24	16	21	137	17	11	3	2	0	0
	20%	42%	30%	5%	31%	27%	34%	34%	28%	14%	9%	12%	80%	10%	6%	2%	1%	0%	0%
DEL+SURVEY GROUP																			
104	19	45	31	5	36	30	33	36	31	13	8	11	73	11	9	3	3	1	1
%	18%	43%	30%	4%	35%	29%	32%	34%	30%	13%	7%	11%	70%	11%	9%	3%	3%	1%	1%

7.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	2	16	4	1	12	6	6	10	7	1	0	0	18	3	2	0	0	0	0
	9%	70%	17%	4%	52%	26%	26%	43%	30%	4%	0%	0%	78%	13%	9%	0%	0%	0%	0%
RVEY GROUP																			
35	4	18	12	1	9	9	16	11	11	8	1	4	32	2	0	0	0	0	0
	11%	51%	34%	3%	26%	26%	46%	31%	31%	23%	3%	11%	91%	6%	0%	0%	0%	0%	0%
DEL+SURVEY GROUP																			
38	4	22	11	1	14	10	14	14	12	6	1	3	33	3	1	0	0	0	0
%	10%	59%	28%	3%	36%	26%	38%	36%	31%	16%	2%	7%	86%	9%	3%	0%	0%	0%	0%

7.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	3	4	11	1	11	7	2	9	4	2	1	3	10	4	4	0	3	0	0
	14%	19%	52%	5%	52%	33%	10%	43%	19%	10%	5%	14%	48%	19%	19%	0%	14%	0%	0%
RVEY GROUP																			
49	11	19	16	1	19	13	16	17	15	7	2	8	41	5	2	1	0	0	0
	22%	39%	33%	2%	39%	27%	33%	35%	31%	14%	4%	16%	84%	10%	4%	2%	0%	0%	0%
DEL+SURVEY GROUP																			
30	6	10	12	1	13	9	8	11	8	4	1	5	22	4	3	0	1	0	0
%	20%	33%	39%	3%	43%	29%	26%	37%	27%	13%	4%	16%	73%	13%	9%	1%	4%	0%	0%

7.1C	11 TO 15 YEARS ON THE JOB																		
ODEL GROUP																			
14	3	5	3	0	4	4	6	5	6	2	0	1	3	1	3	4	3	0	1
	21%	36%	21%	0%	29%	29%	43%	36%	43%	14%	0%	7%	21%	7%	21%	29%	21%	0%	7%
URVEY GROUP																			
23	4	10	5	1	10	6	5	10	4	3	5	1	17	2	1	2	0	0	0
	17%	43%	22%	4%	43%	26%	22%	43%	17%	13%	22%	4%	74%	9%	4%	9%	0%	0%	0%
ODEL+SURVEY GROUP																			
23	4	9	5	1	9	6	7	9	6	3	3	1	12	2	2	4	2	0	1
%	19%	41%	22%	3%	38%	27%	30%	41%	27%	14%	14%	5%	54%	8%	11%	16%	8%	0%	3%

7.1D	15+ YEARS ON THE JOB																		
ODEL GROUP																			
15	2	8	4	0	5	6	5	2	7	2	1	1	3	2	2	1	0	2	1
	13%	53%	27%	0%	33%	40%	33%	13%	47%	13%	7%	7%	20%	13%	13%	7%	0%	13%	7%
URVEY GROUP																			
65	15	26	18	6	16	19	22	20	19	6	8	8	47	8	8	0	2	0	0
	23%	40%	28%	9%	25%	29%	34%	31%	29%	9%	12%	12%	72%	12%	12%	0%	3%	0%	0%
ODEL+SURVEY GROUP																			
18	4	8	5	1	5	6	6	5	6	2	2	2	12	2	2	0	0	0	0
%	21%	43%	28%	8%	26%	31%	34%	28%	32%	10%	11%	11%	62%	12%	12%	1%	3%	3%	1%

Q.	37	37	37	37	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.2	38.2	38.2	38.2	38.2
A.	7	8	9	10+	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
MODEL GROUP																			
73	2	1	0	1	0	0	1	3	8	10	11	26	7	7	0	0	0	1	3
	3%	1%	0%	1%	0%	0%	1%	4%	11%	14%	15%	36%	10%	10%	0%	0%	0%	1%	4%
SURVEY GROUP																			
172	0	0	2	0	3	2	5	6	27	19	40	42	12	16	0	1	1	0	3
	0%	0%	1%	0%	2%	1%	3%	3%	16%	11%	23%	24%	7%	9%	0%	1%	1%	0%	2%
MODEL+SURVEY GROUP																			
104	1	0	1	0	1	1	3	4	15	12	22	29	8	10	0	0	0	0	3
%	1%	0%	1%	0%	1%	1%	2%	4%	14%	12%	21%	28%	8%	9%	0%	0%	0%	0%	2%

67.1A 1 TO 5 YEARS ON THE JOB

MODEL GROUP																			
23	0	0	0	0	0	0	0	0	2	3	7	7	3	1	0	0	0	0	1
	0%	0%	0%	0%	0%	0%	0%	0%	9%	13%	30%	30%	13%	4%	0%	0%	0%	0%	4%
SURVEY GROUP																			
35	0	0	0	0	0	0	1	0	4	5	10	8	3	4	0	0	0	0	1
	0%	0%	0%	0%	0%	0%	3%	0%	11%	14%	29%	23%	9%	11%	0%	0%	0%	0%	3%
MODEL+SURVEY GROUP																			
38	0	0	0	0	0	0	1	0	4	5	11	10	4	3	0	0	0	0	1
%	0%	0%	0%	0%	0%	0%	2%	0%	10%	14%	29%	26%	10%	9%	0%	0%	0%	0%	3%

67.1B 6 TO 10 YEARS ON THE JOB

MODEL GROUP																			
21	0	0	0	0	0	0	0	1	2	4	2	9	2	1	0	0	0	1	0
	0%	0%	0%	0%	0%	0%	0%	5%	10%	19%	10%	43%	10%	5%	0%	0%	0%	5%	0%
SURVEY GROUP																			
49	0	0	1	0	1	1	1	5	4	7	10	13	4	3	0	0	0	0	0
	0%	0%	2%	0%	2%	2%	2%	10%	8%	14%	20%	27%	8%	6%	0%	0%	0%	0%	0%
MODEL+SURVEY GROUP																			
30	0	0	0	0	0	0	0	3	3	5	5	9	3	2	0	0	0	0	0
%	0%	0%	1%	0%	1%	1%	1%	9%	9%	16%	17%	31%	9%	6%	0%	0%	0%	1%	0%

67.1C 11 TO 15 YEARS ON THE JOB

MODEL GROUP																			
14	0	0	0	0	0	0	0	0	4	1	1	3	2	3	0	0	0	0	2
	0%	0%	0%	0%	0%	0%	0%	0%	29%	7%	7%	21%	14%	21%	0%	0%	0%	0%	14%
SURVEY GROUP																			
23	0	0	0	0	1	1	1	0	2	3	7	7	0	1	0	0	0	0	1
	0%	0%	0%	0%	4%	4%	4%	0%	9%	13%	30%	30%	0%	4%	0%	0%	0%	0%	4%
MODEL+SURVEY GROUP																			
23	0	0	0	0	1	1	1	0	4	2	5	6	1	2	0	0	0	0	2
%	0%	0%	0%	0%	3%	3%	3%	0%	16%	11%	22%	27%	5%	11%	0%	0%	0%	0%	8%

67.1D 15+ YEARS ON THE JOB

MODEL GROUP																			
15	2	1	0	1	0	0	1	2	0	2	1	7	0	2	0	0	0	0	0
	13%	7%	0%	7%	0%	0%	7%	13%	0%	13%	7%	47%	0%	13%	0%	0%	0%	0%	0%
SURVEY GROUP																			
65	0	0	1	0	1	0	2	1	17	4	13	14	5	8	0	1	1	0	1
	0%	0%	2%	0%	2%	0%	3%	2%	26%	6%	20%	22%	8%	12%	0%	2%	2%	0%	2%
MODEL+SURVEY GROUP																			
18	0	0	0	0	0	0	1	1	4	1	3	5	1	2	0	0	0	0	0
%	3%	1%	1%	1%	1%	0%	4%	4%	21%	8%	17%	26%	6%	12%	0%	1%	1%	0%	1%

	38.2 6	38.2 7	38.2 8	38.2 9	38.2 10	39 1	39 2	39 3	39 4	39 5	39 6	39 7	39 8	39 9	39 10	40 True	40 False	41 True	41 False
EL GROUP																			
73	6	8	19	19	9	2	8	15	7	9	13	6	10	3	0	48	21	70	2
	8%	11%	26%	26%	12%	3%	11%	21%	10%	12%	18%	8%	14%	4%	0%	66%	29%	96%	3%
VEY GROUP																			
172	15	34	62	31	17	11	10	21	18	22	19	25	25	9	12	91	65	164	8
	9%	20%	36%	18%	10%	6%	6%	12%	10%	13%	11%	15%	15%	5%	7%	53%	38%	95%	5%
EL+SURVEY GROUP																			
104	9	18	34	21	11	6	8	15	11	13	14	13	15	5	5	59	36	99	4
	9%	17%	33%	20%	11%	5%	7%	15%	10%	13%	13%	13%	14%	5%	5%	57%	35%	96%	4%

.1A 1 TO 5 YEARS ON THE JOB

EL GROUP																			
23	4	5	4	5	3	1	2	6	1	4	4	1	3	1	0	17	5	22	1
	17%	22%	17%	22%	13%	4%	9%	26%	4%	17%	17%	4%	13%	4%	0%	74%	22%	96%	4%
RVEY GROUP																			
35	3	7	15	6	3	1	1	4	4	9	4	7	3	1	1	24	9	35	0
	9%	20%	43%	17%	9%	3%	3%	11%	11%	26%	11%	20%	9%	3%	3%	69%	26%	100%	0%
DEL+SURVEY GROUP																			
38	5	8	12	7	4	1	2	7	3	9	5	5	4	1	1	27	9	37	1
	12%	21%	33%	19%	10%	3%	5%	17%	9%	22%	14%	14%	10%	3%	2%	71%	24%	98%	2%

.1B 6 TO 10 YEARS ON THE JOB

DEL GROUP																			
21	2	0	6	6	2	0	4	4	4	1	3	2	2	1	0	14	6	21	0
	10%	0%	29%	29%	10%	0%	19%	19%	19%	5%	14%	10%	10%	5%	0%	67%	29%	100%	0%
RVEY GROUP																			
49	5	7	23	8	2	2	3	4	3	7	9	6	9	2	4	24	22	47	2
	10%	14%	47%	16%	4%	4%	6%	8%	6%	14%	18%	12%	18%	4%	8%	49%	45%	96%	4%
DEL+SURVEY GROUP																			
30	3	3	12	6	2	1	3	3	3	3	5	3	5	1	2	16	12	29	1
	10%	10%	41%	20%	6%	3%	10%	11%	10%	11%	17%	11%	16%	4%	6%	54%	40%	97%	3%

.1C 11 TO 15 YEARS ON THE JOB

DEL GROUP																			
14	0	1	4	3	1	1	1	3	1	2	1	2	2	1	0	9	3	13	0
	0%	7%	29%	21%	7%	7%	7%	21%	7%	14%	7%	14%	14%	7%	0%	64%	21%	93%	0%
RVEY GROUP																			
23	2	4	8	3	5	2	3	3	1	4	1	4	1	1	3	10	10	21	2
	9%	17%	35%	13%	22%	9%	13%	13%	4%	17%	4%	17%	4%	4%	13%	43%	43%	91%	9%
DEL+SURVEY GROUP																			
23	1	3	7	4	4	2	2	4	1	4	1	4	2	1	2	12	8	21	1
%	5%	14%	32%	16%	16%	8%	11%	16%	5%	16%	5%	16%	8%	5%	8%	51%	35%	92%	5%

7.1D 15+ YEARS ON THE JOB

ODEL GROUP																			
15	0	2	5	5	3	0	1	2	1	2	5	1	3	0	0	8	7	14	1
	0%	13%	33%	33%	20%	0%	7%	13%	7%	13%	33%	7%	20%	0%	0%	53%	47%	93%	7%
URVEY GROUP																			
65	5	16	16	14	7	6	3	10	10	2	5	8	12	5	4	33	24	61	4
	8%	25%	25%	22%	11%	9%	5%	15%	15%	3%	8%	12%	18%	8%	6%	51%	37%	94%	6%
ODEL+SURVEY GROUP																			
18	1	4	5	4	2	1	1	3	3	1	2	2	3	1	1	9	7	17	1
%	6%	22%	26%	24%	12%	8%	5%	15%	14%	5%	12%	11%	19%	6%	5%	51%	39%	94%	6%

	42 A	42 B	42 C	42 D	42 E	43 A	43 B	43 C	43 D	44 Yes	44 No	45 A	45 B	45 C	45 D	45 E	46 True	46 False	47 True
EL GROUP																			
73	50	1	6	10	2	10	22	19	22	70	3	2	19	29	23	0	10	63	34
	68%	1%	8%	14%	3%	14%	30%	26%	30%	96%	4%	3%	26%	40%	32%	0%	14%	86%	47%
VEY GROUP																			
172	113	2	17	26	6	44	47	45	37	159	10	12	64	62	29	4	36	136	80
	66%	1%	10%	15%	3%	26%	27%	26%	22%	92%	6%	7%	37%	36%	17%	2%	21%	79%	47%
EL+SURVEY GROUP																			
104	69	1	10	15	3	23	29	27	25	97	6	6	35	39	22	2	20	84	48
	67%	1%	9%	15%	3%	22%	28%	26%	24%	93%	5%	6%	34%	37%	21%	2%	19%	81%	47%
1A 1 TO 5 YEARS ON THE JOB																			
EL GROUP																			
23	20	0	3	0	0	4	9	5	5	23	0	1	3	9	10	0	3	20	8
	87%	0%	13%	0%	0%	17%	39%	22%	22%	100%	0%	4%	13%	39%	43%	0%	13%	87%	35%
VEY GROUP																			
35	27	0	3	3	1	6	12	13	4	33	2	0	12	13	10	0	3	32	18
	77%	0%	9%	9%	3%	17%	34%	37%	11%	94%	6%	0%	34%	37%	29%	0%	9%	91%	51%
EL+SURVEY GROUP																			
38	31	0	4	2	1	7	14	12	6	37	1	1	10	14	13	0	4	34	17
	81%	0%	10%	5%	2%	17%	36%	31%	16%	97%	3%	2%	26%	38%	34%	0%	10%	90%	45%
1B 6 TO 10 YEARS ON THE JOB																			
EL GROUP																			
21	13	1	2	1	1	4	7	7	5	20	1	0	5	9	7	0	3	18	10
	62%	5%	10%	5%	5%	19%	33%	33%	24%	95%	5%	0%	24%	43%	33%	0%	14%	86%	48%
VEY GROUP																			
49	36	0	3	6	2	17	10	11	13	48	1	7	21	15	7	0	8	41	23
	73%	0%	6%	12%	4%	35%	20%	22%	27%	98%	2%	14%	43%	31%	14%	0%	16%	84%	47%
EL+SURVEY GROUP																			
30	21	0	2	3	1	9	7	8	8	29	1	3	11	10	6	0	5	25	14
	70%	1%	7%	10%	4%	30%	24%	26%	26%	97%	3%	10%	37%	34%	20%	0%	16%	84%	47%
1C 11 TO 15 YEARS ON THE JOB																			
EL GROUP																			
14	9	0	0	4	0	1	4	3	4	14	0	0	5	6	3	0	3	11	8
	64%	0%	0%	29%	0%	7%	29%	21%	29%	100%	0%	0%	36%	43%	21%	0%	21%	79%	57%
RVEY GROUP																			
23	12	1	4	3	0	9	6	4	4	19	2	3	7	11	2	0	7	16	9
	52%	4%	17%	13%	0%	39%	26%	17%	17%	83%	9%	13%	30%	48%	9%	0%	30%	70%	39%
EL+SURVEY GROUP																			
23	13	1	2	4	0	6	6	4	5	20	1	2	7	10	3	0	6	16	10
	57%	3%	11%	19%	0%	27%	27%	19%	22%	89%	5%	8%	32%	46%	14%	0%	27%	73%	46%
1D 15+ YEARS ON THE JOB																			
EL GROUP																			
15	8	0	1	5	1	1	2	4	8	13	2	1	6	5	3	0	1	14	8
	53%	0%	7%	33%	7%	7%	13%	27%	53%	87%	13%	7%	40%	33%	20%	0%	7%	93%	53%
RVEY GROUP																			
65	38	1	7	14	3	12	19	17	16	59	5	2	24	23	10	4	18	47	30
	58%	2%	11%	22%	5%	18%	29%	26%	25%	91%	8%	3%	37%	35%	15%	6%	28%	72%	46%
EL+SURVEY GROUP																			
18	11	0	2	4	1	3	5	5	6	17	2	1	7	6	3	1	4	14	9
	58%	1%	10%	24%	5%	16%	26%	26%	30%	90%	9%	4%	38%	35%	16%	5%	24%	76%	47%

POLICE PERFORMANCE/WELLNESS SURVEY — SUMMARY

Q.	47	48.1	48.1	48.2	48.2	48.3	48.3	48.4	48.4	48.5	48.5	48.6	48.6	49	49	49	49	49	50
A.	False	True	False	True	False	True	False	True	False	True	False	True	False	A	B	C	D	E	A
MODEL GROUP																			
73	37	67	6	35	38	36	38	62	11	49	25	60	12	53	16	3	1	0	62
	51%	92%	8%	48%	52%	49%	52%	85%	15%	67%	34%	82%	16%	73%	22%	4%	1%	0%	85%
SURVEY GROUP																			
172	92	150	21	65	107	79	93	136	35	111	59	122	49	125	39	6	1	1	121
	53%	87%	12%	38%	62%	46%	54%	79%	20%	65%	34%	71%	28%	73%	23%	3%	1%	1%	70%
MODEL+SURVEY GROUP																			
104	55	92	11	42	62	49	56	84	20	68	36	77	26	76	23	4	1	0	78
%	53%	89%	11%	41%	59%	47%	53%	81%	19%	65%	34%	74%	25%	73%	22%	4%	1%	0%	75%
67.1A 1 TO 5 YEARS ON THE JOB																			
MODEL GROUP																			
23	15	22	1	13	10	10	13	17	6	13	10	18	4	17	5	0	1	0	21
	65%	96%	4%	57%	43%	43%	57%	74%	26%	57%	43%	78%	17%	74%	22%	0%	4%	0%	91%
SURVEY GROUP																			
35	17	34	1	16	19	17	18	33	2	25	10	28	7	25	7	2	0	1	26
	49%	97%	3%	46%	54%	49%	51%	94%	6%	71%	29%	80%	20%	71%	20%	6%	0%	3%	74%
MODEL+SURVEY GROUP																			
38	21	37	1	19	19	18	20	33	5	25	13	30	7	28	8	1	1	1	31
%	55%	97%	3%	50%	50%	47%	53%	86%	14%	66%	34%	79%	19%	72%	21%	3%	2%	2%	81%
67.1B 6 TO 10 YEARS ON THE JOB																			
MODEL GROUP																			
21	10	19	2	10	11	9	12	20	1	16	5	19	2	14	7	0	0	0	18
	48%	90%	10%	48%	52%	43%	57%	95%	5%	76%	24%	90%	10%	67%	33%	0%	0%	0%	86%
SURVEY GROUP																			
49	26	39	10	19	30	20	29	40	9	32	17	34	15	30	17	2	0	0	28
	53%	80%	20%	39%	61%	41%	59%	82%	18%	65%	35%	69%	31%	61%	35%	4%	0%	0%	57%
MODEL+SURVEY GROUP																			
30	15	25	5	12	18	12	18	26	4	21	9	23	7	19	10	1	0	0	20
%	51%	83%	17%	41%	59%	41%	59%	86%	14%	69%	31%	76%	24%	63%	34%	3%	0%	0%	66%
67.1C 11 TO 15 YEARS ON THE JOB																			
MODEL GROUP																			
14	6	12	2	7	7	8	6	12	2	9	5	10	4	10	2	2	0	0	11
	43%	86%	14%	50%	50%	57%	43%	86%	14%	64%	36%	71%	29%	71%	14%	14%	0%	0%	79%
SURVEY GROUP																			
23	14	20	3	6	17	8	15	16	7	13	10	17	6	16	6	0	1	0	13
	61%	87%	13%	26%	74%	35%	65%	70%	30%	57%	43%	74%	26%	70%	26%	0%	4%	0%	57%
MODEL+SURVEY GROUP																			
23	12	19	3	8	15	10	13	17	5	13	9	16	6	16	5	1	1	0	15
%	54%	86%	14%	35%	65%	43%	57%	76%	24%	59%	41%	73%	27%	70%	22%	5%	3%	0%	65%
67.1D 15+ YEARS ON THE JOB																			
MODEL GROUP																			
15	6	14	1	5	10	9	7	13	2	11	5	13	2	12	2	1	0	0	12
	40%	93%	7%	33%	67%	60%	47%	87%	13%	73%	33%	87%	13%	80%	13%	7%	0%	0%	80%
SURVEY GROUP																			
65	35	57	7	24	41	34	31	47	17	41	22	43	21	54	9	2	0	0	54
	54%	88%	11%	37%	63%	52%	48%	72%	26%	63%	34%	66%	32%	83%	14%	3%	0%	0%	83%
MODEL+SURVEY GROUP																			
18	9	16	2	7	12	10	9	14	4	12	6	13	5	15	3	1	0	0	15
%	51%	89%	10%	36%	64%	54%	47%	75%	24%	65%	34%	70%	29%	83%	14%	4%	0%	0%	83%

Q.	52	52	53	53	55	55	55	55	56	56	57.1	57.1	57.1	57.2	57.2	57.2	57.2	58	58
A.	F	G	True	False	A	B	C	D	True	False	A	B	C	A	B	C	D	True	False
MODEL GROUP																			
73	9	3	2	71	17	25	14	16	38	33	28	7	34	17	4	48	14	10	61
	12%	4%	3%	97%	23%	34%	19%	22%	52%	45%	38%	10%	47%	23%	5%	66%	19%	14%	84%
SURVEY GROUP																			
172	13	3	24	145	63	52	32	23	73	97	61	31	81	28	8	107	37	47	122
	8%	2%	14%	84%	37%	30%	19%	13%	42%	56%	35%	18%	47%	16%	5%	62%	22%	27%	71%
MODEL+SURVEY GROUP																			
104	9	3	11	92	34	33	20	17	47	55	38	16	49	19	5	66	22	24	78
%	9%	2%	11%	88%	33%	31%	19%	16%	45%	53%	36%	16%	47%	18%	5%	63%	21%	23%	75%
67.1A 1 TO 5 YEARS ON THE JOB																			
MODEL GROUP																			
23	4	1	0	23	6	10	3	3	12	10	11	0	11	4	1	18	3	2	21
	17%	4%	0%	100%	26%	43%	13%	13%	52%	43%	48%	0%	48%	17%	4%	78%	13%	9%	91%
SURVEY GROUP																			
35	3	0	6	28	14	11	6	5	15	20	10	11	14	5	1	25	8	11	24
	9%	0%	17%	80%	40%	31%	17%	14%	43%	57%	29%	31%	40%	14%	3%	71%	23%	31%	69%
MODEL+SURVEY GROUP																			
38	5	1	4	34	13	14	6	5	18	20	14	7	16	6	1	28	7	9	30
%	12%	2%	10%	88%	34%	36%	16%	14%	47%	52%	36%	19%	43%	16%	3%	74%	19%	22%	78%
67.1B 6 TO 10 YEARS ON THE JOB																			
MODEL GROUP																			
21	2	1	1	20	6	8	5	2	12	8	6	4	10	7	2	10	6	2	18
	10%	5%	5%	95%	29%	38%	24%	10%	57%	38%	29%	19%	48%	33%	10%	48%	29%	10%	86%
SURVEY GROUP																			
49	4	1	3	44	22	12	7	5	20	28	21	6	22	12	2	30	9	14	33
	8%	2%	6%	90%	45%	24%	14%	10%	41%	57%	43%	12%	45%	24%	4%	61%	18%	29%	67%
MODEL+SURVEY GROUP																			
30	3	1	2	27	12	9	5	3	14	15	12	4	14	8	2	17	6	7	22
%	9%	3%	6%	91%	40%	29%	17%	10%	46%	51%	39%	14%	46%	27%	6%	57%	21%	23%	73%
67.1C 11 TO 15 YEARS ON THE JOB																			
MODEL GROUP																			
14	2	0	1	13	2	6	2	4	7	7	8	1	4	5	1	11	2	4	10
	14%	0%	7%	93%	14%	43%	14%	29%	50%	50%	57%	7%	29%	36%	7%	79%	14%	29%	71%
SURVEY GROUP																			
23	2	1	5	18	9	6	5	3	9	14	9	5	9	4	3	10	6	5	18
	9%	4%	22%	78%	39%	26%	22%	13%	39%	61%	39%	22%	39%	17%	13%	43%	26%	22%	78%
MODEL+SURVEY GROUP																			
23	2	1	4	19	7	7	4	4	10	13	10	4	8	5	2	13	5	5	17
%	11%	3%	16%	84%	30%	32%	19%	19%	43%	57%	46%	16%	35%	24%	11%	57%	22%	24%	76%
67.1D 15+ YEARS ON THE JOB																			
MODEL GROUP																			
15	1	1	0	15	3	1	4	7	7	8	3	2	9	1	0	9	3	2	12
	7%	7%	0%	100%	20%	7%	27%	47%	47%	53%	20%	13%	60%	7%	0%	60%	20%	13%	80%
SURVEY GROUP																			
65	4	1	10	55	18	23	14	10	29	35	21	9	36	7	2	42	14	17	47
	6%	2%	15%	85%	28%	35%	22%	15%	45%	54%	32%	14%	55%	11%	3%	65%	22%	26%	72%
MODEL+SURVEY GROUP																			
18	1	0	2	16	5	6	4	4	8	10	6	3	10	2	0	12	4	4	14
%	6%	3%	12%	88%	26%	30%	22%	21%	45%	54%	30%	14%	56%	10%	3%	64%	21%	24%	74%

Q.	63.2	63.3	63.3	63.4	63.4	63.5	63.5	63.6	63.6	63.7	63.7	63.8	63.8	63.9	63.9	63.0	63.0	63.1	63.1
A.	False	True	False	True	False	True	False	True	False	True	False	True	False	True	False	True	False	True	False
MODEL GROUP																			
73	51	21	49	16	56	15	57	19	53	42	30	6	66	54	18	36	30	1	67
	70%	29%	67%	22%	77%	21%	78%	26%	73%	58%	41%	8%	90%	74%	25%	49%	41%	1%	92%
SURVEY GROUP																			
172	103	58	113	59	112	54	117	60	111	101	71	18	153	124	48	96	67	5	164
	60%	34%	66%	34%	65%	31%	68%	35%	65%	59%	41%	10%	89%	72%	28%	56%	39%	3%	95%
MODEL+SURVEY GROUP																			
104	65	34	69	32	71	29	74	34	70	61	43	10	93	76	28	56	41	3	98
%	63%	32%	66%	31%	69%	28%	71%	32%	67%	58%	41%	10%	89%	73%	27%	54%	40%	2%	94%

67.1A 1 TO 5 YEARS ON THE JOB

MODEL GROUP																			
23	20	3	20	6	17	6	17	5	18	11	12	1	22	16	7	12	11	1	22
	87%	13%	87%	26%	74%	26%	74%	22%	78%	48%	52%	4%	96%	70%	30%	52%	48%	4%	96%
SURVEY GROUP																			
35	28	11	24	12	23	9	26	12	23	23	12	4	31	29	6	15	16	0	33
	80%	31%	69%	34%	66%	26%	74%	34%	66%	66%	34%	11%	89%	83%	17%	43%	46%	0%	94%
MODEL+SURVEY GROUP																			
38	32	9	29	12	26	10	28	11	27	22	16	3	35	30	9	18	18	1	36
%	83%	24%	76%	31%	69%	26%	74%	29%	71%	59%	41%	9%	91%	78%	22%	47%	47%	2%	95%

67.18 6 TO 10 YEARS ON THE JOB

MODEL GROUP																			
21	12	8	12	5	15	6	14	6	14	14	6	2	18	16	4	10	9	0	20
	57%	38%	57%	24%	71%	29%	67%	29%	67%	67%	29%	10%	86%	76%	19%	48%	43%	0%	95%
SURVEY GROUP																			
49	26	16	32	21	27	17	31	18	30	27	22	1	47	34	15	36	12	1	48
	53%	33%	65%	43%	55%	35%	63%	37%	61%	55%	45%	2%	96%	69%	31%	73%	24%	2%	98%
MODEL+SURVEY GROUP																			
30	16	10	19	11	18	10	19	10	19	18	12	1	28	21	8	20	9	0	29
%	54%	34%	63%	37%	60%	33%	64%	34%	63%	59%	40%	4%	93%	71%	27%	66%	30%	1%	97%

67.1C 11 TO 15 YEARS ON THE JOB

MODEL GROUP																			
14	9	4	9	2	12	0	14	4	10	7	7	1	13	12	2	5	7	0	13
	64%	29%	64%	14%	86%	0%	100%	29%	71%	50%	50%	7%	93%	86%	14%	36%	50%	0%	93%
SURVEY GROUP																			
23	12	10	13	8	15	8	15	10	13	12	11	3	20	16	7	13	9	1	21
	52%	43%	57%	35%	65%	35%	65%	43%	57%	52%	48%	13%	87%	70%	30%	57%	39%	4%	91%
MODEL+SURVEY GROUP																			
23	13	9	13	6	16	5	18	9	14	12	11	2	20	17	5	11	10	1	21
%	57%	38%	59%	27%	73%	22%	78%	38%	62%	51%	49%	11%	89%	76%	24%	49%	43%	3%	92%

67.1D 15+ YEARS ON THE JOB

MODEL GROUP																			
15	10	6	8	3	12	3	12	4	11	10	5	2	13	10	5	9	3	0	12
	67%	40%	53%	20%	80%	20%	80%	27%	73%	67%	33%	13%	87%	67%	33%	60%	20%	0%	80%
SURVEY GROUP																			
65	38	22	43	18	47	20	45	21	44	38	27	10	55	45	20	32	30	3	62
	58%	34%	66%	28%	72%	31%	69%	32%	68%	58%	42%	15%	85%	69%	31%	49%	46%	5%	95%
MODEL+SURVEY GROUP																			
18	11	6	12	5	14	5	13	6	13	11	7	3	16	13	6	9	8	1	17
%	60%	35%	64%	26%	74%	29%	71%	31%	69%	60%	40%	15%	85%	69%	31%	51%	41%	4%	93%

Q.	63.2	63.2	63.3	63.3	63.4	63.4	64.1	64.1	64.1	64.1	64.1	64.2	64.2	64.2	64.2	64.2	64.3	64.3	64.4
A.	True	False	True	False	True	False	A	B	C	D	E	A	B	C	D	E	True	False	True
IODEL GROUP																			
73	18	54	14	58	35	36	23	30	7	8	4	11	26	5	20	8	33	39	7
	25%	74%	19%	79%	48%	49%	32%	41%	10%	11%	5%	15%	36%	7%	27%	11%	45%	53%	10%
URVEY GROUP																			
172	52	117	46	123	81	90	63	53	15	39	3	23	47	22	56	24	100	72	13
	30%	68%	27%	72%	47%	52%	37%	31%	9%	23%	2%	13%	27%	13%	33%	14%	58%	42%	8%
IODEL+SURVEY GROUP																			
104	30	73	25	77	49	53	36	35	9	20	3	14	31	11	32	14	56	47	8
%	29%	70%	24%	74%	47%	51%	35%	34%	9%	19%	3%	14%	30%	11%	31%	13%	54%	45%	8%
57.1A 1 TO 5 YEARS ON THE JOB																			
IODEL GROUP																			
23	4	19	3	20	15	7	6	13	2	2	0	3	12	1	6	0	8	15	4
	17%	83%	13%	87%	65%	30%	26%	57%	9%	9%	0%	13%	52%	4%	26%	0%	35%	65%	17%
URVEY GROUP																			
35	7	27	8	27	21	13	19	9	3	4	0	5	12	6	10	2	13	22	4
	20%	77%	23%	77%	60%	37%	54%	26%	9%	11%	0%	14%	34%	17%	29%	6%	37%	63%	11%
IODEL+SURVEY GROUP																			
38	7	30	7	31	24	13	16	14	3	4	0	5	16	5	11	1	14	24	5
%	19%	79%	19%	81%	62%	34%	43%	38%	9%	10%	0%	14%	41%	12%	28%	3%	36%	64%	14%
57.1B 6 TO 10 YEARS ON THE JOB																			
IODEL GROUP																			
21	4	16	5	15	10	10	9	5	3	1	2	4	6	1	7	2	9	11	3
	19%	76%	24%	71%	48%	48%	43%	24%	14%	5%	10%	19%	29%	5%	33%	10%	43%	52%	14%
URVEY GROUP																			
49	11	38	15	34	22	27	19	14	7	10	0	9	13	5	14	8	31	18	5
	22%	78%	31%	69%	45%	55%	39%	29%	14%	20%	0%	18%	27%	10%	29%	16%	63%	37%	10%
IODEL+SURVEY GROUP																			
30	6	23	9	21	14	16	12	8	4	5	1	6	8	3	9	4	17	12	3
%	21%	77%	29%	70%	46%	53%	40%	27%	14%	16%	3%	19%	27%	9%	30%	14%	57%	41%	11%
57.1C 11 TO 15 YEARS ON THE JOB																			
IODEL GROUP																			
14	4	10	1	13	6	8	5	5	1	2	1	2	5	1	3	2	4	10	0
	29%	71%	7%	93%	43%	57%	36%	36%	7%	14%	7%	14%	36%	7%	21%	14%	29%	71%	0%
URVEY GROUP																			
23	9	13	6	15	12	11	6	8	2	7	0	0	5	2	14	2	15	8	1
	39%	57%	26%	65%	52%	48%	26%	35%	9%	30%	0%	0%	22%	9%	61%	9%	65%	35%	4%
IODEL+SURVEY GROUP																			
23	8	14	4	17	11	12	7	8	2	5	1	1	6	2	10	2	12	11	1
%	35%	62%	19%	76%	49%	51%	30%	35%	8%	24%	3%	5%	27%	8%	46%	11%	51%	49%	3%
57.1D 15+ YEARS ON THE JOB																			
IODEL GROUP																			
15	6	9	5	10	4	11	3	7	1	3	1	2	3	2	4	4	12	3	0
	40%	60%	33%	67%	27%	73%	20%	47%	7%	20%	7%	13%	20%	13%	27%	27%	80%	20%	0%
URVEY GROUP																			
65	25	39	17	47	26	39	19	22	3	18	3	9	17	9	18	12	41	24	3
	38%	60%	26%	72%	40%	60%	29%	34%	5%	28%	5%	14%	26%	14%	28%	18%	63%	37%	5%
IODEL+SURVEY GROUP																			
18	7	11	5	13	7	12	5	7	1	5	1	3	5	3	5	4	12	6	1
%	39%	60%	28%	71%	38%	62%	28%	36%	5%	26%	5%	14%	25%	14%	28%	20%	66%	34%	4%

Q.	64.4	64.5	64.5	64.5	64.5	65.1	65.1	65.2	65.2	65.3	65.3	65.4	65.4	65.5	65.5	65.6	65.6	65.7	65.7
A..	False	A	B	C	D	True	False	True	False	True	False	True	False	True	False	True	False	True	False
MODEL GROUP																			
73	64	25	40	7	0	18	54	19	53	59	13	43	28	61	11	65	7	50	22
	88%	34%	55%	10%	0%	25%	74%	26%	73%	81%	18%	59%	38%	84%	15%	89%	10%	68%	30%
SURVEY GROUP																			
172	157	81	68	23	2	54	116	49	121	120	52	101	70	130	41	149	20	107	64
	91%	47%	40%	13%	1%	31%	67%	28%	70%	70%	30%	59%	41%	76%	24%	87%	12%	62%	37%
MODEL+SURVEY GROUP																			
104	94	45	46	13	1	31	72	29	74	76	28	61	42	81	22	91	11	67	36
%	90%	43%	44%	12%	1%	29%	69%	28%	71%	73%	27%	59%	40%	78%	21%	87%	11%	64%	35%

67.1A 1 TO 5 YEARS ON THE JOB																			
MODEL GROUP																			
23	19	8	12	3	0	4	19	6	17	22	1	13	10	20	3	20	3	16	7
	83%	35%	52%	13%	0%	17%	83%	26%	74%	96%	4%	57%	43%	87%	13%	87%	13%	70%	30%
SURVEY GROUP																			
35	31	14	18	4	0	12	22	12	22	27	8	19	15	29	5	31	3	27	7
	89%	40%	51%	11%	0%	34%	63%	34%	63%	77%	23%	54%	43%	83%	14%	89%	9%	77%	20%
MODEL+SURVEY GROUP																			
38	33	14	20	5	0	11	27	12	26	32	6	21	16	32	5	34	4	28	9
%	86%	38%	52%	12%	0%	28%	71%	31%	67%	84%	16%	55%	43%	84%	14%	88%	10%	74%	24%

67.1B 6 TO 10 YEARS ON THE JOB																			
MODEL GROUP																			
21	17	5	12	3	0	5	16	5	16	16	5	10	10	17	4	19	2	16	5
	81%	24%	57%	14%	0%	24%	76%	24%	76%	76%	24%	48%	48%	81%	19%	90%	10%	76%	24%
SURVEY GROUP																			
49	44	26	18	5	0	17	32	13	36	37	12	34	15	39	10	44	4	27	22
	90%	53%	37%	10%	0%	35%	65%	27%	73%	76%	24%	69%	31%	80%	20%	90%	8%	55%	45%
MODEL+SURVEY GROUP																			
30	26	13	13	3	0	9	21	8	22	23	7	19	11	24	6	27	3	18	12
%	87%	44%	43%	11%	0%	31%	69%	26%	74%	76%	24%	63%	36%	80%	20%	90%	9%	61%	39%

67.1C 11 TO 15 YEARS ON THE JOB																			
MODEL GROUP																			
14	14	6	7	1	0	5	8	1	12	9	4	9	4	12	1	13	0	10	3
	100%	43%	50%	7%	0%	36%	57%	7%	86%	64%	29%	64%	29%	86%	7%	93%	0%	71%	21%
SURVEY GROUP																			
23	22	13	4	4	2	9	14	6	17	13	10	14	9	15	8	17	5	13	10
	96%	57%	17%	17%	9%	39%	61%	26%	74%	57%	43%	61%	39%	65%	35%	74%	22%	57%	43%
MODEL+SURVEY GROUP																			
23	22	12	7	3	1	9	13	4	18	13	9	14	8	16	5	18	3	14	8
%	97%	51%	30%	14%	5%	38%	59%	19%	78%	59%	38%	62%	35%	73%	24%	81%	14%	62%	35%

67.1D 15+ YEARS ON THE JOB																			
MODEL GROUP																			
15	14	6	9	0	0	4	11	7	8	12	3	11	4	12	3	13	2	8	7
	93%	40%	60%	0%	0%	27%	73%	47%	53%	80%	20%	73%	27%	80%	20%	87%	13%	53%	47%
SURVEY GROUP																			
65	60	28	28	10	0	16	48	18	46	43	22	34	31	47	18	57	8	40	25
	92%	43%	43%	15%	0%	25%	74%	28%	71%	66%	34%	52%	48%	72%	28%	88%	12%	62%	38%
MODEL+SURVEY GROUP																			
18	17	8	9	2	0	5	14	6	12	13	6	10	8	14	5	16	2	11	7
%	93%	43%	46%	12%	0%	25%	74%	31%	67%	69%	31%	56%	44%	74%	26%	88%	12%	60%	40%

Q.	66.1	66.1	66.2	66.2	66.3	66.3	67.1	67.1	67.1	67.1	67.2	67.2	67.2	67.2	67.3	67.3	67.4	67.4	67.4
A.	True	False	True	False	True	False	A	B	C	D	A	B	C	D	A	B	A	B	C
ODEL GROUP																			
73	44	27	20	51	28	44	23	21	14	15	41	19	16	33	61	10	6	23	18
	60%	37%	27%	70%	38%	60%	32%	29%	19%	21%	56%	26%	22%	45%	84%	14%	8%	32%	25%
URVEY GROUP																			
172	77	94	38	131	36	132	35	49	23	65	70	53	34	34	150	20	8	44	38
	45%	55%	22%	76%	21%	77%	20%	28%	13%	38%	41%	31%	20%	20%	87%	12%	5%	26%	22%
ODEL+SURVEY GROUP																			
104	51	51	25	77	27	75	25	30	16	34	47	31	21	28	90	13	6	28	24
%	49%	49%	24%	74%	26%	72%	24%	29%	15%	33%	45%	29%	20%	27%	86%	12%	6%	27%	23%

7.1A 1 TO 5 YEARS ON THE JOB																			
ODEL GROUP																			
23	13	9	9	13	6	17	23	0	0	0	9	4	6	14	21	2	4	16	3
	57%	39%	39%	57%	26%	74%	100%	0%	0%	0%	39%	17%	26%	61%	91%	9%	17%	70%	13%
URVEY GROUP																			
35	23	11	10	22	10	22	35	0	0	0	3	18	5	9	32	2	8	25	2
	66%	31%	29%	63%	29%	63%	100%	0%	0%	0%	9%	51%	14%	26%	91%	6%	23%	71%	6%
ODEL+SURVEY GROUP																			
38	24	13	12	23	11	26	38	0	0	0	8	14	7	15	35	3	8	27	3
%	62%	34%	33%	60%	28%	67%	100%	0%	0%	0%	21%	38%	19%	40%	91%	7%	21%	71%	9%

7.1B 6 TO 10 YEARS ON THE JOB																			
ODEL GROUP																			
21	12	8	7	13	8	12	0	21	0	0	9	5	5	11	14	6	1	7	9
	57%	38%	33%	62%	38%	57%	0%	100%	0%	0%	43%	24%	24%	52%	67%	29%	5%	33%	43%
URVEY GROUP																			
49	21	28	11	38	13	35	0	49	0	0	19	13	9	11	41	8	0	18	26
	43%	57%	22%	78%	27%	71%	0%	100%	0%	0%	39%	27%	18%	22%	84%	16%	0%	37%	53%
ODEL+SURVEY GROUP																			
30	14	15	8	22	9	20	0	30	0	0	12	8	6	9	24	6	0	11	15
%	47%	51%	26%	73%	30%	67%	0%	100%	0%	0%	40%	26%	20%	31%	79%	20%	1%	36%	50%

7.1C 11 TO 15 YEARS ON THE JOB																			
ODEL GROUP																			
14	9	5	1	13	6	8	0	0	14	0	9	5	3	6	12	2	0	0	6
	64%	36%	7%	93%	43%	57%	0%	0%	100%	0%	64%	36%	21%	43%	86%	14%	0%	0%	43%
URVEY GROUP																			
23	11	12	2	21	5	18	0	0	23	0	7	12	3	4	17	5	0	1	10
	48%	52%	9%	91%	22%	78%	0%	0%	100%	0%	30%	52%	13%	17%	74%	22%	0%	4%	43%
ODEL+SURVEY GROUP																			
23	12	10	2	21	7	16	0	0	23	0	10	10	4	6	18	4	0	1	10
%	54%	46%	8%	92%	30%	70%	0%	0%	100%	0%	43%	46%	16%	27%	78%	19%	0%	3%	43%

7.1D 15+ YEARS ON THE JOB																			
ODEL GROUP																			
15	10	5	3	12	8	7	0	0	0	15	14	5	2	2	14	0	1	0	0
	67%	33%	20%	80%	53%	47%	0%	0%	0%	100%	93%	33%	13%	13%	93%	0%	7%	0%	0%
URVEY GROUP																			
65	22	43	15	50	8	57	0	0	0	65	41	10	17	10	60	5	0	0	0
	34%	66%	23%	77%	12%	88%	0%	0%	0%	100%	63%	15%	26%	15%	92%	8%	0%	0%	0%
ODEL+SURVEY GROUP																			
18	7	11	4	14	4	15	0	0	0	18	13	3	4	3	17	1	0	0	0
%	40%	60%	22%	78%	20%	80%	0%	0%	0%	100%	69%	19%	24%	15%	93%	6%	1%	0%	0%

	67.4	67.4	67.5	67.5	68.1	68.1	68.1	68.2	68.2	68.2	68.3	68.3	68.3	69	69	70	70	71	71
).	D	E	Yes	No	A	B	C	A	B	C	A	B	C	True	False	True	False	True	False
DEL GROUP																			
73	13	14	20	53	47	10	18	17	55	1	5	61	7	60	13	23	50	52	21
	18%	19%	27%	73%	64%	14%	25%	23%	75%	1%	7%	84%	10%	82%	18%	32%	68%	71%	29%
RVEY GROUP																			
172	40	42	54	118	101	59	12	32	120	19	23	112	37	138	34	44	128	130	41
	23%	24%	31%	69%	59%	34%	7%	19%	70%	11%	13%	65%	22%	80%	20%	26%	74%	76%	24%
DEL+SURVEY GROUP																			
104	22	24	31	73	63	29	13	21	74	8	12	73	19	84	20	28	76	77	26
	22%	23%	30%	70%	60%	28%	12%	20%	71%	8%	11%	71%	18%	81%	19%	27%	73%	74%	25%
.1A	1 TO 5 YEARS ON THE JOB																		
DEL GROUP																			
23	0	0	0	23	18	2	4	1	21	1	2	19	2	19	4	10	13	15	8
	0%	0%	0%	100%	78%	9%	17%	4%	91%	4%	9%	83%	9%	83%	17%	43%	57%	65%	35%
RVEY GROUP																			
35	0	0	1	34	21	13	1	2	28	4	7	28	0	30	5	8	27	26	9
	0%	0%	3%	97%	60%	37%	3%	6%	80%	11%	20%	80%	0%	86%	14%	23%	77%	74%	26%
DEL+SURVEY GROUP																			
38	0	0	1	37	26	10	3	2	32	3	6	31	1	32	6	12	26	27	11
	0%	0%	2%	98%	67%	26%	9%	5%	84%	9%	16%	81%	3%	84%	16%	31%	69%	71%	29%
.1B	6 TO 10 YEARS ON THE JOB																		
DEL GROUP																			
21	4	0	2	19	13	2	6	4	17	0	2	19	0	18	3	6	15	14	7
	19%	0%	10%	90%	62%	10%	29%	19%	81%	0%	10%	90%	0%	86%	14%	29%	71%	67%	33%
RVEY GROUP																			
49	5	0	6	43	30	15	4	9	33	7	7	28	15	38	11	13	36	38	10
	10%	0%	12%	88%	61%	31%	8%	18%	67%	14%	14%	57%	31%	78%	22%	27%	73%	78%	20%
DEL+SURVEY GROUP																			
30	4	0	3	27	18	7	4	6	21	3	4	20	6	24	6	8	22	22	7
	13%	0%	11%	89%	61%	24%	14%	19%	71%	10%	13%	67%	21%	80%	20%	27%	73%	74%	24%
.1C	11 TO 15 YEARS ON THE JOB																		
DEL GROUP																			
14	6	2	8	6	7	3	4	5	9	0	1	12	1	11	3	1	13	10	4
	43%	14%	57%	43%	50%	21%	29%	36%	64%	0%	7%	86%	7%	79%	21%	7%	93%	71%	29%
IRVEY GROUP																			
23	8	4	8	15	13	8	2	4	17	2	2	13	8	20	3	8	15	18	5
	35%	17%	35%	65%	57%	35%	9%	17%	74%	9%	9%	57%	35%	87%	13%	35%	65%	78%	22%
DEL+SURVEY GROUP																			
23	9	4	10	13	12	7	4	5	16	1	2	15	5	19	4	5	17	17	5
	38%	16%	43%	57%	54%	30%	16%	24%	70%	5%	8%	68%	24%	84%	16%	24%	76%	76%	24%
.1D	15+ YEARS ON THE JOB																		
DEL GROUP																			
15	3	12	10	5	9	3	4	7	8	0	0	11	4	12	3	6	9	13	2
	20%	80%	67%	33%	60%	20%	27%	47%	53%	0%	0%	73%	27%	80%	20%	40%	60%	87%	13%
JRVEY GROUP																			
65	27	38	39	26	37	23	5	17	42	6	7	43	14	50	15	15	50	48	17
	42%	58%	60%	40%	57%	35%	8%	26%	65%	9%	11%	66%	22%	77%	23%	23%	77%	74%	26%
DEL+SURVEY GROUP																			
18	7	12	11	7	11	6	2	6	12	1	2	12	4	14	4	5	14	14	4
	38%	62%	61%	39%	58%	32%	11%	30%	62%	8%	9%	67%	22%	78%	22%	26%	74%	76%	24%