Evaluation of the Effects of Shift work Assignment:

A Survey of Motivation in Police Officers

by

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Abstract

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The detrimental health effects of a varied shift schedule on personnel were researched extensively. In fact, the culmination of this work was substantive policy changes, especially within the law enforcement field. While these policy changes were sound in principal, the implementation of invariable shift assignments to meet organizational requirements and the subsequent impact on personnel was documented less frequently. There was little research on employee motivation as a consequence of shift assignments. Partly a consequence of the implementation of organizational mandates with little regard for employee welfare, it was this employee/organization nexus that was inherently important to personal and organizational success. This relationship between employee motivation and shift assignments needed to be researched, and was the focus of this proposal.

A Motivation Index, comprised of the various survey questions grouped together according to a specific factor, was created to allow analysis of specific effects of shift assignments on the employee's motivation. These factors were based on external-personal and internal-institutional variables. The analysis began with descriptive statistics of the data—mean, median, mode, range, minimum, maximum, standard deviation, bar chart, histogram, and significant correlations were presented. Additional analysis was conducted using principal components analysis, used to help reduce the data to outline patterns of relationships between the

survey questions. These results were used to identify which clusters of variables shared variance and were considered most important to the survey respondent.

The purpose of the analysis was twofold—to identify which factors were most meaningful to the survey respondent, and to incorporate these results into policy development in organizational behavior, specifically within the law enforcement community.

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Chapter 1-Introduction

Background

Police departments provide services to their communities all day, every day. Early police departments were earmarked for social service delivery because they were one of the few organizational institutions with operations conducted twenty-four hours a day. Police agencies allocated their resources according to numbers of calls for service and number of personnel available. Innumerable work schedules were created, designed to provide specific police resources at certain times of the day. It soon became apparent that the effects of a varied shift schedule had detrimental health effects on personnel. This resulted in extensive research. In fact, the culmination of this work was substantive policy changes within the law enforcement field. Many police agencies scheduled their personnel to a steady, constant shift. It was thought by many police administrators that these policy changes would improve morale, attitudes, and employee performance. While these policy changes were sound in principal, the implementation of invariable shift assignments to meet organizational requirements and the subsequent impact on personnel was documented less frequently. In fact, there was little research on employee motivation as a consequence of shift assignments.

It had long been apparent in policy analysis that personnel assignments were based on organizational needs, without regard to any significant employee concerns (Miner, 2002). Personnel were assigned according to organizational mandates. Within the law enforcement field, this policy included assignments that covered the 24-hour period, every day divided into some type of shift. Should there occur a need for additional personnel, such as that required to address an identified crime concern, additional shifts were added to overlap the core schedule. Many times, the personnel assigned to these varied shifts had little recourse but to follow their

assignment orders. The organizational function became paramount, at the expense of the individual employee. The organization became increasingly able to replace a recalcitrant employee with one more amenable to the mission. The consequence was an increasing disconnect between the organization and the employee—one of the hallmarks of Weberian Bureaucracy.

Statement of the Problem

Although the bureaucratic performance of the police organization resulted in an increasingly fluid service delivery, one of the consequences was increased employee dissatisfaction. In extreme cases, the result was employee apathy and poor employee morale. The consequence was the development of a civil service mentality, where just enough "effort" to complete the task was acceptable. In fact, a standard was established where slightly greater effort resulted in stellar employee performance.

The consequence of this employee paradigm was diminished employee motivation. The organization developed a work environment where results were most important, at the expense of employee satisfaction. Personnel were socialized to approach their assigned tasks as merely an assignment, to be completed as efficiently as possible. There was no type associative work ethic for the employee to embrace. Personal aggrandizement was replaced by the organization's requirements. The result usually manifested itself in substandard, mediocre performance. Poor performance resulted in mediocre service delivery, one of the more important results being increased complaints of poor police and citizen encounters. The associative work ethic developed from mediocre performance was the direct result of organizational indifference to employee morale—the consequence of framing service delivery without consideration of employee wellbeing. The result was poor employee motivation.

It was this relationship between employee motivation and work schedules that needed to be researched. If employee satisfaction could somehow be increased, service delivery would necessarily be improved. The benefits to the organization and employees would be substantive. Happier employees would approach an organizational mandate with renewed vigor and professionalism.

Purpose of the Study

The purpose of this study was to research aspects of employee motivation with regard to specific shift assignments. A survey instrument was developed that consisted of specific institutional and personal factors that affected shift assignment. Being able to understand the importance of these factors from the employee standpoint would facilitate the identification of the specific aspects deemed most important—those aspects the employees felt most strongly about. If these aspects could be satisfied, improved employee motivation would result in improved performance, on both the personal and organizational level.

The results of this research could be used by organizations to help frame policy regarding shift assignments, with consequences to employee motivation incorporated into organizational behavior. Although it was generally understood that a satisfied employee would perform better overall, somehow these concerns were sidelined during the development of the modern organizational behavior paradigm. Careful analysis of these effects of shift assignments on the employee's motivation, based on external-personal and internal-institutional variables, would reveal the importance of personal motivation in organizational performance. It is hoped these results would be integrated into policy development in organizational behavior. Due to the nexus between employees and the organization, improved employee motivation would necessarily improve organizational health.

Theoretical Framework

The guiding theory of this employee and management assignment nexus was grounded in Hertzberg's Motivation/Hygiene Theory. Motivation-hygiene theory developed from research conducted by Frederick Herzberg, Bernard Mausner, and Barbara Snyderman on job attitudes at eleven work sites in the Pittsburgh area and reported on in *The Motivation to Work* (1959). Herzberg informed us that motivation comprised two aspects that operated within the work setting.

The first aspect consisted of hygiene factors, which later were called maintenance factors, and the second aspect, motivators. The hygiene factors related to the work environment; the motivators related to the work itself. Hygiene factors consisted of those factors that provided a positive influence and, by default, needed no maintenance. Motivators were based on the medical hygiene model, and consisted of factors that had an adverse affect on personal motivation, and needed constant attention to minimize their deleterious effects on the individual. According to this theory, shift assignment was viewed as a hygiene factor that figured significantly in police officer motivation.

Hertzberg considered hygiene factors that were not treated properly as a source of dissatisfaction (1959). The greater the level of this dissatisfaction, the greater the difficulty the employee experienced difficulty in employing personal motivators successfully. Herzberg saw this as directly related to organizational performance, and ultimately indicative of the organization's solvency (1959).

According to Herzberg, an employee with little or no input into their shift assignments, as a consequence of organizational behavior based on impersonal agency needs, experienced a direct impact on their motivation. In fact, this effect correlated positively to the level of

employee performance, which influenced organizational behavior—the poorer the employee motivation, the poorer the employee performance and organizational health.

Those personnel with greater input in their shift assignment experienced increased motivation, and those personnel with little or no input in their shift appointment suffered significant declines in motivation.

Research Hypotheses

There was substantial literature on the effects of variable shift assignments and employee health. In fact, a direct result of the deleterious effects of variable shifts was the switch in many organizations to steady shift assignments (Mott et al., 1965; Greiner et al., 1981). According to this scheduling system, employees performed invariable hours, usually on the basis of seniority. It was generally understood that steady hours lessened the deleterious health effects of working varied hours, and improved employee health and morale.

What was lacking currently in the literature was the consequence of shift assignments on officer's motivations. Organizations considered one aspect of employee health, with the change to steady hours, while neglecting the impact of these personnel decisions on employee motivation. Nowhere was this more significant than in the public service sector of law enforcement. Recognition of these consequences was important for service delivery and framed the research questions: What factors were most important to the employee? What were the effects of shift assignments on police officer's motivation? Was there a causal link between shift assignment and motivation? Was this important to understanding employee performance?

It was these research questions that allowed the development and testing of the following hypotheses:

H_0: There was no effect of shift assignment on the various factors that comprised the Motivation Index.

H_1: Choice in shift assignment affected positively the internal, institutional factors of the Motivation Index.

H_2: Choice in shift assignment affected positively the external, personal factors of the Motivation Index.

H_3: Shift assignment satisfaction correlated positively with internal, institutional factors.

H_4: Shift assignment correlated negatively with external, personal factors.

Importance of the Study

The malaise that permeates civil service mentality is partly a consequence of personal motivation. In police departments, and their mandate to provide a service twenty-four hours a day, shift work necessarily became another factor that affected individual motivation. The importance of understanding the underlying causes that influence personal motivation in shift work was the impetus for this study.

Eight factors considered important to motivation were identified and incorporated into a survey. These factors consisted of institutional and personal aspects considered influential on performance. The survey was designed to determine the attitude about each specific factor and identify what was important to the police officer. Its ultimate purpose was to negate the concept of civil service malaise and implement the humanistic perspective of the organizational behavior in police departments.

A survey instrument was created that gauged respondents attitudes about the eight factors identified as important to motivation. Participants were asked to select their response to a

specific statement which was based on the 5-point Likert scale. This was designed to capture the range of attitudes the respondent display.

The health of any large police agency depended directly on employee performance. If employees were not motivated, morale and performance suffered. The consequences were mediocrity and dissatisfaction, both within the police officer and the police manager. This culminated in the delivery of a police service to the community that was substandard. This was obviously unacceptable, given the heightened security concerns in our communities.

This study intended to inform several literatures on police officer performance and police management philosophy. The study aimed to show how organizational behavior directly impacted management decisions to allocate employee resource. The consequence of these assignments affected how police officers performed their assignments.

Officers had a vested interest in participating in this study. Work schedules were always part of the bargaining process during contract negotiations. It was not often, however, that management was interested in employee opinion outside of the contract realm. The Lieutenants' Union, for example, negotiated a pilot program to study a compressed work schedule as part of collective bargaining. This was the first time in recent memory that such a pilot program was agreed to. Although the Lieutenant's Two Platoon Duty Chart Pilot Program was never implemented, a clear change in current shift practices was being considered. It was entirely possible that this signaled a paradigmatic change in organizational behavior. The organization was beginning to incorporate the motivation/performance nexus into its policies.

The consequences of this study were specific benefits to police officers and managers. First, employee considerations were important to motivation and performance. If this personal aspect was not considered in resource allocation, the individual, and the agency suffered

significantly. The study intended to highlight the importance of employee concerns in motivation to perform. Only after proper recognition would police officers be able increase motivation and perform better, with an ultimate improvement in organizational performance.

This study could also provide the framework for agencies to consider that not only met organizational mandates, but incorporated individual officer's needs. The study would provide guidance for law enforcement executives in managing their personnel assignments to provide a better police service to the community.

A study of this type would also be informative for unions in deciding what was most important to their membership during the next round of the bargaining process during contract negotiations. Too often, the collective bargaining process involved city agents and union representatives, each advocating their respective positions with little additional input. For the unions this was significant, since problems occurred when there was a lack of understanding and appreciation for the membership and its needs. It appeared that increased salary with few "givebacks" was all that the union leadership advocates during the negotiation process. A study of this kind informed the unions of other factors important to the membership that could be utilized as leverage and would be important to negotiations.

Scope of the Study

This study was conducted within the New York City Police Department, the largest urban police force in the United States. A survey was given to voluntary participants to gather information on demographics and those factors identified in the literature as important to employees. The survey was designed to be quantitative in nature.

A sample consisted of members of the New York City Police Department. Respondents were limited to members in the ranks of Police Officer, Detective, Sergeant, and Lieutenant.

There were no executives in the ranks of Captain and above surveyed for this study. Although it was entirely possible that executive leaders had different concerns than the lower ranks, the design of the Motivation Index incorporated factors shared by all involved in shift work.

The survey was constructed to capture specific demographic information—age, gender, rank, years of service, years in rank, and years in assignment. Questions were then constructed according to the various factors. Response selections were based on a five choice Likert scale of Strongly Disagree to Strongly Agree. Undecided was the middle response, separating positive from negative responses. The survey responses for each factor were ordinal, and discrete.

Each factor contained several, similar questions designed to gather information on a specific factor. In addition, several questions were created that were the opposite of previously posed questions, to serve as a check on construct validity. The result was thirty-two questions on the eight factors of the Motivation Index.

Five internal, institutional factors and the three external, personal factors were developed to codify Herzberg's Motivation/Hygiene theory. These eight factors were chosen for their significance in employee motivation and satisfaction. The questions were designed to gather responses and as checks on response validity.

Definition of Terms

Factors: Motivation was divided into several variables that combined to create an index, capturing several dimensions designed to gauge an employee's regard for his shift assignment. The impetus for the Motivation Index was based on work by various authors (Hackman and Oldham, 1975; Furnham, 1991; Lindner, 1998; Fowler, 1995) that conducted research in the fields of employee motivation, job satisfaction, and organizational behavior. Hackman and Oldham (1975) identified five dimensions of the work environment which were incorporated into

the Job Diagnostic Survey. These dimensions--skill variety, task identity, task significance, independence, and two-interactive communication—were identified as significant aspects of employee motivation. Furnham (1991) created the Corporate Climate Questionnaire to gauge the employee's perception of the work environment. The survey was used by managers to improve the work environment. Lindner (1998) developed a ten factor index to assess employee motivation. This index—interesting, wages, appreciation, security, conditions, promotions, inclusion, loyalty, discipline, sympathy—was ordered in relation to significance for the employee. Fowler (1995) identified communication and decision making as important to respondents.

This research was analyzed within the context of Herzberg's Hygiene/Motivation Theory. The specific factors that comprised the Motivation Index were identified as significant to law enforcement. The internal, institutional factors were identified as hygiene factors and highlighted the work environment. According to the theory, their presence did not necessarily motivate people. It was their absence that created dissatisfaction in the employee. The external, personal factors, on the other hand, were the motivators. These factors were important to the employee to perform better within the work environment.

The survey instrument for this research consisted of internal, institutional factors—the shift assignment (Questions 1-4), the significance of the assignment (Questions 5-8) , the autonomy of the assignment (Questions 9-12), the independence of the assignment (Questions 13-16), and the level of feedback (Questions 17-20), and external, personal factors--family concerns(Questions 22-24), income requirements (Questions 25-28), and personal lifestyle issues (Questions 29-32).

It was the interconnectedness of these internal and external factors, and their influence on employee motivation that was important to understand. Only when there was a proper balance maintained between organizational requirements and employee concerns, would an employee be motivated. This balance, however, reflected differing, competing agendas that were not balanced easily. This was due to the employee prioritizing the two dimensions, internal and external, according to personal necessities.

The institutional factors were the internal organizational factors that reflected the perceived organizational mandate. The employee rationalized the assignment as related to its importance within the organization. Menial assignments were relegated to the lower levels of the organizational hierarchy and had a deleterious impact on their significance to the employee. In contrast, those assignments considered instrumental to the organizational paradigm were of considerably greater value to the employee.

Along with the perceived importance of the assignment, the level of autonomy the employee achieved in task performance was also an important consideration. Most employees appreciated the trust that was associated with autonomy. The level of trust in employee ability was correlated negatively to the amount of supervision the employee received. Here, the employee was given a specific task set and then was allowed to perform without direct supervision. The employee who experienced a greater level of trust possessed greater feelings of satisfaction and motivation.

Another important aspect associated with internal organizational factors was the level of independence the assignment creates. This referred to how much the function of the assignment was dependent on other aspects of the organization. An example was the administrator of a subunit who relied on the overhead command for his work assignment. Here, the administrator's

performance was completely dependent on a higher level of bureaucracy. While this was a factor inherent in hierarchical institutions, it was important to understand this interplay of employee and hierarchical control.

The final aspect of the internal dimension concerned the amount of feedback that was allowed in the assignment. According to current theory, communications could be up, down, or sideways. It was, however, the level of feedback present in the communication process that indicated how much circular communication existed within the organization. In hierarchical organizations where communications were primarily downward—upper levels of the hierarchy directing lower levels—there existed, to a greater extent, poor employee motivation. In fact, the level of feedback allowed within an organization was positively correlated to employee motivation. Employees were motivated by the process of input into their daily assignments.

The external factors were related specifically to the employee outside the organization. Here, employee family concerns were a significant factor for many employees. Today, many households required two incomes to meet financial obligations. In households with children, this meant both parents worked. Reconciling personal work schedules with children was always challenging. As a consequence, many employees required specific schedules to meet their family obligations. Those employees with little input into their schedule requirements faced the dilemma of balancing the family with their work. What usually occurred was the employee struggled to reconcile work with family, which created a reduction in the willingness to work.

A consequence of this was the creation of organizational ceilings experienced by many employees. These employees were faced with choices that pitted careers against their families. They limited themselves to assignment choices that helped to lessen the conflict created by work and family, sometimes at the expense of career advancement. Even though only tacitly implied,

this aspect crossed both genders and lifestyles. Most employees experienced some form of this dilemma which caused great stress for the employee. The results were usually specific choices that affected employee motivation directly.

Another factor that was important to consider in employee motivation was income requirements. The reason employees required additional income was myriad and complex. Within the organization, the employee usually met these requirements by working overtime or collecting night shift differential. This implied that the employee was allowed access to the extra hours and the evening and night shift. It was this access to the overtime and shift differential that was directly related to the level of motivation within the employee. Those employees that could meet their financial expectations experienced higher levels of motivation.

The final aspect of the external dimension concerned lifestyle issues. This factor consisted primarily of the way employees lived their lives—their waking and sleeping hours, or circadian rhythm. Personal preferences for specific hours ranged from early morning to late evening. These preferences depended on the specific biological rhythm the individual possessed. The closer the organizational schedule requirements matched the employee's personal needs, the greater their motivation.

It was the sum total of all of these factors, both internal and external, that comprised the Motivation Index. The index number that was created from the dimensional factors was based on a motivation continuum based on the 5-point Likert scale. The higher the score, the greater the employee's motivation would be. This score also reflected how well the shift assignment met the institutional and personal needs of the employee. It was these higher scores that indicated a motivated employee, which was of benefit to all concerned—the employee and the organization.

Since this study consisted of a principal component analysis, which identified those factors considered most important to the survey respondent, identification of the independent and dependent variable was not required. They were, however, identified within the context of the study design, to provide context for the research. It would be hoped, future research would build on these variables to provide support for the Index.

Independent Variable: The independent variable in this study consisted of the agency's organizational design for resource allocation. In the NYPD, resource allocation comprised a careful analysis of neighborhood population density, crime rates, and incident response times. It is generally understood within criminology that areas high in population density experience higher levels of disorder, turmoil, and crime. As a consequence, those precincts with high crime rates required increased responses by the police department. Using one of the traditional factors for indicating police performance, response time, or the time between the call to the 911 emergency telephone system and the arrival of the police, was used to determine the required officer allotment for the area. As long as the response times mirrored closely the response times for other precincts, the personnel allotment was considered appropriate.

Although not required for the analysis in this study, the institutional factors that comprised significance, autonomy, and independence of the assignment reflected the agency allocation model for the various shifts. It was hoped that survey responses indicated a level of disagreement indicative of a possible disconnect between factors the employee could and could not control. More input by the employee would increase motivation.

Agencies with greater commitment to the organizational function allocated their resources without regard to personnel concerns. Since law enforcement was one of the only public service agencies that operated all day, every day, shift assignments were implemented to

structure a uniform police presence within the community. It was this shift assignment (Questions 1-4), that was the independent variable and was operationalized according to whether there was any choice in the assignment.

Dependent Variable: The dependent variable in this study consisted of the police officer's motivation. Whether or not a police officer was motivated to perform acceptably depended on what shift they were assigned. A police officer who was comfortable with his assignment was motivated to work. The police officer, who was not satisfied with his assignment, lost motivation, and would perform, at times, to less than acceptable standards.

Summary

There was little research on employee motivation as a consequence of shift assignments. Partly a consequence of the implementation of organizational mandates with little regard for employee welfare, it was this employee/organization nexus that was inherently important to personal and organizational success. This relationship between employee motivation and shift assignments needed to be researched, and was the focus of this proposal.

An eight-factor index, called the Motivation Index, was created to allow analysis of specific effects of shift assignments on the employee's motivation. These factors were based on external-personal and internal-institutional variables. Descriptive and inferential analyses were conducted to identify which factors were most important for the employee. The purpose was to facilitate integration into policy development in organizational behavior.

Chapter 2-Review of Literature

Introduction

The motivations to become a police officer were myriad. They ranged from the ideological (provide a public service to the community), to the practical (employee benefits) along a continuum of motivation. Additionally, this continuum did not remain static over the officer's career. One could see that these motivations were dynamic, reflective of the officer's current life circumstances. What may have motivated the officer to pursue a career in law enforcement may have been entirely different from what drove the officer to go to work every day.

The ideological motivators that drove individuals to pursue a career in law enforcement were characterized by providing a service to the community. The notion of the crime fighter bringing criminals to justice identified the police officer as protector of the community. With the concomitant authority as defined by law, the police officer possessed a tremendous amount of authority and power to compel individuals to do their bidding, while actively engaged with the criminal element in their service to the community. While certainly attractive, the practical aspect of becoming a police officer was equally important.

A successful career in government civil service, such as law enforcement, provided much stability to the employee. After an initial probationary period, the successful employee could look forward to long term job security and advancement. In addition, the employee obtained benefits, both present and future, as part of their employment.

This continuum of motivation was easily incorporated into the quasi-military organization that characterizes police agencies. While the police agency reflected the military model with its defined rules, policies, and rank hierarchy, police officers on the beat possessed a

certain amount of independence. These officers interacted with their supervisors at the beginning of their shift and then performed their police functions with limited oversight. It was generally understood that their training and conformity to the quasi-military model, framed their individual conduct according to department policy. When off duty, however, and unlike the military model, these officers exercised personal independence and autonomy. Only when conduct conflicted with department rules, or policy, was there managerial intervention.

Because of the coercive nature of policing, this quasi-military structure was the best way for the department to control its employees. This mirrored military doctrine, except that police departments did not control their personnel all day, every day. In private sector employment, defined primarily by profits, the business model controlled the organization. Decisions were made reflective of best, most efficient practices.

Motivation in the workplace incorporated a complex interaction between the individual, the organization, management, and end state, or some type of product or service. These interactions, however, ultimately depended on employee performance, within the larger, organizational paradigm. The employee developed the impetus to work accordingly, based on rules and regulations, within the context of personal empowerment. It was this empowerment that was referred to as motivation. The individual framed their behavior according to what was accepted within the organization.

Development in the field of employee motivation was considered on two levels. This was a consequence of the need to understand the microcosm of employee motivation research within the larger field of organizational behavior. One would not be able to completely understand employee motivation without consideration of its development within the larger context and development of organizational behavior.

Applied Research

Research on the health consequences of shift work was documented extensively (Alexander & Walker, 1996; Anshel, 2000; Brown & Campbell, 1994; Ivanhoff, 1994; Swanson, Gaines, & Gore, 1991; Hart et al., 1994, Territo & Vetter, 1981; Violanti, 1983, 1984; Violanti & Aaron, 1993). Research in this area identified unwanted stressors that led to personal health issues, both physical and mental (Violanti, 1984). The physical factors consisted of a loss of energy, caused by constant fatigue, increased susceptibility to common illnesses, and increased gastro-intestinal complaints. The mental factors included such conditions as increased forgetfulness, which was a direct consequence of sleep deprivation, increased moodiness and irritability, and increased emotional sensitivity.

The impact of diminished health resulted in decreased performance, due to poor motivation (Cochrane, 2001). Employees experiencing the stresses created by sleep deprivation ended up with diminished cognitive ability and motor skills. Within law enforcement, the potential consequences were dire.

Naturally, this diminished performance transcended the workplace and affected the employee at home. The employee was caught in a never ending cycle of attempting to reconcile diminished performance and motivation with the demands of policing, while attempting to strive for some semblance of normalcy. It became apparent that this caused great stress in the individual that would have to be addressed.

Although there was much literature on the health consequences of shift work, there were to date, few studies of motivation in law enforcement. Most studies in the law enforcement literature were geared towards stress--organizational stressors (Stinchcomb, 2004); gender differences as stressors (Morash et al., 2006); and police occupational stressors (Brown &

Campbell, 1995). In law enforcement, research was geared towards job satisfaction—agency environment (Zhao et al., 1999); stress and organizational commitment (Jaramillo et al., 2005); family and lifestyle affects (Whetstone, 2001); promotional policy and organizational communication (Brunetto and Farr-Wharton, 2003); and training (Currie and Dollery, 2006). In the area of motivation, (Fowler (1995) surveyed corrections officers at a local jail. Moreira et al. (2002) studied physical educators at work. Beyth-Marom et al. (2006) studied tutors at a university.

These studies attempted to identify different aspects that drove motivation. The research identified motivation as a continuum, from personal goals to organizational influence. Whether organizational or personal, the researchers used the various theories developed over the course of motivation research in order to define behavior within the context of the worker within the organization. These theories also reflected the continuum from organizational mandates to personal goals. The theories that identified more closely with individual, personal motivation became important in the humanist perspective. For law enforcement, this was increasingly important.

The product of policing was human interaction and service. The principles of scientific management would not reconcile with the policing paradigm. Police officers provided human services to the community, and studying them required the humanist tradition. One of the major contributions to this field was Kaufman's (1960) study of forest rangers.

Kaufman (1960) studied a sample of district rangers within the United States Forest Service. He showed how the administrative management of policy on a national level was implemented at the local level, within a diverse community. This example of public administration highlighted how policy diffused throughout the agency into a coherent,

administrative function at the level of the individual forest district. Although the motivations for rangers in this study to implement and conform to policy were based on a macro-level (overall policy implementation) analysis, the study was important for its discussion of middle-level agency within a large bureaucracy. As a consequence, it informed the public administration literature, which law enforcement agencies were a part of. One still had, however, to understand better why police agencies functioned the way they did. More research was needed to understand the nexus between organizational behavior, shift work, and employee motivation.

Organizational Behavior

Based on the principles of organizational behavior, police organizations needed to accommodate influences from the community they served with those factors that regulated the organization in achieving what Greiner et al. (1981) identified as service-oriented delivery. According to this model, the agency developed a work schedule that provided this service delivery. Personnel resources were allocated according to policies designed to maximize service potential with a finite number of resources. The implications of cost and benefit analysis, within economics, were incorporated to provide a specific product—the delivery of police services. Police managers needed to be cognizant of the reasons organizations performed the way they did, and how this affected policy development. An added feature was growing recognition that personnel development would figure significantly in organizational behavior and policy development.

Within the field of organizational behavior, there were several major paradigms in the literature about the organization and its function (Miner, 2002). The first, the traditional systems approach, considered organizational operations paramount and was reflected in the work of F. W. Taylor. As a consequence to criticisms of traditional theory, the humanist approach became

the way to view organizational behavior (Bennis, 1966). Work in this field was based partly on the research of Mayo, Maslow, Herzberg, and Adams. The final approach, considered a combination of the first two, was referred to as the bridging approach to organizational behavior. William Ouchi's Theory Z (1981) was a relevant example of the importance of employee input within the organization, while not dismissing the importance of the organization, so highly regarded in the traditional approach. None of these theories, however, would have been possible without a general recognition of the importance of production and the worker (Coffer & Appley, 1964).

The reasons for work in our modern society can be qualified on a continuum from ideological on one end to practical on the other. The ideological reasons consist of, to name a few, fulfillment, recognition, esteem, belonging, satisfaction, and commitment, to remuneration, benefits, control, leadership, and development. While not inclusive, these qualities highlight some of the significant factors people use as their rationale to work. This current philosophy about work, however, has not always been in place. Throughout history, different motivations provided the impetus to work.

These various motivational attitudes towards work were defined according to several distinct periods in history--the Greek and Roman empires, the Middle Ages, the Reformation, and the Industrial Revolution. These periods were considered milestones in history that caused a paradigmatic shift in the motivations to work. During the Greek and Roman empires, work was disdained and relegated to tradesmen and slaves. The upper levels of society limited themselves to the military, law, or politics, seeing trades as beneath them. During the Middle Ages, labor became spiritualized, a holy and sanctified practice. During the Reformation, labor was codified into the protestant work ethic. Work was acceptable to all, signified by individual achievement.

During the Industrial Revolution, the religious undertones that defined work were replaced by the practical approaches. New technology was developed and incorporated into production. Profits and efficiency became the driving forces that qualified work.

While manual labor was disdained during the Greek and Roman Empires, the Middle Ages were recognized by the contributions of the Order of Cistercians in farming, and the Industrial Revolution for production and labor. During this time, the Order of Cistercians (1098) followed Benedictine rule closely, and advocated a lifestyle of simplicity and poverty. The emphasis on farming became the dominant manner for improved life during the Middle Ages. Since their farming industry became so large, the Order used peasant labor with their vast agricultural holdings. These local peasants were indoctrinated into a lesser status within the Order to assist daily farming operations. The emphasis was on the holy nature, and sanctity of manual labor.

For the peasants, the impetus to work hard was rewarded by the spiritual power of the Order. For the ignorant, this became the panacea for an eternal reward. This sanctity of manual labor would be idealized and utilized until the Sixteenth Century. Then, there occurred the Reformation and the concept of the protestant work ethic.

During this period, Luther and Calvin influenced notions about work, which reflected the reformation of current Christian thought (Hill, 1996). Work was advocated as fit for all, approved equally by God. No longer was there a hierarchy of acceptable work, as in the Middle Ages, but as an inherent part of daily life, as defined by a reformed religious ideology.

After the Reformation, there began the modern concept of the work ethic—the idea that work was desirable and noble, and individual achievement was important. This was in direct

contrast to work philosophy which occurred during the Greco and Roman Empires, when work was considered menial and undesirable, the function of slaves and the lesser classes.

During the time of the Industrial Revolution, organizational behavior came to the forefront. As early as 1832, Charles Babbage discussed the division of labor and its effect on production (Vroom, 1964). He posed the idea that specialization required only that limited amount of specific ability to complete the required task—a notion that ultimately drove organizational improvements in productivity.

During this time, however, little research was actually concerned with the worker operating within the organizational environment (Taylor, 1998). Of paramount concern to businessmen was the coordination of planning operations, production activities, all the while minimizing expenses such as wages and material costs. This was a time of affluence for the owners of production, at the expense of the working class.

One researcher, Robert Owen, however, recognized the importance of employee well-being within the workplace (Miner, 2002). His studies on workplace conditions and employee well-being were considered revolutionary within organizational behavior and to his credit, the fatigue and work environment were recognized as important factors that affected the workforce. His work was considered the first in the field of employee performance (Miner, 2002). Although this work was innovative, most conventional thinking concerned improvements in production and streamlining the production process to increase efficiency. Nowhere was this more evident than in the contributions of Frederick W. Taylor and his work on Scientific Management.

There occurred within the workplace an increasing awareness of the complex interaction between the organization and the employee. In order to streamline the production process, driven by the desire for increased profitability, F.W. Taylor posited the principles of scientific

management. Previously, the foreman of the workplace was given sole responsibility for producing a specific product for management. Production was driven by ad hoc methods, individually tailored for each workplace.

Taylor applied scientific methodology to understand the various aspects of production and to find the best most efficient way to conduct production (1998). While he was an employee at the Midvale Steel Company in Philadelphia, he gained great insight into the nexus between employee motivation and production. He believed that workers were influenced by their own self-interest, engaging in a process called Natural Soldiering—a natural inclination for employees not to push themselves—and, Systematic Soldiering—a manufactured inclination for employees not to produce so much to see their quotas raised, or others' employment threatened (1998). What he proposed was a new philosophy of management, called Scientific Management.

This philosophy was based on the idea of finding the most efficient and quick method of task completion, with constant enforcement of the proposed standards. Science was used to define tasks, and personnel were specially selected and trained to accomplish the task. Workers and management shared in a cooperative philosophy that was to permeate the workplace. In addition, management and employees tasks were split equally, replacing the old system of worker responsibility for many operations, with management being rewarded with little or no effort.

In Principles of Scientific Management (1909) Taylor outlined his ideas of a science of the production process. The former, ad hoc processes were replaced by a developed, codified set of precepts for the workplace. Employee training and development, along with cooperation with

management were advocated as the way to streamline the production process, and create a more equitable environment for the employee.

Taylor was considered an important contributor to the organizational behavior and employee motivation nexus based on his application of scientific methodology to the work environment (Miner, 2002). His belief in the rational person, able to make financial choices based on the level of monetary reward, remained problematic, since there was more to employee satisfaction than salary. Taylor held certain factors within the work environment to be constant, which current literature found not to be the case. Organizational factors such as variable shifts, output, and other demands were an increasingly important part of worker motivation. In addition, personal factors such as family, income, and lifestyle were also important to motivation. For these reasons, Taylor was strongly criticized (Bennis, 1966). The notion that the worker was relegated to the status of the worker robot, motivated only by salary, proved unpalatable. In addition, there occurred occasions where managers manipulated the principles to their own selfish ends, at the expense of the workers. Still, much of Taylor's philosophy was incorporated into modern day organizations, such as the clear delineation of authority, responsibility, separation of planning and operations, task specialization, management by exception, and worker incentives frame much of organizational theory design.

The next significant contributor to the traditional model of organization was Max Weber and his codification of the Bureaucratic Model (Miner, 2002). This model consisted of several characteristics designed, as in Taylor's Scientific Management, to streamline the organizational process. The ideal bureaucracy followed the principles of hierarchy and was organized according to a division of labor. Employees were selected for their qualifications, and occupied

levels of the hierarchy where the entitlements of the position were according to the office, rather than the employee.

Weber considered the ideal bureaucracy to be the most efficient form of organization (Miner, 2002). He neglected to consider, however, how this ideal form affected the worker. Within this paradigm, the employee was a small part of the impersonal organizational structure. The consequence of this was employee boredom, and lack of motivation. There were, however, employees that subscribed to this ideal, and found security in the routine nature of their assignment. These personnel were less than ambitious, and fit well into the bureaucracy, since there was little regard for motivation, except as important to efficient operation.

The result was a modern interpretation of bureaucracy that was a slow, ponderous, inefficient organization, which many agencies, including law enforcement were representative of. Personal motivation was inconsequential to organizational operations. There remained an emphasis on conformity, without regard to employee development.

Bennis (1966) added additional criticisms of the bureaucratic model. There was no regard for the important influence of the informal organization, which comprised the peer group network. Additional aspects, such as no adequate means for dealing with unknown factors that constantly arise within any modern organization, failures in the ability to communicate effectively due to the levels of hierarchy, and failure to implement the full potential of personal motivation within the system, all served to create a profoundly impersonal organization.

Thompson (1967) and Bennis (1970) criticized Weber's model of bureaucracy as ignorant of the importance of the individual within the organization. Bennis informed us that the nature of bureaucracy hindered personal development. The individual was forced into conformity within the organization, limiting communication. In fact, the nature of bureaucracy

did not reconcile the inherent conflict between formal and informal culture, something current organizational behavior recognizes as important for overall system health. If the individual was not considered within the context as an operator within the larger organizational system, the system was doomed to a mechanical process that ignored individual insight and performance.

The result was an organization with a narrow focus, unable to incorporate, or respond to changes within the environment. Traditionally, police departments reflected this narrow vision by blaming crime trends on social factors and not on organizational behavior. Ultimately, the police were the "thin blue line" between order and chaos, and crime increases only heightened this difference. The consequence was a groupthink that nothing could change the current crime trends—the police were doing the best they could with the resources they had available.

This rationale was contrary to current organizational theory. Current thought highlighted the importance of both the macro- and micro-perspective in organizations. The organization needed to respond to outside, environmental influences and also recognize and incorporate the input of individual actors within the organization to facilitate the organizational mandate. In this way, human resources were utilized fully, and the organization became receptive to outside input and influence, something contrary to the bureaucratic ideal.

Although there was no shortage of criticisms of these two paradigms, they were recognized as fundamental constructs in the traditional models of organizational design (Miner, 2002). Their concepts formed the foundations of modern organizations. Their effects would have to be considered in any consideration of employee motivation within the workplace. In fact, it was this overarching influence that created such lackluster employee performance, something the next philosophical construct attempted to reconcile.

As a reaction to traditional theory, which was seen as not having reconciled employee needs with employee behavior, there occurred greater focus on the humanistic aspect of organizational behavior. Studies on motivation conducted under the supervision of Elton Mayo, in 1927, at the Western Electric's Hawthorne Plant near Chicago, highlighted the fact that organizations were social systems. This notion was contrary to the ideas posited by F. W. Taylor that organizations followed a rational and logical paradigm. Motivation, especially, was found to be a construct that operated parallel to the systematic flow of organizational behavior (Mayo, 2003). It was discovered that employees had needs and goals, not always economically motivated. At times, these were contrary to the performance and output measures created by the organization.

The Mayo studies, which lasted almost ten years, tended to focus on interactions within the group rather than individual motivation. The findings that workers conformed to group pressure, and developed a kind of groupthink, outside of the formal organization, were important in defining employee motivation. It was the responsibility of management to play a positive role in minimizing any conflict between the informal employee network and the formal organizational mandates.

The consequence of Mayo's work was a trend to replace the traditional approach to organizational behavior, with research into the more humanistic aspect (Miner, 2002). This created an atmosphere of increased research into worker motivation, leadership, and the organization as a behavioral system, at the expense of continued work on traditional theories. Apparently, the critiques of traditional management theory were such that humanism became the focus within the field. What researchers failed to recognize was the importance of the nexus

between the organization and its workers. One could not exist without the other, and focusing almost exclusively on employee issues, became a disservice to the organizational behavior field.

Nevertheless, work began on individual motivation, with the contributions of Maslow, Herzberg, Vroom, Adams, and Skinner recognized as contributing major developments in the field. Although their work was not considered to be part of organizational behavior, their micro-perspective approach to individual needs was an important part of the focus this new research was taking (Miner, 2002).

Abraham Maslow, a psychologist, developed a need hierarchy to help explain individual motivation (1943). These consisted of five sequential needs: physiological, safety, belongingness, esteem, and self-actualization. Only when an individual satisfied almost completely a lesser need, would they be able to advance to the next higher level of need (Maslow, 1943). Individuals were motivated to advance from one need to the next along this continuum, ever striving for the satisfaction of completing whatever level they were on and advancing upwards.

Maslow's hierarchy applied readily to organizational behavior because it posited the individual motivations to achieve higher levels, regardless of the environment. Within the organizational setting, all of the needs applied to the worker and their attempts at achievement. The lower level needs tended to be satisfied with salary. The middle level needs were satisfied with peer group affiliation. The highest levels were achieved through advancement within the organization, achieving the highest levels of management. This new approach culminated in an individual's self-actualization, the fulfillment of self.

Due to the bureaucratic and paramilitary nature of the NYPD, motivation to excel within the agency was primarily based on promotion to the higher ranks. This paralleled Maslow's self-

actualization component, which was the highest step in a hierarchy of needs. Personnel were motivated to achieve promotion as the fulfillment of personal achievement. When one attained the higher ranks, one increased personal authority and autonomy, something many assigned personnel desired. It was the one single way to improve individual status within the Department. Many officers, however, never achieved this elevation in status. Instead, they relied on factors they were able to control, such as the external, personal factors of the Motivation Index, and substituted promotion for this control aspect.

The next theory development on motivation occurred with research done by Frederick Herzberg et al., on job attitudes at eleven work sites in Pittsburgh, in 1959. What the researchers saw within the work setting was operationalized into two sets of variables: 1. hygiene factors, which later became to be known as maintenance factors, and 2. motivators. (Herzberg, Mausner, and Snyderman, 1959).

The hygiene factors related to the work environment, with the motivators relating to the work itself. The researchers identified the hygiene factors as key to employee motivation. If these factors were not maintained properly, employee motivation suffered, leading to the ultimate decline in the organization. With the deterioration in hygiene factors, the more difficult it became to employ the second factor, motivators, akin to Maslow's esteem and self-actualization needs (Herzberg, Mausner, & Snyderman, 1959).

The next major contributor to motivation was supplied by Vroom (1964) and his thoughts about expectancy. This theory was based on the concept that employees are motivated to work to achieve rewards. This was based on the idea of certain expectations, if achieved, result in feelings of satisfaction. These outcomes, referred to as valences, were either positive, when having the outcome was desired over not having it, and negative, when not having the outcome

was preferred (Vroom, 1964). When the individual expected a specific outcome, Vroom suggested this created a force that acted upon the individual, motivating them to achieve a specific outcome. It was this combination of valences and forces that Vroom saw as the major motivators that drove individual conduct.

Adams' (1965) discussion of equity was the next major construct in the development of motivation. Within this theory, employees strived to achieve equity with their peers based on comparison of inputs and outputs (Adams, 1965). This notion implied that an inequitable condition existed. This perceived inequity resulted in employee dissatisfaction, because it created an imbalance within the workforce. The employee, who was dissatisfied, was subsequently motivated to restore the balance between the individual and the workgroup setting.

This process of balancing, however, was directly proportional to the level of tension that resulted from the inequity (Adams, 1965). When possible, the individual restored balance through changing either inputs, or outputs, or when unable to affect any results, resorted to extreme measures, such as transfers, taking leave, or any other type of separation from the workgroup. There was also the possibility that the individual attempted to change cognitively, the perceptions of imbalance in the workgroup. Here, an individual changed his standard of comparison to adjust the level of perceived inequity and concomitant tension.

The final aspect of organizational behavior consisted of research done by William Ouchi in Japan, in 1981. He observed the Japanese production process and developed Theory Z as reconciling the concerns of both traditional organizational behavior and the human relations approach to organizational behavior. This theory placed an emphasis on the employee as stakeholder within the organization (Ouchi, 1981). There was a vision shared by both management and the employees within the organization that created unity and pride within the

specific workforce. There was also emphasis on generalization so that all employees became familiar with all tasks within the organization. This philosophy allowed management greater confidence in the employee to perform assigned tasks (Ouchi, 1981). In this organization, employee motivation transcended personal concerns, towards working for the common benefit of all members of the organization.

Even though this evolution of theories within organizational behavior highlighted the importance of the employee within the workplace, the end result, especially within law enforcement agencies, was to retain the bureaucratic forms of organization—or the status quo (Territo & Vetter, 1981). This was partly due to the fact that paramilitary agencies modeled themselves more readily to the Weberian style of organization, with its emphasis on hierarchy and division of labor. The consequence was a regimented organization, impervious to new developments in organizational philosophy. This was especially the case with the mandate to provide a constant service delivery, based on an eight hour work day.

The evolution of the eight hour work day was the consequence of labor advocacy, beginning during the Industrial Revolution, and incorporated in America with New Deal legislation (Chase, 2003). The 1938 passage of the Fair Labor Standards Act (29 U.S. Code Chapter 8) resulted in the codification of the average American work week. The new regulations required a workday that was eight hours a day, and for only five days a week. The other two days were time off for the employee.

Due to the nature of policing to provide service twenty-four hours a day, seven days a week, the normal work schedule did not lend itself readily to law enforcement. Relieving shifts could leave, with oncoming shifts replacing them, without some type of shift overlap. This was to allow the outgoing shift to brief the oncoming personnel on relevant conditions. Within the

NYPD, this resulted in thirty-five extra minutes added to every work day, accrued as additional time off.

As with other unions consisting of hourly wage earners, the shift schedules performed in the NYPD were parts of the collective bargaining process with the unions during the contract negotiation process. During the 1960s and 1970s, patrol officers were assigned to twenty individual squads, and worked around the clock, in reverse order. An officer worked one week of the 4 x 12 shift, then one week of the 8 x 4 shift, followed by one week of the 12 x 8 shift. Beginning in 1979, patrol officers were assigned to nine squads, and rotated according to a cycle of one week of 8 x 4, one week of 4 x 12, one week of 8 x 4, two weeks of 4 x 12, and one week of 12 x 8. Beginning with NYPD Commissioner Lee P. Brown's tenure from 1990 to 1992, patrol officers began to work a steady shift, either the 8 x 4, 4 x 12, or 12 x 8 shifts. This was the most recent schedule police officers work, with no indication of a change occurring.

Shift work was the result of providing a service 24 hours a day, every day of the week (Brown & Campbell, 1994; Cochrane, 2001; Violanti, 1984; Mott et al., 1965). The public safety service provided by law enforcement was an example of a critical service required at all times of the day and night. The consequence was to have personnel scheduled to work their assigned shifts during all hours of the day and night.

This type of work schedule was divided into a variety of shift assignments, either steady or rotating. Steady hours consisted of any block of hours during a 24 hour period. They remained, however, unchanged, for the employee. Rotating shifts, on the other hand, varied according to some sort of sequential schedule. The main idea for this type of work schedule was to share the less desirable working hours, usually from midnight to eight in the morning (Rosa & Colligan, 1997).

In agencies that operated a patrol schedule according to rotating shifts, all members shared the burden equally of having to work the most undesirable hours. Of course, not all perceptions of undesirable hours were similar. Most personnel did not readily enjoy having to work the late evening to early morning hours. They rationalized it as part of the work environment, something that was shared equally.

In contrast to the rotating shift assignment was the steady shift. According to this design, personnel were assigned to work regular hours, but usually rotated their days off with the other members assigned to the same hours. This type of schedule was considered a positive response to the deleterious effects of rotating shifts. Different issues, however, became important (Domach, 2000).

Within most police agencies, scheduling of regular shift assignments was based on seniority. It was also used as way to enforce discipline. Personnel were assigned to a certain shift, usually the midnight to morning shift, as a way to punish them and to enforce discipline. The resultant motivation factor was not necessarily different from that experienced by the junior personnel, who tended to be the most susceptible to being assigned to a shift they would not ordinarily request. The results, in either case, were employees assigned to a shift and had trouble reconciling their shift with their personal concerns. This caused increased stress, both physical and emotional, on the employee.

These conditions occurred within the employee because of a disruption in the individual's natural circadian rhythm (Cochrane, 2001). The employee was being forced to disrupt the normal sleep process by having to be awake during sleep periods and forced to sleep during the normal waking period. For most people, this involved sleeping between midnight and five a.m. When this couldn't occur, the individual experienced increased stress, exacerbating a potentially

deleterious condition. In order to prevent this, the relationship between shift work and officer motivation needed further study in order to develop effective policy that ensured proper service delivery by motivated employees.

Chapter 3-Research Methods

Research Design

This project began with the understanding that the research would have unique access to the law enforcement community. The question of whether or not to incorporate a qualitative or quantitative design was defined by specific constraints that curtailed study design possibilities. The primary concern was the amount of access to the population. It was unclear how many police officers and how much time would be available for the research. This constraint limited the study to be quantitative in nature.

The limited access to the police officer population precluded any qualitative design. Although an open-ended interview design would have resulted in much information, in great detail, possibly identifying factors not otherwise considered, this design was not possible due to the organizational constraint that limited access to the police officer population. A finite amount of time and access was offered to complete the study.

With the decision to create a quantitative design determined by organizational constraints, a survey design was chosen to collect the data, since it had the distinct benefit of descriptive and analytical statistics, with greater consistency due to its standardization. (Groves, et al., 2004; Bernard, 2000; Maxfield & Babbie, 2006). The problem, however, was to create an instrument, defined by Herzberg's theory, that captured finite attitudes on a continuum of feelings towards various underlying factors. An instrument was created that obtained Likert-type responses on the factors determined to be important to the employee.

The survey was attached to an Informed Consent document that outlined the general aspects of the research and provided contact information for any respondents with additional

questions. In addition, the actual survey instrument was preceded by an explanation of the survey instrument and specific instructions on how to complete the survey.

The actual survey was based on previous research and incorporated factors considered important to the employee. It was not, however, the panacea for employee motivational research and could only be considered exploratory. This limited analysis to descriptive statistics and principal component analysis to reduce the numerous questions, in order of importance, to identify those factors considered most important to the survey respondent. The survey was designed to take approximately ten minutes to complete.

Participants

The sampling frame for this study was the police officers of the New York City Police Department. These participants were selected according to Department policy that structured semi-annual attendance at firearms requalification. At the patrol borough level, there was a training coordinator that allocated personnel to attend firearms qualification according to a prescribed attendance schedule. This schedule was based on personnel allocation throughout the various Department subunits, and was designed to prevent a dearth in personnel resources in any part of the agency. It was through this personnel attendance scheduling that by default, a systematic and random design was created. There was variability in attendance, which ensured a sample that reflected many parts of the Department.

Randomness in this study was created by the personnel attendance scheduling designed by the Training Bureau. Allotments to attend firearms requalification were based on a percentage of all Department bureaus. This process was designed to ensure attendees came from all bureaus in the agency and prevented a dearth in personnel in any specific unit, for any specific workday. The Firearms and Tactics Section possessed a daily allocation list that all

attendees were checked against during training registration at the beginning of the day. The list comprised all bureaus of the Department and how many personnel from each bureau were allocated to attend. The training coordinators were constrained to assign personnel according to this list. If there were too many personnel assigned to training from a specific bureau, the additional personnel were informed they were to reschedule their training and were returned to their units. A follow-up call to the training coordinator ensured these occurrences were minimized.

The sample design for this study consisted of a random sample of those personnel that attended semi-annual firearms qualification at the Outdoor Range. In order to be selected for the survey, the police officer needed to be considered full duty status, with no restrictions. While this limit was a significant issue, it posed few selection problems, since there were enough eligible officers to be able to collect a reliable sample. The sample consisted of those officers who voluntarily partook in the survey, which was conducted before any training began.

At the beginning of the training day, conducted by the Firearms and Tactics Section, there was a period of time where personnel were offered the opportunity to participate in the survey voluntarily. This occurred before the mandatory firearm use and safety lecture that begins all training. Those wishing to cooperate were issued an Informed Consent document, along with the survey. The participants were given verbal and written instructions on the purpose of the survey and were allowed a period of time to ask any questions and complete the survey.

The data was collected at the New York City Police Department Outdoor Range, located at Rodman's Neck in the Bronx, on six different days (October 9, 11, 12, 17, 18, 19, 2007). 580 surveys were collected form voluntary participants. The surveys were verified and coded for

input into a Microsoft Excel spreadsheet for analysis. 12 surveys were found to be void for lack of participation—survey respondents failed to provide enough responses to the 6 demographic variables and 32 questions to be considered for inclusion in the data set. The final data set consisted of 568 surveys.

Instrumentation

Survey methodology was used to collect the data for this research. The survey was an anonymous, self-administered questionnaire, completed voluntarily. The questionnaire consisted of two parts: a demographic portion, designed to capture participant information, and a section on gauging the level of work motivation within a specific shift assignment.

Part I consisted of questions about the participant's status within the Department. This part, identified as the demographic portion of the survey, consisted of the respondent's age, gender, time in service (years), rank (civil service), time in current rank, and time in current assignment. The gender and rank variables were coded as categorical variables—male or female, and police officer, detective, sergeant, lieutenant, and captain. The remaining variables were coded according to a three year continuum, designed to capture all possible variation.

The second section consisted of a series of statements designed to gauge the level of motivation within the participant's specific shift assignment. These questions were answered according to a 5-point Likert scale (Strongly Disagree, Disagree, Undecided, Agree, Strongly Agree).

Research Procedures and Pilot Testing

The initial concept for this research was defined by previous research in the organizational behavior field on employee motivation. The various literatures were reviewed to

identify the specific factors considered most important to the employee. Based on this review, a quantitative research design was created.

A research proposal was successfully defended and forwarded to the John Jay College of Criminal Justice Institutional Review Board for an Expedited Review. The expedited review was based on having obtained prior agency approval and the survey being anonymous and confidential. The research did not involve any vulnerable populations.

After IRB approval, the survey instrument was tested inside the Resource Analysis Section of the Office of Management Analysis and Planning. Police officers that worked there were offered voluntary, anonymous participation to test the survey instrument. Approximately ten police officers partook in the survey. They all considered the survey instrument straightforward, and needed no modification.

Data Analysis

The survey results were entered into Microsoft Office Excel 2007. Statistical analysis was conducted with PASW (Predictive Analytics Software) Statistics 18, formerly known as SPSS (Statistical Package for the Social Sciences).

The data analysis followed a several-tiered process using PASW Statistics 18. The data was coded according to a predetermined format. The Age, Years of Service, Time in Rank, and Time in Assignment variables, offered as an interval of three years in the survey instrument, was entered into the data set with the middle year. This was done to facilitate the data analysis. The Rank variable was entered as PO = 1, DET = 2, SGT = 3, and LT = 4. Gender was coded as M = 1, and F = 2.

The responses to the survey questions were coded as Strongly Disagree = 1, Disagree = 2, Undecided = 3, Agree = 4, and Strongly Agree = 5. This coding format provided the context for the descriptive and exploratory analysis of the data.

The survey questions were coded according to a format that facilitated quick identification of the factor (institutional, personal), and which aspect (shift assignment, significance of assignment, autonomy of assignment, independence of assignment, level of feedback, family concerns, income requirements, lifestyle issues) was analyzed.

Initially, the survey was evaluated for construct validity. Groves et al., (2004) suggested evaluating surveys according to analysis of whether the questions being asked were reliable and valid. In order to assess survey reliability, Cronbach's α was measured. High values of α signaled the question had high reliability. Field (2009) recommended a value of .7 to .8 was an acceptable value for Cronbach's α. The survey questions were created by asking the same concept in a different way and then comparing responses. It was considered reliable if these different questions elicited similar responses. It was hoped that Cronbach's α would approach 1.0, which indicated high validity, and implied no deviation from responses.

Cronbach's α was computed on various configurations of the data set. Reliability checks were conducted on the data set with all survey responses, and separately for the four questions that comprised each factor in the Motivation index. Since the final four questions gathered information on four different items and resulted in a negative value, in violation of reliability assumptions, they were removed for a separate analysis check. When required, questions phrased in reverse were reverse-scored (Question 2, Question 4, Question 7, Question 11, Question 23), which resulted in the creation of the variables Question 2opp, Question 4opp, Question 7opp, Question 11opp, and Question 23opp.

The descriptive analysis comprised frequencies (range, minimum, maximum, mean, median, mode, and standard deviation), graphs (histograms, bar charts), and correlations (Pearson's Product Moment). Only significant correlations at either the .01 or .05 level of significance, with a two-tailed test were listed. This descriptive analysis provided a summary of the demographic data and provided a general overview and context of the survey sample for the concepts to be analyzed.

The absence of race in the demographic portion of the survey was a consequence of agency hypersensitivity to race issues. This exclusion was based on the politicization of race within the Department and was understood to diminish the potential for participation in the current survey. While this was certainly an item of interest, it would be saved for a future study. In fact, a study based exclusively on race and its impact on officer motivation would be an important offshoot of the current project.

The final aspect of the analysis consisted of Principal Component Analysis (PCA). Field (2009) suggested this type of analysis to identify variables not directly measured. It was a process by which data was analyzed for emergent patterns and themes underlying a large number of variables (Rummel, 1967; Meyers et al., 2006). There were many aspects to employee motivation and a principal component analysis on this data set identified the groups of variables that clustered together in a meaningful way. This was used to identify specific patterns of association between the various questions. It facilitated identification of the specific dimensions of the Motivation Index into more manageable factors.

Lubke and Múthen (2004) reported using the Likert outcomes as a continuous variable in factor analysis violated the assumption of multivariate normality. The authors reported numerous studies that used factor analysis with success that used a single, homogenous

population. Since only police officers were used in the study, and the nominal variables of gender and rank were not included, this type of analysis was considered valid.

The first step in the analysis consisted of data screening. Since PASW would do whatever requested, no matter how nonsensical, an initial correlation matrix was created. Here, inter-correlations amongst the demographic variables and survey questions were reviewed. Although Field (2009) recommended exclusion of those variables that did not correlate with other variables, this study modified the admonition and combined the related questions into their separate Motivation Indexes for another analysis. This procedure corrected for correlation problems.

Field (2009) recommended the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity was to be calculated initially, as a preliminary step to determine whether a principal component analysis was warranted for the data. The KMO statistic, calculated from 0 and 1, would be near 1 to warrant application of PCA. The Bartlett's test was calculated for significance to identify whether or not there were correlations between variables. High significance signaled a PCA analysis was valid.

PASW was used next to conduct a principal component analysis, used to find the number, identity, and relationship of the items that were analyzed. The process offered an unrotated factor solution and a scree plot. The unrotated factor solution and scree plot were used to identify which components contributed most significantly to the variance, identified as most important in the survey. Each additional component resulted in only the most significant factors included in the analysis.

The results were the total variance explained by the data. Most important were the eigenvalues, measures of the shape of the distribution, and their percent of variance. These were

presented for each factor before and after extraction, and before rotation. The eigenvalues were the multipliers of the eigenvectors. This measure identified each amount of the total variance contributed by the factor.

The component matrix presented a graphic display of the component and which factors were included in the calculation of the component. Each subsequence component calculation included the contribution of each factor above the 1.0 threshold. Any contribution, or loading, less than 1.0 was not included in the display. In this manner, only important parts were listed. Component calculations below 1.0 were left blank.

The scree plot was a graphical display of the component and its eigenvalue. The point where the graph flattened was the decision point for whether or not the component was significant. The flattened tail displayed those components that explained the least amount of variance and were discounted.

Factor rotation was conducted next. Its purpose was to clarify general patterns in the data and identify the distinctly related groupings in the data. A varimax, or orthogonal rotation of the data set, was used, to rotate the axes 90* through any major clusters of variables. This was especially important when the various factors that comprised the Motivational Index were analyzed. This mathematical technique facilitated the identification of which factors were most significant for interpretation.

Analysis of the results identified the common themes prevalent in the data. The most significant factors were analyzed within the context of Herzberg's Motivation/Hygiene theory. Where required, the argument for modification of Herzberg's two part theory was presented. This included discussion of a possible requirement to include another separate, distinct component to the theory.

Assumptions of the Study

There were various assumptions related to this study that related to sample size, variables, and their distributions. These issues were incorporated into the research design to maximize the ability to generalize to the greater law enforcement population.

The size of the sample had a direct influence on the adequacy of the results. Meyers et al. (2006) recommended a sample size from 200 to 400, with a sample size of 500 considered very good. Since this study comprised 568 cases, this was considered adequate for valid analysis.

The variables in this study were identified as either independent or dependent. The design of the survey instrument resulted in a combination of the independent and dependent variables, which hampered inferential analysis. Since all the variables were quantitatively measured, however, the exploratory aspect of principal component analysis was warranted (Meyer et al., 2006).

The survey responses were discrete and categorical, and ordered. The five Likert choices violated the assumptions of a normal distribution, and precluded parametric statistics. Any complex mathematical relationships could not be calculated. Only rank ordering was warranted.

The analyses assumed each survey demographic variable and question had equal weighting. Rigorous methodology was used to avoid prejudicing the analysis outcome.

Chapter 4-Research Findings

All survey data was entered into a using Microsoft Office 2007 Excel spreadsheet. A master file was created with all the data, which served as an original file for all analyses. The research findings comprised reliability statistics, descriptive statistics, and principal component analysis. Where required, clarification was included that explained the underlying rational for modification of the data set for a specific analysis.

Reliability Statistics

The survey responses that comprised the entire data set had high reliability—for all survey responses (559 valid, 9 missing), Cronbach's $\alpha = .726$. Cronbach's α was improved with the removal of Question 7opp (.727), Question 8opp (.731), Question 16 (.730), Question 21 (.729), Question 22 (.731), Question 23opp (.728), Question 24 (.737), Question 25 (.728), Question 26 (.730), Question 27 (.730), Question 28 (.733), Question 29 (.733), Question 30 (.739), Question 31 (.739).

The survey responses for the data set (564 valid, 4 missing) that excluded the last four questions (Question 29, Question 30, Question 31, Question 32) had a Cronbach's $\alpha = .752$. Cronbach's α was improved with the removal of Question 7opp (.754), Question 8 (.757), Question 15 (.754), Question 16 (.756), Question 21 (.755), Question 22 (.758), Question 23opp (.754), Question 24 (.763), Question 25 (.754), Question 26 (.756), Question 27 (.757), Question 28 (.759).

The survey responses for the data set (565 valid, 3 missing) of the four questions (Question 1, Question 2opp, Question 3, Question 4opp) had a Cronbach's $\alpha = .733$. Cronbach's α was not improved if any items were deleted from the reliability analysis.

The survey responses for the data set (567 valid, 1 missing) of the four questions (Question 5, Question 6, Question 7opp, Question 8opp) had a Cronbach's α = .570. Cronbach's α was improved with the removal of Question 8opp (.641).

The survey responses for the data set (568 valid) of the four questions (Question 9, Question 10, Question 11opp, Question 12) had a Cronbach's α = .836. Cronbach's α was not improved if any items were deleted from the reliability analysis.

The survey responses for the data set (568 valid) of the four questions (Question 13, Question 14, Question 15, Question 16) had a Cronbach's α = .473. Cronbach's α was not improved if any items were deleted from the reliability analysis.

The survey responses for the data set (567 valid, 1 missing) of the four questions (Question 17, Question 18, Question 19, Question 20) had a Cronbach's α = .813. Cronbach's α was improved with the removal of Question 20 (.817).

The survey responses for the data set (568 valid) of the four questions (Question 21, Question 22, Question 23opp, Question 24) had a Cronbach's α = .816. Cronbach's α was not improved if any items were deleted from the reliability analysis.

The survey responses for the data set (568 valid) of the four questions (Question 25, Question 26, Question 27, Question 28) had a Cronbach's α = .766. Cronbach's α was not improved if any items were deleted from the reliability analysis.

The survey responses for the data set (568 valid) of the four questions (Question 29, Question 30, Question 31, Question 32) had a Cronbach's α = -1.161. The negative value was due to the negative average covariance among the four questions, a violation of reliability assumptions. This was due to the four questions designed to capture opinions on four separate items—day shift, afternoon shift, night shift, waking/sleeping patterns. The consequence was no

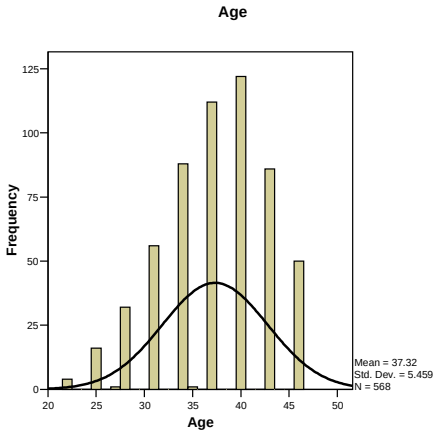
way to measure reliability with any accuracy, since there was no redundancy in questions, as for the other factors.

Descriptive Statistics

The following comprised the descriptive statistics of the survey responses. These statistics consisted of the number of valid responses, range, mean, median, mode, standard deviation, skewness, and kurtosis for the demographic variables and where relevant, the individual questions. A graph of the responses with an overlay of a normal distribution was included. These graphs were titled with the initial acronyms for the variables created for data entry. Although not used in the analysis, the numeral included with each acronym identified the question number. Additionally, significant correlations for each variable at the .01 level were provided. An initial analysis of effect, or how different choices to the questions were, was included to create a context for the data analysis section. The thresholds were .1 for a small effect, .3 for a medium effect, and .5 for a large effect. Only medium and large effects were described. The Pearson Product Moment Correlation, r, as applied to effect size, did not include the direction of the relationship, only the size of the effect.

AGE

For the Age variable, the sample consisted of 568 valid results. The range of ages was 24 years, from 22 years to 46 years. The mean was 37.32 years; the median was 37 years; the mode was 40 years. The standard deviation was 5.46 years. Skewness was -.410. Kurtosis was -.364.

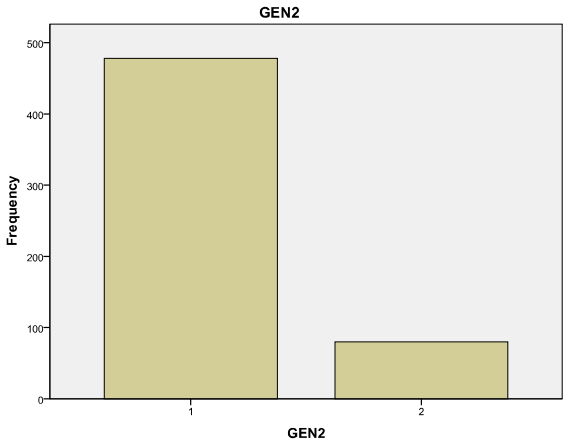


Age correlated with Gender (r = -.122, p < .01), Rank (r = .162, p < .01), Years in Service (r = .800, p < 01), Years in Rank (r = .513, p < .01), Years in Assignment (r = .384, p < .01), Question 9 (r = .146, p < .01), Question 11 (r = -.153, p < .01), Question 12 (r = .112, p < .01), Question 18 (r = .092, p < .05), Question 20 (r = .125, p < .01), Question 27 (r = -.107, p < .05), Question 28 (r = -.126, p < .01), Question 29 (r = .124, p < .01).

Age experienced a large effect with the demographic variables of Years in Service, Years in Rank, and Years in Assignment.

GENDER

For the Gender variable, the sample consisted of 558 valid results. 478 males and 80 females participated in the survey. 10 surveys had no gender listed.

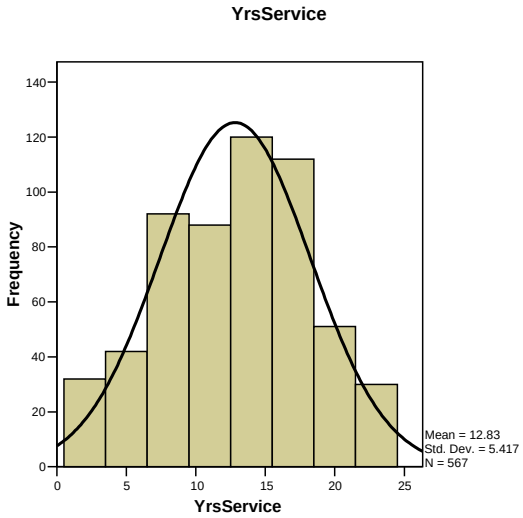


Gender correlated with Age (r = -.122, p < .01), Rank (r = -.102, p < .05), Years in Service (r = -.157, p < .01), Question 1 (r = .097, p < .05), Question 19 (r = -.084, p < .01), Question 21 (r = .098, r < .05), Question 24 (r = .115, p < .01), Question 25 (r = -.090, p < .05), Question 27 (r = -.106, p < .05), Question 29 (r = .117, p < 01), Question 30 (r = -.134, p < .01), Question 31 (r = -.085, p < 05).

Gender experienced no medium or large effects with the other demographic variables or questions.

YEARS IN SERVICE

For the Years in Service variable, the sample consisted of 567 valid results. One survey had no years in service selected. The range of years in service was 21 years in service, from 2 years in service to 23 years in service. The mean was 12.83 years in service; the median was 14 years in service; the mode was 14 years in service. The standard deviation was 5.417 years in service. Skewness was -.143. Kurtosis was -.654.



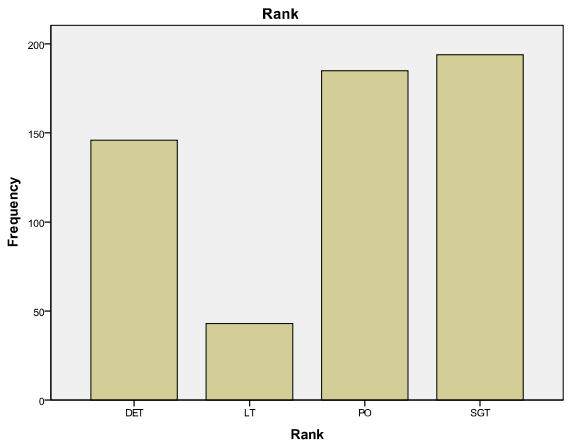
Years in Service correlated with Age (r = .800, p < .01), Gender (r = -.157, p < .01), Rank (r = .275, p < .01), Years in Rank (r = .557, p < .01), Years in Assignment (r = .453), p < .01),

Question 3 (r = .110, p < .01), Question 4 (r = -.132, p < .01), Question 6 (r = .093, p < .05), Question 9 (r = .173, p < .01), Question 10 (r = .104, p < .05), Question 11 (r = -.188, p < .01), Question 12 (r = .194, p < .01), Question 13 (r = .100, p < .05), Question 17 (r = .121, p < .01), Question 18 (r = .095, p < .05), Question 19 (r = .096, p < .05), Question 20 (r = .185, p < .01), Question 28 (r = -.106, p < .05).

Years in Service experienced a large effect with the demographic variables of Age, Years in Rank, and Years in Assignment.

RANK

For the rank variable, the sample consisted of 568 valid results. 185 Police Officers, 146 Detectives, 194 Sergeants, and 43 Lieutenants completed the survey.

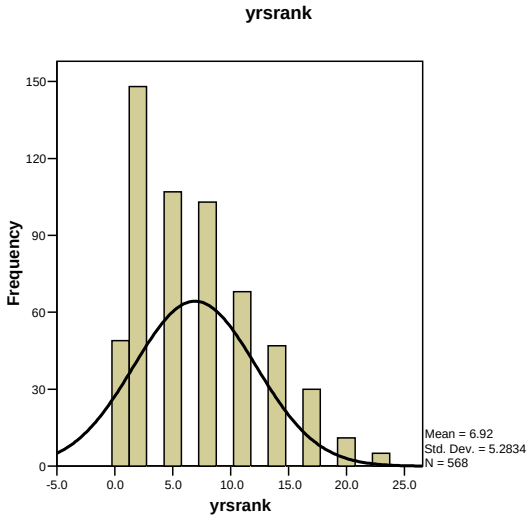


Rank correlated with Age (r = .162, p < .01), Gender (r = -.102, p < .05), Years of Service (r = .275, p < .01), Years in Rank (r = -.448, p < .01), Years in Assignment (r = -.219), p < .01), Question 1 (r = -.082, p < .05), Question 6 (r = .179, p < .01), Question 15 (r = -.109, p < .01), Question 19 (r = .112, p < .01), Question 20 (r = .096, p < .05), Question 23 (r = -.105, p < .05), Question 25 (r = -.127, p < .01), Question 26 (-.137, r < .01), Question 27 (r = -.204, p < .01), Question 28 (r = -.144, p < .05), Question 29 (r = -.126, p < .01), Question 30 (r = .191, p < .01).

Rank experienced no medium or large effects with the other demographic variables or questions.

YEARS IN RANK

For the Years in Rank variable, the sample consisted of 568 valid results. The range was 22.5 years in rank, from .5 years in rank, to 23 years in rank. The mean was 6.92 years in rank, the median was 5 years in rank, the mode was 2 years in rank. The standard deviation was 5.28 years in rank. Skewness was .795. Kurtosis was -.101.

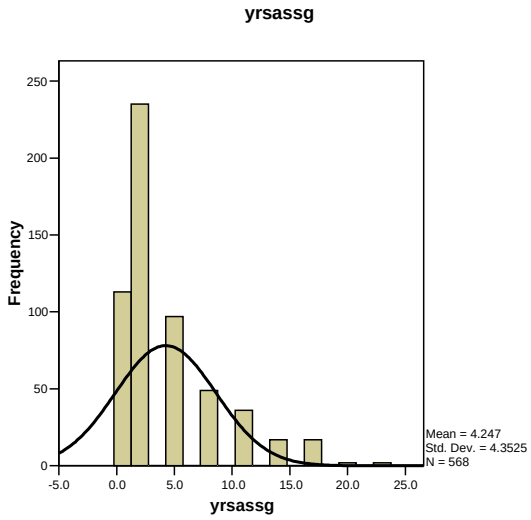


Years in Rank correlated with Age ($r = .513$, $p < .01$), Rank ($-.448$, $p < .01$), Years of Service ($r = .557$, $p < .01$), Years in Assignment ($r = .575$, $p < .01$), Question 2 ($r = -.094$, $p < .05$), Question 3 ($r = .138$, $p < .01$), Question 4 ($r = -.166$, $p < .01$), Question 9 ($r = .139$, $p < .01$), Question 11 ($r = -.143$, $p < .01$), Question 12 ($r = .190$, $p < .01$), Question 13 ($r = .145$, $p < .01$), Question 15 ($r = .104$, $p < .05$), Question 17 ($r = .121$, $p < .01$), Question 18 ($r = .147$, $p < .01$), Question 20 ($r = .090$, $p < .05$), Question 25 ($r = .134$, $p < .01$), Question 26 ($r = .126$, $p < .01$), Question 29 ($r = .115$, $p < .01$), Question 30 ($r = -.148$, $p < .01$), Question 31 ($r = -.087$, $p < .05$).

Years in Rank experienced a large effect with the demographic variables of Age, Years of Service, and Years in Assignment.

YEARS IN ASSIGNMENT

For the Years in Assignment variable, the sample consisted of 568 valid results. The range was 22.5 years in assignment, from .5 years in assignment to 23 years in assignment. The mean was 4.25 years in assignment, the median was 2 years in assignment, and the mode was 2 years in assignment. The standard deviation was 4.35 years in assignment. Skewness was 1.656. Kurtosis was 2.382.

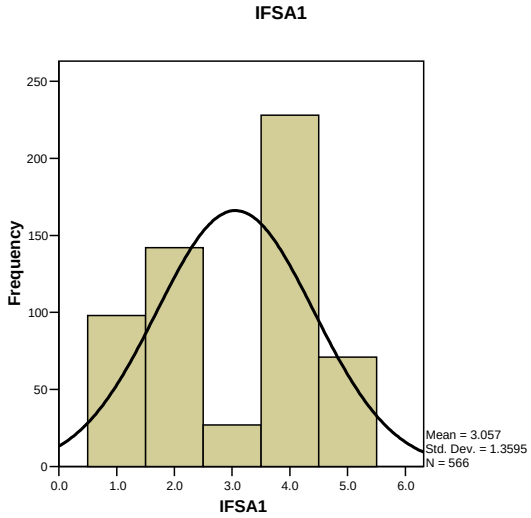


The Years in Assignment correlated with Age ($r = .384$, $p < .01$), Rank ($r = -.219$, $p < .01$), Years of Service ($r = .453$, $p < .01$), Years in Rank ($r = .575$, $p < .01$), Question 3 ($r = .094$, $p < .05$), Question 4 ($r = -.141$, $p < .01$), Question 5 ($r = -.094$, $p < .05$), Question 25 ($r = .111$, $p < .01$), Question 26 ($r = .111$, $p < .01$), Question 29 ($r = .096$, $p < .05$), Question 30 ($r = -.089$, $p < .05$).

Years in Assignment experienced a large effect with Years in Rank.

Question 1: I was assigned to a specific shift after discussion and conferral with me.

For Question 1, the sample contained 566 valid results. Two surveys had no choice selected. The median and mode was 4.0. The Likert responses were 98 (Strongly Disagree), 142 (Disagree), 27 (Undecided), 228 (Agree), and 71 (Strongly Agree). Skewness was -.217. Kurtosis was -1.380.



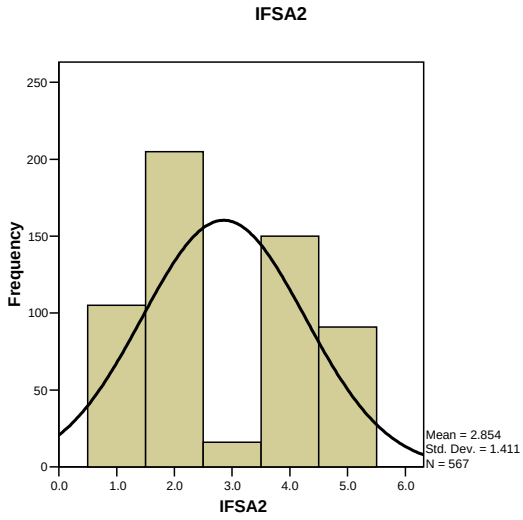
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 1 correlated with Gender ($r = .097$, $p = .05$), Rank ($r = -.082$, $p < .05$), Question 2 ($r = -.341$, $p < .01$), Question 3 ($r = .376$, $p < .01$), Question 4 ($r = -.345$, $p < .01$), Question 5 ($r = .147$, $p < .01$), Question 9 ($r = .208$, $p < .01$), Question 10 ($r = .108$, $p < .01$), Question 11 ($r = -.108$, $p < .05$), Question 12 ($r = .115$, $p < .01$), Question 13 ($r = .131$, $p < .01$), Question 14 ($r = .190$, $p < .01$), Question 17 ($r = .218$, $p < .01$), Question 18 ($r = .197$, $p < .01$), Question 19 ($r = .203$, $p < .01$), Question 20 ($r = .189$, $p < .01$), Question 32 ($r = .167$, $p < .01$).

Question 1 experienced a medium effect with Question 2, the question that asked if the employee was satisfied with their shift assignment, Question 3, the question that asked if the employee was satisfied with their shift assignment, and Question 4, the question that asked if the employee had a choice, they would choose a different shift.

Question 2: I received my assignment with little or no input from me.

For Question 2, the sample contained 567 valid results. One survey had no choice selected. The median and mode was 2.0. The Likert responses were 105 (Strongly Disagree), 205 (Disagree), 16 (Undecided), 150 (Agree), and 91 (Strongly Agree). Skewness was .208 and Kurtosis was -1.422.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

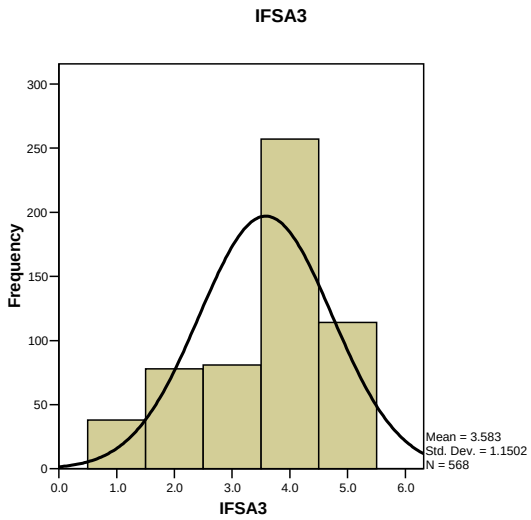
Question 2 correlated with Years in Rank ($r = -.094$, $p < .05$), Question 1 ($r = -.341$, $p < .01$), Question 3 ($r = -.407$, $p < .01$), Question 4 ($r = .372$, $p < .01$), Question 5 ($r = -.089$, $p < .05$), Question 9 ($r = -.288$, $p < .01$), Question 10 ($r = -.219$, $p < .01$), Question 11 ($r = .270$, $p < .01$), Question 12 ($r = -.236$, $p < .01$), Question 13 ($r = -.318$, $p < .01$), Question 14 ($r = -.263$, $p < .01$), Question 17 ($r = -.216$, $p < .01$), Question 18 ($r = -.327$, $p < .01$), Question 19 ($r = -.195$, $p < .01$), Question 20 ($r = .-.351$, $p < .01$), Question 24 ($r = .121$, $r < .01$), Question 32 ($r = -.133$, $p < .01$).

Question 2 experienced a medium effect with Question 1, the question that asked if the employee was assigned to a specific shift after discussion and conferral, Question 3, the question

that asked if the employee was satisfied with their shift assignment, Question 4, the question that asked if the employee had a choice, they would work a different shift, Question 13, the question that asked if the employee had great freedom within their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 3: I am satisfied with my shift assignment.

For Question 3, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 38 (Strongly Disagree), 78 (Disagree), 81 (Undecided), 257 (Agree), and 114 (Strongly Agree). Skewness was -.741 and Kurtosis was -.310.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

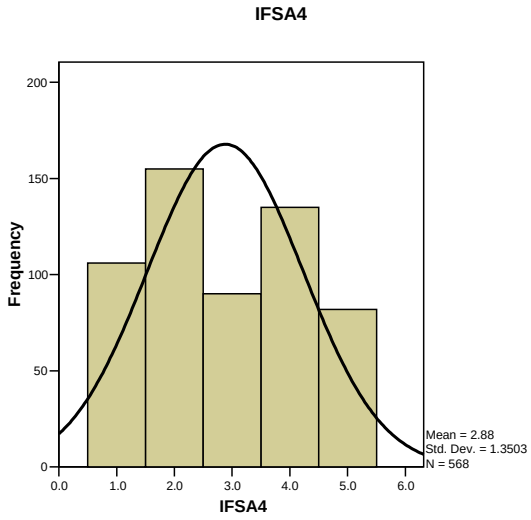
Question 3 correlated with Years in Service ($r = .110$, $p < .01$), Years in Rank ($r = .138$, $p < .01$), Years in Assignment ($r = .094$, $p < .05$), Question 1 ($r = .376$, $p < .01$), Question 2 ($r = -.407$, $p < .01$), Question 4 ($r = -.664$, $p < .01$), Question 5 ($r = .151$, $p < .01$), Question 6 ($r = .172$, $p < .01$), Question 7 ($r = -.123$, $p < .01$), Question 9 ($r = .346$, $p < .01$), Question 10 ($r = .263$, $p < .01$), Question 11 ($r = -.257$, $p < .01$), Question 12 ($r = .309$, $p < .01$), Question 13 ($r = .346$, $p < .01$), Question 14 ($r = .327$, $p < .01$), Question 17 ($r = .291$, $p < .01$), Question 18 (r =

.365, p < .01), Question 19 (r = .310, p < .01), Question 20 (r = .340, p < .01), Question 21 (r = -.119, p < .01), Question 22 (r = -.146, p < .01), Question 24 (r = -.208, p < .01), Question 26 (r = -.129, p < .01), Question 27 (r = -.107, p < 05), Question 28 (r = -.088, p < .05), Question 32 (r = .274, p < .01).

Question 3 experienced a large effect with Question 4, the question that asked if given a choice, the employee would work a different shift. Question 3 experienced a medium effect with Question 1, the question that asked if the employee was assigned to a specific shift after discussion and conferral, Question 2, the question that asked if the employee received their assignment with little or no input, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question18, the question that asked if the employee was allowed to express their feeling about significant issues that affected their assignment, Question 19, the question that asked if within the work setting, input from others was considered in decision making, and Question 20, the question that asked if the employee's opinion was considered important.

Question 4: If I had a choice, I would work a different shift.

For Question 4, the sample contained 568 valid results. The median was 3.0 and the mode was 2.0. The Likert responses were 106 (Strongly Disagree), 155 (Disagree), 90 (Undecided), 135 (Agree), and 82 (Strongly Agree). Skewness was .115 and Kurtosis was -1.254.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

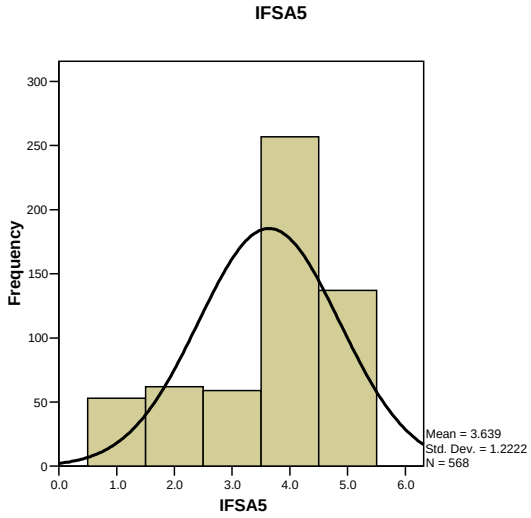
Question 4 correlated with Years of Service ($r = -.132$, $p < .01$), Years in Rank ($r = -.166$, $p < .01$), Years in Assignment ($r = -.141$, $p < .01$), Question 1 ($r = -.345$, $p < .01$), Question 2 ($r = .372$, $p < .01$), Question 3 ($r = -.664$, $p < .01$), Question 6 ($r = -.142$, $p < .01$), Question 7 ($r = .112$, $p < .01$), Question 9 ($r = -.267$, $p < .01$), Question 10 ($r = -.194$, $p < .01$), Question 11 ($r = .206$, $p < .01$), Question 12 ($r = -.258$, $p < .01$), Question 13 ($r = -.279$, $p < .01$), Question 14 ($r = -261$, $p < .01$), Question 17 ($r = -.247$, $p < .01$), Question 18 ($r = -.265$, $p < .01$), Question 19 ($r = -.242$, $p < .01$), Question 20 ($r = -.250$, $p < .01$), Question 22 ($r = .123$, $p < .01$), Question 24 ($r = .141$, $p < .01$), Question 26 ($r = .126$, $p < .01$), Question 27 ($r = .106$, $p < 05$), Question 28 ($r = .125$, $p < .01$), Question 30 ($r = .120$, $p < .01$), Question 32 ($r = -.337$, $p < .01$).

Question 4 experienced a high effect with Question 3, the question that asked if the employee was satisfied with their shift assignment. Question 4 experienced a medium effect with Question 1, the question that asked if the employee was assigned to a specific shift after discussion and conferral, Question 2, the question that asked if the employee received their

assignment with little or no input, and Question 32, the question that asked if the shift the employee was working best reflected their waking/sleeping patterns.

Question 5: The Department considers my assignment vital to its operation.

For Question 5, the sample contained 568 valid results. The median was 4.0 and the mode was 4.0. The Likert responses were 53 (Strongly Disagree), 62 (Disagree), 59 (Undecided), 257 (Agree), and 137 (Strongly Agree). Skewness was -.877 and Kurtosis was -.218.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

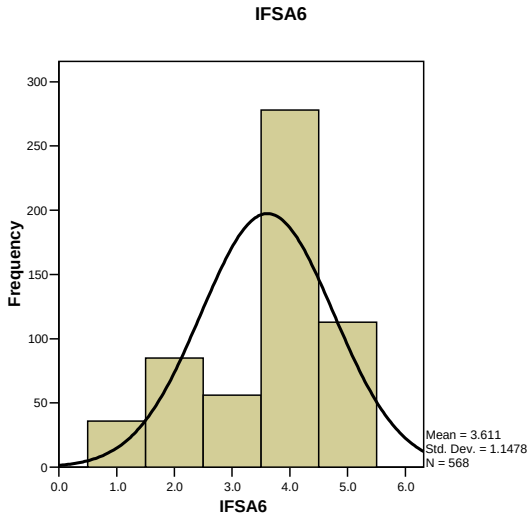
Question 5 was correlated with Years in Assignment ($r = -.094$, $p < .051$), Question 1 ($r = .147$, $p < .01$), Question 2 ($r = -.089$, $p < .05$), Question 3 ($r = .151$, $p < .01$), Question 6 ($r = .394$, $p < .01$), Question 7 ($r = -.323$, $p < .01$), Question 9 ($r = .235$, $p < .01$), Question 10 ($r = .160$, $p < .01$), Question 11 ($r = -.216$, $p < .01$), Question 12 ($r = .141$, $p < .01$), Question 13 ($r = .229$, $p < .01$), Question 14 ($r = 270$, $p < .01$), Question 15 ($r = -.093$, $p < .05$), Question 16 ($r = .096$, $p < .05$), Question 17 ($r = .214$, $p < .01$), Question 18 ($r = .227$, $p < .01$), Question 19 ($r = .219$, $p < .01$), Question 20 ($r = .295$, $p < .01$), Question 24 ($r = -.096$, $p < .05$), Question 26 ($r = -$

.090, p < .05), Question 28 (r = -.118, p < .01), Question 29 (r = .136, p < .01), Question 32 (r = .084, p < .05).

Question 5 experienced a medium effect with Question 6, the question that asked if the employee's assignment was important for others to do their jobs, and Question 7, the question that asked if the Department could do away with the employee's assignment with little or no impact on service delivery.

Question 6: My assignment is important for others to do their jobs.

For Question 6, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 36 (Strongly Disagree), 85 (Disagree), 56 (Undecided), 278 (Agree), and 113 (Strongly Agree). Skewness was -.807 and Kurtosis was -.264.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

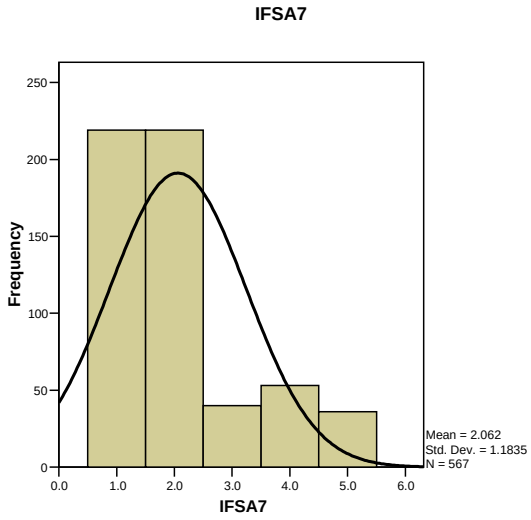
Question 6 correlated with Rank (r = .179, p < .01), Years in Service (r = .093, p < .05), Question 3 (r = .172, p < .01), Question 4 (r = -.142, p < .01), Question 5 (r = .394, p < .01), Question 7 (r = -.407, p < .01), Question 8 (r = -.091, p < .05), Question 9 (r = .092, p < .05), Question 11 (r = -.091, p < .05), Question 15 (r = -.205, p < .01), Question 16 (r = .115, p < .01),

Question 17 (r = .156, p < .01), Question 19 (r = .206, p < .01), Question 20 (r = .224, p < .01), Question 32 (r = .180, p < .01).

Question 6 experienced a medium effect with Question 5, the question that asked if the Department considered the employee's assignment vital to its operation, and Question 7, the question that asked if the Department could do away with the employee's assignment with little or no impact on service delivery.

Question 7): The Department could do away with my assignment with little or no impact on service delivery.

For Question 7, the sample contained 567 valid results. One survey had no response to the question selected. The median was 2.0 and the mode was bimodal at 1.0 and 2.0. The Likert responses were 219 (Strongly Disagree), 219 (Disagree), 40 (Undecided), 53 (Agree), and 36 (Strongly Agree). Skewness was 1.114 and Kurtosis was .388.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

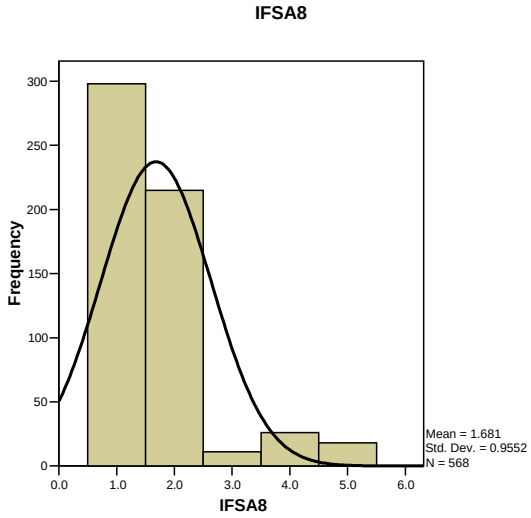
Question 7 correlated with Question 3 (r = -.123, p < .01), Question 4 (r = .112, p < .01), Question 5 (r = -.323, p < .01), Question 6 (r = -.407, p < .01), Question 8 (r = .202, p < .01),

Question 10 (r = .102, p < .05), Question 15 (r = .206, p < .01), Question 16 (r = -.152, p < .01), Question 17 (r = -.090, p < .05), Question 19 (r = -.233, p < .01), Question 20 (r = -.168, p < .01), Question 26 (r = .095, p < .05).

Question 7 experienced a medium effect with Question 5, the question that asked if the Department considered the employee's assignment vital to its operation, and Question 6, the question that asked if the employee's assignment was important for others to do their jobs.

Question 8: My assignment did not exist before the terrorist events of 2001.

For Question 8, the sample contained 568 valid results. The median and mode was 1.0. The Likert responses were 298 (Strongly Disagree), 215 (Disagree), 11 (Undecided), 26 (Agree), and 18 (Strongly Agree). Skewness was 1.868 and Kurtosis was .3.482.



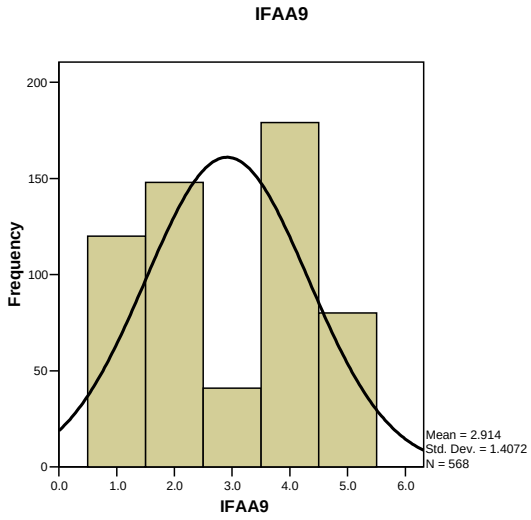
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 8 correlated with Question 6 (r = -.091, p < .05), Question 7 (r = .202, p < .01), Question 16 (r = -.115, p < .01).

Question 8 experienced no medium or large effects with the other demographic variables or questions.

Question 9: I have great flexibility in my schedule.

For Question 9, the sample contained 568 valid results. The median was 3.0 and the mode was 4.0. The Likert responses were 120 (Strongly Disagree), 148 (Disagree), 41 (Undecided), 179 (Agree), and 80 (Strongly Agree). Skewness was .001 and Kurtosis was -1.435.



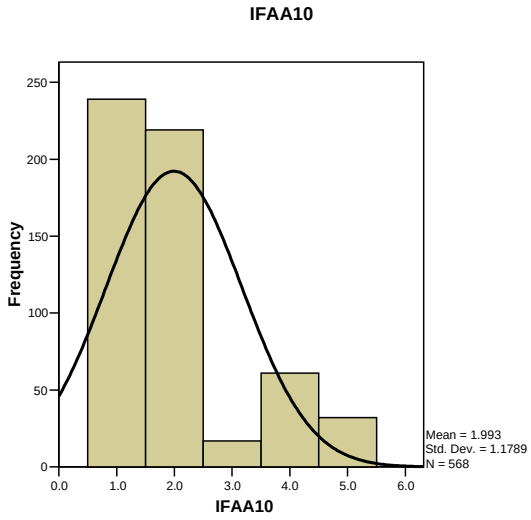
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 9 was correlated with Age ($r = .146$, $p < .01$), Years in Service ($r = .173$, $p < .01$), Years in Rank ($r = .139$, $p < 01$), Question 1 ($r = .208$, $p < .01$), Question 2 ($r = -.288$, $p < 01$), Question 3 ($r = .346$, $p < .01$), Question 4 ($r = -.267$, $p < .01$), Question 5 ($r = .235$, $p < .01$), Question 6 ($r = .092$, $p < .05$), Question 10 ($r = .593$, $p < .01$), Question 11 ($r = -.683$, $p < .01$), Question 12 ($r = .526$, $p < .01$), Question 13 ($r = .566$, $p < .01$), Question 14 ($r = .487$, $p < .01$), Question 15 ($r = .158$, $p < .01$), Question 16 ($r = -.096$, $p < .05$), Question 17 ($r = .348$, $p < .01$), Question 18 ($r = .388$, $p < .01$), Question 19 ($r = .220$, $p < .01$), Question 20 ($r = .410$, $p < .01$), Question 21 ($r = -.090$, $p < .05$), Question 22 ($r = -.159$, $p < .01$), Question 24 ($r = -.179$, $p < .01$), Question 28 ($r = -.155$, $p < .01$), Question 29 ($r = .143$, $p < .01$), Question 32 ($r = .098$, $p < .05$).

Question 9 experienced a large effect with Question 10, the question that asked if the employee could come to work whenever they wanted, Question 11, the question that asked if the employee's schedule was provided and they had to follow it without deviation, Question 12, the question that asked if the employee could take off whenever they wanted, and Question 13, the question that asked if the employee had great freedom within their assignment. Question 9 experienced a medium effect with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with supervisors/subordinates about their work, Question 18, the question that asked if the employee was allowed to express their feeling about significant issues that affected their assignment, and Question 20, the question that asked of the employee's opinion was considered important.

Question 10: I can come to work whenever I want.

For Question 10, the sample contained 568 valid results. The median was 2.0 and the mode was 1.0. The Likert responses were 239 (Strongly Disagree), 219 (Disagree), 17 (Undecided), 61 (Agree), and 32 (Strongly Agree). Skewness was 1.239 and Kurtosis was .543.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

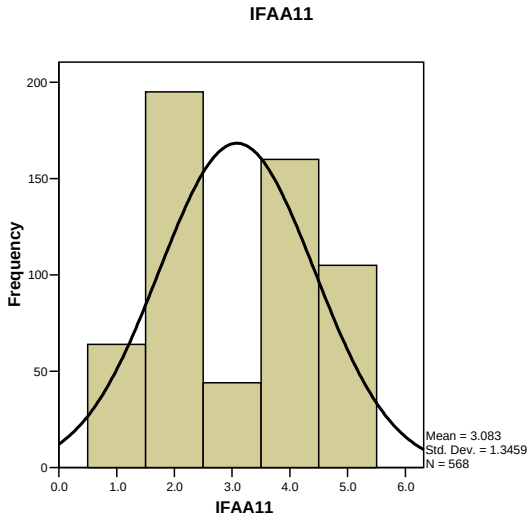
Question 10 correlated with Years of Service ($r = .104$, $p < .05$), Question 1 ($r = .108$, $p < .01$), Question 2 ($r = -.219$, $p < 01$), Question 3 ($r = .263$, $p < .01$), Question 4 ($r = -.194$, $p < .01$), Question 5 ($r = .160$, $p < .01$), Question 7 ($r = .102$, $p < .05$), Question 9 ($r = .593$, $p < .01$), Question 11 ($r = -.551$, $p < .01$), Question 12 ($r = .526$, $p < .01$), Question 13 ($r = .485$, $p < .01$), Question 14 ($r = .447$, $p < .01$), Question 15 ($r = .210$, $p < .01$), Question 17 ($r = .255$, $p < .01$), Question 18 ($r = .308$, $p < .01$), Question 19 ($r = .140$, $p < .01$), Question 20 ($r = .332$, $p < .01$), Question 21 ($r = -.139$, $p < .01$), Question 22 ($r = -.151$, $p < .01$), Question 23 ($r = .130$, $p < .01$), Question 24 ($r = -.142$, $p < .01$), Question 27 ($r = -.095$, $p < 05$), Question 28 ($r = -.129$, $p < .01$), Question 29 ($r = .117$, $p < .01$).

Question 10 experienced a large effect with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 11, the question that asked if the employee was provided for them and that had to follow it without deviation, and Question 12, the question that asked if the employee could take off whenever they wanted. Question 10 experienced a medium effect with Question 13, the question that asked if the employee had great

freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 18, the question that asked if the employee was allowed to express their feelings about significant issued affecting their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 11: My schedule is provided for me, and I must follow it without deviation.

For Question 11, the sample contained 568 valid results. The median was 3.0 and the mode was 2.0. The Likert responses were 64 (Strongly Disagree), 195 (Disagree), 44 (Undecided), 160 (Agree), and 105 (Strongly Agree). Skewness was .027 and Kurtosis was -1.384.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

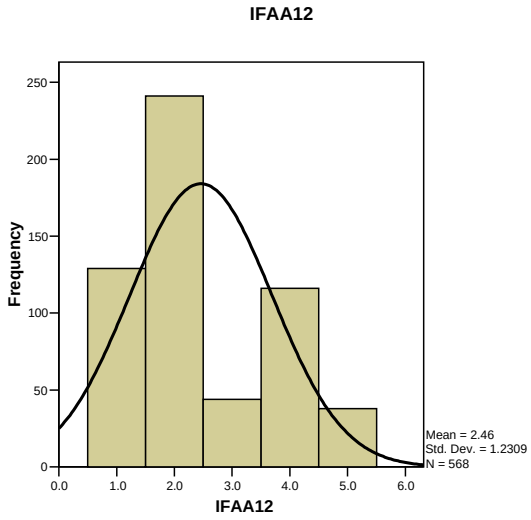
Question 11 correlated with Age ($r = -.153$, $p < .01$), Years of Service ($r = -.188$, $p < .01$), Years in Rank ($r = -.143$, $p < 01$), Question 1 ($r = -.108$, $p < .05$), Question 2 ($r = .270$, $p < 01$), Question 3 ($r = -.257$, $p < .01$), Question 4 ($r = .206$, $p < .01$), Question 5 ($r = -.216$, $p < .01$), Question 6 ($r = -.091$, $p < .05$), Question 9 ($r = -.683$, $p < .01$), Question 10 ($r = -.551$, $p < .01$), Question 12 ($r = -.487$, $p < .01$), Question 13 ($r = -.493$, $p < .01$), Question 14 ($r = -.434$, $p < .01$),

Question 15 ($r = -.166$, $p < .01$), Question 16 ($r = .122$, $p < .01$), Question 17 ($r = -.352$, $p < .01$), Question 18 ($r = -.381$, $p < .01$), Question 19 ($r = -.233$, $p < .01$), Question 20 ($r = -.447$, $p < .01$), Question 21 ($r = .150$, $p < .05$), Question 22 ($r = .172$, $p < .01$), Question 24 ($r = .185$, $p < .01$), Question 26 ($r = .118$, $p < .01$), Question 27 ($r = .113$, $p < .01$), Question 28 ($r = .198$, $p < .01$), Question 29 ($r = -.160$, $p < .01$).

Question 11 experienced a large effect with Question 9, the question that asked the employee had great flexibility in their schedule, and Question 10, the question that asked if the employee could come to work whenever they wanted. Question 11 experienced a medium effect with Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they say fit, Question 17, the question that asked if the employee was able to communicate easily with supervisors/subordinates about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues affecting their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 12: I can take off whenever I want.

For Question 12, the sample contained 568 valid results. The median and mode was 2.0. The Likert responses were 129 (Strongly Disagree), 241 (Disagree), 44 (Undecided), 116 (Agree), and 38 (Strongly Agree). Skewness was .598 and Kurtosis was -.814.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

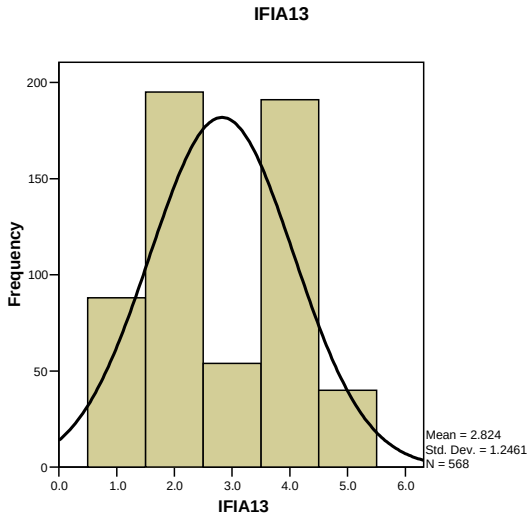
Question 12 correlated with Age ($r = .112$, $p < .01$), Years of Service ($r = .194$, $p < .01$), Years in Rank ($r = .190$, $p < 01$), Question 1 ($r = .115$, $p < .05$), Question 2 ($r = -.236$, $p < 01$), Question 3 ($r = .309$, $p < .01$), Question 4 ($r = -.258$, $p < .01$), Question 5 ($r = .141$, $p < .01$), Question 9 ($r = .526$, $p < .01$), Question 10 ($r = .526$, $p < .01$), Question 11 ($r = -.487$, $p < .01$), Question 13 ($r = .545$, $p < .01$), Question 14 ($r = -.486$, $p < .01$), Question 15 ($r = .289$, $p < .01$), Question 16 ($r = -.142$, $p < .01$), Question 17 ($r = .364$, $p < .01$), Question 18 ($r = .427$, $p < .01$), Question 19 ($r = .206$, $p < .01$), Question 20 ($r = .347$, $p < .01$), Question 21 ($r = -.146$, $p < .01$), Question 22 ($r = -.185$, $p < .01$), Question 23 ($r = .126$, $p < .01$), Question 24 ($r = -.180$, $p < .01$), Question 26 ($r = -.082$, $p < .05$), Question 28 ($r = -.124$, $p < .01$), Question 29 ($r = .090$, $p < .05$).

Question 12 experienced a large effect with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, and Question 13, the question that asked if the employee had great freedom within their assignment. Question 12 experienced a medium effect with Question 3, the question that asked if the employee was satisfied with their shift

assignment, Question 11, the question that asked if the employee's schedule was provided for them and they had to follow it without deviation, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 13: I have great freedom within my assignment.

For Question 13, the sample contained 568 valid results. The median was 3.0 and the mode was 2.0. The Likert responses were 88 (Strongly Disagree), 195 (Disagree), 54 (Undecided), 191 (Agree), and 40 (Strongly Agree). Skewness was .073 and Kurtosis was -1.296.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

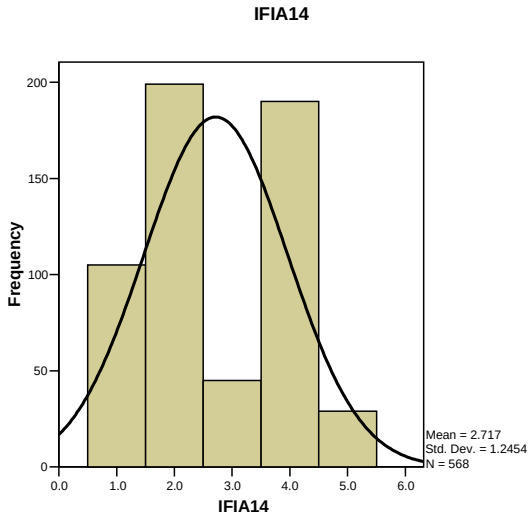
Question 13 correlated with Years of Service ($r = .100$, $p < .05$), Years in Rank ($r = .145$, $p < 01$), Question 1 ($r = .131$, $p < .05$), Question 2 ($r = -.318$, $p < 01$), Question 3 ($r = .346$, $p <$

.01), Question 4 (r = -.279, p < .01), Question 5 (r = .229, p < .01), Question 9 (r = .566, p < .01), Question 10 (r = .485, p < .01), Question 11 (r = -.493, p < .01), Question 12 (r = .545, p < .01), Question 14 (r = .620, p < .01), Question 15 (r = .240, p < .01), Question 17 (r = .402, p < .01), Question 18 (r = .460, p < .01), Question 19 (r = .279, p < .01), Question 20 (r = .453, p < .01), Question 21 (r = -.119, p < .01), Question 22 (r = -.139, p < .01), Question 24 (r = -.238, p < .01), Question 26 (r = -.096, p < .05), Question 28 (r = -.117, p < .01).

Question 13 experienced a large effect with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 12, the question that asked if the employee could take off whenever they wanted, and Question 14, the question that asked if the employee could structure their workload as they saw fit. Question 13 experienced a medium effect with Question 2, the question that asked if the employee received their assignment with little or no input from them, Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 11, the question that asked if the employee's schedule was provided for them and they had to follow it without deviation, Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 14: I can structure my workload as I see fit.

For Question 14, the sample contained 568 valid results. The median and mode was 2.0. The Likert responses were 105 (Strongly Disagree), 199 (Disagree), 45 (Undecided), 190 (Agree), and 29 (Strongly Agree). Skewness was .132 and Kurtosis was -1.335.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

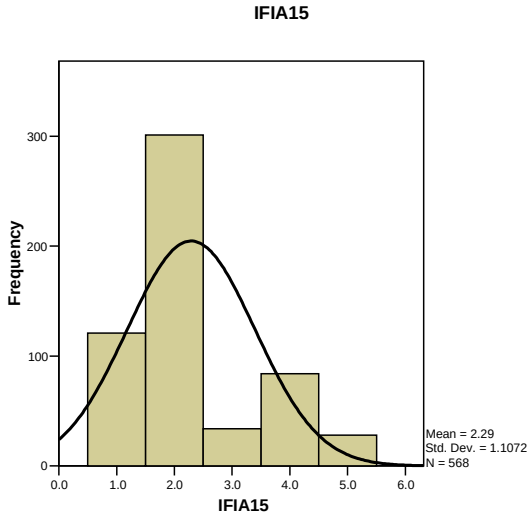
Question 14 correlated with Question 1 ($r = .190$, $p < .05$), Question 2 ($r = -.263$, $p < 01$), Question 3 ($r = .327$, $p < .01$), Question 4 ($r = -.261$, $p < .01$), Question 5 ($r = .270$, $p < .01$), Question 9 ($r = .487$, $p < .01$), Question 10 ($r = .447$, $p < .01$), Question 11 ($r = -.434$, $p < .01$), Question 12 ($r = .486$, $p < .01$), Question 13 ($r = .620$, $p < .01$), Question 15 ($r = .190$, $p < .01$), Question 16 ($r = -.102$, $p < .01$), Question 17 ($r = .345$, $p < .01$), Question 18 ($r = .439$, $p < .01$), Question 19 ($r = .249$, $p < .01$), Question 20 ($r = .405$, $p < .01$), Question 21 ($r = -.123$, $p < .01$), Question 22 ($r = -.125$, $p < .01$), Question 24 ($r = -.131$, $p < .01$), Question 26 ($r = -.096$, $p < .05$), Question 28 ($r = -.136$, $p < .01$), Question 29 ($r = .107$, $p < .05$), Question 32 ($r = .130$, $p < .01$).

Question 14 experienced a large effect with Question 13, the question that asked if the employee had great freedom within their assignment. Question 14 experienced a medium effect with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 11, the question that asked if the employee's schedule was provided for

them and they had to follow it without deviation, Question 12, the question that asked of the employee could take off whenever they wanted, Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important.

Question 15: My assignment does not rely on others.

For Question 15, the sample contained 568 valid results. The median and mode was 2.0. The Likert responses were 121 (Strongly Disagree), 301 (Disagree), 34 (Undecided), 84 (Agree), and 28 (Strongly Agree). Skewness was .941 and Kurtosis was .036.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

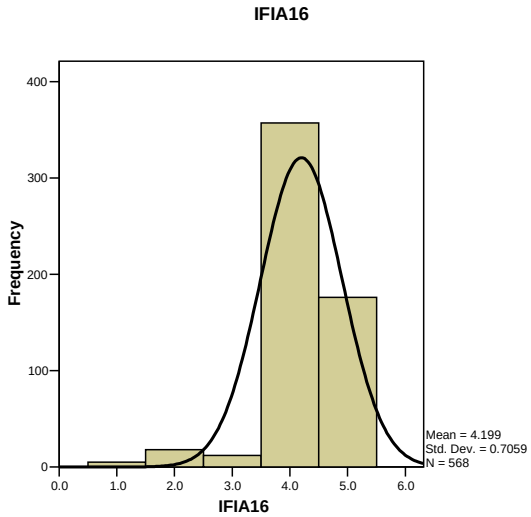
Question 15 correlated with Rank ($r = -.109$, $p < .01$), Years in Rank ($r = .104$, $p < .05$), Question 5 ($r = -.093$, $p < .05$), Question 6 ($r = -.205$, $p < .01$), Question 7 ($r = .206$, $p < .01$), Question 9 ($r = .158$, $p < .01$), Question 10 ($r = .210$, $p < .01$), Question 11 ($r = -.166$, $p < .01$), Question 12 ($r = .289$, $p < .01$), Question 13 ($r = .240$, $p < .01$), Question 14 ($r = .190$, $p < .01$),

Question 16 (r = -.085, p < .05), Question 18 (r = .130, p < .01), Question 20 (r = .101, p < .05), Question 23 (r = .132, p < .01), Question 24 (r = -.085, p < .01).

Question 15 experienced no medium or large effects with the other demographic variables or questions.

Question 16: I am expected to do certain tasks frequently.

For Question 16, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 5 (Strongly Disagree), 18 (Disagree), 12 (Undecided), 357 (Agree), and 176 (Strongly Agree). Skewness was -1.450 and Kurtosis was 4.467.



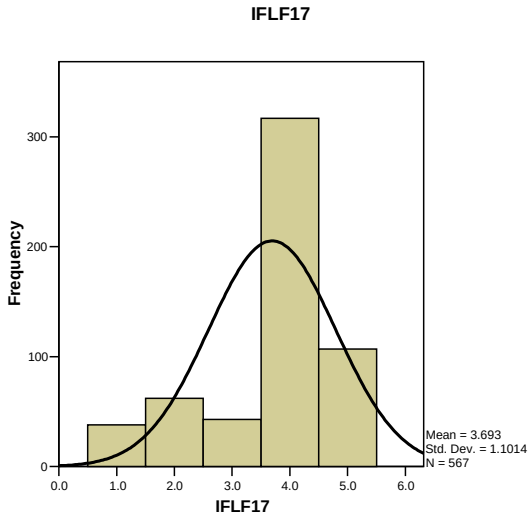
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 16 correlated with Question 5 (r = -.096, p < .05), Question 6 (r = .115, p < .01), Question 7 (r = -.152, p < .01), Question 8 (r = -.115, p < 01), Question 9 (r = -.096, p < .01), Question 11 (r = .122, p < .01), Question 12 (r = -.142, p < .01), Question 14 (r = -.102, p < .05), Question 15 (r = -.085, p < .05), Question 21 (r = .099, p < .05), Question 22 (r = .091, p < .05).

Question 16 experienced no medium or large effects with the other demographic variables or questions.

Question 17: I can communicate easily with my supervisors/subordinates about their work.

For Question 17, the sample contained 567 valid results. One survey had no response to the question selected. The median and mode was 4.0. The Likert responses were 38 (Strongly Disagree), 62 (Disagree), 43 (Undecided), 317 (Agree), and 107 (Strongly Agree). Skewness was -1.074 and Kurtosis was .422.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

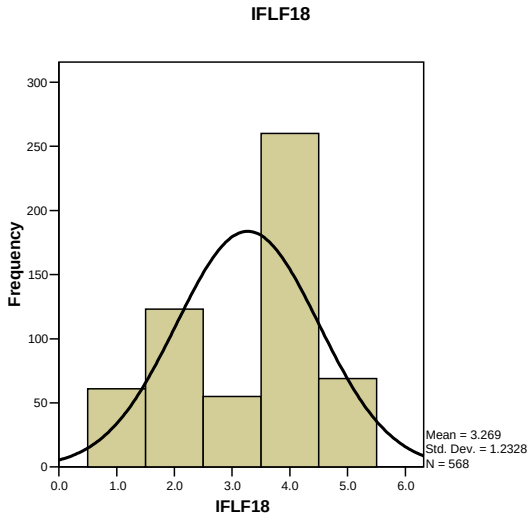
Question 17 correlated with Years of Service ($r = .121$, $p < .01$), Years in Rank ($r = .121$, $p < .01$), Question 1 ($r = .218$, $p < .01$), Question 2 ($r = -.216$, $p < .01$), Question 3 ($r = .291$, $p < .01$), Question 4 ($r = -.247$, $p < .01$), Question 5 ($r = .214$, $p < .01$), Question 6 ($r = .156$, $p < .01$), Question 7 ($r = -.090$, $p < .05$), Question 9 ($r = .348$, $p < .01$), Question 10 ($r = .255$, $p < .01$), Question 11 ($r = -.352$, $p < .01$), Question 12 ($r = .364$, $p < .01$), Question 13 ($r = .402$, $p < .01$), Question 14 ($r = .345$, $p < .01$), Question 18 ($r = .655$, $p < .01$), Question 19 ($r = .388$, $p < .01$), Question 20 ($r = .536$, $p < .01$), Question 22 ($r = -.116$, $p < .01$), Question 24 ($r = -.200$, $p < .01$),

Question 26 ($r = -.127$, $p < .01$), Question 27 ($r = -.116$, $p < .01$), Question 28 .($r = -.156$, $p < .01$).

Question 17 experienced a large effect with Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 17 experienced a medium effect with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 11, the question that asked if the employee's schedule was provided for them and they had to follow it without deviation, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, and Question 19, the question that asked if within the work setting, input from others was considered in decision making.

Question 18: I am allowed to express my feelings about significant issues affecting my assignment.

For Question 18, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 61 (Strongly Disagree), 123 (Disagree), 55 (Undecided), 260 (Agree), and 69 (Strongly Agree). Skewness was -.478 and Kurtosis was -.986.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

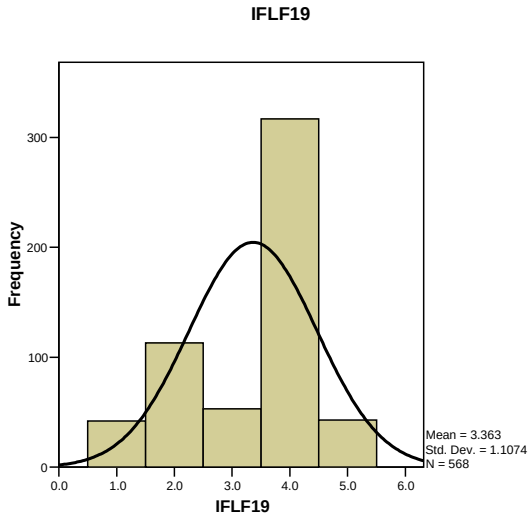
Question 18 correlated with Age ($r = .092$, $p < .05$), Years of Service ($r = .095$, $p < .05$), Years in Rank ($r = .147$, $p < .01$), Question 1 ($r = .197$, $p < .01$), Question 2 ($r = -.327$, $p < .01$), Question 3 ($r = .365$, $p < .01$), Question 4 ($r = -.265$, $p < .01$), Question 5 ($r = .227$, $p < .01$), Question 9 ($r = .388$, $p < .01$), Question 10 ($r = .308$, $p < .01$), Question 11 ($r = -.381$, $p < .01$), Question 12 ($r = .427$, $p < .01$), Question 13 ($r = .460$, $p < .01$), Question 14 ($r = .439$, $p < .01$), Question 15 ($r = .130$, $p < .01$), Question 17 ($r = .655$, $p < .01$), Question 19 ($r = .405$, $p < .01$), Question 20 ($r = .604$, $p < .01$), Question 24 ($r = -.214$, $p < .01$), Question 26 ($r = -.092$, $p < .01$), Question 28 ($r = -.130$, $p < .01$), Question 29 .($r = .107$, $p < .05$), Question 30 ($r = -.095$, $p < .05$).

Question 18 experienced a large effect with Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, and Question 20, the question that asked if the employee's opinion was considered important. Question 18 experienced a medium effect with Question 2, the question that asked if the employee received their assignment with little or no input from them, Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that

asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 11, the question that asked if the employee's schedule was provided for them and they had to follow it without deviation, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, and Question 19, the question that asked if within the work setting, input from others was considered in decision making.

Question 19: Within my work setting, input from others is considered in decision making.

For Question 19, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 42 (Strongly Disagree), 113 (Disagree), 53 (Undecided), 317 (Agree), and 43 (Strongly Agree). Skewness was -.745 and Kurtosis was -.573.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

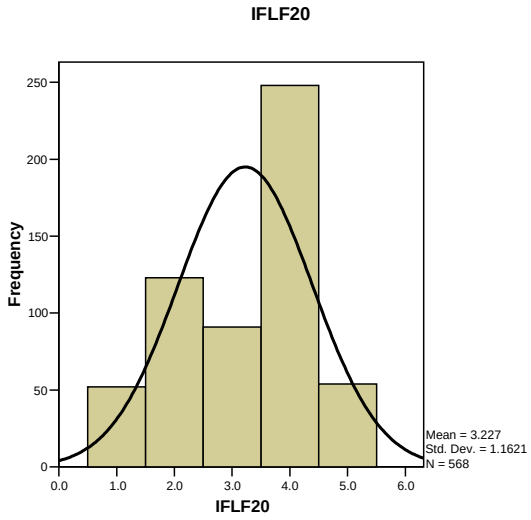
Question 19 correlated with Gender ($r = -.084$, $p < .05$), Rank ($r = .112$, $p < .01$), Years of Service ($r = .096$, $p < .05$), Question 1 ($r = .203$, $p < .01$), Question 2 ($r = -.195$, $p < .01$),

Question 3 ($r = .310$, $p < .01$), Question 4 ($r = -.242$, $p < .01$), Question 5 ($r = .219$, $p < .01$), Question 6 ($r = .206$, $p < .01$), Question 7 ($r = -.233$, $r < 01$), Question 9 ($r = .220$, $p < .01$), Question 10 ($r = .140$, $p < .01$), Question 11 ($r = -.233$, $p < .01$), Question 12 ($r = .206$, $p < .01$), Question 13 ($r = .279$, $p < .01$), Question 14 ($r = .249$, $p < .01$), Question 17 ($r = .388$, $p < .01$), Question 18 ($r = .405$, $p < .01$), Question 20 ($r = .532$, $p < .01$), Question 22 ($r = -.087$, $p < .05$), Question 24 ($r = -.122$, $p < .01$), Question 26 ($r = -.110$, $p < .01$).

Question 19 experienced a large effect with Question 20, the question that asked if the employee's opinion was considered important. Question 19 experienced a medium effect with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, and Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment.

Question 20: My opinion is considered important.

For Question 20, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 52 (Strongly Disagree), 123 (Disagree), 91 (Undecided), 248 (Agree), and 54 (Strongly Agree). Skewness was -.437 and Kurtosis was -.885.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

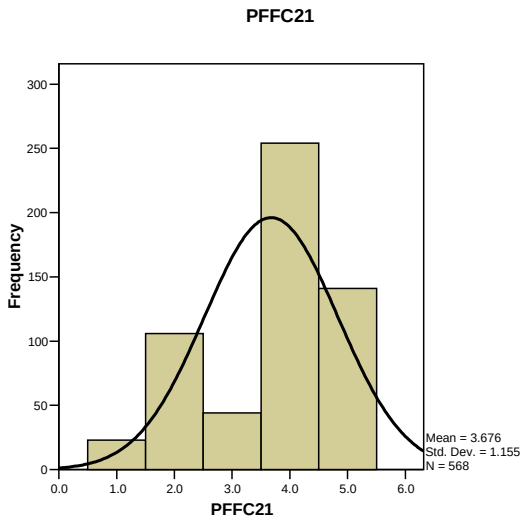
Question 20 correlated with Age ($r = .125$, $p < .01$), Rank ($r = .096$, $p < .05$), Years of Service ($r = .185$, $p < .01$), Years in Rank ($r = .090$, $p < .05$), Question 1 ($r = .189$, $p < .01$), Question 2 ($r = -.351$, $p < .01$), Question 3 ($r = .340$, $p < .01$), Question 4 ($r = -.250$, $p < .01$), Question 5 ($r = .295$, $p < .01$), Question 6 ($r = .224$, $p < .01$), Question 7 ($r = -.168$, $r < 01$), Question 9 ($r = .410$, $p < .01$), Question 10 ($r = .332$, $p < .01$), Question 11 ($r = -.447$, $p < .01$), Question 12 ($r = .347$, $p < .01$), Question 13 ($r = .453$, $p < .01$), Question 14 ($r = .405$, $p < .01$), Question 15 ($r = .101$, $p < .05$), Question 17 ($r = .536$, $p < .01$), Question 18 ($r = .604$, $p < .01$), Question 19 ($r = .532$, $p < .01$), Question 21 ($r = -.137$, $p < .01$), Question 22 ($r = -.162$, $p < .05$), Question 24 ($r = -.189$, $p < .01$), Question 26 ($r = -.085$, $p < .01$), Question 28 ($r = -.188$, $p < .01$), Question 29 ($r = .106$, $p < .05$), Question 32 ($r = .101$, $p < .05$).

Question 20 experienced a large effect with Question 17, the question that asked if the employee could communicate easily with their supervisors/subordinates about their work, Question 18, the question that asked if the employee was able to express their feeling about significant issues that affected their assignment, and Question 19, the question that asked if

within the work setting, input from others was considered in decision making. Question 20 experienced a medium effect with Question 2, the question that asked if the employee received their assignment with little or no input, Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 11, the question that asked if the employee's schedule was provided for them and they had to follow it without deviation, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, and Question 14, the question that asked if the employee could structure their workload as they saw fit.

Question 21: I need to work a specific schedule in order to meet my obligations at home.

For Question 21, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 23 (Strongly Disagree), 106 (Disagree), 44 (Undecided), 254 (Agree), and 141 (Strongly Agree). Skewness was -.709 and Kurtosis was -.551.



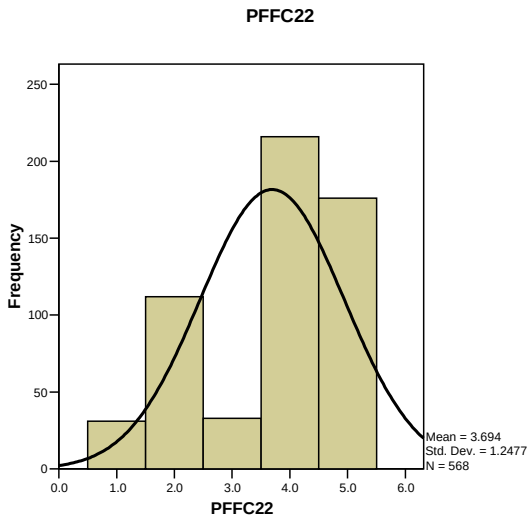
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 21 correlated with Gender ($r = .098$, $p < .05$), Question 3 ($r = -.119$, $p < .01$), Question 9 ($r = -.090$, $p < .05$), Question 10 ($r = -.139$, $p < .01$), Question 11 ($r = .150$, $p < .01$), Question 12 ($r = -.146$, $p < .01$), Question 13 ($r = -.119$, $p < .01$), Question 14 ($r = -.123$, $p < .01$), Question 16 ($r = .099$, $p < .05$), Question 20 ($r = -.137$, $p < .01$), Question 22 ($r = .676$, $p < .01$), Question 23 ($r = -.509$, $p < .01$), Question 24 ($r = .503$, $p < .01$), Question 25 ($r = .114$, $p < .01$), Question 26 ($r = .194$, $p < .01$), Question 27 ($r = .116$, $p < .01$), Question 28 ($r = -.166$, $p < .01$), Question 30 ($r = -.088$, $p < .05$).

Question 21 experienced a large effect with Question 22, the question that asked if the employee was rescheduled to a shift they didn't ordinarily work, they needed to make special arrangements at home, Question 23, the question that asked if the employee's family had no influence on what time I worked, and Question 24, the question that asked if the employee's home life required them to come home punctually.

Question 22: If I get rescheduled to a shift I do not ordinarily work, I need to make special arrangements at home.

For Question 22, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 31 (Strongly Disagree), 112 (Disagree), 33 (Undecided), 216 (Agree), and 176 (Strongly Agree). Skewness was -.695 and Kurtosis was -.754.



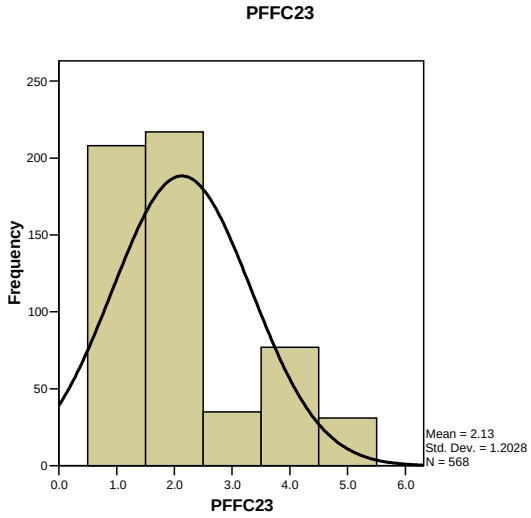
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 22 was correlated with Question 3 ($r = -.146$, $p < .01$), Question 4 ($r = .123$, $p < .01$), Question 9 ($r = -.159$, $p < .01$), Question 10 ($r = -.151$, $p < .01$), Question 11 ($r = .172$, $p < .01$), Question 12 ($r = -.185$, $p < .01$), Question 13 ($r = -.139$, $p < .01$), Question 14 ($r = -.125$, $p < .01$), Question 16 ($r = .091$, $p < .05$), Question 17 ($r = -.116$, $p < .01$), Question 19 ($r = -.087$, $p < .050$), Question 20 ($r = -.162$, $p < .01$), Question 21 ($r = .676$, $p < .01$), Question 23 ($r = -.497$, $p < .01$), Question 24 ($r = .530$, $p < .01$), Question 25 ($r = .139$, $p < .01$), Question 26 ($r = .221$, $p < .01$), Question 27 ($r = .157$, $p < .01$), Question 28 ($r = .201$, $p < .01$).

Question 22 experienced a large effect with Question 21, the question that asked if the employee needed to work a specific schedule in order to meet obligations at home, and Question 24, the question that asked if the employee's home life required them to come home punctually. Question 22 experienced a medium effect with Question 23, the question that asked if the employee's family had no influence on what time I worked.

Question 23: My family has no influence on what time I work.

For Question 23, the sample contained 568 valid results. The median and mode was 2.0. The Likert responses were 208 (Strongly Disagree), 217 (Disagree), 35 (Undecided), 77 (Agree), and 31 (Strongly Agree). Skewness was .974 and Kurtosis was -.118.



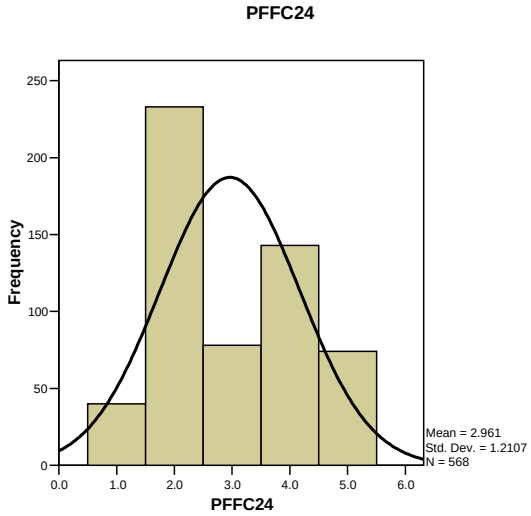
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 23 correlated with Rank ($r = -.105$, $p < .05$), Question 10 ($r = .130$, $p < .01$), Question 12 ($r = .126$, $p < .01$), Question 15 ($r = .132$, $p < .01$), Question 21 ($r = -.509$, $p < .01$), Question 22 ($r = -.497$, $p < .01$), Question 24 ($r = -.446$, $p < .01$), Question 26 ($r = -.145$, $p < .01$), Question 28 ($r = -.103$, $p < .05$), Question 31 ($r = .096$, $p < .05$).

Question 23 experienced a large effect with Question 21, the question that asked if the employee needed to work a specific schedule in order to meet obligations at home. Question 23 experienced a medium effect with Question 22, the question that asked if the employee was rescheduled to a shift they didn't ordinarily work, they needed to make special arrangements at home, and Question 24, the question that asked if the employee's home life required them to come home punctually.

Question 24: My home life requires that I come home punctually.

For Question 24, the sample contained 568 valid results. The median was 3.0 and the mode was 2.0. The Likert responses were 40 (Strongly Disagree), 233 (Disagree), 78 (Undecided), 143 (Agree), and 74 (Strongly Agree). Skewness was .278 and Kurtosis was -1.161.



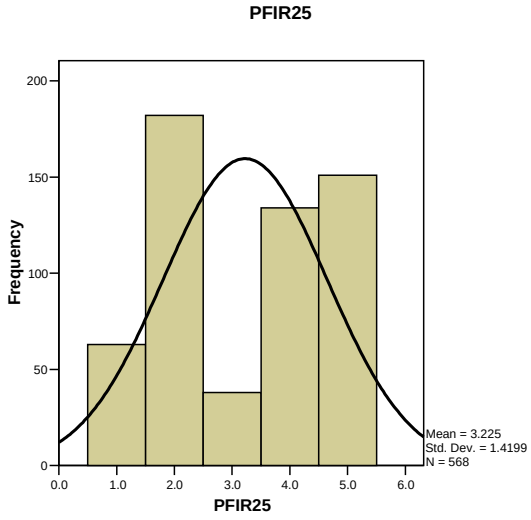
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 24 correlated with Gender ($r = .115$, $p < .01$), Question 2 ($r = .121$, $p < .01$), Question 3 ($r = -.208$, $p < .01$), Question 4 ($r = .141$, $p < .01$), Question 5 ($r = -.096$, $p < .05$), Question 9 ($r = -.179$, $p < .01$), Question 10 ($r = -.142$, $p < .01$), Question 11 ($r = .185$, $p < .01$), Question 12 ($r = -.180$, $p < .01$), Question 13 ($r = -.238$, $p < .01$), Question 14 ($r = -.131$, $p < .01$), Question 15 ($r = -.085$, $p < .05$), Question 17 ($r = -.200$, $p < .01$), Question 18 ($r = -.214$, $p < .01$), Question 19 ($r = -.122$, $p < .01$), Question 20 ($r = -.189$, $p < .01$), Question 21 ($r = .503$, $p < .01$), Question 22 ($r = .530$, $p < .01$), Question 23 ($r = -.446$, $p < .01$), Question 25 ($r = .111$, $p < .01$), Question 26 ($r = .240$, $p < .01$), Question 28 ($r = .161$, $p < .01$), Question 29 ($r = .095$, $p < .05$), Question 30 ($r = -.090$, $p < .05$).

Question 24 experienced a large effect with Question 21, the question that asked if the employee needed to work a specific schedule in order to meet obligations at home, and Question 22, the question that asked if the employee was rescheduled to a shift they didn't ordinarily work, they needed to make special arrangements at home. Question 24 experienced a medium effect with Question 23, the question that asked if the employee's family had no influence on what time the employee worked.

Question 25: I work an extra job to supplement my income.

For Question 25, the sample contained 568 valid results. The median was 4.0 and the mode was 2.0. The Likert responses were 63 (Strongly Disagree), 182 (Disagree), 38 (Undecided), 134 (Agree), and 151 (Strongly Agree). Skewness was -.076 and Kurtosis was -1.481.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

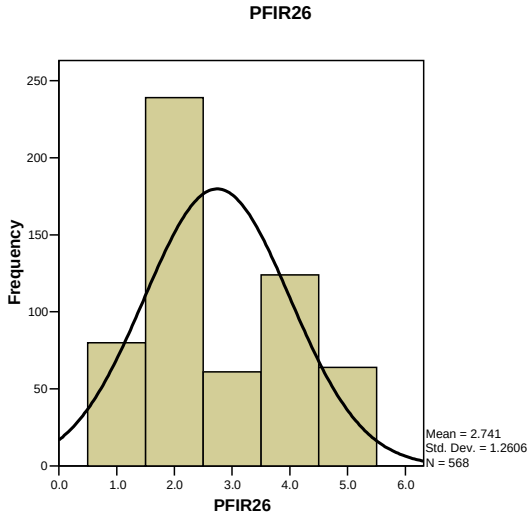
Question 25 correlated with Gender ($r = -.090$, $p < .05$), Rank ($r = -.127$, $p < .01$), Years in Rank ($r = .134$, $p < .01$), Years in Assignment ($r = .111$, $p < .01$), .01), Question 21 ($r = .114$, p

< .01), Question 22 (r = .139, p < .01), Question 24 (r = .111, p < .01), Question 26 (r = .692, p < .01), Question 27 (r = .372, p < .01), Question 28 (r = .370, p < .01).

Question 25 experienced a large effect with Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment. Question 25 experienced a medium effect with Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay their bills, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements.

Question 26: I need to work a specific shift/schedule to meet the demands of other employment.

For Question 26, the sample contained 568 valid results. The median and mode was 2.0. The Likert responses were 80 (Strongly Disagree), 239 (Disagree), 61 (Undecided), 124 (Agree), and 64 (Strongly Agree). Skewness was .412 and Kurtosis was -1.050.



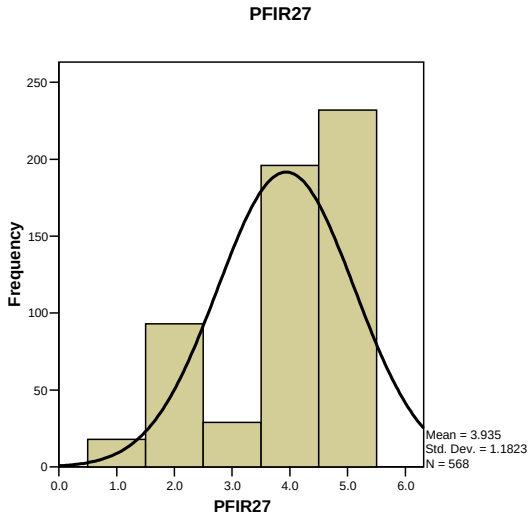
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 26 correlated with Rank ($r = -.137$, $p < .01$), Years in Rank ($r = .126$, $p < .01$), Years in Assignment ($r = .111$, $p < .01$), Question 3 ($r = -.129$, $p < .01$), Question 4 ($r = .126$, $p < .01$), Question 5 ($r = -.090$, $p < .05$), Question 7 ($r = .095$, $p < .05$), Question 11 ($r = .118$, $p < .01$), Question 12 ($r = -.082$, $p < .05$), Question 13 ($r = -.096$, $p < .05$), Question 14 ($r = -.096$, $p < .05$), Question 17 ($r = -.127$, $p < .01$), Question 18 ($r = -.092$, $p < .05$), Question 19 ($r = -.110$, $p < .01$), Question 20 ($r = -.085$, $p < .05$), Question 21 ($r = .194$, $p < .01$), Question 22 ($r = .221$, $p < .01$), Question 23 ($r = -.145$, $p < .01$), Question 24 ($r = .240$, $p < .01$), Question 25 ($r = .692$, $p < .01$), Question 27 ($r = .321$, $p < .01$), Question 28 ($r = .363$, $p < .01$).

Question 26 experienced a large effect with Question 25, the question that asked if the employee needed to work an extra job to supplement their income. Question 26 experienced a medium effect with Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay their bills, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements.

Question 27: I need to work a certain amount of overtime every month to pay my bills.

For Question 27, the sample contained 568 valid results. The median was 4.0 and the mode was 5.0. The Likert responses were 18 (Strongly Disagree), 93 (Disagree), 29 (Undecided), 196 (Agree), and 232 (Strongly Agree). Skewness was -.934 and Kurtosis was -.316.



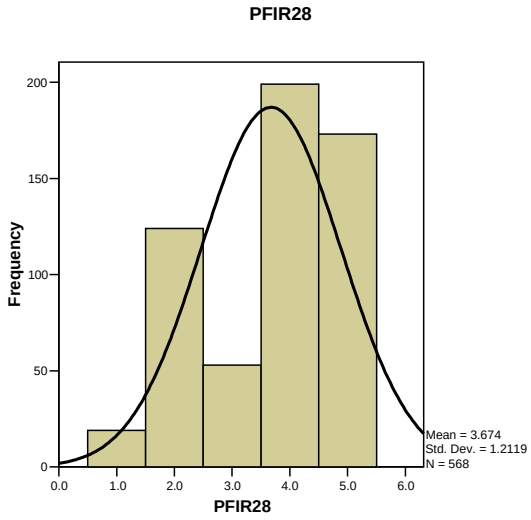
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 27 correlated with Age ($r = -.107$, $p < .05$), Gender ($r = -.106$, r , .05), Rank ($r = -.204$, $p < .01$), Question 3 ($r = -.107$, $p < .05$), Question 4 ($r = .106$, $p < .05$), Question 10 ($r = -.095$, $p < .05$), Question 11 ($r = .113$, $p < .01$), Question 17 ($r = -.116$, $p < .01$), Question 21 ($r = .116$, $p < .01$), Question 22 ($r = .157$, $p < .01$), Question 25 ($r = .372$, $p < .01$), Question 26 ($r = .321$, $p < .01$), Question 28 ($r = .580$, $p < .01$), Question 30 ($r = .165$, $p < .01$).

Question 27 experienced a large effect with Question 28, the question that asked if the employee relied on shift differential to meet income requirements. Question 27 experienced a medium effect with Question 25, the question that asked if the employee needed to work an extra job to supplement their income, and Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment.

Question 28: I rely on shift differential to meet income requirements.

For Question 28, the sample contained 568 valid results. The median and mode was 4.0. The Likert responses were 19 (Strongly Disagree), 124 (Disagree), 53 (Undecided), 199 (Agree), and 173 (Strongly Agree). Skewness was -.549 and Kurtosis was -.955.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

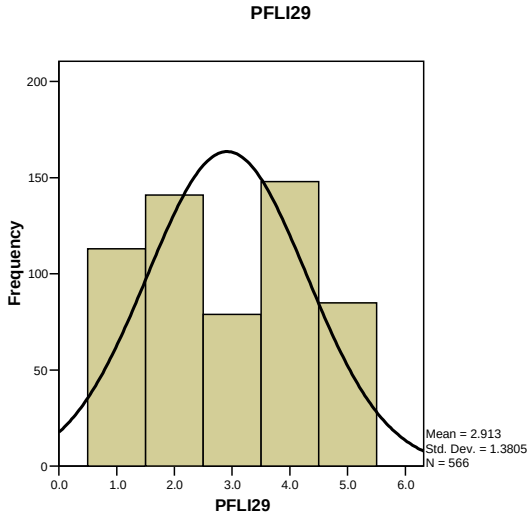
Question 28 correlated with Age ($r = -.126$, $p < .01$), Rank ($r = -.144$, $p < .01$), Years of Service ($r = -.106$, $p < .05$), Question 3 ($r = -.088$, $p < .05$), Question 4 ($r = .125$, $p < .01$), Question 5 ($r = -.118$, $p < .01$), Question 9 ($r = -.155$, $p < .01$), Question 10 ($r = -.129$, $p < .01$), Question 11 ($r = .198$, $p < .01$), Question 12 ($r = -.124$, $p < .01$), Question 13 ($r = -.117$, $p < .01$), Question 14 ($r = -.136$, $p < .01$), Question 17 ($r = -.156$, $p < .01$), Question 18 ($r = -.130$, $p < .01$), Question 20 ($r = -.188$, $p < .01$), Question 21 ($r = .166$, $p < .01$), Question 22 ($r = .201$, $p < .01$), Question 23 ($r = -.103$, $p < .05$), Question 24 ($r = .161$, $p < .01$), Question 25 ($r = .370$, $p < .01$), Question 26 ($r = 363$, $p < .01$), Question 27 ($r = .580$, $p < .01$), Question 29 ($r = -.228$, $p < .01$), Question 30 ($r = .146$, $p < .01$), Question 31 ($r = .217$, $p < .01$).

Question 28 experienced a large effect with Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay their bills. Question 28 experienced a medium effect with Question 25, the question that asked if the employee needed to work an extra job to supplement their income, and Question 26, the question that asked

if the employee needed to work a specific shift/schedule to meet the demands of other employment.

Question 29: I prefer to work the day shift.

For Question 29, the sample contained 566 valid results. Two surveys had no response for the question selected. The median was 3.0 and the mode was 4.0. The Likert responses were 113 (Strongly Disagree), 141 (Disagree), 79 (Undecided), 148 (Agree), and 85 (Strongly Agree). Skewness was .043 and Kurtosis was -1.326.



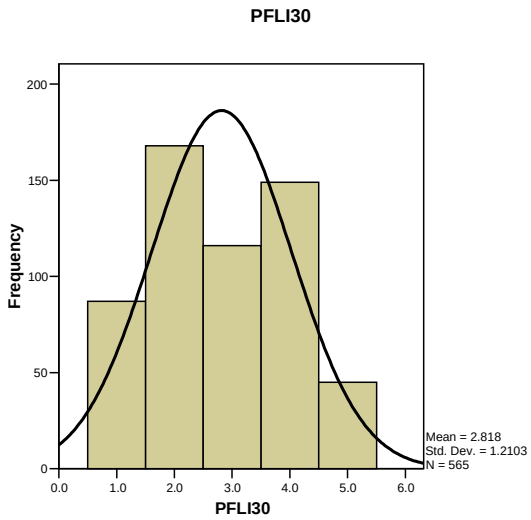
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 29 correlated with Age ($r = .124$, $p < .01$), Gender ($r = .117$, $p < .01$), Rank ($r = -.126$, $p < .01$), Years in Rank ($r = .115$, $p < .01$), Years in Assignment ($r = .096$, $p < .05$), Question 5 ($r = .136$, $p < .01$), Question 9 ($r = -.143$, $p < .01$), Question 10 ($r = .117$, $p < .01$), Question 11 ($r = -.160$, $p < .01$), Question 12 ($r = .090$, $p < .05$), Question 14 ($r = .107$, $p < .05$), Question 18 ($r = .107$, $p < .05$), Question 20 ($r = .106$, $p < .05$), Question 24 ($r = .095$, $p < .05$), Question 28 ($r = -.228$, $p < .01$), Question 30 ($r = -.345$, $p < .01$), Question 31 ($r = -.556$, $p < .01$), Question 32 ($r = .083$, $p < .05$).

Question 29 experienced a large effect with Question 31, the question that asked if the employee enjoyed working the night shift. Question 29 experienced a medium effect with Question 30, the question that asked if the employee would rather work in the afternoon.

Question 30: I would rather work in the afternoons.

For Question 30, the sample contained 565 valid results. Three surveys had no response for the question selected. The median was 3.0 and the mode was 2.0. The Likert responses were 87 (Strongly Disagree), 168 (Disagree), 116 (Undecided), 149 (Agree), and 45 (Strongly Agree). Skewness was .101 and Kurtosis was -1.065.



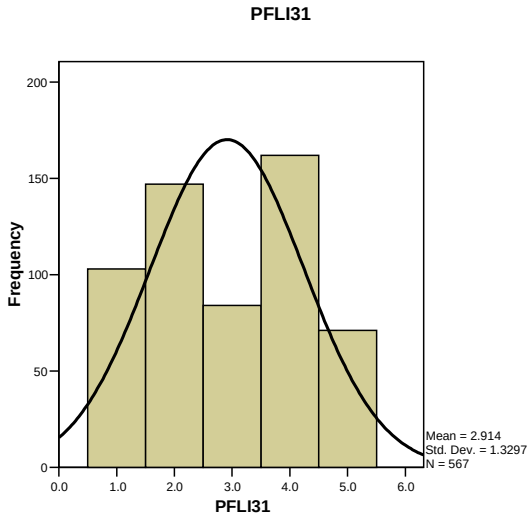
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 30 correlated with Gender ($r = -.134$, $p < 01$), Rank ($r = .191$, $p < .01$), Years in Rank ($r = -.148$, $p < .01$), Years in Assignment ($r = -.089$, $p < .05$), Question 2 ($r = .089$, $p < .05$), Question 4 ($r = .120$, $p < .01$), Question 18 ($r = -.095$, $p < .05$), Question 21 ($r = -.088$, $p < .05$), Question 24 ($r = -.090$, $p < .05$), Question 27 ($r = .165$, $p < .01$), Question 28 ($r = .146$, $p < .01$), Question 29 ($r = -.345$, $p < .01$).

Question 30 experienced a medium effect with Question 29, the question that asked if the employee preferred to work the day shift.

Question 31: I enjoy working the night shift.

For Question 31, the sample contained 567 valid results. One survey had no response for the question selected. The median was 3.0 and the mode was 4.0. The Likert responses were 103 (Strongly Disagree), 147 (Disagree), 84 (Undecided), 162 (Agree), and 71 (Strongly Agree). Skewness was .014 and Kurtosis was -1.271.



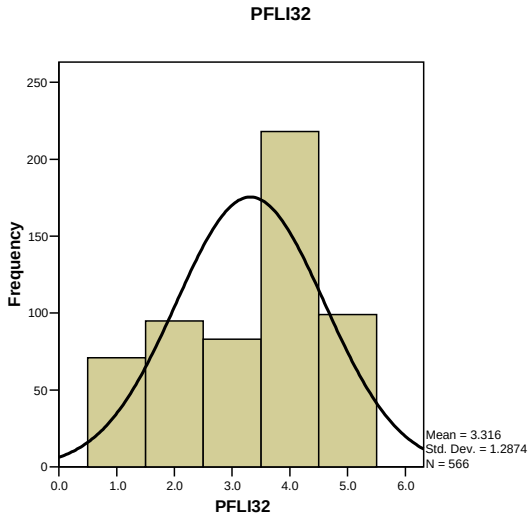
1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 31 correlated with Gender ($r = -.085$, $p < .01$), Years in Rank ($r = -.087$, $p < .05$), Question 23 ($r = .090$, $p < .05$), Question 28 ($r = .217$, $p < .01$), Question 29 ($r = -.556$, $p < .01$), Question 32 ($r = -.086$, $p < .05$).

Question 31 experienced a large effect with Question 29, the question that asked if the employee preferred to work the day shift.

Question 32: I find that the shift I am working best reflects my waking/sleeping patterns.

For Question 32, the sample contained 566 valid results. Two surveys had no response for the question selected. The median and mode was 4.0. The Likert responses were 71 (Strongly Disagree), 95 (Disagree), 83 (Undecided), 218 (Agree), and 99 (Strongly Agree). Skewness was -.466 and Kurtosis was -.950.



1.0 (Strongly Disagree), 2.0 (Disagree), 3.0 (Undecided) 4.0 (Agree), 5.0 (Strongly Disagree)

Question 32 was correlated with Question 1 ($r = .167$, $p < .01$), Question 2 ($r = -.133$, $p < .01$), Question 3 ($r = .274$, $p < .01$), Question 4 ($r = -.337$, $p < .01$), Question 5 ($r = .084$, $p < .05$), Question 6 ($r = .180$, $p < .01$), Question 9 ($r = .098$, $p < .05$), Question 14 ($r = .130$, $p < .01$), Question 20 ($r = .101$, $p < .05$), Question 29 ($r = .083$, $p < .05$), Question 31 ($r = -.086$, $p < .05$).

Question 32 experienced a medium effect with Question 4, the question that asked if the employee had a choice, they would work a different shift.

Chapter 5-Data Analysis

Herzberg posited a theory of motivation based on two factors that influence motivation. Known as motivation/hygiene factors, Herzberg argued these constructs influenced employee motivation and subsequent performance. Within the context of this theoretical framework, this study was designed to capture information in support of this theory. A survey was constructed that asked for demographic statistics of the employee first, and attitudes towards various aspects of the employment, second. These employment aspects were divided into multiple factors that incorporated the two components of Herzberg's theory.

These multiple factors were divided into two components, internal, institutional and external, personal, designed to capture attitudes on a range of employee concerns. The internal, institutional factors were identified as hygiene factors and were indicative of the work environment. According to Herzberg, their presence did not necessarily motivate people. Their absence created dissatisfaction in the employee. The external, personal factors were known as the motivators. These factors were important to the employee to perform better within the work environment. These motivators needed constant attention to motivate the employee.

The first part of the results analysis involved the reliability calculation. The calculation of Cronbach's α was used as a reliability measure for the survey. Values between .7 and .8 indicated good consistency in the measure (Field, 2009). The survey was modified into various configurations in an attempt to improve the reliability indices. The calculation for the entire data set served as the baseline against which all reliability indices for the various configurations were compared.

The survey responses that comprised the entire data set had a reliability factor of .726. This index was improved by various amounts with the removal of questions--from the

institutional factors/significance of assignment, the institutional factors/independence of assignment, the personal factors/family concerns, the personal factors/income requirements, and the personal factors/lifestyle issues—with the greatest increase in reliability to .739.

Any improvement in reliability occurred with removal of questions from the external/personal factors section of the survey, with the greatest improvement in removal of the last section which gathered information on personal shift preferences. This was intuitive since these questions were not designed around a specific factor, and had the greatest variability.

The other external/personal factors highlighted the demographic variability in the sample. The sample was understood to have consisted of the range of families, from single people, to families with and without children, to single parent households. This explained the variability in the various questions on the family concerns, income requirements and lifestyle issues.

The removal of the last four questions, designed to elicit a preference for a specific shift, and whether or not the shift agreed with the respondent, resulted in a reliability of .752. When questions from institutional factors/significance of assignment, institutional factors/independence of assignment, personal factors/family concerns, personal factors/income requirements were removed the reliability increased to .759.

The reliability index for the first four questions that comprised the institutional factors/shift assignment was .733. The reliability index was not improved if any items were deleted from the reliability analysis. This fact highlighted the consistency of responses to the two primary questions and their opposites.

The reliability index for the four questions that comprised the institutional factors/significance of assignment was .570. The index was improved to .641 with the removal of the question on whether or not the assignment existed before the terrorist events of 2001. This

was also expected since there would be variability within the sample that reflected the Department's organizational changes after the 2001 terrorist events.

The reliability index of the four questions that comprised the institutional factor/autonomy of assignment was .836. The index didn't improve if any other questions were deleted from the reliability analysis. This result was both knowing and telling, since it highlighted great consistency amongst the sample and figured significantly in the subsequent principal component analysis.

The reliability index of the four questions that comprised the institutional factors/independence of assignment was .473. The index was not improved if any items were deleted from the reliability analysis. The lack of consistency here was considered an artifact of the design of the questions that gathered information on freedom and workload, although related with regard to independence, not necessarily related to each other, and the Department's bureaucratic nature. Rank structure influenced differentially the amount of freedom and independence the employee experienced.

The reliability index for the questions that comprised the institutional factors/level of feedback was .813. When the question on the importance of the employee's opinion was removed, the index improved to .817. Once again, this was seen as an artifact of the rank structure and the Department's bureaucratic nature.

The reliability index for the questions that comprised the personal factors/family concerns was .816. The index was not improved if any items were deleted f descriptive statistics. The consistency was attributed to the importance of the family in the work/family nexus.

The reliability index for the questions that comprised the personal factors/income requirements was .766. This index was not improved if any items were deleted from the reliability analysis. Survey respondents were more inclined to rely on overtime and shift differential wages to supplement their income, than any income derived from additional employment.

The reliability index for the questions that comprised the personal factors/lifestyle issues was -1.161. This negative value was the result of questions designed to capture opinions on four separate items—day shift, afternoon shift, night shift, waking/sleeping patterns. The consequence was no consistency in responses. There was no redundancy in questions incorporated into the section design, unlike the other factors.

A profile of the survey respondents was collected. These results were unable to be compared to the profile of the entire population, due to denial of access. It was inferred, however, the sample was representative of the larger population due to its size. The various correlations calculated for the sample were of greater value in the descriptive analysis. These measures of association began to highlight the importance of the identified factors that comprised the Motivation Index. Each item identified something important towards overall support of Herzberg's theory.

The sample size was deemed adequate with verification by G*Power, which calculated a minimum sample size of 524 cases for a two-tailed analysis with .01 level of significance and an effect size of .3 and power of .8. Field (2009) suggested the correlation coefficient was a good indicator of effect size. The values of r = .1 (small effect), r = .3 (medium effect), and r = .5 (large effect) were suggested to explain 1%, 9%, and 25% of the variance in the data. Squaring the correlation value gave the amount of shared variance for the two variables (Coefficient of

Determination). Although all significant correlations were presented, only conclusions were drawn for correlations with a medium effect or greater. The questions were combined according to the various parts that comprised the Motivation Index. Conclusions were discussed within the overall context of the relationships for each question in the component as a measure of association, rather than any causal inference.

The Age variable was positively related to the Years in Service, Years in Rank, and Years in Assignment variables. Older personnel averaged more years in each component. Age accounted for 64% of the shared variance in the Years in Service variable, 26% of the shared variance in the Years in Rank variable, and 15% of the shared variance in the Years in Assignment variable. As personnel aged, they experienced the effect of increased time in each variable.

Using the .3 effect size threshold, there were no variables significantly associated with Gender. With the largest shared variance of 3%, shared with Years in Service, all other shared variances were less. This fact highlights the neutrality of Gender in this sample of personnel. Gender had no effect on the survey results, indicating the factors were relevant to all.

The Years of Service variable correlated positively with the Age, Years in Rank, and Years in Assignment variables. The Years of Service variable accounted for 64% of the shared variance in the Age variable, 31% of the shared variance in the Years in Rank variable, and 21% of the shared variance with the Years in Assignment variable. It was intuitive and understood that as personnel increased their years of service, they tended to remain at their assignments for longer periods.

The Rank variable was negatively correlated with the Years in Rank variable, and accounted for 20% of the shared variance with Years in Rank. In this sample, the higher the

rank, the less time in rank for the officers. None of the other questions met the .3 threshold, and indicated rank was not important in factor identification.

The Years in Rank variable correlated positively with the Age variable, the Years of Service variable, and the Years in Assignment variable. Years in Rank was negatively correlated with the Rank variable. The Years in Rank variable accounted for 26% of the shared variance with the Age variable, 31% of the shared variance with the Years of Service variable, and 33% of the shared variance with the Years in Assignment variable. Years in Rank accounted for 20% of the shared variance in the Rank variable. Older personnel tended to have more years in rank. Personnel with fewer years in rank had fewer years in their assignment, a consequence movement to another assignment after promotion. The higher the rank, the fewer the years in rank the respondent had.

The Years in Assignment variable positively correlated with the Age variable, the Years of Service variable, and the Years in Rank variable. The Years in Assignment explained 14.7% of the shared variance with the Age variable, 21% of the shared variance with the Years of Service variable, and 33% of the shared variance with the Years in Rank variable. It appeared that the fewer the years in assignment, the fewer the years in rank the employee had.

Question 1 asked whether or not the employee had any input into what shift they were assigned to. Question 1 correlated negatively with Question 2, designed to be the opposite of Question 1, and asked if the employee received their shift assignment with little or no input and with Question 4, the question that asked if the employee would choose to work a different shift. Input into shift assignment explained 12% of the shared variance with Question 2 and 12% of the shared variance with Question 4. There were no additional correlations identified above the .3 threshold.

Question 2 asked if the employee received their shift assignment with little or no personal input. Question 2 correlated positively with Question 4, the question that asked if the employee preferred to work a different shift. Question 2 accounted for 12% of the shared variance with Question 1 and 17% of the shared variance with Question 4.

Question 2 correlated negatively with Question 1, the question that asked if the employee received their assignment after discussion, Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 13, the question that asked if the employee had great freedom within their assignment, Question 18, the question that asked if the employee was allowed to express their feelings about significant issued that affected their assignment, and Question 20, the question that asked if the employee's opinion was important. Question 2 accounted for 17% of the shared variance with Question 3, 10% of the shared variance with Question 13, 11% of the shared variance with Question 18, and 12% of the shared variance with Question 20.

Question 3 asked if the respondent was satisfied with their shift assignment. Question 3 correlated positively with Question 1, the question that asked if the respondent received their shift assignment after conferral and discussion, Question 9, the question that asked if the employee had flexibility in their schedule, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 18, the question that asked if the employee could express their feelings about significant issues affecting their assignment, Question 19, the question that asked if input from others was considered in decision making, and Question 20, the question that asked if the respondent's opinion was considered important.

Question 3 accounted for 14% of the shared variance with Question 1, 12% of the shared variance with Question 9, 10% of the shared variance with Question 12, 12% of the shared variance with Question 13, 11% of the shared variance with Question 14, 13% of the shared variance with Question 18, 10% of the shared variance with Question 19, and 12% of the shared variance with Question 20.

Question 3 correlated negatively with Question 2 and Question 4. Question 3 accounted for 17% of the shared variance with Question 2 and 44% of the shared variance with Question 4.

Question 4 asked if the employee would change their shift, if given a choice. Question 4 correlated positively with Question 2, the question that asked if the employee received the shift assignment with little or no input. Question 4 accounted for 14% of the shared variance with Question 2.

Question 4 correlated negatively with Question 1, the question that asked if the shift assignment occurred after discussion and conferral with the employee, Question 3, the question that asked if the employee was satisfied with their shift assignment, and Question 32, the question that asked if the shift the employee worked best reflected their waking/sleeping patterns. Question 4 accounted for 12% of the shared variance with Question 1, 44% of the shared variance with Question 3, and 11% of the shared variance with Question 32.

Survey respondents tended to be assigned to a specific shift after conferral and discussion. This point was confirmed with the question that asked if the employee received their shift assignment with little or no input, and yielded opposite results. As a consequence, they were satisfied with their shift assignment. If given a choice, most employees preferred their shift. There were, however, a significant group of respondents that preferred to work another shift.

Employees believed their shift assignments were not random and arbitrary. They were allowed to express their opinions about their assignment, and their opinions were considered important. The employees, although they felt their shift assignment was planned, they tended to split their agreement about the freedom in their assignment. Although most felt they had limited freedom in their assignment, there was a significant group that felt they did have freedom in their assignment. This could be contributed to personnel with significant freedom in their assignment that responded to the survey, e.g., integrity control officers that work any schedule mutually agreed to with the unit's commanding officer.

Employees were satisfied with their shift assignments and given a choice, would not change their shift. This was supported by the fact that employees had input into their shift assignment. Employees felt they had flexibility in their schedule, but were not able to take off whenever they wanted.

Employees were split with regard to the freedom within their assignment and structuring their workload. This was an artifact of the rank structure of the survey participants. Those in leadership positions experienced more freedom than their subordinates, but still restricted by bureaucratic structure of the Department and its organizational mandates.

Most employees would not change their shift assignment, given a choice. This appeared to be a consequence of employee input into designation of shift assignment. The employees also felt the shift they were assigned to, reflected their waking/sleeping patterns. This should be interpreted with care, however, since it may be an artifact of the employee getting used to the specific shift they are assigned.

There was a substantial group, however, that would change their shift, given the choice. This was an important finding, since this indicated a difference of opinion with regard to shift

assignment. Further exploration would identify the other variables that affected the employee's preference for shift assignment.

Question 5 asked if the Department considered the employee's assignment vital to its operation. Question 5 correlated positively with Question 6, the question that asked if the employee's assignment was important for others to do their jobs. Question 5 accounted for 16% of the share variance with Question 6.

Question 5 correlated negatively with Question 7, the question that asked if the Department could do away with the employee's assignment with little or no impact on service delivery. Question 5 accounted for 10% of the shared variance with Question 7.

Question 6 asked if the employee's assignment was important for others to do their jobs. Question 6 correlated positively with Question 5, the question that asked if the employee's assignment was vital to Department operations. Question 6 accounted for 16% of the shared variance with Question 5.

Question 6 correlated negatively with Question 7, the question that asked if the Department could do away with the employee's assignment with little or no impact on service delivery. Question 6 accounted for 17% of the shared variance with Question 7.

Question 7 asked whether the Department could do away with the employee's assignment with little or no impact on service delivery. Question 7 was not correlated positively with any questions. Question 7 correlated negatively with Question 5, the question that asked if the Department considered the assignment vital to its operation and Question 6, the question that asked if the assignment was important for others to do their jobs. Question 7 accounted for 10% of the shared variance with Question 5 and 17% of the shared variance with Question 6.

Question 8 asked if the employee's assignment existed before the terrorist events of 2001. The question was designed to capture if any respondents belonged to units formed since September 2001, when the Department underwent organizational restructuring and added the Counterterrorism Bureau to its operations. The respondents predominantly disagreed with the question. As such, few associations were expected and confirmed by the question having no associations with any other questions.

Employees considered their assignments important for the Department's mission, and significantly important for other employees to complete their tasks. Employees strongly disagreed with the statement that the Department could do away with their assignment with little or no impact on police services. While this importance was measured only as an attitude, the responses indicated the employees placed their assignments high on a hierarchy of all assignments, regardless of the type of assignment.

Employees considered their assignment important, for others and the Department. This reflected the positive attitude towards the assignment and suggested employees were predominantly satisfied with their position and assignment. Whether or not this was in fact true, was irrelevant. It was the attitude that mattered, and the associations continued in the expected directions. Employees found agency in their assignments that reflected in their responses to the various questions.

Question 9 asked if the employee had great flexibility in their schedule. Question 9 correlated positively with Question 3, the question the asked if the employee was satisfied with their shift assignment, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom

within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with supervisors or subordinates about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 9 accounted for 12% of the shared variance with Question 3, 35% of the shared variance with Question 10, 28% of the shared variance with Question 12, 32% of the shared variance with Question 13, 24% of the shared variance with Question 14, 12% of the shared variance with Question 17, 15% of the shared variance with Question 18, and 17% of the shared variance with Question 20.

Question 9 correlated negatively with Question 11, the question that asked if the employee's schedule was provided for them, and they had to follow it without deviation. Question 9 accounted for 47% of the shared variance with Question 11.

Question 10 asked if the employee could come to work whenever they wanted. Question 10 correlated positively with Question 9, the question that asked if the employee had flexibility in their schedule, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 10 accounted for 35% of the shared variance with Question 9, 28% of the shared variance with Question 12, 24% of the

shared variance with Question 13, 20% of the shared variance with Question 14, 9% of the shared variance with Question 18, and 11% of the shared variance with Question 20.

Question 10 correlated negatively with Question 11, the question that asked if the employee could take off whenever they wanted. Question 10 accounted for 30% of the shared variance with Question 11.

Question 11 asked if the employee was provided with a schedule that they had to follow without deviation. Question 11 did not correlate positively with any questions. Question 11 correlated negatively with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom in their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee could express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 11 accounted for 47% of the shared variance with Question 9, 30% of the shared variance with Question 10, 24% of the shared variance with Question 12, 24% of the shared variance with Question 13, 19% of the shared variance with Question 14, 12% of the shared variance with Question 17, 15% of the shared variance with Question 18, and 20% of the shared variance with Question 20.

Question 12 asked if the employee could take off whenever they wanted. Question 12 correlated positively with Question 3, the question that asked if the employee was satisfied with

their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 12 accounted for 10% of the shared variance with Question 3, 28% of the shared variance with Question 9, 28% of the shared variance with Question 10, 30% of the shared variance with Question 13, 13% of the shared variance with Question 17, 18% of the shared variance with Question 18, and 12% of the shared variance with Question 20.

Question 12 correlated negatively with Question 11, the question that asked if a schedule was provided for the employee, which they had to follow without deviation, Question 14, the question that asked if the employee could structure their workload as they saw fit. Question 12 accounted for 24% of the shared variance with Question 11 and 24% of the shared variance with Question 14.

Employees tended to split on the questions of schedule flexibility and planning. This was attributed to rank and specific assignment within the Department. Police Officers and Sergeants assigned to the Patrol Services Bureau followed a prescribed schedule, and were mandated to work according to minimum manning requirements. The minimum number of required resources—sector patrols, precinct staff, and supervisors—precluded many from taking off, or changing their schedules. More scheduling flexibility was afforded the Lieutenants. As long as these managers had subordinate supervisors assigned to the shift, they were able to restructure

their shift assignment to a greater extent than the sergeants. Most respondents, however, agreed they were still limited to when they could take off.

This limitation was attributed to the Department's bureaucratic nature and emphasis on maintaining an adequate number of personnel resources to accomplish the patrol services function. Deviations were attributed to the support and investigative services, those assignments considered secondary to the patrol function, and more in a supportive role.

Question 13 asked if the employee had great freedom within their assignment. Question 13 correlated positively with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 14, the question that asked if the employee could structure their work load as they saw fit, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 13 accounted for 12% of the shared variance with Question 3, 32% of the shared variance with Question 9, 24% of the shared variance with Question 10, 30% of the shared variance with Question 12, 38% of the shared variance with Question 14, 16% of the shared variance with Question 17, 21% of the shared variance with Question 18, and 21% of the shared variance with Question 20.

Question 13 correlated negatively with Question 2, the question that asked if the employee received their assignment with little or no input from them, Question 11, the question

that asked if the employee's schedule was provided for them and they had to follow it without deviation. Question 13 accounted for 10% of the shared variance with Question 2 and 24% of the shared variance with Question 11.

Question 14 asked if the employee could structure their workload as they saw fit. Question 14 correlated positively with Question 3, the question that asked if the employee was satisfied with their assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom in their assignment, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee could express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 14 accounted for 11% of the shared variance with Question 3, 24% of the shared variance with Question 9, 20% of the shared variance with Question 10, 24% of the shared variance with Question 12, 38% of the shared variance with Question 13, 12% of the shared variance with Question 17, 19% of the shared variance with Question 18, and 16% of the shared variance with Question 20.

Question 14 correlated negatively with Question 11, the question that asked if the employee had a schedule provided for them, which they had to follow without deviation. Question 14 accounted for 19% of the shared variance with Question 11

Question 15 asked if the employee's assignment did not rely on others. Question 15 did not correlate significantly with any other questions.

Question 16 asked if the employee had to do certain tasks frequently. Question 16 did not correlate significantly with any other questions.

Employees tended to disagree that they possessed great freedom within their assignment. This was determined to be the consequence of the bureaucratic nature of the Department, where the employee was assigned to accomplish certain tasks towards the overall Department mandate. Overall, employees felt they had to complete their assigned tasks within an organizational mosaic of interdependent personnel, all components working towards a shared goal. They were satisfied within their work setting.

The results, however, revealed another aspect of the employee, entirely different from the previous results. A significant sample of respondents tended to agree that they possessed great freedom within their assignment. This may have been the result of respondents that were assigned to several assignments within the Department that possessed more independence than the regular patrol officer. These assignments included various investigative assignments and the position of Integrity Control Officer. It was entirely possible the sample captured personnel assigned to these various units that possessed certain independence within their assignments.

Detectives assigned to the investigative units such as the Detective Bureau had certain independence not allowed regular patrol officers. They were assigned to follow a specific schedule and were assigned to investigate incidents which occurred within their jurisdiction while they worked. They were allowed, however, certain latitude when it came to their assigned investigations. As long as they displayed progress in their caseload, they were pretty much left to function with little supervision.

In addition, the position of Integrity Control Officer allowed the greatest amount of independence of any employee within the organization. This position, designed to be an independent oversight of precinct operations, was staffed by middle level managers, and worked directly for the commanding officer. They were allowed to structure all aspects of their assignment as they saw fit, with the commanding officer's approval.

Question 17 asked if the employee was able to communicate easily with supervisor/subordinate about their work. Question 17 correlated positively with Question 9, the question that asked if the employee had great flexibility in their schedule, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, Question 19, the question that asked if input from others was considered in decision making, and Question 20, the question that asked if the employee's opinion was considered important. Question 17 accounted for 12% of the shared variance with Question 9, 13% of the shared variance with Question 12, 16% of the shared variance with Question 13, 12% of the shared variance with Question 14, 43% of the shared variance with Question 18, 15% of the shared variance with Question 19, and 29% of the shared variance with Question 20.

Question 17 correlated negatively with Question 11, the question that asked if the employee's schedule was provided for them, to follow without deviation. Question 17 accounted for 12% of the shared variance with Question 11.

Question 18 asked if the employee was allowed to express their feelings about significant issues that affected their assignment. Question 18 correlated positively with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked of the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 19, the question that asked if input was considered in decision making, and Question 20, the question that asked if the employee's opinion was considered important. Question 18 accounted for 13% of the shared variance with Question 3, 15% of the shared variance with Question 9, 9% of the shared variance with Question 10, 18% of the shared variance with Question 12, 21% of the shared variance with Question 13, 19% of the shared variance with Question 14, 43% of the shared variance with Question 17, 16% of the shared variance with Question 19, and 36% of the shared variance with Question 20.

Question 18 correlated negatively with Question 2, the question that asked if the employee received their assignment with little or no input from them, and Question 11, the question that asked if the employee's schedule was provided for them, to follow without deviation. Question 18 accounted for 11% of the shared variance with Question 2 and 15% of the shared variance with Question 11.

Question 19 asked if input from others was considered in decision making. Question 19 correlated positively with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 20, the question that asked if the employee's opinion was considered important. Question 19 accounted for 10% of the shared variance with Question 3, 15% of the shared variance with Question 17, 16% of the shared variance with Question 18, and 28% of the shared variance with Question 20. There were no other significant correlations identified beyond the .3 threshold.

Question 20 asked if the employee's opinion was considered important. Question 20 correlated positively with Question 3, the question that asked if the employee was satisfied with their shift assignment, Question 9, the question that asked if the employee had great flexibility in their schedule, Question 10, the question that asked if the employee could come to work whenever they wanted, Question 12, the question that asked if the employee could take off whenever they wanted, Question 13, the question that asked if the employee had great freedom within their assignment, Question 14, the question that asked if the employee could structure their workload as they saw fit, Question 17, the question that asked if the employee could communicate easily with their supervisor/subordinate about their work, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 19, the question that asked if input from others was considered in decision making. Question 20 accounted for 12% of the shared variance with Question 3, 17% of the shared variance with Question 9, 11% of the shared variance with

Question 10, 12% of the shared variance with Question 12, 21% of the shared variance with Question 13, 16% of the shared variance with Question 14, 29% of the shared variance with Question 17, 36% of the shared variance with Question 18, and 28% of the shared variance with Question 19.

Question 20 correlated negatively with Question 2, the question that asked if the employee received their assignment with little or no input from them and Question 11, the question that asked if the employee's schedule was provided for them, to follow without deviation. Question 20 accounted for 12% of the share variance with Question 2 and 20% of the shared variance with Question 11.

Survey respondents felt they were actively involved in the communication within the assignment. While it was generally understood that communication followed three paths--up, down, and sideways—most bureaucracies experienced only downward communication from the management to the worker. Within the Department, survey respondents agreed that their input was considered important. This was important for overall employee health and organizational performance.

Question 21 asked if the employee needed to work a specific schedule to meet obligations at home. Question 21 correlated positively with Question 22, the question that asked if the employee needed to make special arrangements at home if rescheduled to a shift they didn't ordinarily work, Question 24, the question that asked if the employee's home life required them to come home punctually. Question 21 accounted for 46% of the shared variance with Question 22 and 25% of the shared variance with Question 24.

Question 21 correlated negatively with Question 23, the question that asked if the employee's family had no influence on what time they worked. Question 21 accounted for 26% of the shared variance with Question 23.

Question 22 asked if the employee needed to make special arrangements at home if rescheduled to a shift they didn't ordinarily work. Question 22 correlated positively with Question 21, the question that asked if the employee needed to work a specific schedule to meet obligations at home and Question 24, the question that asked if the employee's home life required them to come home punctually. Question 22 accounted for 46% of the shared variance with Question 21 and 28% of the shared variance with Question 24.

Question 22 correlated negatively with Question 23, the question that asked if the employee's family had no influence on what time they worked. Question 22 accounted for 25% of the shared variance with Question 23.

Question 23 asked if the employee's family had no influence on what time they worked. Question 23 correlated negatively with Question 21, the question that asked if the employee needed to work a specific schedule to meet obligations at home, Question 22, the question that asked if the employee needed to make special arrangements at home if rescheduled to a shift they didn't ordinarily work, and Question 24, the question that asked if the employee's home life required them to come home punctually. Question 23 accounted for 26% of the shared variance with Question 21, 25% of the shared variance with Question 22, and 20% of the shared variance with Question 24.

Question 24 asked if the employee's home life required them to come home punctually. Question 24 correlated positively with Question 21, the question that asked if the employee needed to work a specific schedule to meet obligations at home, Question 22, the question that

asked if the employee needed to make special arrangements at home if rescheduled to a shift they didn't ordinarily work, and Question 23, the question that asked if the employee's family had no influence on what time they worked. Question 24 accounted for 25% of the shared variance with Question 21, 28% of the shared variance with Question 22, and 20% of the shared variance with Question 23.

Employees with families agreed that their family concerns impacted their shift assignments. Their family responsibilities figured actively within the assignment. This opinion was consistently supported throughout the questions that asked about family concerns. In addition, there were no other correlations with a moderate effect or greater beyond the questions that asked about the family. As such, the issue was independent of the other factors, but still important to the employee.

Question 25 asked if the employee worked an extra job to supplement their income. Question 25 correlated positively with Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment, Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay their bills, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements. Question 25 accounted for 48% of the shared variance with Question 26, 14% of the shared variance with Question 27, and 14% of the shared variance with Question 28.

Question 26 asked if the employee needed to work a specific shift/schedule to meet the demands of other employment. Question 26 correlated positively with Question 25, the question that asked if the employee worked an extra job to supplement their income, Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to

pay their bills, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements. Question 26 accounted for 48% of the shared variance with Question 25, 10% of the shared variance with Question 27, and 13% of the shared variance with Question 28.

Question 27 asked if the employee needed to work a certain amount of overtime every month to pay their bills. Question 27 correlated positively with Question 25, the question that asked if the employee worked an extra job to supplement their income, Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements. Question 27 accounted for 14% of the shared variance with Question 25, 10% of the shared variance with Question 26, and 34% of the shared variance with Question 28.

Question 28 asked if the employee relied on shift differential to meet income requirements. Question 28 correlated positively with Question 25, the question that asked if the employee worked an extra job to supplement their income, Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment, and Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay their bills. Question 28 accounted for 14% of the shared variance with Question 25, 13% of the shared variance with Question 26, and 34% of the shared variance with Question 27.

A large number of employees agreed they needed extra income beyond that provided by their basic salary to pay their bills. A significant number of employees relied on overtime, shift differential, or an extra job to supplement their income. Those that engaged in outside

employment agreed they didn't need to work a specific shift/schedule to meet the demands of the other employment. These employees appeared to reconcile their shift assignments with the demands of the other employment in order to make ends meet.

Question 29 asked if the employee preferred to work the day shift. Question 29 correlated negatively with Question 30, the question that asked if the employee would rather work in the afternoons and Question 31, the question that asked if the employee enjoyed working the night shift. Question 29 accounted for 12% of the shared variance with Question 30 and 31% of the shared variance with Question 31.

Question 30 asked if the employee would rather work in the afternoons. Question 30 correlated negatively with Question 29, the question that asked if the employee preferred to work the day shift.

Question 31 asked if the employee enjoyed working the night shift. Question 31 correlated negatively with Question 29, the question that asked if the employee preferred to work the day shift. Question 31 accounted for 31% of the shared variance with Question 29.

Question 32 asked if the shift the employee worked best reflected their waking/sleeping pattern. Question 32 correlated negatively with Question 4, the question that asked if the employee had a choice, they would work a different shift. Question 32 accounted for 11% of the shared variance with Question 4.

Employees displayed a diverse preference for which shift they preferred. While some preferred a specific shift, there was also a large number who disagreed with the preference. Whatever the choice, the association with the other choices was in the expected direction. What was more interesting, however, was the fact that most employees agreed that the shift they worked best reflected their waking/sleeping patterns. This finding was attributed to the idea that

the employees became used to the hours of their specific shift and felt out of sorts when assigned to a different shift. This was especially true with the midnight shift, the shift totally opposite to most human circadian rhythms, which took approximately three months to get used to.

The final part of the research findings consisted of the principal component analysis. PASW 18 was used for the principal component analysis of the data set. Costello and Osborne (2005) suggested the popularity of this analysis was due to it being the default method for the software. This was not an issue, since the ultimate purpose of the analysis was to identify a hierarchy of indexes important to the employee, in support of Herzberg's theory. Principal component analysis, distinguished from factor analysis, was the preferred method to reduce the data to identify the underlying factors. The principal components were identified from the survey responses. In this manner, a few components were identified that captured the largest amount of variability in the survey responses. This form of data reduction process, however, was not without cost.

The process of factor analysis, in contrast, identified several variances (shared, unique, error) and only used the shared variance between variables to identify the underlying factors in the data set. In this manner, the emergent factors were grouped according to the most important correlations. The result was the reduction of a large data set to a few factors that accounted for most of the variance. This reduction identified the separate variances and used only the shared variance in calculation. This was not the case with principal component analysis.

The process did not separate the several variances but combined them into the calculations. The process was used to identify which factors were most important in the survey. The risk, however, was inflation in the significance of questions not significantly correlated. The analysis was conducted with this caveat in mind.

Initial analysis of the entire data was conducted to determine the suitability for principal component analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was included in the PASW18 as a measure of prediction for the use of PCA. The measure was used to determine whether there were significant correlations between the various questions to warrant the principal component analysis. The closer the KMO statistic approached 1.0, the larger the degree of common variance among the Question s. Kaiser (1974) warned a statistic below 0.49 shouldn't be factored. The KMO statistic for the whole survey results was .801, which indicated patterns in the correlations were able to be identified in a principal component analysis.

The Bartlett's Test of Sphericity was the other measure included in PASW18 to assist in determining whether there was a significant relationship between the variables to warrant a PCA. This test was used to test the null hypothesis that the variables were not correlated. If the calculated significance level was significant ($p < .05$), the null hypothesis was rejected. This indicated there were relationships between the variables and PCA was warranted. In this case, the Bartlett's statistic was highly significant ($p < .0001$). The survey responses were correlated and amenable to further analysis.

The Communalities chart listed, in order of importance, the proportion of variance explained by the common factors. Since principal component analysis assumed all variance was common, the initial value listed is 1.0, the total variance. The extraction section listed the common, shared variance associated with the variable. The shared variance for all variables was impressive, calculated between .431 and .804. This meant shared variance was between 43% and 80% for the variables. In this study, variables considered important were those with shared variance of .700 or greater. They comprised Age, Time in Service, Question 8, the question that asked if the employee's assignment existed before the terrorist events of 2001, Question 18, the

question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, Question 21, the question that asked if the employee needed to work a specific schedule to meet obligations at home, Question 22, the question that asked if the employee needed to make special arrangements at home if rescheduled to a shift they didn't ordinarily work, Question 25, the question that asked if the employee needed to work an extra job to supplement their income, Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment, and Question 29, the question that asked if the employee preferred to work the day shift.

The Total Variance Explained chart displayed the eigenvalues associated with the components before and after extraction, and before rotation. The values associated with each component are presented as the percentage of variance explained. Listed in descending order, the top ten components explained 64% of the total variance. These components were listed for extraction and rotation based on an eigenvalue of 1.0 threshold. The first component accounted for 18% of the total variance, the second component accounted for 8% of the total variance, the third and fourth component accounted for 7% of the total variance, the fifth component accounted for 6% of the total variance, the sixth component accounted for 5% of the total variance, the seventh and eighth components accounted for 4% of the total variance, and the ninth and tenth components accounted for 3% of the total variance. At this point, eigenvalues were below the 1.0 threshold and not included for extraction.

The part of the chart that listed the Rotation Sums of Squared Loadings, listed the eigenvalues and their percent of accounted for variance after rotation. This was done to optimize the factor structure, and minimize extreme differences in accounted for variance. Here, the ten

components ranged from 12% to 3% of the total variance. The higher components, the first and second were reduced, and the remaining components, third through tenth, were increased.

The initial graph of total variance identified the components, in order of most contribution to the total variance. The first ten components explained 64% of the total variance. The first component accounted for 18% of the total variance, the last selected, component ten, accounted for 3% of the total variance. All the other components accounted for 3% or less of the total variance and were removed from consideration.

The Scree Plot displayed each component with its associated eigenvalue. At component ten, the plot trails off to lesser amounts. The graph provides a pictorial display of the Total Variance Explained chart and further support of the choice of the 1.0 eigenvalue threshold for inclusion in the extraction analysis.

The Component Matrix and Rotated Component Matrix charts displayed the correlations for each variable and the factor for the ten components. Each component displayed the factors that were selected for extraction. Any values below .300 were suppressed from the chart. Although the results for the Component Matrix were listed, rotation identified ten distinct factors, which clarified considerably the factors that comprised the component.

In the Component Matrix, component one, Question 13, the question that asked if the employee had great freedom within their assignment, Question 9, the question that asked if the employee had great flexibility in their assignment, and Question 20, the question that asked if the employee's opinion was considered important, all had correlations above .700. In the Rotated Component Matrix, Question 9, Question 10, the question that asked the employee could come to work whenever they wanted, and Question 13 had correlations above .700. Question 11, the question that asked if the employee's schedule was provided for them, to follow without

deviation had a correlation below -.700. These factors were identified as the autonomy of assignment and independence of assignment factors.

In the Component Matrix, component two, Time in Current Rank, Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment, Time in Current Assignment, Question 22, the question that asked if the employee needed to make special arrangements at home if rescheduled to a shift they did not ordinarily work, Question 25, the question that asked the employee worked an extra job to supplement their income, and Time in Service all had correlations above .500. In the Rotated Component Matrix, Time in Service, Age, Time in Current Rank, and, Time in Current Assignment had correlations above .700. These variables were identified as the seniority factor.

In the Component Matrix, component three, Question 22, the question that asked if the employee needed to make special arrangements at home if rescheduled to a shift they did not ordinarily work, and Question 21, the question that asked if the employee needed to work a specific schedule in order to meet their obligations at home had correlations above .400. In the Rotated Component Matrix, Question 22 and Question 21 had correlations above .800. These variables were identified as the family concerns factor.

In the Component Matrix, component four, Question 7, the question that asked if the Department could do away with the assignment with little or no impact on service delivery, Question 15, the question that asked if the employee's assignment did not rely on others, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements had correlations above .400. In the Rotated Component Matrix, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment and Question 17, the question that asked if the employee could

communicate easily with their supervisor/subordinate about their work had correlations above .700. These variables were identified as the level of feedback factor.

In Component Matrix, component five, Question 31, the question that asked if the employee enjoyed working the night shift, and Question 28, the question that asked if the employee relied on shift differential to meet income requirements had correlations above .400. In the Rotated Component Matrix, Question 3, the question that asked the employee was satisfied with their shift assignment had a correlation above .700. This variable was identified the shift assignment factor.

In the Component Matrix, component six, Question 4, the question that asked if the employee would work a different shift had a correlation above .500. In the Rotated Component Matrix, Question 25, the question that asked if the employee worked an extra job to supplement their income, and Question 26, the question that asked if the employee needed to work a specific shift/schedule to meet the demands of other employment had correlations above .800. These variables were identified as the income requirements factor.

In the Component Matrix, component seven, Question 31, the question that asked if the employee enjoyed working the night shift, and Question 30, the question that asked if the employee would rather work in the afternoons had correlations above .400. In the Rotated Component Matrix, Question 6, the question that asked if the employee's assignment was important for others to do their jobs had a correlation above .700. This variable was identified as the significance of assignment factor.

In the Component Matrix, component eight, Question 18, the question that asked if the employee was allowed to express their feelings about significant issues that affected their assignment, and Question 17, the question that asked if the employee could communicate easily

with their supervisor/subordinate about their work had correlations above .400. In the Rotated Component Matrix, Question 29, the question that asked if the employee preferred to work the day shift had a correlation above .800. This variable identified the lifestyle factor.

In the Component Matrix, component nine, Question 8, the question that asked if the employee's assignment existed before the terrorist events of 2001 had a correlation above .700. In the Rotated Component Matrix, Question 27, the question that asked if the employee needed to work a certain amount of overtime every month to pay bills, and Question 30, the question that asked if the employee would rather work in the afternoons had correlations above .600. These variables identified the income requirements and lifestyle issues factor.

In the Component Matrix, component ten, Question 30, the question that asked if the employee would rather work in the afternoons had a correlation above .400. In the Rotated Component Matrix, Question 8, the question that asked if the employee's assignment existed before the terrorist events of 2001 had a correlation above .800. This variable identified the significance of assignment factor.

The next part of the principal component analysis consisted of combining the various questions into the various parts that comprised the Motivation Index--Institutional Factors/Shift Assignment (Questions 1-4), Institutional Factors/Significance of Assignment (Questions 5-8), Institutional Factors/Autonomy of Assignment (Questions 9-12), Institutional Factors/Independence of Assignment (Questions 13-16), Institutional Factors/Level of Assignment (Questions 17-20), Personal Factors/Family Concerns (Questions 21-24), and Personal Factors/Income Requirements (Questions 25-28), and Factors/Lifestyle Issues (Questions 29-32).

The KMO statistic for the combined survey results was .714, which indicated patterns in the correlations able to be identified in a principal component analysis. Bartlett's statistic was highly significant ($p < .0001$), which indicated relationships between the variables. The survey responses were amenable to further analysis.

The Communalities chart listed, in order of importance, the proportion of variance explained by the common factors. Since principal component analysis assumed all variance was common, the initial value listed is 1.0, the total variance. The extraction section listed the common, shared variance associated with the variable. The shared variance for all variables was impressive, calculated between .358 and .803. This meant shared variance was between 35% and 80% for the variables. In this study, variables considered important were those with shared variance of .700 or greater. They comprised Age, Time in Service, and Questions 5-8. No other indexes were above the .700 threshold.

The Total Variance Explained chart displayed the eigenvalues associated with the components before and after extraction, and before rotation. The values associated with each component are presented as the percentage of variance explained. Listed in descending order, the top four components explained 62% of the total variance. These components were listed for extraction and rotation based on an eigenvalue threshold of 1.0. The first component accounted for 25% of the total variance, the second component accounted for 19% of the total variance, the third component accounted for 10% of the total variance, and the fourth component accounted for 9% of the total variance. At this point, eigenvalues were below the 1.0 threshold and were not included for extraction.

The part of the chart that listed the Rotation Sums of Squared Loadings, listed the eigenvalues and their percent of accounted for variance after rotation. This was done to optimize

the factor structure, and minimize extreme differences in accounted for variance. Here, the four components ranged from 22% to 10% of the total variance. The highest component, the first, was reduced, and the second, third, and fourth were reduced.

The initial graph of total variance identified the components, in order of most contribution to the total variance. The first four components explained 62% of the total variance. The first component accounted for 25% of the total variance, the last selected, component four, accounted for 9% of the total variance. All the other components accounted for 8% or less of the total variance and were removed from consideration.

The Scree Plot displayed each component with its associated eigenvalue. At component four, the plot trails off to lesser amounts. The graph provides a pictorial display of the Total Variance Explained chart and further support of the choice of the 1.0 eigenvalue threshold for inclusion in the extraction analysis.

The Component Matrix and Rotated Component Matrix charts displayed the correlations for each variable and the factor for the four components. Each component displayed the factors that were selected for extraction. Any values below .300 were suppressed from the chart. Although the results for the Component Matrix were listed, rotation identified four distinct factors, which clarified considerably the variables that comprised the component.

In the Component Matrix, component one, Time in Service and Age had correlations above .700. In the Rotated Component Matrix, Time in Service, Age, Time in Current Rank, and Time in Current Assignment, had correlations above .700. These factors were identified as the seniority factor.

In the Component Matrix, component two, Questions 9-12, the questions that asked how flexible the employee's schedule was, Questions 17-20, the questions that asked about the

amount of two-way communication that existed in the employee's assignment, and Questions 13-16, the questions that asked how the employee's assignment fit into the organizational structure, had correlations above .500. In the Rotated Component Matrix, Questions 9-12, the questions that asked how flexible the employee's work schedule was, Questions 17-20, the questions that asked about the amount of two-way communication that existed in the employee's assignment, and Questions 13-16, the questions that asked how the employee's assignment fit into the organizational structure had correlations above .700. These variables were identified as autonomy of assignment, independence of assignment, and level of feedback factors.

In the Component Matrix, component three, Questions 25-28, the questions that asked about the employee's income requirements, had a correlation above .700. In the Rotated Component Matrix, Questions 25-28, the questions that asked about the employee's income requirements, had a correlation above .800. This index was identified as the income requirements factor.

In the Component Matrix, component four, Questions 5-8, the questions that asked how important the employee's assignment was to the Department had a correlation above .700. In the Rotated Component Matrix, Questions 5-8, the questions that asked how important the employee's assignment was to the Department had a correlation above .800. This index was identified as the significance of assignment factor.

The results of the principal component analysis identified the various factors most important to the employee. The variables of Age and Time in Service had the highest correlations, but were not considered important in the analysis. It was intuitive that those with more time in service tended to be older. In that regard, the two variables contributed nothing towards the test of the hypotheses. More importantly, the variables with the next highest

correlations were the questions that asked about the employee's income requirements and family concerns. These correlations were all above .800. Independence and autonomy were next in the hierarchy of correlations, with correlations in the high .700s.

These conclusions were supported further with the analysis of the various indexes that comprised the Motivation Index. Time in service, age, and time in current rank had the highest correlations, but were not included. Independence and autonomy of assignment were next in importance, with family concerns and income requirements following next. The final component contained the largest correlation attributed to the significance of assignment, but also contained the smallest correlation, attributed to the level of feedback. This was identified as an artifact of the employee's feeling that their assignment was important and feedback was constrained by the bureaucratic nature of the Department.

Chapter 6-Discussion, Limitations of the Study, Suggestions for Future Research, Policy Implementation

Discussion

Herzberg suggested that hygiene factors were related to the work environment and needed no maintenance, except as to provide a positive influence for the employee. It was the lack of positive influence that created dissatisfaction for the employee. The motivators, however, were directly related to employee performance and needed constant attention to prevent adverse affects on the individual.

In this study, the Internal/Institutional questions were considered the hygiene factors. Response selections were based on a five choice Likert scale of Strongly Disagree (1), Disagree (2), Undecided (3), Agree (4), and Strongly Agree (5). The External/Personal questions were considered the motivators. As such, the internal, institutional factors needed to provide a positive influence to prevent dissatisfaction within the employee and the external, personal factors needed attention to motivate the employee to perform.

The most important chart in this study was the rotated component matrix of the Motivation Index factors. The Motivation Index consisted of the four questions that were created for each individual factor and were combined for analysis. Although the chart included all of the results, only the most significant factors to the employee were highlighted. These comprised two aspects of the institutional factors, the significance of the assignment and independence of the assignment, and one personal factor, income requirements. This was a surprising finding since it was generally understood that personal factors, such as family concerns and lifestyle issues, were important to employees. This finding would have to be reconciled with Herzberg's theory.

Rotated Component Matrix

	Component			
	1	2	3	4
TIME IN SERVICE	.879			
AGE	.845			
TIME IN CURREN TRANK	.799			
TIME IN CURRENT ASSIGNMENT	.716			
INSTITUTIONAL FACTOR/INDEPENDENCE OF ASSIGNMENT		**.822**		
INSTITUTIONAL FACTOR/AUTONOMY OF ASSIGNMENT		.798		
INSTITUTIONAL FACTOR/LEVEL OF FEEDBACK		.704		
INSTITUTIONAL FACTOR/SHIFT ASSIGNMENT		.589		
PERSONAL FACTOR/INCOME REQUIREMENTS			**.814**	
PERSONAL FACTOR/FAMILY CONCERNS			.641	
INSTITUTIONAL FACTOR/SIGNIFICANCE OF ASSIGNMENT				**.833**
PERSONAL FACTOR/LIFESTYLE ISSUES				.586

The internal/institutional factors of significance and independence of assignment were most important to the employee. Identified as a hygiene factor, these factors had a direct influence on employee satisfaction. According to the theory, the maintenance of these factors was important to avoid employee dissatisfaction. The results indicated these factors were managed properly, which allowed the employee to attach a certain amount of ownership to their assignment. Within the work setting, the employee felt satisfaction with the significance of their assignment and being allowed a certain level of independence.

Employees seemed to attach an intrinsic value and importance to their work. Although the notion of a thin blue line, where the police officer provided to the public a security buffer against crime, has receded into relative obscurity, it could be argued that the concept was alive in the police culture. Employees felt a purpose to the work which provided proper maintenance and resulted in little dissatisfaction with the significance of the assignment.

The independence factor conformed to Weberian notions of specialization within bureaucratic organizations. In the Department, the greatest amount of independence and discretion was experienced by the patrol force. Contact with supervisors was limited to the start of the shift, when attendance was taken and assignments were issued, and at the end of the shift, when officers returned and were accounted for. During the shift, police officers were mostly beholden only to the police dispatcher. The only interaction with supervisors occurred during visits, when supervisors met with police officers and annotated the interaction in the officer's activity log, and during significant assignments, when supervisors were required to respond. Barring these events, police officers patrolled their areas, largely free from direct supervision. As long as any assignments were handled properly, police officers in the patrol force experienced great independence.

This, however, went against the entrenched bureaucratic nature of the Department. With the establishment of the Compstat paradigm, and its concomitant emphasis on accountability placed squarely on precinct commanders, many officers found themselves increasingly supervised by middle managers, who felt increased performance pressures from their commanders. The result was increased oversight. The fact that independence figured so importantly in employee's attitudes was an important finding. Police officers were still able to exert a measure of independence that satisfied the maintenance of the factor, with little dissatisfaction.

Employees managed to find a way to develop a way to manifest a type of ownership of the assignment through the independence within the assignment. While it could be argued that the employees were still under the direct control of higher levels of management, they were able

to develop something important for themselves. They developed a connection to the assignment, a level of satisfaction that transcended the bureaucratic structure of the Department.

Following close behind, was income requirements. This factor was identified as a motivator, something that needed to be reconciled to the employee's benefit for the employee to be motivated properly. The results indicated the employees found this factor was important and needed constant attention. Income requirements provided the impetus to work. Additional income was sought through extra employment, or through overtime and shift differential. The fact that employees sought extra income highlighted a financial incentive for employees to work more. Whether it was for their lifestyles or the attainment of financial wealth, the importance of the extra income to the employee required constant attention.

It was interesting to see that family concerns figured less importantly than other factors. Many modern families required two incomes to make ends meet. This meant families needed to balance schedule conflicts with the family. Children and pets needed to be cared for while the employee was away at work. Apparently, employees reconciled their family concerns with the work requirements. Within the Department, there were numerous options to reconcile work with family concerns. While civilian employees at Police Headquarters have childcare services available to them at the workplace, uniformed employees had no such option. Instead, they were offered other options. These ranged from work locations close to home to special work schedules. Those employees that modified their shift assignment according to their personal family needs did so with little disruption in the workplace. Given the large number of employees within the Department, and multiple personnel for any given shift assignment, this ameliorated the affects of an employee that organized their shift assignment around their family. In fact, as long as the work requirements were met, variability in shift assignments was tolerated.

Lifestyle issues also figured less importantly to the employee than family concerns. The questions asked whether or not employees liked specific shifts and whether or not the shift assignment agreed with their circadian rhythm. Although the responses were mixed, most employees felt their shift assignment agreed with them. This may have been more a consequence of the employee getting used to a certain shift, rather than any wake/rest cycle. In any case, the employee was able to reconcile their lifestyle with their specific assigned shift.

Finally, the level of feedback figured less significantly to the employee than other factors. Study results indicated employees were satisfied with the communication aspect within the Department. They felt communication was easy, input was important. The bureaucratic notion of top-down communication was replaced with the three-way dynamic needed for successful discourse. Although there was no doubt that communication breakdowns still occurred, it seemed this factor was incorporated into normal operations and was relegated to lesser important status.

It was both knowing and telling that employees were more concerned with the institutional factors rather than the personal factors. Employees needed to be satisfied within the work environment first, and then turned their attention to personal matters. This was attributed to the employee that managed the work environment, and then reconciled all other aspects of their personal lives. The income and family issues lingered in the background and were addressed after the employee was satisfied within the work setting. This fact indicated a possible reason why there were so many transfers that occurred continually within the Department. Employees sought to improve their work situation, all the while feeling the need to reconcile their personal life with their professional life.

Employees tended to be satisfied with their assignments and felt their shift best reflected their waking/sleeping patterns. If this comfort level was the result that the employee was used to the shift assignment was not verified. It was, however, considered a consequence of the satisfaction provided by the shift assignment. Employees felt good about their work, in part, because of the ability to reconcile the demands of the personal factors. If this were not the case, the results obtained were certainly expected to be different.

The average age of the study sample was 37.32 years, indicative of a level of seniority within the Department. One must wonder, however, whether similar results would be obtained from a younger age sample? Since younger adults usually possessed greater individual freedom, partly due to being single and not constrained by the obligations of a family, it was entirely possible that this group would have different priorities in the Motivation Index.

The study sample indicated that independence and significance of the assignment, and income were the most important factors. Less significant to the respondents were feedback, family concerns, and lifestyle. The results were obtained from a sample with some seniority and maturity. It would be interesting to see if similar results would be obtained from younger police officers. Would there be similarities in the Motivation Index, or would something entirely different be indicated in this group? It was entirely possible that the lifestyle factor and income would be more important to this group, since they possessed greater freedom. Independence and significance would also be less important since younger employees would not have gained the wisdom of recognizing the intrinsic value of work. It could be entirely possible that younger employees would be more motivated by the practical reasons for work, rather than any ideological reasons.

The null hypothesis suggested there was no impact of the shift assignment on the various factors that comprised the Motivation Index. Through the application of a principal component analysis, the data was reduced and factors were identified that figured significantly in employee motivation. This finding showed support for rejecting the null hypothesis. The significance and independence factors and income requirements figured significantly in employee attitudes. Less significant, but also important, were the family concerns, level of feedback, and lifestyle issues

In turn, support for the alternative hypotheses was presented. Overall, the shift assignment correlated positively with both the internal, institutional and external, personal factors identified in the principal component analysis. Significance, independence and income and family were all important to the employee within their shift assignment.

Limitations of the Study

All research on human subjects contained weaknesses inherent in their design (Maxfield & Babbie, 2006; Campbell & Stanley, 1963). As long as the research identified any constraints, especially with regard to sample results generalized to the population, the research would be considered to have passed academic muster. This study was no different.

This study was designed with a certain amount of subjective interpretation. In this proposal, the concern was that analysis of results obtained would be skewed. There was no doubt that the authorship of this dissertation reflected many years within the NYPD and would incorporate the subjective, interpretive interjections of the researcher. As long as the results were presented as the respondents reported, this reflexive bias would not misinterpret the analysis, but would further define the constructs that motivate officers.

Issues of reliability and validity, and their influence on study design, were also addressed. It was important that any design recognized the influence of these variables. Within this study,

issues of reliability and validity (internal, external, and construct) were identified and measures were taken to minimize their adverse affects.

The reliability of this study was dependant primarily on the accuracy of survey participants' responses (Beimer et al., 2004). This issue was addressed initially in the instructions for the survey. It was hoped that by informing the survey participant, this research would have an impact on future policy development and would create an imperative to be honest. While this was a lofty ideal, there was another more practical construct that assisted in increased data reliability.

The demographic portion of the data can be used to identify any anomalies in the responses. It was generally understood within the law enforcement community that there was less autonomy for those with little time in service and in rank. This can be used to identify those survey responses that were outliers. The sample size assured any outliers were of little consequence.

The internal validity of this study was supported by the way the survey was constructed to retrieve responses on the various factors. The study was designed to reflect whether shift assignments affected the factors that comprised the Motivation Index, in a causal process. While one could certainly identify other variables that influenced motivation, the survey was designed to identify only the variables of interest. With this narrow focus, the analysis was limited to a narrow construct, that being the internal, institutional and the external, personal factors.

The next threats to internal validity consisted of confounding variables that were considered more important in experimental and quasi-experimental design, but should still be accounted for in any design construction (Campbell & Stanley, 1963). The threats that were most relevant to this study are threats of history, testing and instrumentation, and regression to

the mean. The other threats to validity, maturation, mortality, and diffusion of treatments, were of significance to experimental designs, which this study didn't incorporate.

History referred to the introduction of a confounding independent variable (Campbell and Stanley, 1963) that affected the study group. In the case of this study, significant changes in the scheduling of personnel would have an impact. The survey was intended to gauge feelings and perceptions with the scheduling process that was currently in place. This was of minimal concern, since any policy changes of such a nature took time to implement, and data collection was completed within a short time.

Testing and instrumentation referred to the application of the measurement instrument and design of the instrument itself (Beimer et al., 2004). Testing was the term when subjects got used to the testing procedure. Even though survey participants only had to record their responses one time, discussion amongst peers was an important consideration. While absolute protection against this threat was altogether improbable, intermittent, random survey delivery went a long way towards preventing this problem. Instrumentation was the confounding influence of changing the survey. Since only one survey was used, this approach was not a concern for this study.

Regression to the mean referred to the study group achieving extreme scores on a variable (Beimer et al., 2004). In this study, the sampling design ensured enough representative variability to make this a minor concern. The sampling was designed to consist of a random distribution of sample participants, and results obtained would reflect an unbiased cross-section of the population.

The external validity was the level of generalizabilty for this study (Maxfield & Babbie, 2006). It was the purpose of this research to identify concerns within the law enforcement

community, not just to the sample of survey participants. Since this study reflected a random sample of personnel assigned to the Department, survey results were certainly generalizable to the Department. In fact, the results could also apply to any police departments that faced similar organizational issues over shift assignments. Whatever type of policing an organization is involved in, scheduling of service delivery became a central issue.

Although the survey instrument was considered applicable to most large police departments, its application to smaller police departments, and international police agencies would necessarily have to be changed. This was due to the different reasons officers performed the various shifts within these agencies. The motivations for shift work in large departments, with personnel able to exercise greater freedom of choice were not necessarily experienced by their counterparts in smaller police departments and international agencies. This was primarily due to the differences in staffing each type agency uses.

Large agencies benefited from a greater number of personnel resources to fill their staffing requirements. Smaller departments did not have this benefit. The smaller departments needed to fill positions according to their various schedules, and necessarily assigned personnel resources without regard to employee preferences. Within these agencies, the police officer did not have a choice in shift assignments, on a regular basis. It was interesting to note this was something their counterparts in larger agencies experienced primarily during their junior years with the agency.

Besides small agencies, this idea of mandatory assignment applied to countries that possessed national police agencies. In countries that have their law enforcement defined by a national police agency, as in Turkey, assignment to the various shifts was also qualified by

region. Police officers would not have a choice in where they were assigned, in addition to what shift they performed.

Construct validity was the final aspect of this research that was addressed. Since there was no previous, standardized survey instrument that assessed motivation as a consequence of shift work, the research was designed differently. This survey was constructed to measure similar constructs with different statements. Application of a simple statistical analysis that compared the responses to the two statements provided a construct validity index. The closer this index approached 1.0, the greater the construct validity of the new survey (Beimer et al., 2004).

In addition to the major concerns of selection bias, regression to the mean, errors could occur throughout the research process (Groves et al., 2004; Biemer et al., 2004). Based on specific research Questions and hypotheses, research design began with a target population, then a sampling frame from which a sample is selected. Data collection procedures were then designed, to be applied to the sample. The final steps in the process involved administering a measurement instrument, data manipulation, and finally, statistical analysis.

It was important to understand that survey research, as in many other types of research designs, involved a sample that was used to represent the qualities of the greater population (Bernard, 2000). From sample responses, statistical analyses were interpreted to reflect a quality of the population. This analysis, however, required that survey responses reflected accurately the true respondent's qualities, and the characteristics of the sample represented the population characteristics (Groves et al., 2004). When these two conditions deviated, errors occurred. The consequence was inference from a sample not truly reflected in the population (Biemer et al., 2004).

The combination of all the different types of error was referred to as total error (Groves et al., 2004; Beimer et al., 2004). It comprised two aspects of the research design, representation and measurement. The representation aspect referred to the sample and includes, coverage error (improper target population, sampling frame), sampling error (nonrepresentative sample), nonresponse error (failure to participate), and adjustment error (editing data). The measurement aspect included errors in validity (deviations from construct), measurement error (false responses), and processing error (improper data coding).

Within this study, concerns about coverage error and sampling error were accounted for through the random attendance of full duty police officers at the semi-annual firearms qualification cycle. This design introduced enough systematic variance to ensure a sample representative of police officers assigned to work without restrictions.

In addition, concerns about adjustment error were also minimized. Due to the simplicity of the survey design, there was no need to manipulate the responses to fit the coding scheme. The demographic data was separated into a choice of specific ranges, and coded with the middle value of the three year range, allowing no deviation. The question responses were framed by a five-value Likert scale, and also allowed for no deviation in response choices.

This choice of design facilitated data coding and input into the statistical program. The coding of the demographic data consisted of nominal and ratio variables, coded according to the specific ranges of values constructed for the instrument. Coding of the responses to the questions was organized along an ordinal scale, allowing statistical analysis to gauge better the relationship between shift work assignment and the different organizational and personal variables.

In this study, the nonresponse error that occurred when survey participants chose either to not answer questions, or answer them improperly—not indicative of their actual preferences. A major concern in any survey methodology (Beimer et al. 2004), this fact figured significantly in the choice of sample size. Only twelve respondents, from the 580 survey participants, submitted surveys that were too incomplete for analysis. They were removed from data entry. Surveys with few omissions were included, since the sample size was large enough to minimize these errors. With these data adjustments, there was a large enough sample size to allow comprehensive data analysis.

In addition, another aspect of survey responses included in the nonresponse error was the effect of answering in an expected manner, termed socially desirability (Bernard, 2000). This was also be negated by the size of the sample. While this was an issue that could only be verified through additional methodology, as in follow-up interviews, or additional surveys, it would remain the focus of future research in this field.

Finally, the analysis choices were restricted by the difficulty in identifying a measure to compare the responses to. In model construction, dependent and independent variables are identified and combined into an equation that best describes the relationship. The lack of a clearly defined independent variable restricted the analysis to identifying the factors that were most important to the employee.

Suggestions for Future Research

There were many variables to consider when the research into motivation and shift work was planned. Because of the innumerable interdependencies and relationships that were present within the concept of motivation and shift work, the distinctions and identification of independent and dependent variables became blurred. This complicated the identification of the

factors considered most important to the employee and incorporated into the Motivation Index. In fact, future research into these psychological and sociological constructs would be relegated to identification of what was important to the employee, and serve as the starting point for the additional research.

One way to develop further the Motivation Index would be to conduct open-ended interviewing. A methodology that used open-ended interviews would facilitate the identification of what was most important to the employee and suggest what was not considered. Supported by a more comprehensive demographic component which identified specific assignments within the Department, greater specificity in the lifestyle and family components would be instrumental in the identification of these important factors for the employee. It was entirely possible that different motivations would become increasingly important with specific employee life changes.

This study codified a concept of a Motivation Index that was analyzed within an exploratory design. Additional research into the Motivation Index proposed in this study would continue to identify additional factors considered important to the employee. New studies would continue with focus group research, or open interviewing to identify those concepts, or modify those already existing, into a Motivation Index more indicative of the current issues that motivated the employee. It was entirely possible that influences external to the institutional and personal factors incorporated within this Motivation Index figured more significantly in future research. Future research should identify additional factors important to the employee.

Another aspect important to future research would be to identify an appropriate measure to evaluate employee performance. The traditional approach of evaluating personnel based on the number of arrests affected, no longer adequate, would be replaced by a measure more

suitable3 to capture employee motivation. The aforementioned methodologies would assist in the development of this measure.

Additional research would need to be conducted to validate possible modification of Herzberg's Motivation/Hygiene Theory. It seemed somewhat simplistic to only consider the dissatisfaction created by the lack of maintaining the hygiene of the workplace. It would certainly be possible that other factors within the workplace influenced employee satisfaction. Although the Motivation Index could be a start towards this modification, there would need to be much additional research conducted to validate the inclusion of any additional factors to Herzberg's theory.

This study attempted to gauge officer's attitudes on the eight factors that comprised the Motivation Index. Furthermore, it is worth exploring if there were some additional factors that motivated the respondents to answer the way they did. While only speculation, and not supported by the research questions, this notion hinted at the idea of underlying factors that motivated officers.

Known as interfering, or intervening factors, these are recognized as confounding influences. These would have to be identified and incorporated into additional research in an attempt to develop an Index more fully representative of the motivations officers experienced with regard to shift work. Focus group research and incorporation into a larger survey would allow methodological replication and meaningful comparison to the current study.

Summary

Future research should incorporate the following strategies:

- Conduct open-ended interviewing to identify additional factors considered important to the employee

- Conduct focus group research similarly, to identify additional factors considered important to the employee
- Develop a performance measure to adequately gauge employee motivation
- Reconfigure Hertzberg's Motivation/Hygiene Theory to incorporate a workplace satisfaction component

Policy Implementation

Organizations that implemented the identified factors would benefit of benefit to both the employee and the organization. The employee would be provided with a supportive atmosphere and the organization would see improvement in its end product. This would, however, require additional research in this field. The implication for policy development would necessarily incorporate multiple fronts. The results and application to law enforcement policy was limited to the factors that comprised the Motivation Index. The internal, institutional and external, personal factors that were identified as significant to the employee would need to be incorporated into policy development to create a work atmosphere that motivated the employee. It would be of greater benefit to improve the work situation, rather than to identify the specific motivators important to the employee. The problem was due to the innumerable factors involved in employee motivation. The various types of motivation to work would be as numerous and varied as the life circumstances for the employee. Regardless of this significance, future organizational behavior required policy that included these new factors into the organizational environment.

Any modified Index needed to be compared to some measure of performance, or some other organizational construct, to begin to identify a meaningful Motivation Index. Otherwise, the Index would have no utility to the organization. Within organizational behavior, this would involve importing some constructive meaning to the Index to be compared to some measure of

employee performance. This implied a focus on using the Index as an agent for change within the organizational environment. The organization would use the index/performance comparison to develop policy that promoted the best performance within the individual employee, which still kept organizational mandates in the forefront of organizational behavior.

Instead of constantly identifying new factors considered important to the employee, this research would develop a comprehensive measure deemed useful. With this measure identified, organizations would be able to gauge their own employee's performance and identify appropriate changes to maximize the employee's potential.

This would be a tall order, especially due to the bureaucratic nature of law enforcement agencies with their Weberian ideals of organizational efficiency. It would necessarily require a complete philosophical shift in the way the organization was managed. This focus on organizational change, however, would be the most useful way to improve employee performance. Those organizations that embraced change, and restructured themselves to the benefit of the employee, would experience potential for the greatest improvement. The motivated employee would reflect positively in the organizational performance.

It was sincerely believed that the malaise that permeated law enforcement, with its emphasis on mediocrity, would be changed by using the factors identified in the Motivation Index to influence positive change within existing policy. The employee would be made to feel greater satisfaction which would manifest itself in the delivery of police services. The emphasis would be on changing the organization and the way it utilized employees to perform its mandates.

Within organizational behavior, the Motivation Index would be used to frame policy with specific employee considerations in mind. Although this would be problematic since

organizational mandates didn't readily reconcile with personal needs, the attempt should be made. Emphasis on change within the workplace, without a diminution of police services, would frame new policies. In the field of law enforcement, and its focus on crime reduction, any change would involve employee needs. It was generally understood that a motivated employee would improve performance. Within law enforcement, this necessarily involved improved interaction with the community the organization served. The benefits for all concerned would be profound.

Summary

Ultimately, any policy development would require the organization to embrace the following caveats:

- Organizational shift from Weberian to Humanist paradigm
- Incorporation of greater independence and autonomy into employee supervision
- Incorporation of Motivation Index into organizational philosophy
- Identification of performance measure to gauge employee performance
- Development of oversight mechanism and corrective policy to ensure substantive service delivery

Appendix 1

Principal Component Analysis

The Principal Components Analysis for the complete survey was conducted first. Gender and rank were not included, since they were nominal variables.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	7539.477
	Df	630
	Sig.	.000

Communalities

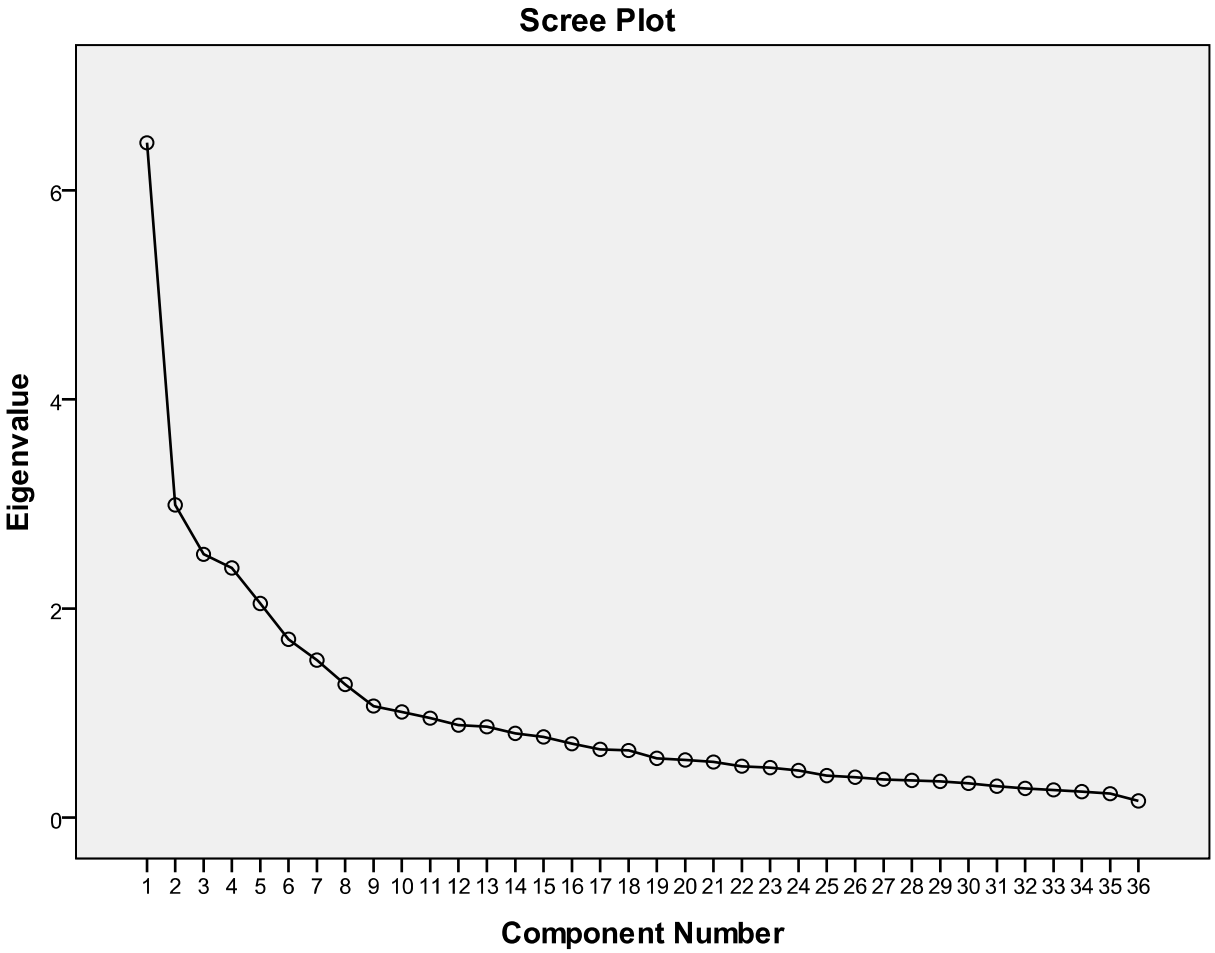
	Initial	Extraction
AGE	1.000	.748
TIMEINSERVICE	1.000	.804
TIMEINCURRENTRANK	1.000	.687
TIMEINCURRENTASSIGNMENT	1.000	.599
IFSA1	1.000	.446
IFSA2	1.000	.440
IFSA3	1.000	.678
IFSA4	1.000	.691
IFSA5	1.000	.528
IFSA6	1.000	.639
IFSA7	1.000	.557
IFSA8	1.000	.750
IFAA9	1.000	.695
IFAA10	1.000	.622
IFAA11	1.000	.640
IFAA12	1.000	.578
IFIA13	1.000	.652
IFIA14	1.000	.562
IFIA15	1.000	.431
IFIA16	1.000	.445
IFLF17	1.000	.630
IFLF18	1.000	.733
IFLF19	1.000	.556
IFLF20	1.000	.679
PFFC21	1.000	.724
PFFC22	1.000	.747
PFFC23	1.000	.616
PFFC24	1.000	.607
PFIR25	1.000	.751
PFIR26	1.000	.760
PFIR27	1.000	.699
PFIR28	1.000	.692
PFLI29	1.000	.788
PFLI30	1.000	.630
PFLI31	1.000	.690
PFLI32	1.000	.468

Extraction Method: Principal Component Analysis.

Total Variance Explained

Com-ponent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumu-lative %	Total	% of Variance	Cumu-lative %	Total	% of Variance	Cumu-lative %
1	6.454	17.928	17.928	6.454	17.928	17.928	4.181	11.613	11.613
2	2.990	8.306	26.234	2.990	8.306	26.234	2.715	7.541	19.153
3	2.519	6.996	33.230	2.519	6.996	33.230	2.682	7.449	26.602
4	2.388	6.634	39.864	2.388	6.634	39.864	2.543	7.063	33.665
5	2.048	5.688	45.552	2.048	5.688	45.552	2.419	6.719	40.384
6	1.706	4.739	50.291	1.706	4.739	50.291	2.124	5.901	46.286
7	1.506	4.183	54.474	1.506	4.183	54.474	1.983	5.507	51.793
8	1.274	3.540	58.014	1.274	3.540	58.014	1.701	4.726	56.519
9	1.068	2.965	60.980	1.068	2.965	60.980	1.428	3.967	60.486
10	1.011	2.809	63.789	1.011	2.809	63.789	1.189	3.302	63.789
11	.952	2.644	66.432						
12	.884	2.456	68.889						
13	.869	2.414	71.303						
14	.807	2.240	73.543						
15	.771	2.143	75.686						
16	.707	1.964	77.650						
17	.654	1.817	79.467						
18	.643	1.785	81.252						
19	.568	1.577	82.830						
20	.552	1.533	84.363						
21	.533	1.480	85.843						
22	.492	1.367	87.209						
23	.480	1.332	88.541						
24	.450	1.251	89.792						
25	.402	1.118	90.910						
26	.388	1.077	91.987						
27	.367	1.019	93.006						
28	.357	.992	93.999						
29	.347	.964	94.962						
30	.328	.912	95.874						
31	.301	.836	96.710						
32	.281	.779	97.489						
33	.266	.739	98.228						
34	.249	.691	98.918						
35	.230	.638	99.556						
36	.160	.444	100.000						

Extraction Method: Principal Component Analysis.


Scree Plot
Eigenvalue
0
2
4
6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
Component Number

Component Matrix[a]

	Component									
	1	2	3	4	5	6	7	8	9	10
IFIA13	.716									
IFAA9	.714									
IFLF20	.708									
IFAA11	-.693									
IFLF18	.690							.444		
IFAA12	.673									
IFIA14	.668									
IFLF17	.618							.413		
IFAA10	.607			.330						
IFSA3	.596					-.417				
IFSA2	-.488					.352				
IFLF19	.479							.373		
TIMEINCURRENTRANK		.578	-.445							
PFIR26		.567					-.334			-.318
TIMEINCURRENTASSIGNMENT		.536	-.413							
PFFC22	-.328	.528	.464							
PFIR25		.523		.320	.332		-.376			
TIMEINSERVICE		.518	-.464	-.345						
PFFC24	-.382	.432	.367							
PFFC21		.484	.508							
AGE		.463	-.493	-.370						
PFFC23		-.420	-.473							
IFSA7				.481	-.307	-.337				
IFSA6			.331	-.431		.331		-.312		
IFIA15				.430						
PFIR27		.311		.396	.360					.390
PFLI31					.486		.444			-.354
PFIR28	-.312			.421	.474					
IFSA4	-.507					.533				
IFSA1	.325					-.437				
IFSA5	.364					.395				
PFLI29					-.503		-.572			
PFLI30							.431			.427
PFLI32						-.310		-.349		
IFSA8									.773	
IFIA16									-.443	

Extraction Method: Principal Component Analysis.
a. 10 components extracted.

Rotated Component Matrix[a]

	Component									
	1	2	3	4	5	6	7	8	9	10
IFAA9	.794									
IFAA10	.777									
IFAA11	-.747									
IFIA13	.728									
IFAA12	.694									
IFIA14	.683									
TIMEINSERVICE		.872								
AGE		.835								
TIMEINCURRENTR ANK		.788								
TIMEINCURRENTA SSIGNMENT		.723								
PFFC22			.839							
PFFC21			.836							
PFFC23			-.773							
PFFC24			.723							
IFLF18	.359			.752						
IFLF17				.718						
IFLF20	.380			.674						
IFLF19				.673						
IFSA4					-.791					
IFSA3					.735					
IFSA1					.604					
PFLI32					.571					
IFSA2					-.515					
PFIR25						.858				
PFIR26						.841				
IFSA6							.780			
IFSA7							-.641			.301
IFSA5							.640			
IFIA15	.352						-.494			
PFLI29								.844		
PFLI31								-.817		
PFIR27						.482			.665	
PFLI30									.641	
PFIR28						.495			.580	
IFSA8										.828
IFIA16										-.542

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

The factor analysis for each component of the Motivation Index was conducted next. Gender and Rank were not included, since they were nominal variables.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.714
Bartlett's Test of Sphericity	Approx. Chi-Square	1799.374
	Df	66
	Sig.	.000

Communalities

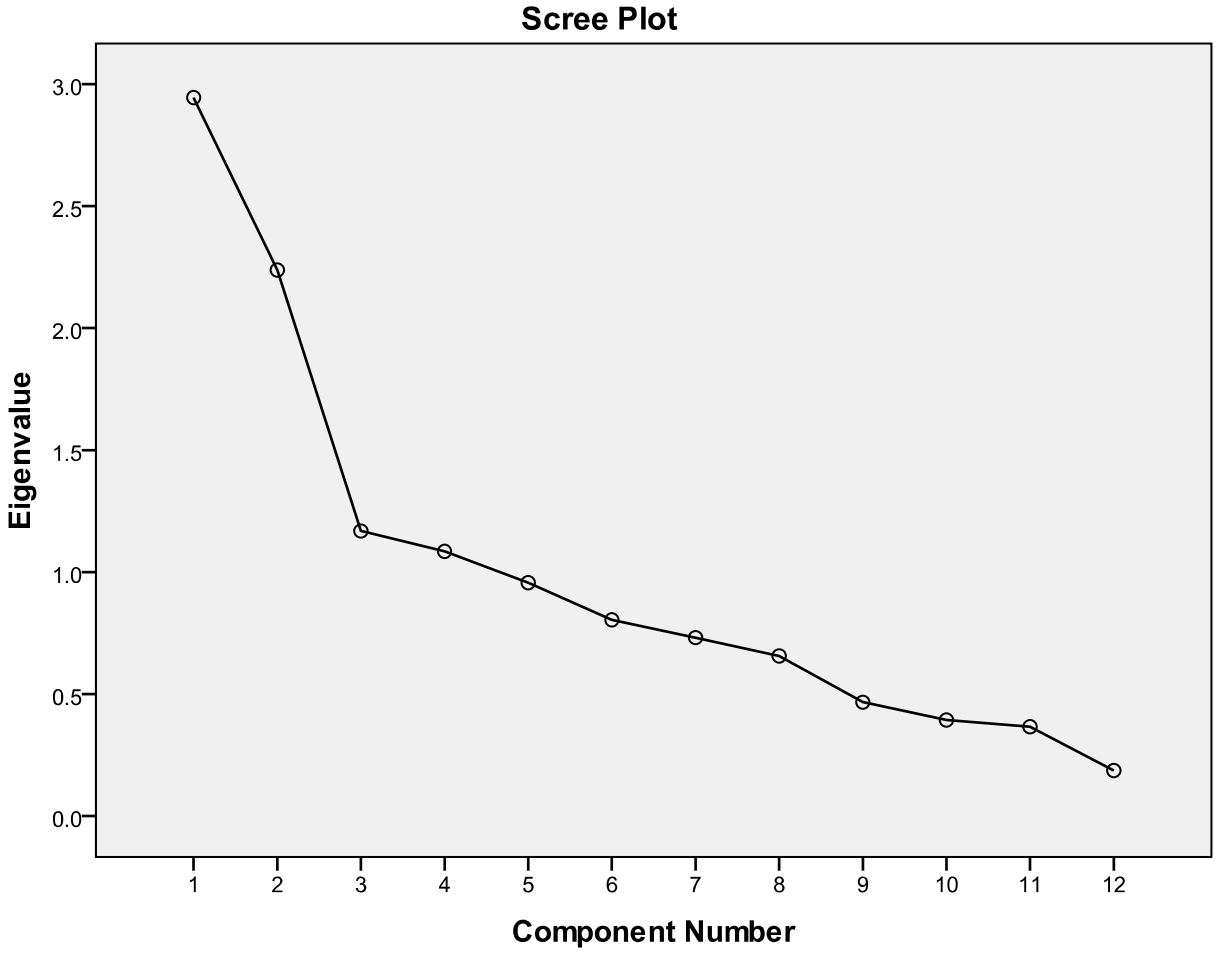
	Initial	Extraction
AGE	1.000	.763
TIMEINSERVICE	1.000	.803
TIMEINCURRENTRANK	1.000	.691
TIMEINCURRENTASSIGN MENT	1.000	.569
IFSA14MI	1.000	.358
IFSA58MI	1.000	.725
IFAA912MI	1.000	.687
IFIA1316MI	1.000	.683
IFLF1720MI	1.000	.615
PFFC2124MI	1.000	.454
PFIR2528MI	1.000	.667
PFLI2932MI	1.000	.421

Extraction Method: Principal Component Analysis.

Total Variance Explained

Com-ponent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumu-lative %	Total	% of Variance	Cumu-lative %	Total	% of Variance	Cumu-lative %
1	2.945	24.542	24.542	2.945	24.542	24.542	2.671	22.257	22.257
2	2.238	18.651	43.194	2.238	18.651	43.194	2.253	18.777	41.034
3	1.169	9.739	52.932	1.169	9.739	52.932	1.307	10.894	51.928
4	1.085	9.041	61.974	1.085	9.041	61.974	1.205	10.045	61.974
5	.957	7.973	69.947						
6	.804	6.701	76.648						
7	.732	6.097	82.745						
8	.657	5.472	88.217						
9	.467	3.891	92.108						
10	.394	3.283	95.390						
11	.366	3.053	98.443						
12	.187	1.557	100.000						

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component			
	1	2	3	4
TIMEINSERVICE	.750	-.450		
AGE	.707	-.442		
TIMEINCURRENTRANK	.678	-.450		
IFAA912MI	.607	.520		
TIMEINCURRENTASSIGN MENT	.534	-.503		
IFLF1720MI	.536	.566		
IFIA1316MI	.508	.555		
IFSA14MI	.322	.426		
PFIR2528MI			.755	
PFFC2124MI		-.305	.548	
IFSA58MI				.771
PFLI2932MI			.324	.504

Extraction Method: Principal Component Analysis.
a. 4 components extracted.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
TIMEINSERVICE	.879			
AGE	.845			
TIMEINCURRENTRANK	.799			
TIMEINCURRENTASSIGN	.716			
MENT				
IFIA1316MI		.822		
IFAA912MI		.798		
IFLF1720MI		.704		
IFSA14MI		.589		
PFIR2528MI			.814	
PFFC2124MI			.641	
IFSA58MI				.833
PFLI2932MI				.586

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Appendix 2

Informed Consent Form

A researcher at CUNY is asking you to fill out a survey about Shift Assignments and Personal Motivation. The researcher wants to know the level of influence a shift assignment has on the person, and whether or not their motivation to work is affected. The results of this survey will be used to inform the literature that guides policy development and allocation of personnel resources.

The Principal Investigator is Rainer Kroll, a PhD student at the CUNY Graduate Center, and a sworn member of the service assigned to Office of Management Analysis and Planning, Resource Analysis Section.

This survey is anonymous and confidential, and is strictly voluntary. There is no risk in not participating. Should you choose to participate, please be advised that all surveys will be kept secure by the principal investigator and will only be used to compile statistical data. After entering the data into the statistical program, the survey will be destroyed.

The survey takes about 10 minutes to complete. Should you choose to participate, you are asked to fill out your responses as completely and accurately as possible. Make sure to respond how you actually feel about the question, not what you may think is the appropriate response. Remember, your sincerity will highlight what is required to make sound policy decisions.

Should you have any questions about your participation in this survey, you may reach me at John Jay College, Department of Law and Police Science, at 212 237 8032. You may also contact the CUNY/Graduate Center, Office of Sponsored Research, at 212 817 7525.

Date:_____

_____ _____

Signature Principal Researcher

Appendix 3

Instructions for Completing the Shift Assignment and Motivation Survey

This survey consists of two parts. Part I consists of questions about your status within the Department. You are asked to circle the category that best describes your current situation. Part II consists of the various factors that comprise the Motivation Index. You are asked to circle the response that best describes your feelings about the question.

The information from Part I will be used to outline what type of individual participated in the survey and will be used in complex analysis to determine whether a particular typology reflects a specific level of motivation. The information from Part II will be used to create a Motivation Index for each survey participant. This Index will be used in statistical analysis to inform policy development.

Please remember that your opinion is important, not what you may think the Department wishes. It is hoped that this information will frame future policy choices, creating a Department with highly motivated employees.

Appendix 4

Shift Assignment and Motivation Survey

Part I: Demographic Data

Age: 21-23+ 24-26+ 27-29+ 30-32+

33-35+ 36-38+ 39-41+ 42-44+ 45+

Gender: M F

Time in Service (years): 1-3+ 4-6+ 7-9+ 10-12+ 13-15+

16-18+ 19-21+ 22+

Rank (civil service): P.O. Det. Sgt. Lt. Capt.

Time in Current Rank: 1-3+ 4-6+ 7-9+ 10-12+ 13-15+

16-18+ 19-21+ 22+

Time in Current Assignment: 1-3+ 4-6+ 7-9+ 10-12+ 13-15+ 16-18+

19-21+ 22+

Institutional Factors

Shift Assignment:

This section is designed to gather information on your specific work schedule.

1. I was assigned to a specific shift after discussion and conferral with me:

Strongly Disagree Disagree Undecided Agree Strongly Agree

2. I received my assignment with little or no input from me.

Strongly Disagree Disagree Undecided Agree Strongly Agree

3. I am satisfied with my shift assignment.

Strongly Disagree Disagree Undecided Agree Strongly Agree

4. If I had a choice, I would work a different shift.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Significance of Assignment:

This section is designed to gather information on how important your assignment is to the Department.

5. The Department considers my assignment vital to its operation.

Strongly Disagree Disagree Undecided Agree Strongly Agree

6. My assignment is important for others to do their jobs.

Strongly Disagree Disagree Undecided Agree Strongly Agree

7. The Department could do away with my assignment with little or no impact on service delivery.

Strongly Disagree Disagree Undecided Agree Strongly Agree

8. My assignment did not exist before the terrorist events of 2001.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Autonomy of the Assignment

This section is designed to gather information on how flexible your work schedule is.

9. I have great flexibility in my schedule.

Strongly Disagree Disagree Undecided Agree Strongly Agree

10. I can come to work whenever I want.

Strongly Disagree Disagree Undecided Agree Strongly Agree

11. My schedule is provided for me, and I must follow it without deviation.

Strongly Disagree Disagree Undecided Agree Strongly Agree

12. I can take off whenever I want.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Independence of Assignment

This section is designed to gather information on how your assignment fits into the organizational structure.

13. I have great freedom within my assignment.

Strongly Disagree Disagree Undecided Agree Strongly Agree

14. I can structure my workload as I see fit.

Strongly Disagree Disagree Undecided Agree Strongly Agree

15. My assignment does not rely on others.

Strongly Disagree Disagree Undecided Agree Strongly Agree

16. I am expected to do certain tasks, frequently.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Level of Feedback:

This section is designed to gather information on the amount of two-way communication that exists in your work assignment.

17. I can communicate easily with my supervisors/subordinates about their work.

Strongly Disagree Disagree Undecided Agree Strongly Agree

18. I am allowed to express my feelings about significant issues affecting my assignment.

Strongly Disagree Disagree Undecided Agree Strongly Agree

19. Within my work setting, input from others is considered in decision making.

Strongly Disagree Disagree Undecided Agree Strongly Agree

20. My opinion is considered important.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Personal Factors

Family Concerns

This section is designed to gather information on how your family affects your shift assignment.

21. I need to work a specific schedule in order to meet my obligations at home

Strongly Disagree Disagree Undecided Agree Strongly Agree

22. If I get rescheduled to a shift that I do not ordinarily work, I need to make special arrangements at home.

Strongly Disagree Disagree Undecided Agree Strongly Agree

23. My family has no influence on what time I work.

Strongly Disagree Disagree Undecided Agree Strongly Agree

24. My home life requires that I come home punctually.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Income Requirements

This section is designed to gather information on your salary needs.

25. I work an extra job to supplement my income.

Strongly Disagree Disagree Undecided Agree Strongly Agree

26. I need to work a specific shift/schedule to meet the demands of other employment.

Strongly Disagree Disagree Undecided Agree Strongly Agree

27. I need to work a certain amount of overtime every month to pay my bills.

Strongly Disagree Disagree Undecided Agree Strongly Agree

28. I rely on shift differential to meet income requirements.

Strongly Disagree Disagree Undecided Agree Strongly Agree

Lifestyle Issues:

This section is designed to gather information on your preferences for specific work hours.

29. I prefer to work the day shift.

Strongly Disagree Disagree Undecided Agree Strongly Agree

30. I would rather work in the afternoons.

Strongly Disagree Disagree Undecided Agree Strongly Agree

31. I enjoy working the night shift.

Strongly Disagree Disagree Undecided Agree Strongly Agree

32. I find that the shift I am working best reflects my waking/sleeping patterns.

Strongly Disagree Disagree Undecided Agree Strongly Agree

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