

**AN EMPIRICAL STUDY OF THE RELATIONS BETWEEN LEADERSHIP,  
SOCIAL SUPPORT NETWORKS, TASK AUTONOMY AND EMOTIONS IN A  
TECHNICAL WORK ENVIRONMENT**

A Dissertation

by

TANYA VERNIECE DUGAT WICKLIFF

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2005

Major Subject: Interdisciplinary Engineering

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Approved by:

Chair of Committee,	Karan Watson
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## **ABSTRACT**

An Empirical Study of the Relations between Leadership, Social Support Networks, Task Autonomy and Emotions in a Technical Work Environment.

(December 2005)

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Chair of Advisory Committee: Dr. Karan Watson

The world in which we live is hyper-dynamic with multiple inputs, outputs and expectations. As it relates to the fast pace of corporate America, customers want products and services within a tighter market window, with no defects and for lower costs. Stakeholders insist that managers do more with less – less human and financial resources yet more aggressive technological and sales goals. These realities translate into a more complex work environment in that the emotional toll of pending economic outcomes act to motivate or paralyze the very engine designed to produce the desired outcomes – the employees.

The body of work presented in this dissertation directly addresses the empirical relationship between the perceptions of the work context factors of leadership, task autonomy and social support networks with respect to the positive and

negative emotions of the employees of the engineering firm that participated in this study. The empirical results from this research indicate that a positive and significant interrelationship does exist among the factors examined in this study.

The employees studied included 249 middle to upper level managers of whom 78.7% were men and 21.3% were women. The range of years of experience for the participants varied from new hire to more than 20 years. Homogeneity of Variance tests confirms the validity of comparative analysis for the segmented data population. Multivariate statistics were used to address the four research questions. The strongest correlations occurred for the subgroups of women and non-managers with respect to the relationship of social support networks and positive emotions. Until now, there has been no empirical research linking the social support networks factor directly to emotions.

## **DEDICATION**

To my greatest inspiration, my sons – Jamar M. Dugat, Raymond A. Wickliff, and Cortlan J. Wickliff – and to the loving memories of my mother, Velma Mitchell, and grandmother, Christa Baldwin Wright. I'm eternally grateful for your love and support!

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Texas and Mt. Sinai Baptist Church in Austin, Texas; and to the motivating, loving memories of my mom-Velma Mitchell, grandma-Christa Baldwin Wright, great-grand mother-Mamie Sip Baldwin and husband/friend-Anthony “Tony” Wickliff – I love you and thank you all! A special thanks goes to my personal pep squad – Patricia Walton, Javay Walton, Gussie Baldwin Jones, Michaela & Rod Price, Jessica & Torrey Thompson, Danni & Kelvin Green, Tiffany & Lyric Jackson, Troy Rhynes, Gary Davis, Calvin Garvey, Alice Whitley, Paul A. Stewart, Bill Atkinson and Jakael Dugat. Thanks for your words and deeds of encouragement and support; Michaela, Tiffany and Danni, special thanks for being constant, available shoulders and dear friends. To my three sons, thanks for your patience, love and sacrifice – Jamar Dugat, Raymond “Rambo” Wickliff and Cortlan Wickliff – I love you. Finally, and above all, I thank and praise God! If it seems as though I owe a lot to a lot, I do! Rest assured, I do understand that to whom much is given, much is required!

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## CHAPTER I

### INTRODUCTION

Employees in numerous settings often express that they are highly stressed, over-worked, and feel under-appreciated and under-valued. Layoffs, perceived unrealistic budget cuts, and frequent leadership changes are contributors to these frustrations expressed by employees. Many studies point to a work place culture in flux resulting in people being more withdrawn, cold and self-absorbed with worry of what changes will occur next and how they will be directly affected. Work environments like these containing large amounts of employment uncertainty, resource scarcity and decreased employee loyalty tend to result in the underperformance of workers. Even without such negative factors surrounding a work environment, numerous studies conclude that 'empowered' workers, those that take actions to enhance productivity and the environment for workers, can be key elements in assuring that performance within an organization will maintain the competitive edge necessary in turbulent and changing times (Ralston 2005; Staw 1994). Scholars have noted in their research the importance of action, especially individual's action, in a work context during times of significant organizational changes (Bateman 1993; Bruch 2001; Brunsson 1982; Peak 1994; Senge et al. 1999).

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This dissertation follows the style of *The American Journal of Sociology*.

One of these scholars, Heike Bruch, Director of the Institute of Leadership and Human Resource Development of the University of St. Gallen, Switzerland, has created a model that defines some key components of individual action. Her research began with a foundational question set in a work context of what makes some people act while others choose not to act (Bruch 2001). Bruch's research ((Bruch 2001) defines action as both focused and purposive. In her foundational model (Figure 1.1) several paths lead to individual action. Components of the model include individual cognition, volition, emotion and the work context. Each of the components in the model represent a grouping of multiple factors that have been found to influence action (Bruch 2001). While there is a long history of research on cognition for work, only more recently have researchers increasingly focused on the study of emotions in a work context (Ashkanasy 2000).

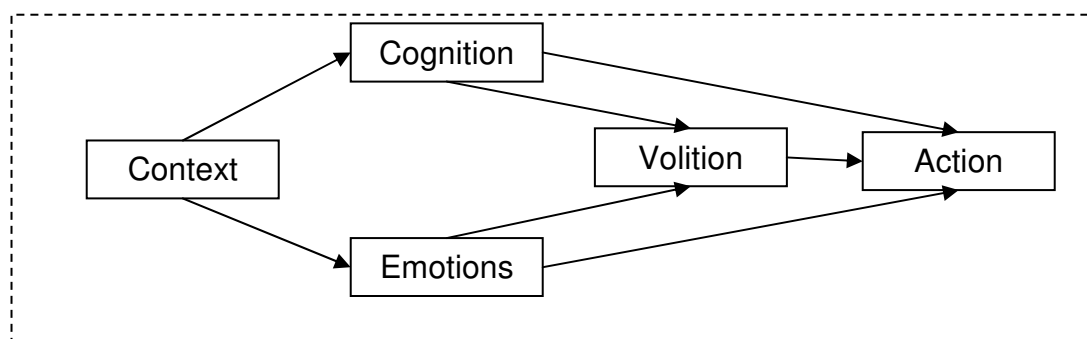


Figure 1.1 Individual Energy (IE) Model [Action] (Bruch 2001)

A large international oil and gas company had engaged Bruch to explore the level of Individual Energy for action and aid supervisors in the encouragement of more individual action in order to enhance overall corporate performance. In this context a survey instrument developed by Bruch and numerous interactions with employees and supervisors had resulted in an overall sense of better understanding for all. However, given the ever-recurring theme of limited resources, supervisors continued to query researchers about indicators for the best decision-making strategies for enhancing the individual energy for action when resources or sequencing require that certain choices be made. In this context it is important to note the factors of influence of Bruch's model (Fig. 1.2).

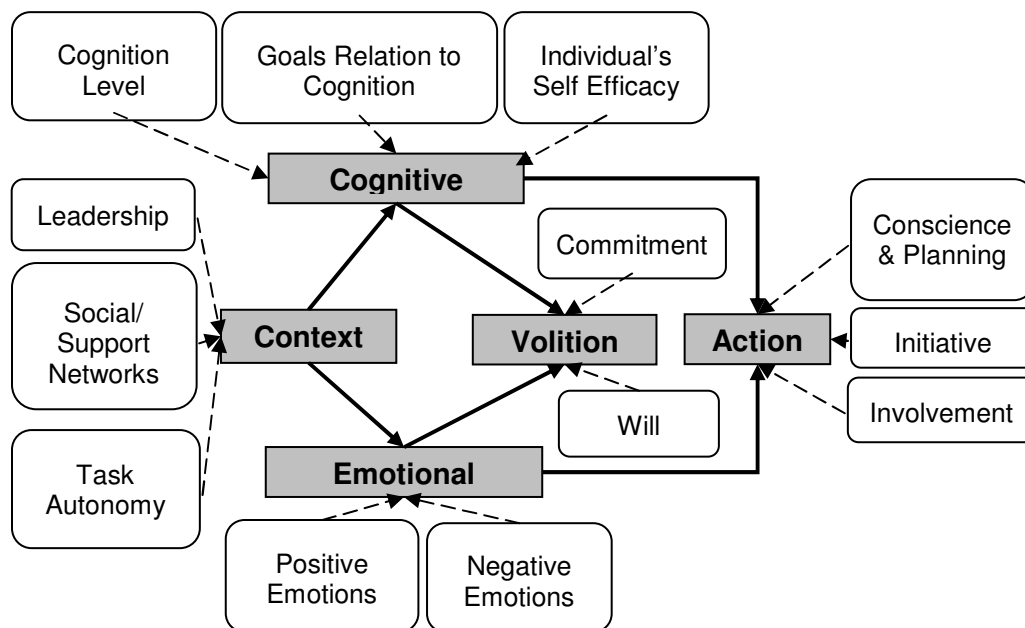


Figure 1.2 Factors Influencing Bruch's IE Model of Action

No argument is posed here for which component or factor influencing a component will most likely influence the environment for individual energy for action. However, the literature revealed the need for more exploration of the effects of context, as modeled here, on the emotional energy of the individuals. Specifically, the need for consideration of the factors influencing the context in relation to the factors affecting the emotional energy of the individual was desired. This is because the supervisors could comprehend the total model, but were searching for information that should influence decision-making when they can invest limited resources in some changes of context in hopes of enhancing the emotional energy of individuals. Many anecdotal cases illustrate that such relations exist, but more study is necessary to give better aid to supervisors and co-workers.

Based upon the need for deeper analysis of the relation between the work context factors and the emotional energy factors, the research presented here was developed. The approach called for analyzing the data collected from the survey instrument developed by Bruch and administered to employees at the company in this study. This linking between these factors of work context and emotions have had some attention in the literature (Biggiero 2001; Bruch 2001; Ibarra 1995; Michel 2004; Nardi 2002; Tushman 1981). In both popular and scholarly literature, individual emotions have been linked to organizational effectiveness and are noted as an integral part of the work that many individuals

do on a daily basis (Brown 1995). Scholars have developed models to try and gain a better understanding of how emotions affect the work environment and how the work environment affects individual emotions (Ashkanasy 2000b; Brockner 2001; Bruch 2001; Doolen 2003; Kenny 1963; Wood 1989).

The primary purpose of this study is to examine data to analyze the relations between the perceptions of the work environmental factors of leadership, social support networks, and task autonomy with respect to the emotions of the employees of the engineering firm that participated in the study. The results from the empirical study will be used to determine if it is possible to refine the Individual Energy model of action developed by Heike Bruch (Bruch 2001; Bruch 2002).

This research is significant because companies today are faced more and more with managing the complexities of leading a diverse workforce. In addition to the growing ethnic diversity that comprises our work environment, more complexity is added to the work environment via increased technology, global influences, volatile economic climates and the like (Wolff 1999). This complexity and the people that it affects bring a plethora of emotions to the work environment that must to be dealt with. The research is further significant because the leaders have to rely more directly on the initiative, commitment and talents of the employees. How leaders manage their relationships with their employees, implicitly and explicitly, is a growing concern as it has been found to directly



affect the productivity of the workers and thus the profitability of the organization (Brown 1995; Gerson 1999; Ghoshal and Bartlett 1997). Relationship building is essential for all employees and at the heart of this critical skill is the need to learn to deal first with one's own emotions, and then the emotions of others in their work environment.

This study examines the data gathered from Conoco, Inc., headquartered in Houston, Texas. Engineering and technology corporations like Conoco need to better understand how to recognize, analyze and utilize the emotions of their employees strategically. Since this research focuses on individual's perceptions about their work environment and the subsequent affects on their emotions, with organizations, just as the employees are portable with transferable skills.

## **PURPOSE**

The primary purpose of this study is to examine data and analyze the relations between the perceptions of the work environmental factors of leadership, task autonomy and social support networks with respect to the emotions of the employees of the engineering firm that participated in the study. The data will also be used to investigate the relations between the individual work context factors themselves. Finally, the results from the empirical study will be used to

determine if it is possible to refine the Individual Energy model of action developed by Heike Bruch (Bruch 2001; Bruch 2002).

## **SIGNIFICANCE**

Individual emotions have been linked to organizational effectiveness (Brown 1995; Grigg 2001; Wheeler 2001). Transformational leadership has been credited with being a key component in achieving organizational performance metrics (Hellriegel, Slocum and Woodman 2001). Task autonomy has been found to have an affect on employees' physical health but limited research is available regarding its impact on the emotions of members of organizations (Doolen 2003; Karasek 1990). Similarly, research has shown that social support networks in the workplace have a positive affect on its members (Ibarra 1995; Michel 2004; Nardi 2002). These networks are said to be instrumental in career progression but no empirical research has been found to determine if there is a relationship between the networks and the emotions of the members. Scholars theorize that better understanding of the individual and their emotions in an organizational context may play a paramount role in corporations' ability to be competitive in the future.

This research examines the significance of the relationships between leadership, social support networks and task autonomy with respect to emotions and with

respect to each other. This is significant as a foundational step in aiding the management of organizations in their resource decisions when faced with choosing between the work context factors that will be examined in this research. This empirical study of the relations between social support networks and emotions is a unique contribution to the literature.

Available resources are scarce in many sectors given our current economic climate. Leaders are being forced to figure out how to better manage their workforce as the stakes become higher and the stakeholders (employees, customers, investors and leaders) are becoming more demanding. The diversity of the workforce, depressed economic climate, prevailing 'slow-to-change' corporate culture and scarcity of resources, have leaders screaming for help. Learning to deal with emotions in an organizational context can help. Therefore, this research is significant to persons in corporations, academia and even the public sector because emotions are people centric and to acquire a better understanding and skills to deal effectively with emotions in the workplace is beneficial for the organizations to which the individuals belong.

## **PROBLEM DEFINITION**

The productivity, profitability and effectiveness of organizations rest on the shoulders of their employees. The employees most often choose to act positively, negatively or not at all in alignment with their emotions (Brown 1995). The leaders of the organizations impact the employees' emotions. Leaders that are perceived to be inspiring tend to positively impact their followers' emotions (Boje 2000; Morand 2001). Knowing how their employees perceive the leadership of the engineering firm of the organization whose data will be analyzed for this study is important for that company to know, as is the case for any organization. The relationship and significance of the relationship between the perception of inspiring leadership for the members of the engineering firm and their emotions will be analyzed.

Job control or task autonomy has been found to have an affect on employees' physical health but limited research is available regarding the impact on their emotions (Karasek 1990; Lam 2002). Similarly, research has shown that social support networks in the workplace have a positive affect on its members (Ibarra 1995; Nardi 2002). These networks are said to be instrumental in career progression but no empirical research has been found to determine if there is a relationship between the networks and the member emotions.

## DEFINITION OF TERMS

1. Action – purposive, deliberate focused energetic behavior.
2. Emotions – task specific, intense feelings that are related to or induced by a certain object or environmental stimuli. Negative emotions are said to promote reactive behavior, and positive emotions are a key source of action (Bruch 2001).
3. Individual Energy model by Heike Bruch – encompassing context, cognition, emotions, volition and action.
4. Leaders or leadership – inspiring (transformational) managers that focus on relationships, stimulates the intellect, considers the individual to engage them fully and seeks to satisfy a higher, greater organizational need.
5. Productivity – (organizational effectiveness) goal attainment with improvements or at least not depleting resources or placing undue strain upon its members.
6. Social Support Networks – informal or formal group of persons that offer advice, guidance, mentoring, encouragement, comfort and/or information sharing regarding issues that affect the individuals in the group.

7. Task Autonomy – or Job control - the latitude to make decisions on the job and the discretion to select the most appropriate skills to complete the task.

## **RESEARCH QUESTIONS**

Considering a leader with limited human and financial resources, he or she is constantly examining how to maximize their employees' productivity. With that schema in mind with respect to this research, the motivating question was born. *How does one best allocate their resources in a work context between initiatives that promote task autonomy, social support networks or leadership to maximize the positive impact on their employees' emotions?* To study the data to address the subsequent research questions, multivariate analysis in the SPSS statistical software package was used.

1. What is the relation between the perception of the presence of task autonomy in a work context and emotions?
2. What is the relation between the perception of leadership as inspiring in a work context and emotions?

3. What is the relation between the perception of the presence of social support networks in a work context and emotions.
4. What is the inter-relationship between the perception of the presence of task autonomy, perception of leadership as inspiring, and perception of the presence of social support networks in a work context?

The investigation proposed here will further develop Bruch's model so that a more detailed level of interaction between certain components can be understood. This is not expected to change the overarching model, but rather to aid supervisors in considering the work context factors that they can influence.

## **CHAPTER II**

### **LITERARY REVIEW**

Often stated in the context of trends and behavioral norms, several of our modern day leaders within organizations may be echoing similar sentiment as captured in a cliché of old – “the more things change, the more they stay the same”. Many of our corporations and organizations are no doubt in a scramble to survive, let alone thrive, in the current political, economical and cultural climate characterized by rapid change. Change is everywhere and visible from our boardrooms to our classrooms of this now more globally connected world. Mergers, acquisitions, diversity, economic recession, “dot com” busts and oil company booms are but a few of the visible colors of change that companies are experiencing. So what is staying the same? Organizations still rely on their people to drive their success via productivity improvements.

Productivity improvements and increases in organizational effectiveness have been a central focus of businessman and research scholars for more than a century. Henry Ford, Fredrick Taylor, Frank and Lillian Gilbreath, Henry Gantt, and Chester Barnard all shared a common quest to capture productivity gains whether by basic assembly line systems, optimization of production layout or best practice methods which reduced process steps (Allen 1998; Georgopoulos 1957; Grimes 2005).



The term productivity within an organization can have different meanings or refer to a variety of key “care-about” depending on the products and services offered by the entity. Thus “productivity” encompasses a broad scope in its definition that is often group or even industry specific. Productivity may refer to various efficiency and effectiveness measures within an organization – goal attainment, product or service quality, the minimization of disruptions in a process, rates of absenteeism or turnover, piece part production output, profitability, growth, stability, measures of customer satisfaction or even employee morale and job satisfaction (Quinn 1978).

In the 1911 seminal work of Fredrick Taylor, he noted processes to increase worker productivity from time and motion studies that he had performed on industrial workers (Chandran 1998). From his research in one of his experiments on rail car work loading methods, he was able to increase the productivity (output) by a factor of four (Allen 1998).

Central to the Gilbreaths’ research was the quest for “one best way” to perform work tasks (Allen 1998). The couple is credited with pioneering the field of Motion Studies. One of Frank Gilbreth’s studies in the early 1900’s involved researching productivity improvements in the process of laying bricks, which resulted in increased output of more than one hundred percent and patents (Allen 1998). Not all of the early research regarding productivity focused on

industrial outputs. Henry Gantt's research in the late 1800's through 1919 centered on motivational schemes such as increased effectiveness of reward incentives.

Chester Barnard is credited with the development of the concepts of strategic planning and the systems approach to studying organizations (Allen 1998; Chandran 1998). After retiring as CEO from New Jersey Bell Telephone company, Barnard recorded his career's research and observations in a book titled *Functions of the Executive* which contains foundational productivity principals deemed useful still for today's organizations (Allen 1998; Chandran 1998; Quinn 1978). Central themes in Barnard's work are the concepts of satisfaction and effectiveness. "Barnard taught that the three top functions of the executive were to 1) establish and maintain an effective communication system, 2) hire and retain effective personnel, and 3) motivate those personnel" (Allen 1998). Barnard "recognized that in order for the organization to survive in the external environment and to succeed in the long run, it was necessary to sustain cooperation from employees by satisfying the condition of efficiency", which was defined as the "satisfaction of individual motives" (Chandran 1998). Barnard concluded from his research that satisfying individual motives was as important as effectiveness – "the ultimate objective of cooperative action" – toward an organizational purpose (Chandran 1998; Ghoshal and Bartlett 1997).

Barnard's research linked organizational goal attainment to organizational productivity objectives and noted the fundamental requirement of cooperative action from the members of the organization (Allen 1998; Chandran 1998; Ghoshal and Bartlett 1997). Barnard also determined through his research that there is a relationship between employee motivation, the organizational environment and productivity. Nearly a century after Barnard's published research, both scholars and practitioners alike still acknowledge the importance of this trichotomous relationship between the individual (from whom action is required), environment (work context) and productivity (goal attainment specific to the organization's objective).

Early in the 20<sup>th</sup> century Lewin noted from his research that "human behavior is either a directed action or an emotional expression" (Lewin 1939). The equation he proposed to represent this relationship is  $B = f(p,e)$ , or behavior is a function of an individual's personal factors (like emotions) and their environment. This social science perspective of considering the individual's personal factors as it relates to their environment was a pioneering concept for early organizational development theory. Decades later models were created that incorporate this relationship between the individual (individual energy) and work productivity.

Scholars like Albert Bandura in the late 70's, Robert Wood in the 80's, Neal Ashkanasy in the 90's, Heike Bruch and Cliff Grimes since 2000 have published

research that links the individual's behavior (action) to both their personal factors (like cognition, emotions and motivation) and their environment (Ashkanasy 2000a; Bruch 2001; Grimes 2005; Wood 1989). In the last two decades more scholarly and popular publications have begun to emerge regarding organizational effectiveness (productivity), which focus on the work environment and its employees' as individuals with basic non-tangible requirements to foster success in their work roles such as emotion management, a teaming culture, and employee input (autonomy) where possible to aid in achieving the organization's performance goals (Dugat-Wickliff 2001; Karabanow 1999; Lewis 1998; Nelton 1996; Poynter 2002; Rafaeli 1987; Rosenberg 1980; Senge et al. 1999; Wheeler 2001; Wood 1989; Zimmermann 1999).

In 1980 Richard Rosenberg and Eliezer Rosenstein published their research findings regarding people and productivity. They concluded in their Human Relations Paradigm (Figure 2.1) that increased participation by individuals in an organization leads to increased motivation and then arrives at improved productivity (Rosenberg 1980).

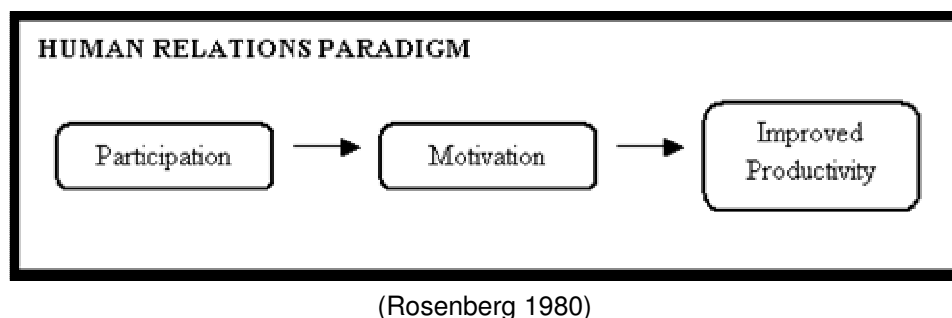


Figure 2.1 Human Relations Paradigm

Rosenberg and Rosenstein's paradigm clearly links the individual and their motivation to productivity but offers only an opportunity to generalize the level and type of individual participation and organizational productivity. This model does not specifically reference or take into account the environmental factors resulting from the work environment.

Wood and Bandura's (1989) Social Cognitive Theory highlights the triadic relationship between behavior, cognitive and other personal factors and the external environment as shown in the diagram below - Figure 2.2 (Wood 1989).

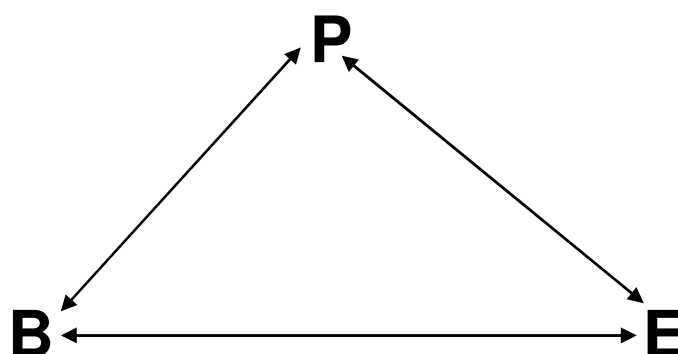


Figure 2.2 Social Cognitive Theory

Unlike the Rosenberg and Rosenstein, Wood and Bandura's model does incorporate environmental factors but does not offer any differentiation of the specific personal, behavioral and environmental factors that comprise the primary factors. Bruch's model also shows a relationship between behavior, or action, personal factors and the work environment (context). Similar to Wood and Bandura's model, Bruch incorporates behavior, personal and environmental factors into her model but with more granularity regarding the specific type of personal factors (cognition, emotion, volition). The details found in Bruch's Individual Energy model affords us a good place to start with research that probes further into the relationship between personal factors and the work environment. Of particular interest is the relationship between emotions of the individual and the work context as bodies of work have emerged that suggest

that emotions can be influenced by others and individuals (Hochschild 1979b; Kemper 1991). Potential implications for managers and leaders who can possibly influence the emotions of their subordinates are significant if they can thereby reap productivity gains. Given the implications, the study of emotions in a work context warrants further investigation.

Several environmental factors affect the emotions of the employees and ultimately the success of the organization. In this research, the work context variables – leadership, task autonomy or job control, and social support networks – are studied as they influence the personal factor of employee emotion. Leaders are beginning to acknowledge that those employees who work close to a process (the front line workers) have a valuable perspective regarding how to achieve the desired productivity gains for their work process. They further acknowledge that when those persons performing the daily tasks, for instance in a manufacturing setting, have the skills, tools and are granted some autonomy to decide how to best utilize their knowledge and ability for the greater good of the organization, a win-win scenario is present for the organization and the individual (Abraham 2000; Doolen 2003; Karasek 1990; Karasek 1979; Lee 1993).

Employees who perceive that they have some autonomy or job control tend to be happier (more positive emotions on the job) and more productive employees

(Abraham 2000; Doolen 2003; Karasek 1990; Karasek 1979; Lee 1993).

Organizations are forming strategic groups, or teams, that collectively address cross-functional issues, and these groups are often given some autonomy to implement improvements per the guidance of the leadership (Doolen 2003; Kelly 2001). An ancillary effect often realized as a by-product of these work groups, or teams, interacting that seem to be of benefit to both the organization and the individual are social support networks. These networks, or sub-groups, often form around common interests and other similarities among team members.

Researchers within the last decade have begun to take notice of this rise in social support or intentional networks (Nardi 2002). As the corporate climate has rapidly been changing, employees seem to rely on their informal, and where possible, formal networks for industry information that can assist them in establishing a competitive advantage. Some may have their origins in work teams but many expand to include vendors, customers, and peers from other companies or even industries that may hold similar jobs or have crossed paths via industry specific conferences or associations. Though not a lot of scholarly information has been published regarding the impact and influence of these networks, companies and employees alike are beginning to acknowledge the existence and importance of social support networks for the individual employee (Michel 2004; Nardi 2002).



## **WORK CONTEXT**

The work context in this study is synonymous with the work place or work environment where the employees perform their job duties. Several factors influence the climate in any given work place such as the number of employees, diversity of the employees' experiences and ethnicity, office layout, complexity and specialization of the jobs performed by the employees, the leadership style of the managers, the frequency and style of communication, the daily work schedule, social support networks that may or may not be present, whether there is task autonomy given to employees and so on. The work environment can even be affected by things such as the attire that the employees are required to wear, if there is a break room present and how the break area is laid out (Dean 1998; Doolen 2003; Reigle 2001). This complex context of variables interacts and produces a work mood or work "feel" which influences emotions on the job. These emotions often act as a catalyst for work behaviors that directly affect productivity. In organizations such as technology or engineering firms that experience rapid change and require quick adjustments, the work mood and subsequent corresponding actions are said to be critical. It is believed that the work mood (emotions on the job) contribute to a successful implementation of technological ideas and innovation, smooth transitioning of mergers and acquisitions and employee team effectiveness and job satisfaction (Reigle

2001). Studies have shown that the mood present in a work environment can directly affect an organization's employee retention rate (Reigle 2001).

In one such study Reigle (2001) reported that an organization that had a work environment that put stronger emphasis on interpersonal relationship values than work task values was able to voluntarily retain employees fourteen months longer on average compared to other companies. Based on studies of organizational work environments in groups that were viewed as successful, some of the key factors that characterized the work place are varying degrees of employee participation in decision making, emphasis on interpersonal relationships more than task, an open door policy, positive communication messages in language and symbols, celebrated work accomplishments, collective effort to look for ways to do the job better, praise for good performance, some decision making passed to the lower levels in the organization and work flexibility when possible. Whereas work context has made for several very interesting studies, it serves as only the canvas for this study. It is much too broad for the scope of this research but does offer many interesting aspects for possible related follow-up research. In this study a specific work environment is the focus – a technical work environment – and only three of the many work context factors will be considered – leadership, task autonomy and social support networks.

## **TECHNICAL WORK CONTEXT**

Lewin, a research scholar, stated as part of his research presentation on group dynamics at the Massachusetts Institute of Technology, that he had assessed from his studies a key factor that has been a thorn in the side of technical organizations. Lewin summarized that “Engineering had a tendency to minimize the human element” (Lewin 1945).

Traditionally in many technical or engineering organizations, the primary emphasis of concern has been production of product or services and all of the metrics associated with maximum output. More than a half of a century since Lewin’s publication, scholars report that individuals in technical firms are often still treated as simply means to an end (Reifer 2000). Many technical organizations are still run by leaders displaying an authoritarian management style that tends to bark out orders, places more emphasis on the task instead of the individual and is isolationist when making departmental decisions involving the individual (Dean 1998; Ghoshal and Bartlett 1997; Reifer 2000). Today lower employee loyalty, higher turnover rates and more dissatisfied employees can more typically be found in these more traditional technical work environments that minimize the human element on the job and often negatively affect the company’s ability to maximize its productivity.

Most savvy technical organizations have begun to proactively embrace the rapid changes and proactively seek to make the necessary work environment adjustments that they believe are required to accommodate the change. These more progressive technical companies tend to have work environments that are lead by individuals that are more transformational and place a more extensive emphasis on the individual and facilitating their needs to accomplish a task rather than focusing on the task itself. The more modern technical environments are more inclusive in decision-making and tend to push more of the key decisions down in the ranks to the employees most directly affected by those decisions. More of these work environments contain self-directed, cross functional teams that are given some autonomy and tend to reward team accomplishments and efforts as much as individual contributions. (Coolidge 1995; Ghoshal and Bartlett 1997; Huy 1999; Kamm 2000; Mackey 2000).

The technology industry is owed some of the blame for the turnover rates as engineers and other technical employees are often in high demand but short in supply. Training for these employees is sometimes grueling and time consuming. The pool of qualified candidates in the United States is not large enough, in a thriving economy, to support the demand. This shortage of technical employees in technical communities like Silicon Valley, has created in boom times, bidding wars for top qualified people (Reifer 2000). Given the characteristics of the new generation of technical employees (Generation X),

organizations are being forced to address more people centric issues in the workplace that affect the individual such as emotions. Given that there can usually be found exceptions to most every rule, the younger technical employees in the workforce today seem to direct the maximum amount of loyalty toward themselves, as they believe companies today are not loyal to their employees.

The younger employees (20 to mid 30 age range) tend to be motivated by benefits other than their paycheck and 401K, as those are the expected minimums from their employers. They are more concerned with flexibility in work schedules, the ability to utilize their creativity on the job, access to training and technology, and inclusion in critical decision making that affects them (Amabile 1996; Krug 1998; Mackey 2000). Some employees mistakenly characterize the attributes of these employees as lazy and unconcerned. The truth is that these employees are great problem solvers, technologically savvy and willing to work hard. They seem to want in return basic respect for their individualism, flexibility in achieving results and the guarantee of time to play as hard as they work. Krug (1996) reported that this new attitude of the younger employee has most likely been derived from the observance of their parents and grandparents being “workaholics” yet still experiencing layoffs with minimal “play” time or personal benefits to show for it all. Employees are being forced to understand how to deal with this type employee as it is projected that these

Generation Xers make up nearly 50% of the workforce (Krug 1998). With such an astounding statistic before company leaders, it is clear that adjustments in how to deal with their workforce is necessary. Understanding the emotions of the employees and learning to deal with them effectively in a work context will benefit the employers greatly.

### **EMOTIONS, NOT EMOTIONAL INTELLIGENCE**

Decades ago scholars, psychologist, and social scientist such as Bales (1950), Fleishman (1957), Likert (1967) and Henry Mintzberg (1973) noted the importance of human relations skills or socio-emotional orientation in the work place (Morand 2001). Executive teams at major corporations like Ford Motor Company, Motorola, HP, Cisco and Southwest Airlines are recognizing the value in better understanding their employees' emotions and some are claiming it to be their hidden strategic advantage (Cooper 1997; Johnson 1999; Morand 2001). Thus how one intelligibly uses the knowledge of emotions in the workplace is viewed as very useful information.

Scholars once thought that intelligence was a one dimensional measure, but now believe it to multi-faceted (Morand 2001). Emotional Intelligence is one of the newer measures that is of particular interest to leadership in organizations. Daniel Goldman popularized the concept in 1995, but this term was defined several years before. Salovey and Mayer (1990) broadly defined emotional

intelligence as the “ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and action” (Morand 2001). This definition speaks to the detection and analysis of emotions and then the ability to use this analyzed emotion data to drive individual thinking and action. This is broader than the scope of this research.

Emotional Intelligence is an area of increased focus in both popular and scholarly research and may be a strategic area for future follow-up research. However, this research focuses on emotion and not emotional intelligence. The data in this study will be analyzed to assess the reported level of emotion experienced by the participants and characterization of their emotion as positive or negative in relation to work context variables for the individuals who completed the questions in the survey instrument.

## **EMOTIONS**

Derived from the Latin word “emovere” which means to move out or to stir up, emotions have been a focal subject of researchers for more than a century. James Lange (1885) in trying to determine the origins of emotions insisted that they were the consequences of certain “vasco-motor effects” (Ashkanasy 2000b). Other scholars (Cannon (1927) and Schachter & Singer (1962)) that

share Lange's Centralist Theory of Emotions believe that the mind interprets events and the interpretation provides emotional feeling and determines the quality of the emotional experience. Scholars like Paulhan (1930) and Hunt (1941) promote a Conflict Theory as a factor in the explanation of the origins of emotion. This theory is based on the arrest of tendency. Meyer (1956) continued research of this theory which suggests that emotion is "aroused when a tendency to respond is arrested or inhibited" (Ashkanasy 2000b). Mandler (1984) also subscribes to the Conflict Theory of emotion. He contends that "emotion, positive or negative, are the result of cognitive interruption, and depending on the surroundings, situation and context, either positive or negative emotions can result from the same interruption type" (Ashkanasy 2000b). Kemper (1978, 1984) promotes a social interactional theory of emotion that focuses on the interdependence of human relations spawning the emergence of emotions. These are just some of the many theories that exist regarding emotion and its origin making an exhaustive literature review very difficult at best. These scholarly representative postulates regarding emotion illustrate that the topic has been important in research for decades and it is growing in importance to organizations (Ashkanasy 2000b). The growing popularity of emotions in organizations as a research topic prompted Neal Ashkanasy in 1996 to organize a symposium on emotion at the Annual Meeting of the Academy of Management. This symposium led to the formation of the first conference on Emotions in Organizational Life held in San Diego, California in August of 1998



and the momentum derived from this meeting of the minds regarding emotions continues to grow. Though emotion theorists, researchers and scholars have broad views and perspectives, they all tend to agree that the emotion experience and expression has been and will continue to be of vital importance to people and the organizations with whom they affiliate.

In the literature it has been estimated that emotions and emotional monitoring, by the individual or the management, may be part of the jobs of at least one third of the United States workers spanning at least 48 occupational categories (Abraham 2000). Emotion is now recognized as a key feature of the work that many people do (Ashforth 1993). For instance a nurse that is nurturing and compassionate in the way he / she performs their daily work tasks is simply performing the expected job duties, but these are displays of emotion. Likewise, friendly salespersons that smile and make eye contact with potential customers are simply doing their job. In fact many occupations require various emotional displays or performances. Sports coaches tend to display enthusiasm; funeral directors tend to show dignified respect; professional wrestlers often exude anger and hate (Ashforth 1993; Gabriel 1998; Rafaeli 1987; Wheeler 2001).

Excessive emotion displayed in a work setting can disrupt reasoning and analytical processing, however, some studies suggest that too little emotion can be even more detrimental to an organization (Bird 1997). When emotions are

recognized and properly managed in a work environment, it can benefit the individual, their management and the organization. In many high-performing organizations, emotions are a sign of strength and can be a competitive advantage for the organizations that harness and utilize them. In fact, emotions are essential and unavoidable in business since businesses rely on people and people come with a plethora of emotions whether displayed or suppressed. Scholars have concluded that emotions are at the heart of an individual's productivity, learning, and commitment (Bird 1997). Leaders in premier organizations utilize the emotion resource in their employees and draw on values such as trust, integrity, credibility, empathy, and resilience to build teams that are founded on trusting, profitable business relationships (Brown 1995). Researchers have concluded that the emotional state of the individual directly impacts their desire and even ability to perform work tasks (Gabriel 1998; Rafaeli 1987).

Leading authorities like Fineman (1993) who study emotions, agree that emotions are complex and it is difficult to pin point exactly how they all fit into the organizational context. Social relations are said to be major instigators of emotions. In fact, some researchers believe that emotions are socially constructed (Kemper 1991). Social psychologists treat emotion as a dependent variable – the product of social influences (Thoits 1989).

Other scholars contend that emotions are responses to environmental agents (Kemper 1991). Weis and Cropanano's (1996) research on work attitude suggests that people tend to be more satisfied when their emotional experience at work is positive rather than negative. They further determined that sometimes the general valence of people's emotions (whether positive or negative) could influence or predict their work attitudes and behaviors (Brockner, 2001).

Brockner's study of emotions encompasses his research of individual self-regulation in which people seek to align their behaviors with appropriate goals or standards for the organization.

Rafaeli and Sutton, Bruch, Thoits and others have all recommended empirical studies of emotions in a work context as an area for further research (Bruch 2002; Callahan et al. 2001; Gomez-Mejia 1990; Hochschild 1979a; Kotter and Heskett 1992; Rafaeli 1987; Thoits 1989). In this research emotions in an organizational context and their associated relations between task autonomy, leadership and social support networks are studied.

## **TASK AUTONOMY**

Task autonomy for this study is synonymous with job control and is defined as the latitude to make decisions on the job and the discretion to select the most appropriate skills to complete the task. Researchers have found job control to be a significant factor in characterizing the work environment. Karasek's (1979) job demands-job control model or job strain model (Figure 2.3) has provided the conceptual foundation for studies on the impact of job control on the emotion of stress in the work place (Abraham 2000; Fox 1993; Karasek 1990; Karasek 1979). Demand is the externally determined amount of effort that a job requires. Control is the ability to moderate or to make decisions about demands in the planning and execution of work and the possibility for personal freedom, or autonomy, on the job (Kushnir 1991).

According to Karasek's model, jobs that make many demands on an individual, induce a state of arousal, which, if coupled with little job control, prevent the selection of an appropriate coping response and, in turn, lead to a host of physiological problems. Positive outcomes (including learning and motivation) occur when this sequence is reversed. When a job is sufficiently high in its demand or challenging, but enough control is given to permit employees to draw on their various coping response skills and act effectively when under stress, then the employee may minimize the negative emotions like stress, job dissatisfaction, emotional exhaustion, erosion of organizational commitment and

turn-over intentions. The person is more likely to act on the goals set forth by the organization (Abraham 2000; Karasek 1990; Karasek 1979; Lee 1993).

The job strain model postulates that psychological strain results from the joint effects of the demands in the work environment and the decision-making freedom available to the worker making the decision (Abraham 2000; Fox 1993; Karasek 1990; Karasek 1979).

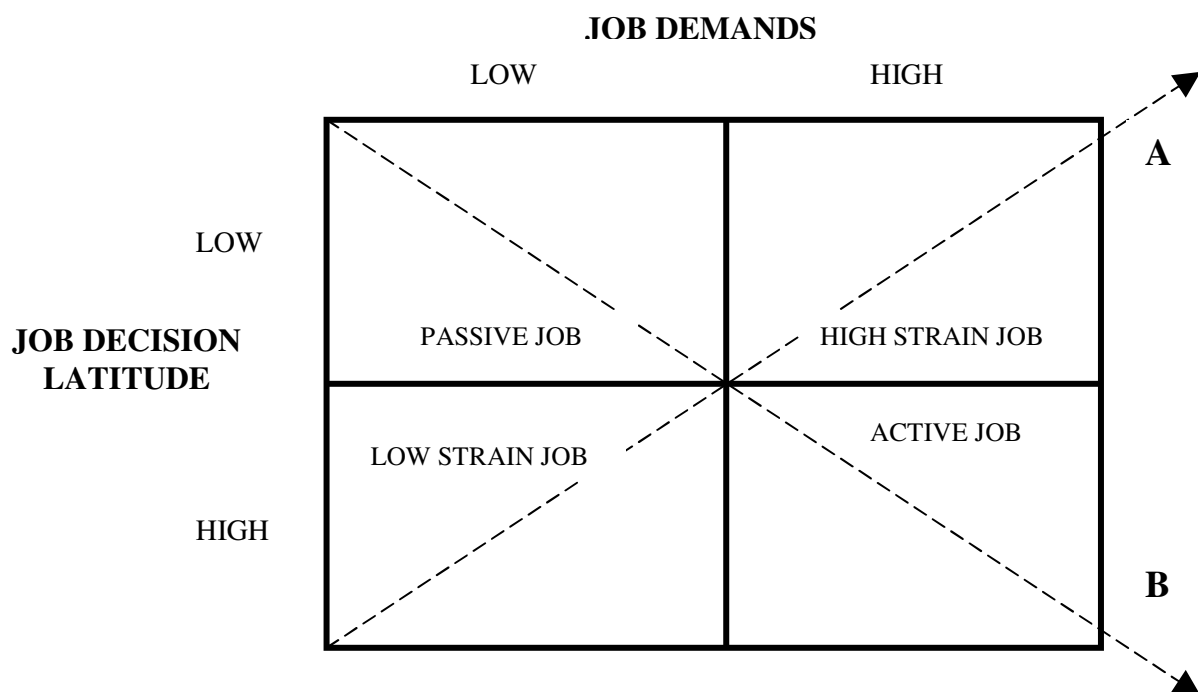


Figure 2.3 Job Strain Model

Following diagonal A in the Job Strain Model, the strain increases as job demands increase, relative to the decrease in job decision latitude or control. When the job demands and job control are simultaneously high, then it is hypothesized that it would lead to the development of new and even creative behavior patterns that may manifest both on and off the job. This quadrant area is labeled “active job” and is believed to be where the most productive action takes place by the employees. The model predicts that jobs at the opposite extreme quadrant (called “passive job”) induce a decline in overall activity and a reduction in general problem-solving activity as the demands on the employee are low and so is the job control (Karasek 1990; Karasek 1979).

Laboratory studies have shown that people need not exercise job control to minimize the negative emotions associated with the lack of control being made available to them. The belief or perception that personal job control is a viable option for an individual, even if it remains unexercised, has a significant impact on the level of stressfulness experienced by individuals in what they perceive to be demanding or threatening situations (Abraham 2000). Since, individuals who perceive themselves as having high control tend to tolerate aversive events better than those who do not perceive such personal control, this study will focus on the measure of the individual’s control perception as a factor in analyzing the work environment context.

In Dolbier's empirical research conducted on individuals that participated in self-leadership studies the findings suggest that autonomy led to enhanced psychological, health and work outcomes (Dolbier 2001). Self-leadership is when an individual governs his or her own actions based on their internal core self (norms, values, experiences, etc.). Abraham (2000) reported in her study on job control and emotion that those individuals who perceived that they had task autonomy or job control, whether it was exercised or not, reported less stress and higher job satisfaction. Self-leadership, emotional intelligence and emotional dissonance as it relates to work outcomes have all been measured empirically. So indirectly a relationship has been established between task autonomy and emotions, as emotions are centric to the concepts mentioned that have been the topic of previous empirical studies. In this study the relationship between emotions and task autonomy will be empirically analyzed directly.

## **LEADERSHIP**

Yukl (1997) defines leadership broadly as the mobilization of human resources toward the attainment of organizational goals. Meindl (1990, 1995) proposed that leadership should be analyzed from a follower-centric perspective and couldn't be understood without consideration of the follower (Ashkanasy 2000b). Regardless of how one defines leadership, it is certain that those occupying leadership roles are critical to the success of organizations. Leaders who act in relational roles are often characterized as transformational (Boje 2000; Conger 1994; Kuhnert 1987). Leaders that can guide, motivate and coach for specific, desired results is essential in rapidly changing times like these of the information age.

In 1978 Burns developed the initial theories around transformational leadership. Bass further developed Burns' work in 1985. Bass introduced Burns' work into an organizational setting whereas Burns initially did the work in a political context. The transformational leader was said to motivate followers to identify with the leader's vision and sacrifice their self-interest for that of the group. Bass and Avolio (1990) believed that this concept also incorporates charisma or idealized influence (followers trust in and emotionally identify with the leaders), intellectual stimulation (followers are encouraged to question their own ways of doing things) and individualized consideration (assignments are delegated to



followers providing them with learning opportunities) (Ashkanasy 2000b; Eisenbach, Watson and Pillai; Lewis 1999; Lontos 1992). Tichy and Devanna followed the initial research of Bass to show that transformational leaders engaged themselves and their followers in a process of recognizing the need for change, creating the new, appropriate vision and then institutionalizing the change (Eisenbach, Watson and Pillai). Examples given in the literature of transformational leaders include Moses, Joan of Arc, Dr. Martin Luther King, Jr., Kennedy and Mahatma Gandhi.

Bennis and Nanus (1985) conducted a study of ninety senior level leaders. While evaluating the common factors of success among those that participated in the study, a list of attributes emerged that is said to be representative of the leadership characteristics found in those leaders who are said to be transformational. They emphasized in their book that leadership was about character, creating a culture (called 'social architecture') capable of generating intellectual capital, producing and clearly communicating vision to those in the organization, and generating and sustaining trust. From Bennis and Nanus' study emerged a list of leadership traits that are found in those who have been successful in achieving their corporate results. These traits include logical thinking, persistence, empowerment, and self-control. Because of the organizational success of the leaders displaying these traits, they were identified as fundamental character traits for transformational leaders.

The leaders' goal was to make followers into self-empowered leaders themselves who would then become change agents for the organization. The job of the leader was to clearly communicate the vision and values to serve as a framework for the empowered team. The transformational leaders became known for being role models, fostering team spirit, evoking positive emotions and motivating and providing meaningful challenges to the team. The leaders also foster creativity and innovation in their groups while offering mentorship (Bennis 1997). Bennis stated that the leadership environment of today is characterized by three major contextual labels: commitment, complexity and credibility (Bennis 1997).

The research of Bass has been echoed in the work of Kouzes & Posner and Schein. They have cited that the essence of the transformation that is needed lies in the work environment and culture. The leader is repeatedly noted as a focal person to achieve the desired results (Boje 2000; Schein 1985; Senge et al. 1999). Conger and Kanungo conducted a study of 488 managers from four US and Canadian organizations (Conger 1987; Conger 1994). They also found the same type of characteristics present in the leaders participating in their research study as did Bennis and Nunus' transformational leadership investigation and with similar resulting successes of their organizations.

Transformational leadership is thought to be the most effective style in addressing rapid organizational change and empowering the employees in the workforce to act on behalf of the organizations best interest (Kuhnert 1987). These leaders are said to have a strong bias toward action that gets successful results. In all types of organizations leadership is identified as a critical factor in any given organization's attainment of its goals and objectives. The actions and attitudes of the leaders are said to have a direct effect on their employees. So with positive results being the quest, leadership is a key ingredient to developing, sustaining and growing a successful organization.

The leadership challenges of today seem to be universal across industry sectors. Whether in a high tech company, an academic institution or a volunteer organization like the United Way, present-day leaders are having to master skills to address challenges like communications, teambuilding, managing conflict, motivation, stress management, organizational culture, implementing change, and formulating/ implementing strategy (Cosier and Dalton 1993). The old organizational management structure that was prevalent in many organizations was one of command and control. Managers were more like dictators that gave orders for the employees to carry out. In today's corporate cultures of companies and organizations employing younger employees who are less responsive to a command and control style of management, a new paradigm is emerging. The new successful managers are focusing on idea generation,

individual initiative, autonomy or job control and performance management. The new paradigm of leadership is more focused on the organization's purpose, people and processes rather than orchestrating the tactical day-to-day operations (Barlow 1996; Ghoshal and Bartlett 1997). This requires a partnering leadership style more closely found in those characterized as transformational leaders (Bennis 1959; Kuhnert 1987).

The theory of transformational leadership "has received considerable empirical support as ratings of transformational leadership predict both subordinate attitudes and measures of leadership effectiveness" (Smith 2004). Though the degree of effectiveness has been hard to measure, empirical studies have shown that there is a direct relationship between leaders and the attitude and feelings of the persons in their organizations. As the study of emotions has increasingly become more popular since the early nineties, many qualitative studies of emotions in politics, industry and the educational system are emerging (Ashkanasy 2000b; Conger 1994; Gabriel 1998; Grigg 2001; Smith 2004; Sylwester 1994). Some scholars propose that emotions may play a larger role in determining human action than does logic and reasoning given the arrangement of the neural fiber network in the brain regions that control each (Sylwester 1994). Given that it has been determined that leaders can directly affect the attitude and feeling of their subordinates, it can then be extrapolated

that leaders can affect the behavior of those that they lead. In this study we will empirically examine the relationship of leadership and emotions.

## **SOCIAL SUPPORT NETWORKS**

Another factor that has been found to effect the work environment and in some cases, help to define it, is the presence of people groupings called networks. Empirical studies have shown that networks can be formal, derived from legal contracts, or informal, derived from tacit or explicit common habits. Networks are integral parts of the organization and are often product, technology or people centric such as consortiums, associations and employee unions. Networks are increasingly being viewed as a competitive advantage for organizations that contain them (Biggiero 2001; Tushman 1981).

The people that make up the membership of the networks are often active in a number of professional, technical and scientific networks. Tushman (1981) refers to people that belong to several networks as boundary spanners. The individuals in these networks gain in the amount of information available to them, keeping them up-to-date with innovations and industry advances (Tushman 1981). Access to the knowledge gained in networks is sometimes a requirement for survival for both the individual's career and group to whom he or she is affiliated, so neither of them becomes obsolete. The knowledge that the

people possess employed by any given organization becomes the strategic competitive advantage of the organizations to which they belong. In the case of formal networks, often the leadership in an organization assigns membership to them. Informal networks are often the result of self-organization among the people. Self-organization is a property of social systems (Biggiero 2001). The formation of these self-organizing networks can be often uncertain and ambiguous as it involves social-psychological aspects and is based on personal relationships (Biggiero 2001). Social networks can serve as forums for knowledge transfer, professional support and even emotional support for people (Tushman 1981). It is the perceived presence or absence of these self-organized social networks that is of interest to us for the purpose of this study.

Research does exist that shows the significant impact that the presence of social support networks can have on the members of organizations (Biggiero 2001; Ibarra 1995; Tushman 1981). The work of Ibarra highlights the importance of social support networks in a work context. In this example, a study was done to investigate the informal social networks of white and minority managers (Ibarra 1995). In this study managers' career progression was analyzed as it related to their participation in industry-specific social support networks. The study showed that overall the minority managers did not progress as far or quickly in their careers compared to their white peers. The white managers tended to participate in and belong to more social support networks. Organizational

literature suggests that members of minority groups are having difficulty gaining significant social and instrumental support in the workplace. Many have argued that exclusion from social networks explains the failure of minority managers to advance more rapidly in their careers and organizations (Ibarra 1995). This lack of access to existing networks and absence of newer more accepting networks is said to have a direct relationship on minority managers' slower progress up the corporate ladder but no published work exists for this or any other study that addresses the direct affect of the social support networks on emotions.

The lack of access or participation in key strategic industry specific networks was identified as a primary reason that many British firms, identified in a study by Newell, were found to be less than fully successful in appropriating relevant technological innovations (Newell 1990). Newell's study compared the technological and business success of companies that belonged to industry specific networks to those that did not belong to these networks. The companies that participated in the industry specific networks boasted of stronger company performance as gauged by their productivity metrics. They also tended to be more technologically advanced, seemingly able to climb technological learning curves faster, with the assistance of industry resources present in the networks. In both the study of the individual managers and the organizations, favorable results came from belonging to social support networks.

Similar sentiment regarding networks was echoed in the study by Moore and Whitt (2000) of nonprofit trustees from 149 organizations in the Louisville, Kentucky area. It is noted in the study that social networks are highly cohesive. Men in this study outnumbered the women on the governing boards and most often held the leadership seats. Consequently, even though women were present in the social networks, their scarce numbers suggests that the network of groups selecting board members may have been void of the presence of females or possibly for some reason bias. Not only were the women rare among the nonprofit trustees, but they were also not found to be predominate in the upper class or on nonprofit (and for-profit) boards (Moore 2000).

Nardi (2002) in her research suggests that social support networks or “intentional networks” are increasingly becoming more important in the workplace as they address the issues of concern often at the individual level (Nardi 2002). She believes that these networks are becoming a central focus of labor management akin to the focus and impact that teams had in the organizational management literature in the recent past. She believes that the team’s effectiveness in our modern organizations is being negatively impacted by the rapid changes in our corporate and economic environments whereby personnel in our organizations change frequently as does their reporting structure and levels of responsibilities. In noting the increasing value of these personal social networks, Nardi (2002) acknowledges that not much research



and consequently theory is available on the subject. The scope of the network can include customers, clients, colleagues, vendors, outsourced service providers, alliance partners in other companies, venture capitalists, funding agencies, the press, strategic peers, in-house experts such as legal and human relations staff, contractors and consultants. Given the extensive pool of potential members, networks serve as a valuable resource for the individual's personal career development and for the organizations as intellectual capital reservoirs for achieving their corporate goals (Nardi 2002).

Though no empirical research has been found to link social support networks and emotions, scholarly literature contains examples of its significant connection in cases of terminally ill persons attending support groups to address their fear and depression or in networks formed like MADD (Mothers Against Drunk Drivers) to console each other's grief and vent their anger. In a recent study of 20 churches where research of the black church as an informal network support source in central Pennsylvania was conducted, ninety-eight (98) healthy elderly subjects were measured on several factors. Those subjects who reported having both family and church networks showed the highest level of well-being (Crawley 2004). Crawley went on to report from her findings that "failure to have one's social support needs met can lead to poor physical and / or emotional health as well as negatively impact / decrease the quality of life" (Crawley 2004).

In this study social support networks and their relationship to emotions will be studied empirically as a unique, significant contribution to the literature.

## **WORK CONTEXT FACTORS**

Though the work context factors of task autonomy, leadership and social support networks were discussed individually and with respect to their individual influence on emotions, literature does support that the factors are related to each other and in this study their relationships will be examined empirically. Leadership, especially transformational leadership, is said to have a significant influence on its followers. In a study of 48 persons on a university campus responding to a help wanted ad that measured leadership with respect to task autonomy, the subjects reported that leaders that exhibited high levels of consideration whether the work tasks were viewed as low or high in structure, perceived that the work environment was high in job autonomy (Ferris 1983). These persons in the study were only hired for four days to code videotaped group interactions. The group was subdivided and the individual groups were given different leader instructions from intentionally varying leader styles. Even when the instructions given were vague, if the leaders were thought to exhibit high degrees of consideration by the studies participants, they perceived they had been granted high degrees of job autonomy (Ferris 1983).

Leaders often play a significant role in the perception, presence and population of social support networks in the workplace. Leaders are often positioned to authorize the network formation, provide meeting accommodations and even assign members to participate, especially in the case of formal networks. Leaders and leadership can play an influential role, positive or negative, in informal networks also (Dean 1998; Doolen 2003; Hord 1992; Mackey 2000). Members of networks usually assemble around common issues of concern whether personal or professional. Leaders influence many work factors – work culture, communications, work area layout and schedules, technology availability, and the like. These subjects are often at the center of a given network's focus and for this study the direct relationship between the perceptions of leadership and the perceptions of the presence of social support networks will be investigated empirically.

Social support networks have been linked implicitly to task autonomy or job control in the form of self-directed teams. These teams often resemble formal networks and at the conclusion of the project may spawn the creation of informal networks to continue discussion and offer support around the teams initial assigned task or topic (Doolen 2003). Just as with the other work context factors being examined in this study, social support networks will be considered in relation to task autonomy.

## **CHAPTER III**

### **METHODOLOGY**

In this study, relations between the work environmental factors task autonomy, leadership, social support networks and emotion will be analyzed. The data used for the analysis was gathered from the deployment of a validated survey instrument in a US-based engineering firm. The instrument was sent to a specific target audience of mid-level to senior technical managers or business unit leaders who were in turn asked to further distribute the instrument to their direct reports. The survey instrument was deployed electronically and respondents were given nine days to complete their responses. The specifics regarding the survey instrument, research population, data collection and analysis are detailed in the sections that follow.

#### **SURVEY INSTRUMENT**

The survey instrument was developed by Heike Bruch, Director of the Institute for Leadership and Human Resource Development at the University of St. Gallen in Switzerland. She was formerly a visiting professor at the London Business School in England. Bruch developed the Individual Energy model (Figure 3.1), which was the motivation for the development of the survey.

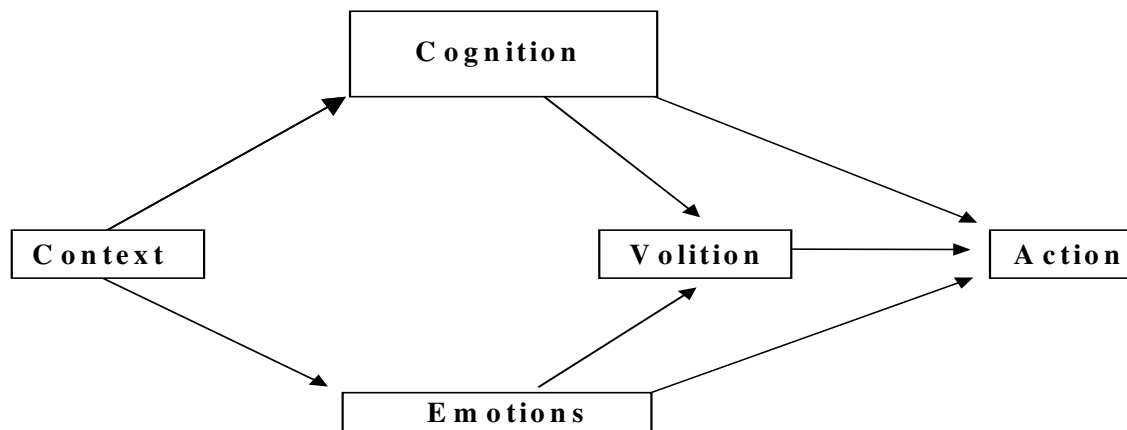


Figure 3.1 Individual Energy Model (Bruch 2001)

Bruch was contracted to consult with Conoco to assess their level of Individual Energy and investigate ways to improve with the goal of more satisfied and hopefully productive employees. The company was very satisfied with Bruch's model and thus was very comfortable with using her instrument as it naturally accounted for all of the key constructs in her model. After reviewing the positive reliability data for Bruch's instrument, as part of the Conoco project management team with limited budget and time constraints, the agreement was made to use Bruch's instrument. No other instruments were formally considered to address

the factors present in her model. For this research study, the data gathered via Bruch's instrument was used.

The survey contains 120 questions (including 6 demographic questions) that address the factors of the individual energy model of action. The survey instrument addresses questions that allow empirical analysis of the major factors displayed in Figure 3.1 and their subcomponents that have not individually but rather collectively been studied (see Figure 1.2 on page 16).

All of the questions in the survey were recorded on a seven point Likert scale. In determining which questions to be included in this survey instrument, the use of indicators and scales that had been used and validated in earlier studies was the primary objective (Bruch 2002). New indicators were developed only for those variables that were not known to have been measured before (Bruch 2002).

The survey questions regarding action were taken from the Proactive Coping Scale developed by Greenglass et al (1999), Kanungo's (1982) Job Involvement Questionnaire and the Reflective Coping Inventory (Greenglass et al, 1999). The reliability for action yielded a composite Cronbach's alpha score of 0.76 (Bruch 2002). The survey questions regarding emotions were taken primarily from the Positive Affect Schedule developed by Watson, Clark and Tellegen (1988). The questions were written to reflect positive and negative task-related

emotions. The reliability for emotions yielded a composite Cronbach's alpha score of 0.85 (Bruch 2002). The survey questions regarding the work context were taken from work control scale developed by Frese et al (1996), the Charismatic Leadership subscale of the Multifactor Leadership Questionnaire (Bass, 1985; Bycio, Hackett and Allen, 1995), and the Proactive Coping Inventory (Greenglass et al, 1999). The reliability for work context yielded a composite Cronbach's alpha score of 0.80 (Bruch 2002).

The only instruction given to the participants that was specific to the survey instrument was to answer the questions with respect to a specific project or task within their regular work environment. This request was made to help the employee focus on a specific incidence of action-taking and the work context associated with that targeted event.

## **RESEARCH POPULATION AND DATA COLLECTION**

Conoco Inc. housed their leadership development center – Conoco University – at its headquarters in Houston, Texas. As part of a research and development effort sponsored by the Human Resource Executive Leadership team, the “individual energy” levels (Bruch 2001) of Conoco's middle to upper management team were assessed using the survey instrument developed by Heike Bruch. Conoco was an engineering firm and most of the subjects were

technical managers or business unit leaders with responsibilities that include technical functions. A concentrated population of these employees participated in an executive leadership development program known as Trailblazer. The Trailblazers were hierarchically about two or three levels down from the CEO. The individual energy survey was deployed to those participants in the Trailblazer program and their teams.

The Trailblazer program was sponsored by the CEO of the company and began in 1999 to train and equip senior level managers and emerging leaders, with tools to aid in achieving long term growth, innovation, and establish a support network (Conoco 1999). The founders of the program observed a gap in leadership perspective between that inherent in their corporate structure and that believed to be the required leadership skills and style of the future. The program included collaboration and instruction from the London Business School, JMW Consultants and the Center for Creative Leadership for about 25 managers at a time that would engage in a series of three one-week classroom sessions spread over a nine-month period. The program also utilized those executive employees that completed the Sloan program at Stanford University, Executive Vice presidents and the CEO as instructors to lend a business specific perspective to the learning experience. In between sessions the participants applied their new knowledge and skills to business cases within their organizations. By the end of the program the participants had formed a subset of a social support network and



gained admittance to the larger network of executive, senior and strategic corporate leaders. The goal was to have the targeted managers leave the program with a clearer understanding of the critical factors that impact their global business environment and tooled to autonomously apply their skills to the growth and prosperity of the company. The individual energy survey was a management tool used to gain information about the managers and their employees and to guide in a more effective utilization of their intellectual capital resources.

The survey was deployed via the web. The URL for the server location that housed the survey was sent to the participants. The managers that received the email were requested to disseminate it throughout their organizations to all of the persons that reported to them. The request was for their direct reports to further distribute the invitation to participate in the survey to their direct reports with leadership responsibility. Therefore the majority of the respondents were managers. Complete confidentiality of individual responses was designed into the deployment process using the web survey tool.

The survey instrument was initially mailed to 149 mid to senior level managers and then to another 571 managers and technology leaders that reported to them. Of the 720 employees that received the invitation to participate in the survey, 380 logged on to the server and began the survey. Only 249 (65.5%) of the

participants that began the survey completed it before the deployment window closed. The number of completed surveys received represented an overall response rate of 34.5%.

## STATISTICAL ANALYSIS

A quantitative approach was applied to the existing data to analyze the relations between environmental work context variables – task autonomy, leadership, and social support networks – and the personal factor of emotions (see Figure 3.2). Descriptive statistical analysis, factor analysis, regression analysis, and correlation analysis were performed in the investigation of the first three research questions. To analyze the relations of the environmental work context variables on each other (see Figure 3.3), regression analysis and correlation analysis were used. The results of the analysis are contained in Chapter IV.

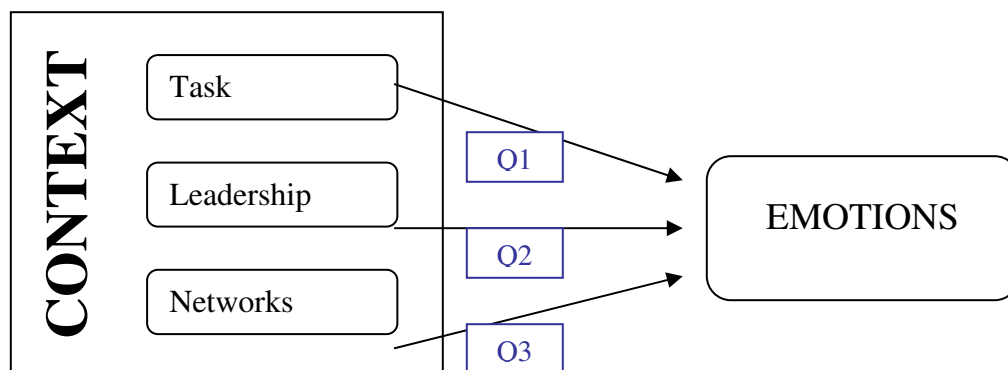


Figure 3.2 Analysis I (Questions 1 – 3)

[Q = research question]

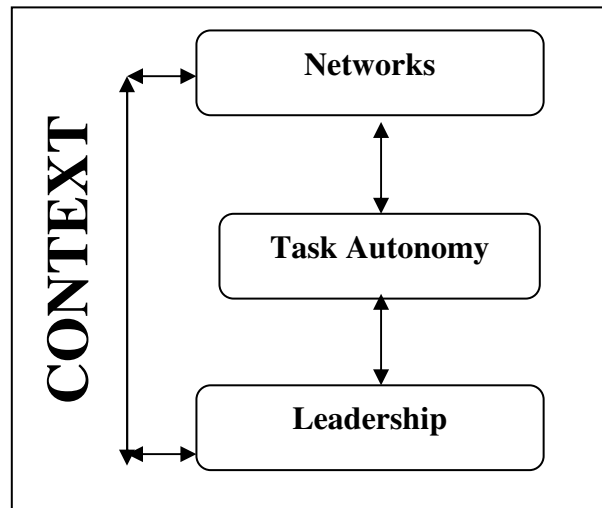


Figure 3.3 Analysis II (Question 4)

For Questions 1 through 3, the dependent variable was emotions. The analysis was performed first using positive emotions then negative emotions as the dependent variable. The independent variables were task autonomy, leadership, and social support networks respectively. For Question 4, each context variable was tested with respect to the others using regression analysis and correlation analysis. Two-tailed tests were used to detect significant relationships. The significance criterion was ( $\alpha$ ) = .05.

## **LIMITATIONS**

The results of the analysis are significant for organizations faced with allocation decisions regarding their task autonomy, leadership, and social support networks. Since the data set is from only one company though, the generalizations may be viewed as limited. Also whenever gathering data via surveys, the integrity and consistency of the responses from respondent to respondent is of some concern. The self-reporting bias inherent in the data collection can be limiting in that it affects the ability for generalizations.

## **CHAPTER IV**

### **ANALYSIS AND RESULTS**

This section contains the data analysis and results of this research study. The primary components of this section include the descriptive statistics, the data reduction analysis including a factor analysis and the results from the regression and correlation analysis. The raw data for this study was compiled and checked for completeness. The data set was determined to be complete with no missing data points.

#### **DESCRIPTIVE STATISTICS**

The original demographic data was decoded using a legend that was incorporated into the survey instrument's decoder. The decoded demographic information included the following variables and the value of the possible responses – “manager” (1=yes, 2=no); “years of work experience” (1= five years or less, 2= six to ten years, 3= eleven to twenty years, 4= more than twenty); “gender” (0=female, 1=male). The complete list of descriptive raw data used in this study can be found in the Appendix, in the Raw Data table.

The remaining data, which has been analyzed for this research, is from a set of 120 questions contained within the survey instrument used for this study. These questions addressed several factors specific to Individual Energy in a work

environment. The 55 questions from the survey instrument that are relevant to this research are listed in tables in this section that have been categorized by the specific context factors (task autonomy, leadership, social support networks, positive emotions and negative emotions) that have been analyzed for this study.

After the data was imported into the SPSS for Windows software from Microsoft Excel and checked for completeness, the descriptive statistics were run. The responses to the survey questions were rated by the respondents and were captured online anonymously.

Participants that completed the survey included 179 managers. This represents 71.9% of the total respondents that completed the survey. The remaining 28.1% were listed as non-managers (Figure 4.1).

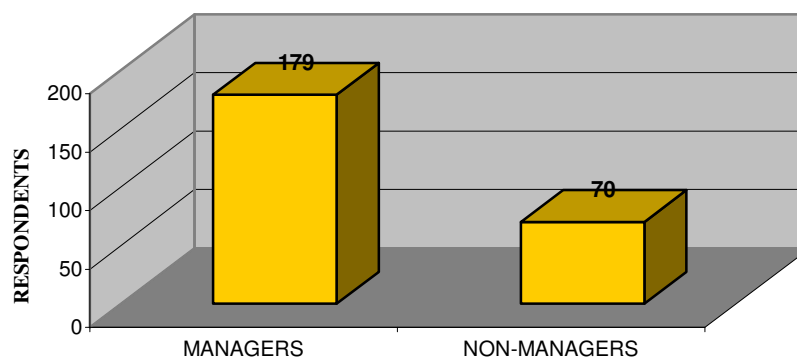


Figure 4.1 Manager Status

Even though nearly 72% of the respondents were managers, only 32.5% had received special training in a senior management-training program called Trailblazers. This data may lend itself to future research for this company on the differences of perceived effectiveness of the managers who have been through the special training and those who have not. This is however beyond the scope of this body of research.

Figure 4.2 indicates that greater than three quarters of the respondents had more than 10 years of tenure with the engineering firm participating in this survey. Thirty-four of the respondents, which represent 13.7%, had been with the company for 5 years or less. Nineteen respondents or 7.6% had been with the company for 6 to 10 years. Of the remaining 196 respondents, half of them had been with the company 11 to 20 years and the other half (98 respondents) had more than 20 years of service with the company.

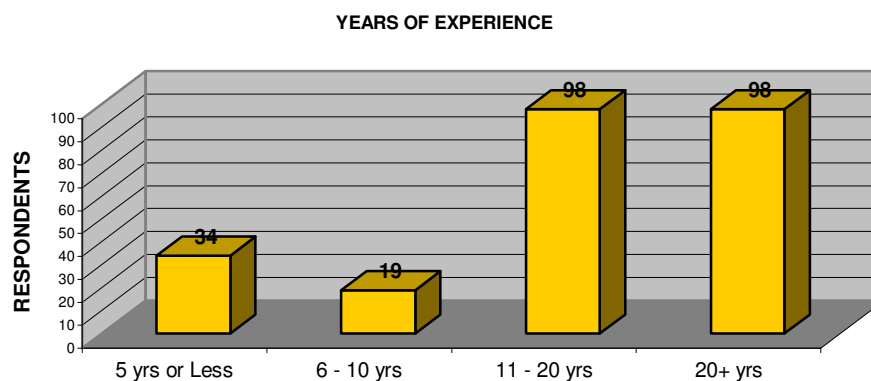


Figure 4.2 Years of Experience

Only 21.3% of the respondents were women (n=55) and the remaining 78.7% of the respondents (n=194) were men as noted below in Figure 4.3.

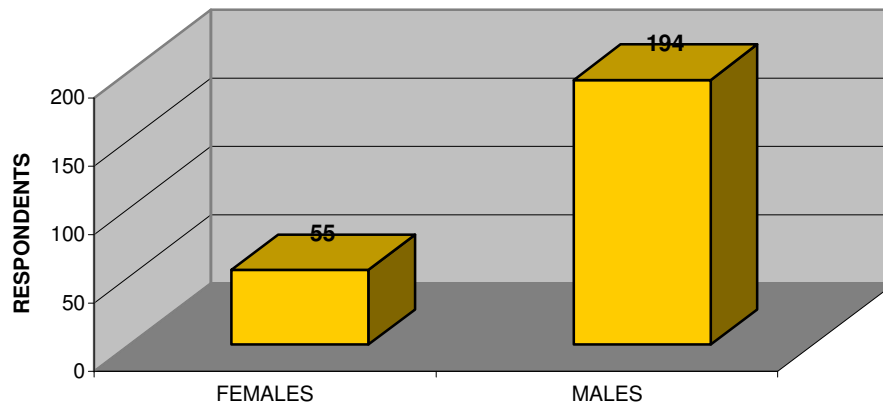


Figure 4.3 Gender

The participants were instructed to answer the survey questions with respect to their specific work tasks or project responsibilities in their most common work environment. The respondents assigned a score to each question based on a seven-point Likert scale whereby assigning a score of seven meant that the participant strongly agreed with a given question and scoring the question with a rating of one was an indication that the respondent strongly disagreed.



There were eight questions in the survey (Table 4.1) that specifically related to the variable 'task autonomy'. The range of responses was between 2 and 7. The range of the mean for each question regarding task autonomy was between 2.53 to 5.90. The mean for this factor was 5.09 with a standard deviation of 1.03. The reliability score for Cronbach's alpha was 0.35. Given the lower alpha value, further investigation was conducted. The factor analysis was referenced and three questions were found to yield an Eigenvalue greater than one suggesting that they may represent a better fit of the autonomy factor using those suggested items from the survey instrument. Those three questions were extracted and the others omitted to create a new autonomy factor. The Cronbach's alpha for the new factor was 0.70. However, further analysis revealed that there was only a 3.6% difference in values for the original autonomy factor incorporating all eight of the questions versus the new one despite the increase in Cronbach's alpha score. Therefore the analysis using the original autonomy factor was retained for this study.

Table 4.1 Task Autonomy Survey Questions

	<b>item</b>	<b>mean</b>	<b>std. Dev</b>
1a	The requirements in this project/task are very challenging for me.	5.82	1.026
1b	In this project/task I can use my knowledge and skills to a large extent.	5.90	1.005
1c	I can plan and arrange my activities in the project/task on my own.	5.35	1.351
1d	The requirements in the project/task are often not demanding enough to me.	2.53	1.467
1e	I feel autonomous in my activities in the project/task.	4.46	1.757

Table 4.1 continued

	<b>item</b>	<b>mean</b>	<b>std. Dev</b>
1f	In my activities in this project/task I depend very much on the activities of others.	5.73	1.222
1g	I can determine my goals in the project/task on my own.	4.63	1.581
1h	The requirements in the project/task are often overwhelming to me.	3.00	1.549

Eleven survey questions relating to 'leadership' were among the 120 questions on this instrument (Table 4.2). The range of responses was between 1.5 and 7. The range of the mean for each question regarding leadership was between 2.47 and 5.46. The mean for this factor was 4.81 with a standard deviation of 1.22. The alpha score for reliability was 0.94.

Table 4.2 Leadership Survey Questions

	<b>Item</b>	<b>mean</b>	<b>std. dev.</b>
2a	My manager tries to find out what I want in the project/task and tries to help me get it.	4.53	1.690
2d	My manager encourages me to express my ideas and opinions on the project/task.	5.46	1.545
2e	I earn credit from my manager for doing my job in the project/task well.	5.20	1.478
2g	My manager makes me enthusiastic about the project/task.	4.87	1.558
2i	My manager provides me with new ways of looking at the project/task.	4.49	1.498
2j	My manager's ideas force me to rethink some of my own ideas on the project/task...	4.66	1.431
2k	My manager makes me feel that I can reach my goals in the project without him/her.	5.22	1.400
2l	My manager enables me to think about problems in the project/task in new ways.	4.86	1.396
2p	My manager is a model for me to follow in the project/task.	4.58	1.669
2q	My manager is an inspiration to me in the project/task.	4.55	1.685
2t	My manager has a special gift for seeing what is really important for me to consider...	4.47	1.566

The survey instrument contained nine questions that relate to social support networks (Table 4.3). The responses from those participating in the initial study ranged from 2.5 to 7. The range of means for these questions was between 4.41 and 5.99. The overall values recorded for social support networks were relatively high (a mean of 5.2) and without much fluctuation given the standard deviation of only 0.86. The Cronbach's alpha score was 0.83.

Table 4.3 Social Support Networks Survey Questions

	<b>item</b>	<b>mean</b>	<b>std. dev.</b>
2b	Information I get from others often help me to deal with problems in the project/task.	5.69	1.068
2c	There are people who give me inspiring feedback on my activities in the project/task.	4.71	1.404
2f	I get advice from other people helping me to solve problems in the project/task.	5.56	1.138
2h	I have someone to discuss my stress from my project/task with and receive feedback.	4.41	1.594
2m	I can usually identify people who can help me develop my own solutions to problems...	5.71	0.892
2n	When I am stressed in the project/task I know whom I can call to help me feel better.	4.77	1.663
2o	Talking to others about the project is really useful... it provides another perspective...	5.99	1.026
2r	If I get...demotivated about the project there are usually people who make me feel better.	4.63	1.445
2s	There are people whom I can get professional advise from in the project/task.	5.35	1.354

There were 27 questions relating to emotions in the survey instrument. Positive emotions represented 56% (n = 15) of the survey questions about emotions (Table 4.4) and 44% (n = 12) were specific to negative emotions (Table 4.5).

The range of responses for the variable 'positive emotions' was from 2.5 to 7. The range of the means was from 4.13 and 6.60. The mean for positive emotions was 5.38 with the smallest value for standard deviation (0.71) of the variables in this research study. The reliability score, alpha, equaled 0.85. The range of the means for 'negative emotions' was from 1 to 6 with the range of the means between 1.30 and 4.11. The mean for all of the survey questions regarding negative emotions is 2.73 with a standard deviation of 1.0. The Cronbach's alpha score of reliability was 0.89.

Table 4.4 Positive Emotions Survey Questions

	<b>item</b>	<b>mean</b>	<b>std. dev.</b>
p5a	About my activities in this project/task, I feel....excited	5.73	1.068
p5b	About my activities in this project/task, I feel....captive	4.13	1.871
p5e	About my activities in this project/task, I feel....interested	6.23	0.833
p5g	About my activities in this project/task, I feel....aggressive	4.56	1.662
p5i	About my activities in this project/task, I feel....enthusiastic	6.00	0.935
p5k	About my activities in this project/task, I feel....alert	5.94	0.889
p5m	About my activities in this project/task, I feel....proud	5.76	1.159
p5o	About my activities in this project/task, I feel....attentive	5.92	0.919
p5r	About my activities in this project/task, I feel....energetic	5.87	0.930
p5t	I associate the following with my activities in this project/task....fun	4.96	1.395
p5u	I associate the following with my activities in this project/task....hope to create value	6.60	0.601
p5v	I associate the following with my activities in this project/task....speed	4.68	1.429
p5y	I associate the following with my activities in this project/task....hope for personal benefits	4.38	1.719
p5z	I associate the following with my activities in this project/task....joy	4.70	1.454
p5aa	I associate the following with my activities in this project/task....momentum	5.27	1.279

Table 4.5 Negative Emotions Survey Questions

	<b>item</b>	<b>mean</b>	<b>std. dev.</b>
n5c	About my activities in this project/task, I feel....stressed	4.11	1.612
n5d	About my activities in this project/task, I feel....nervous	3.30	1.576
n5f	About my activities in this project/task, I feel....frustrated	3.69	1.694
n5h	About my activities in this project/task, I feel....upset	2.14	1.328
n5j	About my activities in this project/task, I feel....disappointed	2.25	1.412
n5l	About my activities in this project/task, I feel....jittery	2.34	1.388
n5n	About my activities in this project/task, I feel....ashamed	1.30	0.672
n5p	About my activities in this project/task, I feel....scared	2.12	1.432
n5q	About my activities in this project/task, I feel....irritable	2.29	1.343
n5s	About my activities in this project/task, I feel....exhausted	2.90	1.584
n5w	I associate the following with my activities in this project/task....discomfort	3.07	1.669
n5x	I associate the following with my activities in this project/task....strain	3.44	1.757

## **DATA REDUCTION**

The complete matrix of data for this study includes the responses from 249 participants. Each of the participants completed 120 questions but only 55 were relevant to the specific factors of this study. Some of the questions in the original data set regarding the participants' goals, expectations, volition and will were outside of the scope of this research study and therefore were discarded. The demographic questions have already been captured in the descriptive statistical analysis so the remaining 55 questions were considered for the data reduction analysis. There are eight questions in the survey categorized as "Autonomy" questions. Eleven survey questions are categorized as "Leadership" questions. Nine questions belong to the "Network" categorization. Of the 27 survey questions that focus on "Emotions", fifteen are categorized as

“Positive Emotions” and twelve are categorized as “Negative Emotions”. The data matrix though reduced some is still 249 respondents by 55 questions large. Each of the individual questions was assigned a specific variable designator for ease of identification and correlation with the original question in the survey.

## **FACTOR ANALYSIS**

Using the Factor Analysis method, numerical coefficients for each survey question used to comprise each variable were calculated. The purpose of this factor analysis was to reduce the data set such that multivariate analysis could be performed to support or disprove the research hypothesis. The complete table of data from the Factor Analysis can be found in the Appendix. Only the components that yielded Eigenvalues greater than one were used in the initial analysis. Only those coefficients that were greater than or equal to 0.2 were used in the component calculations of the variables as anything smaller made minimal contributions to the variance in each variable.

The coefficients matrix for the variable Autonomy is given in Table 4.6 below. Each of the questions categorized in the survey as an autonomy question was included in the Component matrix (Table 4.7) . Only three of the eight questions for autonomy returned an Eigenvalue greater than or equal to one and those three variables accounted for 61% of the total variance in this variable. Each of

the component values is the coefficient used in the data reduction equation for the variable Autonomy. The average response for each question has been calculated and that average is multiplied with each of the component coefficients to determine the reduced variable Autonomy.

Table 4.6 Total Variance

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.074	25.922	25.922	2.074	25.922	25.922
2	1.745	21.811	47.734	1.745	21.811	47.734
3	1.042	13.027	60.761	1.042	13.027	60.761
4	.998	12.470	73.231			
5	.727	9.086	82.317			
6	.559	6.992	89.309			
7	.447	5.585	94.894			
8	.408	5.106	100.000			

Extraction Method: Principal Component Analysis.

Table 4.7 Component Matrix

	Component		
	1	2	3
AUTONY1C	.787	.130	-.125
AUTONY1G	.777	5.509E-02	.316
AUTONY1E	.737	-5.185E-02	.321
AUTONY1A	-2.284E-02	.862	5.492E-02
AUTONY1D	.158	-.771	.255
AUTONY1H	-.269	.449	.677
AUTONY1B	.449	.385	-.485
AUTONY1F	-9.238E-02	.188	.250

Extraction Method: Principal Component Analysis.  
a. 3 components extracted.

The Autonomy data reduction equation using the coefficients from the Component Matrix above follows.

$$\begin{aligned}
 Y_{AUTONOMY} = & \{2.074 * [(.787)(AUTONY1C) + (.777)(AUTONY1G) + (.737) \\
 & (AUTONY1E) + (.449)(AUTONY1B)] + 1.745 * [(.862)(AUTONY1A) + \\
 & (.449)(AUTONY1H) + (.385)(AUTONY1B)] + 1.042 * [(.255)(AUTONY1D) + \\
 & (.677)(AUTONY1H) + (.250)(AUTONY1F)]\}
 \end{aligned}$$

The same process was used to reduce the data of the variables for Leadership, Networks, Positive Emotions and Negative Emotions. Only one of the eleven



questions for Leadership returned an Eigenvalue greater than or equal to one and that variable accounted for 64% of the total variance in this variable. For Networks 57% of the total variance was captured using this method by two of the nine survey questions. The others did not meet the mathematical criteria of an Eigenvalue greater than one. The results of the Factor Analysis for the variables Positive Emotions and Negative Emotions yielded a total variance of 65% (only 4 of 15 variables returned an Eigenvalue greater than or equal to one) and 66% (only 3 of 12 variables returned an Eigenvalue greater than or equal to one) respectively. The Component matrices and the tables of the averages for each variable used in this research are found in the Appendix.

The factor analysis also yielded a table of coefficients for each question used in the analysis that was obtained by the extraction method. These Commonalities (Table 4.8) represent the calculated variance per question that contributed to the overall variables in the analysis.

Table 4.8 Communalities

<b>Communalities</b>		
	Initial	Extraction
AUTONY1A	1.000	.746
AUTONY1B	1.000	.584
AUTONY1C	1.000	.652
AUTONY1D	1.000	.685
AUTONY1E	1.000	.648
AUTONY1F	1.000	.107
AUTONY1G	1.000	.707
AUTONY1H	1.000	.732

Extraction Method: Principal Component Analysis.

Using the Communalities found in Table 4.8, the following equation was used to calculate the variable autonomy.

$$\begin{aligned}
 Z_{AUTONOMY} = & [(.746)(AUTONY1A) + (.584)(AUTONY1B) + (.652)(AUTONY1C) \\
 & + (.685)(AUTONY1D) + (.648)(AUTONY1E) + (.107)(AUTONY1F) + \\
 & (.707)(AUTONY1G) + (.732)(AUTONY1H)]
 \end{aligned}$$

The coefficients derived from the both the component analysis and the extraction methods were used in equations for each variable. Then a third data reduction method was utilized incorporating all of the responses from the survey

questions. Each response was average with equal weighting assigned to each question. Once the data reduction was complete using these methods, regression analysis was conducted to determine how well the overall variance had been captured by the research variables. For each reduced data set, the regression analysis was run twice. For the first run, positive emotions was the dependent variable and autonomy, leadership, networks were the independent variables. For the second run the independent variables remained the same but negative emotions was the dependent variable. The results are recorded in Table 4.9 that follows.

Table 4.9 Data Reduction Methods

<b>Data Reduction Methods (R-squared Values)</b>			
	<b>Eigenvalue &gt; 1</b>	<b>Commonalities</b>	<b>Equal Weight Averaging</b>
<b>Positive Emotions</b>	<b>0.166</b>	<b>0.12</b>	<b>0.147</b>
<b>Negative Emotions</b>	<b>0.048</b>	<b>0.053</b>	<b>0.109</b>

After the mathematical methods were used to reduce the data set, a review of the literature did not substantiate discarding any of the research questions based on the computed Eigenvalues that were greater than or equal to one and the subsequent coefficients. The mathematical equations derived from the

Factor Analysis yielded values of varying magnitude, which did not lend itself to the extraction of comparative analysis, since no specific scale or pattern could be determined. The regression analysis for each data reduction method suggests that no specific method is significantly better than the others in capturing the variance with respect to positive or negative emotions. Further review of the literature did not suggest a need to assign any unequal weighting to the research questions and the equal weighted averaging produced relative values still on the seven point Likert scale which allowed the opportunity for more in-depth analysis.

In analyzing each question in the survey and reviewing the literature, there was no clear advantage to using the Factor Analysis method for data reduction. It was also not very clear as to how to explain the statistical correlation of the variables with any significant meaning since the coefficients were all generated by the computer software and the mathematical derivations offered no added value in explaining the trends or phenomenon emerging from the analysis. The literature with respect to all of the variables (Leadership, Networks, Positive Emotions or Negative Emotions), except Autonomy, did not support any reason to assess any stronger weight to one question versus another; thus, the data for each question was averaged with equal weighting to reduce the data set. This was the final method used and the reduced data set from the equal weighted averaging was used for the remainder of the analysis.

Homogeneity of Variances tests were run to see if there were any significant differences in the segmented data populations. For the subsets of women and men, no significant differences were found except for the autonomy factor. For the manager status and years of work experience segments, no significant differences were found within the subsets for any of the factors except negative emotions. In the few cases where significant differences were noted, comparative analysis would be limited.

## **REGRESSION ANALYSIS**

To address the four research questions, [(1) What is the nature of the relation between task autonomy and emotions? (2) What is the nature of the relation between leadership and emotions? (3) What is the nature of the relation between the presence of social support networks and emotions? (4) What is the nature of the relation between the factors influencing the work context?], multivariate regression analysis and correlation were used. Initially the regression analysis was performed using positive emotions as the dependent variable and autonomy, leadership and networks as the independent variables for the entire data set. The regression was run a second time on the total data set using negative emotions as a dependent variable. The results are recorded in Tables 4.10 and 4.11 that follow.

Using the regression coefficients and the value for the corresponding context factor, an equation can be derived to estimate the value for positive emotions and negative emotions.

Table 4.10 Regression Analysis – Positive Emotions

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.383 <sup>a</sup>	.147	.136	.65970

a. Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	3.390	.318		10.669	.000			
	AUTONM	.150	.041	.218	3.631	.000	.258	.226	.214
	LEADRS	85E-02	.039	.127	1.872	.062	.261	.119	.111
	NETWOR	.168	.055	.203	3.030	.003	.283	.190	.179

a. Dependent Variable: POSEMOTN

Table 4.11 Regression Analysis – Negative Emotions

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330 <sup>a</sup>	.109	.098	.95037

a. Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	5.012	.458		10.950	.000			
	AUTONM	-.238	.060	-.244	-3.989	.000	-.274	-.247	-.241
	LEADRSH	.65E-02	.057	-.118	-1.699	.091	-.208	-.108	-.102
	NETWOR	-.117	.080	-.100	-1.464	.144	-.178	-.093	-.088

a. Dependent Variable: NEGEMOTN

After the regression analysis was conducted for the total data set, the data was segmented to represent the various demographics of the population that participated in the study (women, men, managers, non-managers, varying years of service or tenure) (Table 4.12). The regression analysis was run again using data for each of the respective demographic segments with positive emotions as the dependent variable and then with negative emotions as the dependent variable. The R squared values from all of the regression analysis are recorded in Table 4.12 below.

Table 4.12 Regression Results

(Note: R2 = R-squared)

<b>Regression Results (Positive Emotions)</b>									
	<b>Total Data Set</b>	<b>Women</b>	<b>Men</b>	<b>Manager</b>	<b>Non-Manager</b>	<b>Yr. &lt; 6</b>	<b>Yr. 6 to 10</b>	<b>Yr. 11 to 20</b>	<b>Yr. &gt; 20</b>
<b>R</b>	0.383	0.525	0.366	0.357	0.491	0.438	0.784	0.482	0.264
<b>R2</b>	0.147	0.276	0.134	0.128	0.241	0.192	0.615	0.233	0.07
<b>F</b>	14.029	6.212	9.884	8.527	7.001	2.374	7.997	9.497	2.343
<b>Sig.</b>	0.000	0.001	0.000	0.000	0.000	0.090	0.002	0.000	0.078

<b>Regression Results (Negative Emotions)</b>									
	<b>Total Data Set</b>	<b>Women</b>	<b>Men</b>	<b>Manager</b>	<b>Non-Manager</b>	<b>Yr. &lt; 6</b>	<b>Yr. 6 to 10</b>	<b>Yr. 11 to 20</b>	<b>Yr. &gt; 20</b>
<b>R</b>	0.330	0.377	0.327	0.356	0.296	0.408	0.390	0.296	0.338
<b>R2</b>	0.109	0.142	0.107	0.127	0.088	0.167	0.152	0.088	0.114
<b>F</b>	10.004	1.555	7.686	8.474	2.114	1.998	0.897	3.005	4.049
<b>Sig.</b>	0.000	0.191	0.000	0.000	0.107	0.135	0.466	0.034	0.009

The regression results, using positive emotions as the dependent variable, yielded an R<sup>2</sup> value of 0.147. The R<sup>2</sup> value for the regression analysis using the demographic data set for women only was 0.276. For data specific to the men the R<sup>2</sup> value was 0.134. The R<sup>2</sup> value for the managers was 0.128 and for the non-managers it was 0.241. The R<sup>2</sup> value for the data representing the participants with less than six years of work experience at the company from which the research data was gathered was 0.192. The largest R<sup>2</sup> value of 0.615



occurred using the demographic data grouping representing those with between 6 and 10 years of tenure with the company. The data from the group with between 11 and 20 years of service with the company yielded a  $R^2$  value of 0.233, and finally the group with more than 20 years of service had the lowest  $R^2$  value of 0.07.

The results of the regression analysis that was conducted using negative emotions as the dependent variable yielded  $R^2$  values of 0.109 for the entire data set, 0.142 for the women's data, 0.107 for the men's data, 0.127 for the manager's data and 0.088 for the non-manager's data. For the data set of tenure with the company less than 6 years the highest  $R^2$  value was recorded at 0.167. For tenure between 6 and 10 years the  $R^2$  value was 0.152, for tenure between 11 and 20 years the  $R^2$  value was 0.088 and for the data from those with tenure greater than 20 years, the  $R^2$  value was 0.114.

Using the total data set and then each of the demographically segmented groups of data, correlation analysis was run to address the research questions that there is a significant relationship between the research variables. The results of the correlation analysis are captured in the tables found in the sections that follow. The complete analysis can be found in the Appendix.

## QUESTION 1

Q1: What is the relation between the perception of the presence of task autonomy in a work context and emotions?

Correlation analysis was conducted to investigate the relationship between the perception of the presence of task autonomy in a work context and emotions. The correlation coefficients and significance for all of the data segmentations have been recorded in Tables 4.13 and 4.14 that follow.

Table 4.13 Correlation Results (Positive Emotions vs. Autonomy)

<b>Correlation Results</b>									
<b>Positive Emotions vs. Autonomy</b>									
	<i>Total Data Set</i>	<i>Women</i>	<i>Men</i>	<i>Manager</i>	<i>Non-Manager</i>	<i>Yr. &lt; 6</i>	<i>Yr. 6 to 10</i>	<i>Yr. 11 to 20</i>	<i>Yr. &gt; 20</i>
<b>Corr. Coef.</b>	0.258	0.072	0.286	0.267	0.233	0.394	0.737	0.204	0.210
<b>Sign. (2-tailed)</b>	0.000	0.609	0.000	0.000	0.052	0.021	0.000	0.044	0.038
<b>Sign. Level</b>	signif.	not signif.	signif.	signif.	not signif.	signif.	signif.	signif.	signif.
	0.01		0.01	0.01		0.05	0.01	0.05	0.05

For the total data set, the correlation coefficient is 0.258 and the relationship between positive emotions and task autonomy is very significant at the confidence level of 0.01 or 99%. For the data sets of women and non-managers the data suggest that this relationship is not significant. The data for the men, managers, and persons with tenure between 6 and 10 years suggest that for these groups the relationship between task autonomy and emotions is very significant also. The correlation coefficients were 0.286, 0.267, and 0.737 respectively. The data implies that this relationship is also significant at the 0.05 or 95% confidence level for those with tenure less than 6 years, between 11 and 20 years and greater than 20 years. Their correlation coefficients were 0.394, 0.204 and 0.210 respectively.

Correlation analysis, using negative emotions as the dependent variable, was also conducted to investigate the relationship between task autonomy and emotions. The correlation coefficients and significance for all of the data segmentations is recorded in the table below.

Table 4.14 Correlation Results (Negative Emotions vs. Autonomy)

<b>Correlation Results</b>									
<b>Negative Emotions vs. Autonomy</b>									
	Total Data Set	Women	Men	Manager	Non-Manager	Yr. < 6	Yr. 6 to 10	Yr. 11 to 20	Yr. > 20
<b>Corr. Coef.</b>	-0.274	-0.282	-0.266	-0.322	-0.151	-0.357	0.172	-0.205	-0.296
<b>Sign. (2-tailed)</b>	0.000	0.041	0.000	0.000	0.212	0.038	0.482	0.043	0.003
<b>Sign. Level</b>	signif.	signif.	signif.	signif.	not signif.	signif.	not signif.	signif.	signif.
	0.01	0.05	0.01	0.01		0.05		0.05	0.01

For the entire data set there is a very significant negative correlation between task autonomy and negative emotions at the 99% confidence level. Likewise there is a very significant negative correlation found in the data set for men, managers and persons with more than 20 years of service. The correlation coefficients were  $-0.274$  for the total data set,  $-0.266$  for the men,  $-0.322$  for the managers and  $-0.296$  for those with tenure greater than 20 years. For women, those with less than 6 years of service and those with tenure between 11 and 20 years, the correlation coefficients were  $-0.282$ ,  $-0.357$  and  $-0.205$  respectively. For each of these groups of data, the relationship between task autonomy and negative emotions was significant at the 95% confidence level. For non-managers and those with tenure between 6 and 10 years, this relationship was not significant.

## QUESTION 2

Q2: What is the relation between the perception of leadership as inspiring in a work context and emotions?

Correlation analysis was conducted to investigate the relationship between perception of leadership as inspiring in a work context and emotions. The correlation coefficients and significance for all of the data segmentations have been recorded in Tables 4.15 and 4.16 that follow.

Table 4.15 Correlation Results (Positive Emotions vs. Leadership)

	<b>Correlation Results</b>								
	<b>Positive Emotions vs. Leadership</b>								
	<i>Total Data Set</i>	<i>Women</i>	<i>Men</i>	<i>Manager</i>	<i>Non-Manager</i>	<i>Yr. &lt; 6</i>	<i>Yr. 6 to 10</i>	<i>Yr. 11 to 20</i>	<i>Yr. &gt; 20</i>
<b>Corr. Coef.</b>	0.261	0.318	0.241	0.211	0.398	0.218	0.414	0.351	0.175
<b>Sign. (2-tailed)</b>	0.000	0.020	0.001	0.005	0.001	0.215	0.078	0.000	0.085
<b>Sign.</b>	signif.	signif.	signif.	signif.	signif.	not signif.	not signif.	signif.	not signif.
<b>Level</b>	0.01	0.05	0.01	0.01	0.01			0.01	

For the total data set and the segmented data representing men, managers, non-managers and those with years of service at the company between 11 and 20 years, the relationship between positive emotions and leadership is very

significant at the 99% confidence level. The correlation coefficients are 0.261, 0.241, 0.211, and 0.351 respectively. This relationship was also significant for the women at the 95% confidence level, based on the data. The correlation coefficient for the segmented data for women was 0.318. The relationship between positive emotions and leadership was not statistically significant for the data segments representing those with tenure less than 6 years, with tenure between 6 and 10 years and with tenure greater than 20 years.

With negative emotions as the dependent variable, the relationship between negative emotions and the context variable of leadership was investigated for each of the data segments. The correlation coefficients and significance were recorded in the following table.

Table 4.16 Correlation Results (Negative Emotions vs. Leadership)

<b>Correlation Results</b>									
<b>Negative Emotions vs. Leadership</b>									
	<b>Total Data Set</b>	<b>Women</b>	<b>Men</b>	<b>Manager</b>	<b>Non-Manager</b>	<b>Yr. &lt; 6</b>	<b>Yr. 6 to 10</b>	<b>Yr. 11 to 20</b>	<b>Yr. &gt; 20</b>
<b>Corr. Coef.</b>	-0.208	-0.098	-0.232	-0.212	-0.170	-0.062	-0.367	-0.228	-0.206
<b>Sign. (2-tailed)</b>	0.001	0.487	0.001	0.004	0.161	0.727	0.122	0.024	0.042
<b>Sign. Level</b>	signif.	not signif.	signif.	signif.	not signif.	not signif.	not signif.	signif.	signif.
	0.01		0.01	0.01				0.05	0.05

For the total data set and the segmented data representing men and managers, the relationship between negative emotions and leadership is found to be very significant at the 99% confidence level and negatively correlated. The correlation coefficients are  $-0.208$ ,  $-0.232$  and  $-0.212$  respectively. This relationship is also statistically significant for the groups with tenure between 11 and 20 years and tenure that is greater than 20 years at the 95% confidence level. The correlation coefficients are  $-0.228$  and  $-0.206$  respectively. This relationship was not found to be statistically significant for the data populations representing the women, non-managers and those with either less than 6 years of service or between 6 and 10 years of employment with the company.

### **QUESTION 3**

Q3: What is the relation between the perception of the presence of social support networks in a work context and emotions?

Correlation analysis was conducted to investigate the relationship between the perception of the presence of social support networks in a work context and emotions. The correlation coefficients and significance for all of the data segmentations have been recorded in Tables 4.17 and 4.18 that follow.

Table 4.17 Correlation Results (Positive Emotions vs. Networks)

<b>Correlation Results</b>									
<b>Positive Emotions vs. Network</b>									
	<i>Total Data Set</i>	<i>Women</i>	<i>Men</i>	<i>Manager</i>	<i>Non-Manager</i>	<i>Yr. &lt; 6</i>	<i>Yr. 6 to 10</i>	<i>Yr. 11 to 20</i>	<i>Yr. &gt; 20</i>
<b>Corr. Coef.</b>	0.283	0.497	0.222	0.239	0.412	0.330	0.473	0.419	0.129
<b>Sign. (2-tailed)</b>	0.000	0.000	0.002	0.001	0.000	0.056	0.041	0.000	0.207
<b>Sign. Level</b>	signif.	signif.	signif.	signif.	signif.	not signif.	signif.	signif.	not signif.
	0.01	0.01	0.01	0.01	0.01		0.05	0.01	

The correlation coefficient for the total data set is 0.283 and the relationship between positive emotions and social networks in a work context is statistically found to be very significant with a confidence level of 0.01 or 99% with a positive correlation. Also very significant at the same confidence level are the segments of data representing the women, men, managers, non-managers and those with tenure in the company between 11 and 20 years. The correlation coefficients were 0.497, 0.222, 0.239, 0.412 and 0.419 respectively. The data representing those with tenure between 6 and 10 years was also found to be statistically significant at the 95% confidence level. The correlation coefficient was 0.473.

With negative emotions as the dependent variable, the relationship between negative emotions and the context variable of network was investigated for each



of the data segments. The correlation coefficients and significance were recorded in the following table.

Table 4.18 Correlation Results (Negative Emotions vs. Networks)

<b>Correlation Results</b>									
<b>Negative Emotions vs. Network</b>									
	Total Data Set	Women	Men	Manager	Non-Manager	Yr. < 6	Yr. 6 to 10	Yr. 11 to 20	Yr. > 20
<b>Corr. Coef.</b>	-0.178	-0.252	-0.137	-0.104	-0.276	-0.340	-0.207	-0.166	-0.104
<b>Sign. (2-tailed)</b>	0.005	0.069	0.055	0.165	0.021	0.049	0.395	0.103	0.310
<b>Sign.</b>	signif.	not signif.	signif.	not signif.	signif.	signif.	not signif.	not signif.	not signif.
<b>Level</b>	0.01		0.05		0.05	0.05			

Statistically, the relationship between negative emotions and social support networks is found to be very significant at the 99% confidence level for the total data set. There is a negative correlation and the coefficient is  $-0.178$ . None of the segmented data set shows significance in the relationship at this level. For men, non-managers and those with less than 6 years of tenure are found to display a statistically significant correlation at the 95% confidence level for the relationship between negative emotions and social support networks. The correlation coefficients are  $-0.137$ ,  $-0.276$  and  $-0.340$  respectively. For the data segments representing women, managers, and all of those with tenure greater than six years, this relationship is not statistically significant.

**QUESTION 4**

Q4: What is the inter-relationship between the perception of the presence of task autonomy, perception of leadership as inspiring, and perception of the presence of social support networks in a work context?

Regression analysis was run several times using each of the context variables as a dependent variable and each of the remaining context factors as independent variables. The  $R^2$  values for each regression analysis are recorded in Table 4.19. The  $R^2$  value for the regression analysis with autonomy as the dependent value and leadership and networks as independent variables was 0.031. The  $R^2$  value for the regression analysis with leadership as the dependent variable is 0.241. The independent variables were autonomy and networks. Finally for the regression analysis using networks as the dependent variable and autonomy and leadership as the independent variables, the  $R^2$  value was 0.223.

Table 4.19 Regression Results – Context Variables

Dependent Variables	Independent Variables			R <sup>2</sup> VALUE
	AUTONOMY	LEADERSHIP	NETWORKS	
<b>AUTONOMY</b>		YES	YES	0.031
<b>LEADERSHIP</b>	YES		YES	0.241
<b>NETWORKS</b>	YES	YES		0.223

Correlation analysis was used to aid in the investigation of the relationship of the work context variables – autonomy, leadership and network – to each other.

The results of the correlation for the total data set are given in Table 4.20 that follows.

Table 4.20 Correlation Results – Context Variables

		Correlations		
		AUTONMY	LEADRSH	NETWORK
AUTONMY	Pearson Correlation	1	.175**	.090
	Sig. (2-tailed)	.	.006	.155
	N	249	249	249
LEADRSH	Pearson Correlation	.175**	1	.473**
	Sig. (2-tailed)	.006	.	.000
	N	249	249	249
NETWORK	Pearson Correlation	.090	.473**	1
	Sig. (2-tailed)	.155	.000	.
	N	249	249	249

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

The correlation analysis shows that statistically there is a very significant correlation between both leadership and autonomy, and leadership and networks at the 0.01 or 99% confidence level. The correlation coefficients are 0.175 and 0.473 respectively. Based on the data, the relationship between autonomy and networks is not statistically significant.

## **CHAPTER V**

### **SUMMARY**

This section contains a discussion of the analysis and results found in the previous chapter. The implications of the results and recommendations for future research will also be examined before the research conclusion is given.

This research evolved from the quest to better understand the nature of the relationship between specific work context factors and emotions. Organizations are beginning to accept the reality that emotions are an integral part of the work environment and regular business operations because emotions are inherent in all people. The people that comprise today's workforce bring their emotions with them to every team meeting, quality review and strategy session. In fact many organizations are being proactive in better understanding emotions in the workplace and learning to utilize them to the benefit of the organization (Ashforth 1993).

Organizations want significant, rapid and sustainable change that keeps up with the demands of their internal and external customers to the benefit of all of their stakeholders. The individuals that are part of these change organizations are experiencing the roller coaster ride of highs and lows associated with high corporate expectations, market demands, personal obligations and individual

quests. These people go through a myriad of emotions in their work environment.

Putnam and Mumby (1993) have argued that organizations develop a social reality in which emotion becomes a commodity for achieving instrumental goals (Gabriel 1998). In recognizing that individual emotions somehow lead to a dynamic group emotion implies that it must be addressed and not ignored which had been a popular posture often taken by technical organizations. If harnessed and properly managed, the group emotion can become an asset and possibly even a strategic advantage that can directly affect the overall ability of the group to move forward in the accomplishment of its goals.

In an effort to better understand this emotion resource at work this research was born and framed in the canvas of productivity in a work environment. For more than a century scholars and businesspersons have sought to better understand and subsequently implement strategies that would result in increased productivity and ultimately increased profitability. Several models captured the overall essence of this research quest, which was to better understand the relations between work context factors and emotions. However, of those examined the Individual Energy Model of Action offered the greatest insight into this area of focus and afforded the tools to investigate the research questions.

This study addressed the following four research questions specific to the work context and emotions which will be discussed in the sections that follow.

1. *What is the relation between the perception of the presence of task autonomy in a work context and emotions?*
2. *What is the relation between the perception of leadership as inspiring in a work context and emotions?*
3. *What is the relation between the perception of the presence of social support networks in a work context and emotions?*
4. *What is the inter-relationship between the perception of the presence of task autonomy, perception of leadership as inspiring, and perception of the presence of social support networks in a work context?*

There were eight questions in the survey that specifically related to the variable 'task autonomy'. From the average responses to the questions, it appeared that for the group that took the survey, they felt comfortable that to a large extent they were allowed to use their knowledge and skills on the job. They also seemed confident that they were able to plan and arrange the activities for their project or task on their own, although they did tend to very much depend on the activities of others to accomplish their tasks. This interdependence that is noted in the survey results serve as an indicator that in this technical organization that participated in this survey, the isolationist culture prevalent in the command and control work culture that Ghoshal and Bartlett (1997) spoke about has yielded

possibly to a more cooperative culture deemed to be more productive and profitable for organizations (Denison 1990; Reifer 2000; Reigle 2001). Evident in more cooperative and often more productive work environments are cross-functional teams that are often self-directed and decision making pushed down further in the hierarchical structure to those who are most affected by the decisions to be made. Based on the participants' responses, possibly some of this type autonomous structure was present in the work environment of this engineering company.

When analyzing the regression analysis, the regression line displayed a positive relationship between autonomy and positive emotions. As the perception of autonomy increased, the positive emotions also increased. There was a negative correlation displayed between autonomy and negative emotions. As the perception of autonomy on the job or within a given task increased then the negative emotions decreased. Both trends are favorable.

The relationship was further supported as was evident in the correlation analysis in that the perception of the presence of autonomy did have a significant effect on positive emotions. In fact for the overall population and when analyzing the relationship for the subset groupings of men, managers and employees with six to ten years of tenure with the company, the relationship was very significant meaning significant at the 99% confidence level. It also proved to be a



significant relationship for the subset of employees that had been with the company less than six years and those that had been with the company greater than ten years. The relationship between positive emotions and autonomy was not significant for the group of women and non-managers that took the survey. Based on the correlation coefficients that resulted from the analysis, the strongest correlation came from the group of employees that had been employed with this engineering firm between six and ten years. The least amount of correlation came from the group of women that participated in the survey. This was not surprising seeing as how the relationship for the women was determined to not be significant.

The relationship between the perception of task autonomy and negative emotions was also found to be very significant for the entire data population. When the subsets were analyzed, the data for the men and managers were also found to represent a very significant relationship. Surprisingly, the women subgroup that showed the relationship between task autonomy and positive emotions to be insignificant yielded a very significant correlation between autonomy and negative emotions. Only the non-manager group remained consistently insignificant for both the analysis with positive and negative emotions. The strongest degree of correlation between autonomy and negative emotions was found in the subgroups of managers and those that had been employed with the company for less than six years. The least amount of

correlation between these factors was found in the subset of non-managers for whom the relationship was found to be insignificant for autonomy and both positive and negative emotions.

The second research question addressed the relation between the perception of leadership as inspiring in a work context and emotions. Of the eleven questions in the survey that specifically related to the variable 'leadership', the highest rating was given to the one that stated "my manager encourages me to express my ideas and opinions on the project/task". With a moderate amount of variability, the participants in the survey seemed to view their management as being relatively inspiring. They particularly expressed, via the higher ratings, that their manager gave them credit for doing a job well, made them feel that they could reach the project goals without their help, and enabled them to think about problems in their project/task in new ways. From the literature review, it was discovered that managers who act in relational roles that promote intellectual stimulation and individualized consideration as is implied here, were said to be characterized as transformational (Ashkanasy 2000a; Eisenbach, Watson and Pillai; Lewis 1999; Lontos 1992). Given that a key goal of leaders is to make their followers into self-empowered leaders that become change agents for the organization, this self-reported data from the survey participants suggests that the organization is perceived to possess transformational characteristics in its leadership. For this technical organization and the

departments that are led by the managers that participated in this study, this should be received as favorable news.

Additionally, the regression line from the regression analysis displayed a positive relationship between leadership and positive emotions. As the perception of leadership as being inspiring or transformational increased, positive emotions also increased. There was a negative relationship displayed between leadership and negative emotions. As the perception of leadership as inspiring on the job or within a given task increased, the negative emotions decreased. Again both trends are favorable.

The results of the correlation analysis also yielded favorable results. The relationship between leadership and positive emotions for the entire data set was found to be very significant. This same relationship was also found to be very significant for many of the data subsets that were analyzed (men, managers, non-managers and those with tenure between eleven and twenty years). This relationship was also significant for the subset of women but not found to be significant for any of the other tenure subgroups. Surprisingly the largest correlation coefficient for this analysis was yielded by the subgroup of employees who had been employed with the company between six and ten years, but for this subset, this relationship was found to be insignificant. The

next highest correlation for leadership and positive emotions was for the group of non-managers for whom this was a very significant correlation.

For the total data set and the subgroups of men and managers, the relationship between the perception of leadership as inspiring and negative emotions was very significant. This relationship was also significant for those that had been employed with the company for more than ten years. As was the case for the correlation results for the work context factors leadership and emotions, the largest correlation coefficient came from the subset of employees with tenure between six and ten years, but again the relationship is not significant. As is expected, the data sets that yield the least degree of correlation are not found to be significant relationships, which is the case for the relationship between leadership and negative emotions for those with less than six years of tenure.

The third question addressed the relation between the perception of the presence of social support networks in a work context and emotions. There were nine questions in the survey that specifically related to the variable 'networks'. A very high rating was given to the question, which stated "talking to others about the project is really useful... it provides another perspective". Based on the other rankings assigned to the questions by the participants, the respondents seemed to express that the information that they got from others helped them to deal with problems that they encountered on projects or tasks

and they usually could identify someone who could help develop solutions for the problems. The lower scoring questions centered on knowing where to go to discuss stress and when demotivated, knowing people to go to that could make them feel better.

This empirical study of social support networks with respect to emotions is a unique and significant contribution to the literature given that networks are increasingly being viewed as a competitive advantage for organizations that contain them (Biggiero 2001; Ibarra 1995; Newell 1990; Tushman 1981).

Access to the information that is gained from belonging to these networks is as valuable often to the individual's career as it is to the organization(s) to which the individual is affiliated. This sentiment seemed to be echoed by the respondents in how they rated the questions in the survey regarding networks.

For this question, as was the case with the previous two, the regression analysis yielded a regression line that confirmed that there is a positive relationship between the perception of the presence of social support networks and positive emotions. As the perception increased, the positive emotions also increased. Conversely, as the perception of the presence of social support networks increased, negative emotions decreased.

Also as was the case with the other two research questions, via correlation analysis for the overall data set, the relationship between the factors networks and positive emotions was found to be very significant. Likewise, this relationship was deemed very significant for the data subsets of women, men, managers, non-managers, and those employees with tenure between eleven and twenty years. This relationship was significant for those with tenure between six and ten years but determined to be insignificant for those newer to the company (less than six years) and those very senior employees (more than twenty years tenure). The greatest degree of correlation was found in the subgroup of women. This was the largest correlation coefficient for the women compared to the other work context factors. The least degree of correlation came from the group of employees that had been with the company for more than twenty years that may not be as concerned with support networks.

There is a very significant correlation between the networks and negative emotions for the entire data set. None of the data subsets yielded a very significant relationship. The relationship between networks and negative emotions for the subsets of men, non-managers and those with tenure less than six years was significant to a lesser confidence level but no other groups were significant. The greatest degree of correlation for this relationship came from the subgroup of those with tenure less than six years. The least amount of correlation for this relationship between networks and negative emotions came

from the groups of managers and the employees with more than twenty years of tenure.

The last research question addressed the interrelationship between the perception of the presence of task autonomy, perception of leadership as inspiring, and the perception of the presence of social support networks in a work context.

The regression analysis suggested that for the dependent variable leadership, autonomy and networks account for a fair amount of the variance. When networks was held as the dependent variable, again the R-squared value suggests that a fair amount of variance is accounted for in the independent variables autonomy and leadership. For the complete data set, the context factors were evaluated and via the correlation analysis, two of the relationships were found to be very significant – 1) leadership and autonomy and 2) leadership and networks.

The correlation analysis was run for all of the data subsets. For women, none of the relationships between work context factors were found to be significant. For all of the other subgroups (men, managers, non-managers, and the tenure categories) except those with less than six years of tenure, the relationship between leadership and social support networks was found to be very

significant. The largest correlation coefficients came from the subgroup of those with tenure between six and ten years but all the subgroups had a fairly high degree of correlation. Additionally, the relationship between autonomy and leadership was found to be significant for men, and very significant for managers and those with less than six years of tenure. Finally, for managers, the relationship between autonomy and networks was also found to be significant. For the group of managers, all of the work context relationships were significant. The literature review supported the importance of these work context relationships to managers as leaders play a pivotal role in setting the tone of the work environment (Dugat-Wickliff 2001; Eisenbach, Watson and Pillai; Ibarra 1995; Itzhaky)

## **IMPLICATIONS AND RECOMMENDATIONS**

This research has implications for both academicians and practitioners alike. Academically, though preliminary, the results from this research suggest that modifications in the representation of the Individual Energy Model of Action may be supported. The hypotheses were proven for the overall data set with some exceptions when looking at various segments of the population, therefore, rather than the model as is presented in its original state found in Figures 1.1 and 3.1, the hypotheses suggest a modification more representative of Figure 5.1 below



for the segment of the model that links 'context' to 'emotions' to 'action' is appropriate.

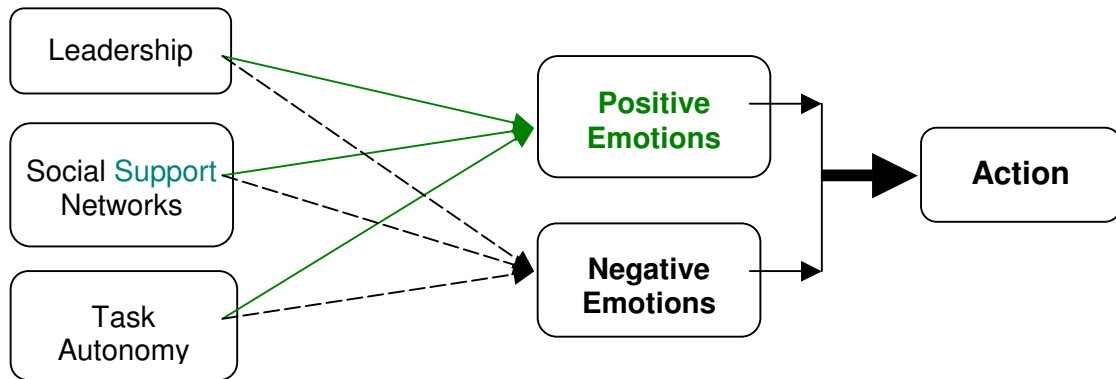


Figure 5.1 Potential Modification to Individual Energy Model

Although it is beyond the scope of this research, future research is recommended to determine the strength of the relationship between these three work context factors with respect to positive and negative emotions. Also to be investigated is the possibility of bi-directional influences within the model modifications gleaned from this research. This model modification does not suggest the elimination of the overall 'context' factor in the model as only a moderate amount of variance in the regression analysis was accounted for by the three work context factors used in this research. This modification merely suggest the opportunity to extract these three context factors outside of the

overall 'box' as a positive and significant relationship has been established directly with both positive and negative emotions.

For leaders of organizations, practitioners in the Organizational Development profession and any persons interested in the development and/or refinement of personnel, there are implications for the tangential value-add opportunity to develop enhancements to their strategic and tactical tool sets. For instance, the literature supports that more positive emotions in the work place increases the probability that employees will act in alignment with the goals and objectives of the organization with which they work. Since this research supported that the perception of leadership as inspiring has a significant and positive impact on the increase of positive emotions and the decrease of negative emotions in a work context, potential enhancements to more traditional leadership training provided within companies could include a module on transformation leadership characteristics and the application of those characteristics in the workplace. Though the data for this research came from one engineering company and thus may present or be perceived to present some limitations in the portability of the findings across industries and professions, in this example of strategic leadership development, it is people centric and thus applicable to any environment where effective leaders and leadership is of interest.

For those looking to gain productivity enhancements that are more tactical in nature, these unique empirical research findings, which support the research question that the perception of the presence of social support networks in a work context has a significant and positive effect on emotions, may be of particular interest. Whether addressing informal corporate networks that are established around ethnicity or gender, formal corporate networks centered on a specific industry, technology or product, or an educational network focused on academic success or student life, the research suggests that the networks serve add value to the members and their perspective affiliates.

Given these findings that emotions are significantly and positively impacted by the work context factors – task autonomy, leadership, and social support networks – further research on emotions in a work context is a natural evolutionary progression, particularly in the area of emotional intelligence. Emotional intelligence research that could further shed light on harnessing emotions data and utilizing the information to guide one's thinking and action would be complimentary to this research.

## **CONCLUSIONS**

There were many factors identified in the literature that impacted the overall effectiveness of employees in their work environment. The Individual Energy Model of Action included three key factors of the work context that were the focus of this research. Emotions are now recognized as an integral part of the work that many people do on a daily basis. The more positive the individual's emotions in a work context, the more apt the employee is to act in accordance with the goals and objectives of the organization. Since emotions are inherent in people, organizations are now beginning to recognize that the strategic use of emotions in the work place can be a competitive advantage. In this research the relations between the work context factors task autonomy, leadership, and social support networks were investigated with respect to emotions.

The hypotheses were supported overall in that each of the work context factors were found to have a significant and positive effect on emotions for the entire data set. The data was further analyzed by segmenting the population by gender, management status and years of tenure with the company. Mixed results were garnered from parsing the data into these various subsets as the relationships between the work context factors and emotions were not always found to be significant. The investigation of the relationships between the individual work context factors and each other supported that only two of the

three relationships were found to be significant – the relationships between leadership and autonomy, and leadership and networks (which yielded the strongest correlation). The relationship between autonomy and networks was not found to be significant.

Though the survey participants all came from one engineering firm, the implications of these research findings span the boundaries of this firm and this industry, as the results are people centric. Given time and follow-up research, these findings may act as a foundational catalyst to aid the governance of organizations in decision-making regarding the allocation of their resources with respect to the development of their leadership, creation and sustainment of social support networks and promotion of individual job control (autonomy) in the work environment, should they quest to positively and significantly impact the emotions of their members.

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## APPENDIX A

### SURVEY INSTRUMENT

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## Questionnaire for the project: "Individual Energy at Work"

### Background to the Survey:

Description of the owner and the topic of the project, the schedule, the outcome and the respondent's outcome

### Aims of the research:

- To understand how individual energy emerges.
- To understand how individual energy influences action.
- To study the conditions for action-taking in projects.

### About the questionnaire:

- This questionnaire asks you about the factors (individual characteristics, situational conditions, organizational support etc.) that influence your activities in innovation or change/innovation processes.
- The questionnaire will take about 40 minutes to complete.
- There are no "right" or "wrong" answers. Our goal is to understand your personal perceptions of the processes.
- Most of the questions ask you to reflect your opinion by circling a number between 1 and 7.

*For example, if you think that the goals that you are following in an innovation or change/innovation process are very binding, you would answer as follows:*

How binding are the goals?

*Not at*  
*all*  
 1-----2-----3-----4-----5-----6-----7  
*Very*  
*much*

- Please answer directly in the electronic form and send it to [heike.bruch@unisg.ch](mailto:heike.bruch@unisg.ch).

### What happens after you have filled up the questionnaire?

- This questionnaire is confidential in the sense that no individuals will be identified.
- Students will analyze the data and discuss them in class.

**Thank you very much for your cooperation and help!**

<b>) Personal data</b>	
a Name:	Ob Your division within Conoco:
c Your department within Conoco:	Od When did you join Conoco?
e Do you hold a management position? Yes No	Of On which hierarchical level?

**IMPORTANT** - The following questions refer to your activities in a certain project (preferably a large innovative project that you are currently working on). Therefore, please think of one change or innovation project in which you are currently involved (if you are involved in several change/innovation projects please select one). And answer **in relation to this project** the following questions.

lo In relation to which project are you answering? \_\_\_\_\_

<b>l Perception of the task</b>	Not at all	Very much
la My tasks in this project are very challenging.	1----2----3----4----5----6----7	
lb In this project I can use my knowledge and skills to a large extent.	1----2----3----4----5----6----7	
lc I can plan and arrange my activities in the project on my own (e.g. calculate which materials/tools I need, timing etc.).	1----2----3----4----5----6----7	
ld My task in the project is often under whelming.	1----2----3----4----5----6----7	
lf I feel autonomous in my activities in the project.	1----2----3----4----5----6----7	
lg In my activities in this project I depend very much on the activities of others.	1----2----3----4----5----6----7	
lh I can determine my goals in the project on my own.	1----2----3----4----5----6----7	
li My task in the project is often overwhelming.	1----2----3----4----5----6----7	

<b>II Perception of relational context</b>	Not at all	Very much
2a My manager tries to find out what I want in the project and tries to help me get it.	1----2----3----4----5----6----7	
2b Information I get from others often help me to deal with problems in the project.	1----2----3----4----5----6----7	
2c There are people who give me inspiring feedback on my activities in the project.	1----2----3----4----5----6----7	
2d My manager encourages me to express my ideas and opinions on the project.	1----2----3----4----5----6----7	
2e I earn credit from my manager for doing my job in the project well.	1----2----3----4----5----6----7	
2f I get advice from other people helping me to solve problems in the project.	1----2----3----4----5----6----7	
2g My manager makes me enthusiastic about the project.	1----2----3----4----5----6----7	
2h I have someone to discuss my project stresses with and receive constructive feedback.	1----2----3----4----5----6----7	
2i My manager has provided me with new ways of looking at the project.	1----2----3----4----5----6----7	
2j My manager's ideas have forced me to rethink some of my own ideas on the project which I had never questioned before.	1----2----3----4----5----6----7	
2k My manager makes me feel that I can reach my goals in the project without him/her.	1----2----3----4----5----6----7	
2l My manager enables me to think about problems in the project in new ways.	1----2----3----4----5----6----7	
2m I can usually identify people who can help me develop my own solutions to	1----2----3----4----5----6----7	

2p My manager is a model for me to follow in the project.	1---2---3---4---5---6---7
2q My manager is an inspiration to me in the project.	1---2---3---4---5---6---7
2r If I get depressed or demotivated about the project there are usually people who make me feel better.	1---2---3---4---5---6---7
2s There are people whom I can get professional advise from in the project.	1---2---3---4---5---6---7
2t My superior has a special gift for seeing what is really important for me to consider in the project	1---2---3---4---5---6---7

<b>III Goals and Expectations</b>	Not at all	Very much
3a I think I can meet deadlines in the project well.	1---2---3---4---5---6---7	
3b I think that I can do a satisfactory job in the project.	1---2---3---4---5---6---7	
3c I am confident that I will be able to live up to what my managers – or other people you depend on for resources – expect from me.	1---2---3---4---5---6---7	
3d I feel confident that I could deal efficiently with unexpected events in the project.	1---2---3---4---5---6---7	
3e I am confident that I will be able to handle critical and important issues in the project well?	1---2---3---4---5---6---7	
3f I have a specific minimum goal in the project.	1---2---3---4---5---6---7	
3g I feel confident in my ability to perform well on the upcoming requirements of the project	1---2---3---4---5---6---7	
3h The project is so dynamic that I often have difficulty keeping the overall goal in sight.	1---2---3---4---5---6---7	
3i I consider the project as a personal challenge.	1---2---3---4---5---6---7	
3j I defined certain goals that I want to reach in the project.	1---2---3---4---5---6---7	
3k My goals for the project are measurable.	1---2---3---4---5---6---7	
3l My goals for the project are ambitious.	1---2---3---4---5---6---7	
3m My goals for the project are clearly defined.	1---2---3---4---5---6---7	
3n My goals for the project are attainable.	1---2---3---4---5---6---7	

<b>IV Will</b>	Not at all	Very much
4a When my activities in this project are interrupted, I have no problem continuing work afterwards.	1---2---3---4---5---6---7	
4b When I work on this project I focus completely on my activities (I am not easily distracted).	1---2---3---4---5---6---7	
4c When my goals in the project conflict with having fun, I keep the goal in the forefront of my awareness.	1---2---3---4---5---6---7	
4d I do not feel innerly obliged to follow the project through to completion.	1---2---3---4---5---6---7	
4e Even when I am facing many requirements I am able to focus my attention completely on the project.	1---2---3---4---5---6---7	
4f I feel a responsibility to the project to continue in it.	1---2---3---4---5---6---7	
4g I consciously decided to do everything I can to make this project a success.	1---2---3---4---5---6---7	
4h I vividly visualize the opportunities to enact the intentions I committed to in the project..	1---2---3---4---5---6---7	
4i I consciously motivate myself in order to perform in this project.	1---2---3---4---5---6---7	
4j I have totally committed to my task in the project.	1---2---3---4---5---6---7	
4k I have a strong will to implement my ideas in the project.	1---2---3---4---5---6---7	



4o When obstacles occur in the process of implementing the project I put even more energy into it.	1---2---3---4---5---6---7
4p In order to concentrate on my activities in the project, I make sure that I don't get overly excited about activities outside the project.	1---2---3---4---5---6---7
4q I vividly visualize what I want to achieve in the project.	1---2---3---4---5---6---7
4r I turn obstacles into positive energy for the project.	1---2---3---4---5---6---7
4s When my goal in the project conflicts with having fun, I let the goal slip from my mind.	
4t If I do poorly in the project, I wallow in self-pity.	
4u If I do poorly in the project, I try not to think about it.	
4v If someone tells me I can't succeed in the project you can be sure that I make an even stronger effort.	
4w If my task in the project is boring or confusing, I keep working hard.	1---2---3---4---5---6---7

<b>V Emotions</b>	Not at all	Very much
5a About my activities in this innovation/change process I feel ... • excited.	1---2---3---4---5---6---7	
5b • captive.	1---2---3---4---5---6---7	
5c • stressed.	1---2---3---4---5---6---7	
5d • nervous.	1---2---3---4---5---6---7	
5e • interested.	1---2---3---4---5---6---7	
5f • frustrated.	1---2---3---4---5---6---7	
5g • aggressive.	1---2---3---4---5---6---7	
5h • upset.	1---2---3---4---5---6---7	
5i • enthusiastic.	1---2---3---4---5---6---7	
5j • disappointed.	1---2---3---4---5---6---7	
5k • alert.	1---2---3---4---5---6---7	
5l • jittery.	1---2---3---4---5---6---7	
5m • proud.	1---2---3---4---5---6---7	
5n • ashamed.	1---2---3---4---5---6---7	
5o • attentive.	1---2---3---4---5---6---7	
5p • scared.	1---2---3---4---5---6---7	
5q • irritable.	1---2---3---4---5---6---7	
5q • energetic.	1---2---3---4---5---6---7	
5r • exhausted.	1---2---3---4---5---6---7	
5s I associate the following with my activities in this innovation/change process... • fun.	1---2---3---4---5---6---7	
5t • hope to create value.	1---2---3---4---5---6---7	
5u • speed.	1---2---3---4---5---6---7	
5v • discomfort.	1---2---3---4---5---6---7	
5w • strain.	1---2---3---4---5---6---7	
5x • hope for personal benefits.	1---2---3---4---5---6---7	
5y • joy.	1---2---3---4---5---6---7	
5z • momentum	1---2---3---4---5---6---7	

5f I make a strong effort in order to get things done in the project.	1—2—3—4—5—6—7
5g In face of setbacks I persevere in order to progress forward in the project.	1—2—3—4—5—6—7
5h I live, eat and breathe my activities in the project.	1—2—3—4—5—6—7
5i Rather than acting impulsively in the project, I usually think of various ways to solve the problem.	1—2—3—4—5—6—7
5j When I take action in the project I have usually gone through different scenarios in order to prepare myself for different outcomes.	1—2—3—4—5—6—7
5k I do what is required in the project but most of the time I am detached from my activities.	1—2—3—4—5—6—7
5l In the project I try to let things work out on their own.	1—2—3—4—5—6—7
5m I take initiative to resolve problems in the project.	1—2—3—4—5—6—7
5n When I take action in the project I have usually thought carefully about the problem.	1—2—3—4—5—6—7
5o I have usually imagined myself solving a difficult problem in the project before I actually act on it.	1—2—3—4—5—6—7
5p Sometimes work in the project is hard but I discipline myself in order to get things done.	1—2—3—4—5—6—7
5q I consider my activities in the project to be very central to me.	1—2—3—4—5—6—7
5r Some of my activities in the project are not really focused on the goals.	1—2—3—4—5—6—7
5s I am very much involved personally in my activities in the project.	1—2—3—4—5—6—7
5t I stretch myself to succeed in the project.	1—2—3—4—5—6—7
5u Sometimes I don't know why I do certain things in this project.	1—2—3—4—5—6—7
5v I am personally absorbed in my activities in the project most of the time.	1—2—3—4—5—6—7
<b>VII</b>	<b>List responses</b>
7a Which are the major factors that contribute to energizing you for the project?	
7b Which factors help you to reduce negative energies in terms of the project?	
7c Which factors encourage you to take initiative in the project?	
7d Which factors impair your taking initiative in the project?	
7e Which are the most important factors that support your commitment to the project?	
7f Which are the most important factors that affect your commitment to the project negatively?	

**Thanks again for your cooperation and your support!**

## APPENDIX B

### FACTOR ANALYSIS

#### Factor Analysis Results

#### VARIABLE: TASK AUTONOMY

#### Average

AUTONY1A	5.82
AUTONY1B	5.90
AUTONY1C	5.35
AUTONY1D	2.53
AUTONY1E	4.46
AUTONY1F	5.73
AUTONY1G	4.63
AUTONY1H	3.00

#### Component Matrix

	Component		
	1	2	3
AUTONY1C	.787	.130	-.125
AUTONY1G	.777	5.509E-02	.316
AUTONY1E	.737	-5.185E-02	.321
AUTONY1A	-2.284E-02	.862	5.492E-02
AUTONY1D	.158	-.771	.255
AUTONY1H	-.269	.449	.677
AUTONY1B	.449	.385	-.485
AUTONY1F	-9.238E-02	.188	.250

Extraction Method: Principal Component Analysis.  
a. 3 components extracted.

## Correlation Matrix

	JTONY1	JTONY1	JTONY1	JTONY1	JTONY1	JTONY1	JTONY1	JTONY1	
Correlation	AUTON	1.000	.213	.040	-.514	-.001	.087	.029	.312
	AUTON	.213	1.000	.308	-.130	.127	-.048	.190	-.073
	AUTON	.040	.308	1.000	-.029	.396	.034	.475	-.202
	AUTON	-.514	-.130	-.029	1.000	.155	-.071	.105	-.137
	AUTON	-.001	.127	.396	.155	1.000	-.047	.479	-.081
	AUTON	.087	-.048	.034	-.071	-.047	1.000	-.055	.055
	AUTON	.029	.190	.475	.105	.479	-.055	1.000	-.006
	AUTON	.312	-.073	-.202	-.137	-.081	.055	-.006	1.000
Sig. (1-ta	AUTON		.000	.265	.000	.494	.085	.326	.000
	AUTON	.000		.000	.020	.023	.225	.001	.126
	AUTON	.265	.000		.322	.000	.295	.000	.001
	AUTON	.000	.020	.322		.007	.131	.049	.015
	AUTON	.494	.023	.000	.007		.232	.000	.102
	AUTON	.085	.225	.295	.131	.232		.196	.195
	AUTON	.326	.001	.000	.049	.000	.196		.465
	AUTON	.000	.126	.001	.015	.102	.195	.465	

Total Variance Explained  
Initial  
Eigenvalues

Extraction  
Sums of  
Squared  
Loadings

Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.074	25.922	25.922	2.074	25.922	25.922
2	1.745	21.811	47.734	1.745	21.811	47.734
3	1.042	13.027	60.761	1.042	13.027	60.761
4	.998	12.470	73.231			
5	.727	9.086	82.317			
6	.559	6.992	89.309			

7	.447	5.585	94.894
8	.408	5.106	100.000

Extraction Method: Principal Component Analysis.

### Factor Analysis Results

#### VARIABLE: LEADERSHIP

	<b>Average</b>
LDRSHP2A	4.53
LDRSHP2D	5.46
LDRSHP2E	5.20
LDRSHP2G	4.87
LDRSHP2I	4.49
LDRSHP2J	4.66
LDRSHP2K	5.22
LDRSHP2L	4.86
LDRSHP2P	4.58
LDRSHP2Q	4.55
LDRSHP2T	4.47

#### **Component Matrix**

	<b>Component</b>
	1
LDRSHP2Q	.886
LDRSHP2P	.877
LDRSHP2G	.863
LDRSHP2L	.854
LDRSHP2T	.852
LDRSHP2D	.843
LDRSHP2I	.842
LDRSHP2A	.781
LDRSHP2J	.767
LDRSHP2E	.701
LDRSHP2K	.395

Extraction Method: Principal Component Analysis.  
a 1 components extracted.

### Total Variance Explained

Correlation Matrix

	LDRSHP2A	LDRSHP2D	LDRSHP2E	LDRSHP2G	LDRSHP2I	LDRSHP2J	LDRSHP2K	LDRSHP2L	LDRSHP2P	LDRSHP2Q	LDRSHP2T	
Correlation	LDRSHP2A	1.000	.664	.532	.676	.641	.530	.222	.623	.626	.651	.579
	LDRSHP2D	.664	1.000	.632	.772	.644	.548	.312	.633	.710	.705	.672
	LDRSHP2E	.532	.632	1.000	.703	.452	.434	.291	.510	.536	.548	.519
	LDRSHP2G	.676	.772	.703	1.000	.662	.538	.375	.624	.713	.744	.693
	LDRSHP2I	.641	.644	.452	.662	1.000	.710	.270	.750	.704	.724	.687
	LDRSHP2J	.530	.548	.434	.538	.710	1.000	.139	.736	.655	.652	.630
	LDRSHP2K	.222	.312	.291	.375	.270	.139	1.000	.356	.294	.250	.345
	LDRSHP2L	.623	.633	.510	.624	.750	.736	.356	1.000	.689	.725	.754
	LDRSHP2P	.626	.710	.536	.713	.704	.655	.294	.689	1.000	.859	.748
	LDRSHP2Q	.651	.705	.548	.744	.724	.652	.250	.725	.859	1.000	.730
	LDRSHP2T	.579	.672	.519	.693	.687	.630	.345	.754	.748	.730	1.000
Sig. (1-tailed)	LDRSHP2A	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2D	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2E	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2G	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2I	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2J	.000	.000	.000	.000	.000	.014	.000	.000	.000	.000	.000
	LDRSHP2K	.000	.000	.000	.000	.000	.014	.000	.000	.000	.000	.000
	LDRSHP2L	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2P	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2Q	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	LDRSHP2T	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.018	63.799	63.799	7.018	63.799	63.799
2	.967	8.790	72.589			
3	.755	6.863	79.452			
4	.454	4.131	83.584			
5	.441	4.009	87.593			
6	.301	2.737	90.331			
7	.290	2.639	92.969			
8	.255	2.318	95.288			
9	.214	1.945	97.233			
10	.185	1.682	98.915			
11	.119	1.085	100.000			

Extraction Method: Principal Component Analysis.

## Factor Analysis Results

### VARIABLE: NETWORKS

	<b>Average</b>
NETWK2B	5.69
NETWK2C	4.71
NETWK2F	5.56
NETWK2H	4.41
NETWK2M	5.71
NETWK2N	4.77
NETWK2O	5.99
NETWK2R	4.63
NETWK2S	5.35

### Component Matrix

	Component	
	1	2
NETWK2R	.773	-.367
NETWK2N	.709	-.482
NETWK2F	.698	.307
NETWK2S	.689	.118
NETWK2H	.659	-.521
NETWK2B	.645	.454
NETWK2O	.608	.385
NETWK2C	.593	-2.060E-02
NETWK2M	.555	.287

Extraction Method: Principal Component Analysis.  
a. 2 components extracted

Correlation Matrix

	NETWK2B	NETWK2C	NETWK2F	NETWK2H	NETWK2M	NETWK2N	NETWK2O	NETWK2R	NETWK2S	
Correlation	NETWK2B	1.000	.336	.503	.195	.343	.294	.449	.371	.373
	NETWK2C	.336	1.000	.364	.351	.242	.310	.263	.394	.321
	NETWK2F	.503	.364	1.000	.338	.348	.311	.413	.409	.446
	NETWK2H	.195	.351	.338	1.000	.246	.579	.259	.572	.322
	NETWK2M	.343	.242	.348	.246	1.000	.265	.309	.302	.365
	NETWK2N	.294	.310	.311	.579	.265	1.000	.280	.659	.414
	NETWK2O	.449	.263	.413	.259	.309	.280	1.000	.323	.383
	NETWK2R	.371	.394	.409	.572	.302	.659	.323	1.000	.444
	NETWK2S	.373	.321	.446	.322	.365	.414	.383	.444	1.000
Sig. (1-tailed)	NETWK2B		.000	.000	.001	.000	.000	.000	.000	.000
	NETWK2C	.000		.000	.000	.000	.000	.000	.000	.000
	NETWK2F	.000	.000		.000	.000	.000	.000	.000	.000
	NETWK2H	.001	.000	.000		.000	.000	.000	.000	.000
	NETWK2M	.000	.000	.000	.000		.000	.000	.000	.000
	NETWK2N	.000	.000	.000	.000	.000		.000	.000	.000
	NETWK2O	.000	.000	.000	.000	.000	.000		.000	.000
	NETWK2R	.000	.000	.000	.000	.000	.000	.000		.000
	NETWK2S	.000	.000	.000	.000	.000	.000	.000	.000	

Total Variance Explained  
Initial  
Eigenvalues

Extraction Sums  
of Squared  
Loadings

Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.940	43.780	43.780	3.940	43.780	43.780
2	1.183	13.148	56.928	1.183	13.148	56.928
3	.760	8.443	65.371			
4	.706	7.841	73.212			
5	.600	6.661	79.874			
6	.576	6.404	86.278			
7	.531	5.899	92.177			
8	.378	4.197	96.374			
9	.326	3.626	100.000			

Extraction Method: Principal Component Analysis.



## Factor Analysis Results

### VARIABLE: POSITIVE EMOTIONS

	Average
PEMOTN5A	5.73
PEMOTN5B	4.13
PEMOTN5E	6.23
PEMOTN5G	4.56
PEMOTN5I	6.00
PEMOTN5K	5.94
PEMOTN5M	5.76
PEMOTN5O	5.92
PEMOTN5R	5.87
PEMOTN5T	4.96
PEMOTN5U	6.60
PEMOTN5V	4.68
PEMOTN5Y	4.38
PEMOTN5Z	4.70
PEMOT5AA	5.27

### Component Matrix

	Component			
	1	2	3	4
PEMOTN5I	.829	-.225	-6.319E-02	.134
PEMOTN5R	.798	-.259	.138	-.139
PEMOTN5A	.796	-.161	-.152	.272
PEMOTN5M	.764	4.166E-02	-.123	1.944E-02
PEMOTN5E	.748	-.373	-4.855E-02	.116
PEMOTN5K	.729	-.138	.275	-.282
PEMOTN5T	.712	.143	-.390	.103
PEMOTN5Z	.676	.358	-.177	.280
PEMOT5AA	.673	.256	4.142E-02	-2.617E-02
PEMOTN5O	.612	-8.878E-02	.352	-.454
PEMOTN5U	.456	-.361	7.213E-02	.153
PEMOTN5Y	.425	.571	-.223	-4.357E-02
PEMOTN5G	.386	.563	.349	3.001E-02

PEMOTN5B            7.104E-02            .140            .742            .538  
 PEMOTN5V            .395            .260            5.523E-02            -.460

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

Correlation Matrix

	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	EMOTN5	
Correlation	PEMOTN	1.000	.056	.668	.213	.750	.480	.600	.314	.593	.560	.354	.215	.247	.535	.429
	PEMOTN	.056	1.000	.015	.188	.033	.116	.009	.030	.031	-.083	.053	-.010	-.062	.118	.090
	PEMOTN	.668	.015	1.000	.131	.721	.503	.504	.384	.617	.429	.432	.208	.170	.383	.384
	PEMOTN	.213	.188	.131	1.000	.224	.187	.262	.272	.249	.186	.100	.202	.353	.298	.301
	PEMOTN	.750	.033	.721	.224	1.000	.499	.583	.445	.667	.519	.399	.240	.239	.483	.497
	PEMOTN	.480	.116	.503	.187	.499	1.000	.550	.611	.653	.381	.310	.293	.258	.345	.444
	PEMOTN	.600	.009	.504	.262	.583	.550	1.000	.424	.532	.582	.240	.227	.322	.509	.441
	PEMOTN	.314	.030	.384	.272	.445	.611	.424	1.000	.572	.274	.224	.228	.189	.277	.363
	PEMOTN	.593	.031	.617	.249	.667	.653	.532	.572	1.000	.502	.367	.259	.140	.403	.464
	PEMOTN	.560	-.083	.429	.186	.519	.381	.582	.274	.502	1.000	.258	.262	.353	.602	.468
	PEMOTN	.354	.053	.432	.100	.399	.310	.240	.224	.367	.258	1.000	.104	.150	.146	.200
	PEMOTN	.215	-.010	.208	.202	.240	.293	.227	.228	.259	.262	.104	1.000	.189	.228	.326
	PEMOTN	.247	-.062	.170	.353	.239	.258	.322	.189	.140	.353	.150	.189	1.000	.391	.302
	PEMOTN	.535	.118	.383	.298	.483	.345	.509	.277	.403	.602	.146	.228	.391	1.000	.515
	PEMOTN	.429	.090	.384	.301	.497	.444	.441	.363	.464	.468	.200	.326	.302	.515	1.000
Sig. (1-tail)	PEMOTN		.191	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	PEMOTN	.191		.409	.001	.305	.034	.447	.320	.315	.096	.203	.437	.167	.032	.079
	PEMOTN	.000	.409		.019	.000	.000	.000	.000	.000	.000	.000	.000	.004	.000	.000
	PEMOTN	.000	.001	.019		.000	.002	.000	.000	.000	.002	.059	.001	.000	.000	.000
	PEMOTN	.000	.305	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	PEMOTN	.000	.034	.000	.002	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	PEMOTN	.000	.447	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	PEMOTN	.000	.320	.000	.000	.000	.000	.000		.000	.000	.000	.000	.001	.000	.000
	PEMOTN	.000	.315	.000	.000	.000	.000	.000	.000		.000	.000	.000	.014	.000	.000
	PEMOTN	.000	.096	.000	.002	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	PEMOTN	.000	.203	.000	.059	.000	.000	.000	.000	.000	.000		.050	.009	.011	.001
	PEMOTN	.000	.437	.000	.001	.000	.000	.000	.000	.000	.050	.000		.001	.000	.000
	PEMOTN	.000	.167	.004	.000	.000	.000	.000	.001	.014	.000	.009	.001		.000	.000
	PEMOTN	.000	.032	.000	.000	.000	.000	.000	.000	.000	.011	.000	.000	.000		.000
	PEMOTN	.000	.079	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	

Total Variance Explained Initial Eigenvalues				Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.125	40.831	40.831	6.125	40.831	40.831
2	1.387	9.244	50.075	1.387	9.244	50.075
3	1.178	7.854	57.929	1.178	7.854	57.929
4	1.026	6.841	64.770	1.026	6.841	64.770
5	.868	5.784	70.555			
6	.818	5.456	76.011			
7	.650	4.333	80.344			
8	.569	3.793	84.138			
9	.515	3.431	87.569			
10	.428	2.853	90.422			
11	.369	2.461	92.882			
12	.325	2.165	95.047			
13	.293	1.952	96.999			
14	.251	1.676	98.675			
15	.199	1.325	100.000			

Extraction Method: Principal Component Analysis.

## Factor Analysis Results

### VARIABLE: NEGATIVE EMOTIONS

#### Average

NEMOTN5C	4.11
NEMOTN5D	3.13
NEMOTN5F	3.69
NEMOTN5H	2.14
NEMOTN5J	2.25
NEMOTN5L	2.34
NEMOTN5N	1.30
NEMOTN5P	2.12
NEMOTN5Q	2.29
NEMOTN5S	2.90
NEMOTN5W	3.07
NEMOTN5X	3.44

#### Component Matrix

	Component		
	1	2	3
NEMOTN5X	.761	-1.660E-02	-.325
NEMOTN5H	.742	-.342	.244
NEMOTN5W	.742	.240	-.146
NEMOTN5Q	.721	-.279	.217
NEMOTN5F	.720	-.321	-.241
NEMOTN5C	.719	.105	-.369
NEMOTN5D	.687	.430	-9.760E-02
NEMOTN5J	.669	-.468	8.176E-02
NEMOTN5S	.662	-.131	-.253
NEMOTN5L	.612	.444	.329
NEMOTN5P	.590	.587	.220
NEMOTN5N	.470	-.143	.651

Extraction Method: Principal Component Analysis.

a. 3 components extracted.



Total Variance Explained Initial Eigenvalues				Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.539	46.156	46.156	5.539	46.156	46.156
2	1.350	11.247	57.404	1.350	11.247	57.404
3	1.088	9.070	66.474	1.088	9.070	66.474
4	.695	5.794	72.267			
5	.663	5.521	77.789			
6	.577	4.812	82.601			
7	.461	3.838	86.439			
8	.403	3.362	89.801			
9	.364	3.037	92.839			
10	.341	2.843	95.681			
11	.271	2.262	97.943			
12	.247	2.057	100.000			

Extraction Method: Principal Component Analysis.

## APPENDIX C

### RAW DATA

#### REDUCED RAW DATA SET

	Manager	Experience	Gender	Autonomy	Leadership	Network	PosEmotion	NegEmotion
1	2	4	1	6.5	5.82	5.44	5.2	2.33
2	2	2	0	4.75	4.09	5.44	4.87	2.58
3	1	4	1	6	5.91	4.56	5.93	3.42
4	1	4	1	6.5	4.18	5.56	6.6	2.42
5	1	4	1	6.25	5.82	6.11	5.73	3
6	1	3	1	6	5.55	5.33	5.47	2.92
7	1	4	1	6.25	5.18	5.78	5.13	2.17
8	2	4	1	5	4.55	3.11	6.27	1.33
9	1	2	1	5.75	5.91	6	5.73	1.83
10	1	4	1	5	5.45	6	5.67	2.83
11	1	2	1	5.5	3.82	4.56	4.93	3.08
12	1	4	1	2	2.45	5.78	5.53	4.25
13	1	1	1	3.75	3.27	3.33	5.07	4.08
14	1	2	1	5.25	4.64	4.56	5.33	2.5
15	1	4	1	6	4.36	4.44	5.53	2.83
16	1	2	1	5.75	4.27	5.33	5.27	2.33
17	1	4	1	6.25	1.36	3.67	5.8	4.5
18	1	4	1	3.75	2.82	3.44	5	5.67
19	1	3	1	6.5	4.91	5.78	5.4	1.5
20	1	4	1	6	5.09	5.89	5	1.67
21	1	4	1	3.75	4.45	4.67	5.2	3.17
22	1	2	1	4.25	4.82	4.89	4.2	2.92
23	1	1	1	5.5	6	5.44	5.2	3.17
24	2	3	1	6	4	3.78	5.13	1.17
25	1	4	0	5.25	5.73	5.78	6.53	2.67
26	1	3	1	5.25	3.18	5.11	6.27	3.75
27	2	3	1	4.75	4.91	4.67	5.13	1.67
28	2	4	1	5.25	5.91	6	5.07	1.75
29	2	3	1	5.5	5.64	5.33	6.67	1.67
30	1	3	0	4.75	6.55	5.78	6.6	3.08
31	1	3	1	4	3.45	4.78	4.27	3.92
32	1	3	1	3.5	3.91	5.67	5.6	3.5
33	2	3	0	5.25	5	6.44	6.33	3.25
34	1	3	0	5.25	6	5.22	4.6	3.75
35	1	3	1	5.25	4	5.89	4.2	2.67
36	2	3	1	4.25	4.27	4.11	4.27	4.83
37	1	4	1	5.25	5.45	5.33	6.2	3.92

38	2	3	1	5.75	6.18	6.44	5.87	3.83
39	2	3	0	5.25	4.82	5.44	5.13	1.08
40	2	1	0	5.5	5.82	6.11	5.07	3.67
41	2	4	1	4	5.55	5.11	5.87	4.5
42	2	1	0	6.5	5.64	5.33	5.27	1.33
43	1	3	1	5.75	2.91	3	5.73	2.17
44	1	4	1	5.75	3.82	3.78	3.67	4.08
45	1	3	0	3	2.82	5.22	4.53	1.42
46	1	3	1	5.25	2.91	3.33	4.27	1.33
47	2	3	0	6	5.64	5.22	5.47	3.83
48	1	4	0	4.75	4.36	6.11	6.27	4.42
49	2	3	1	5.25	3.64	4.22	4.47	4.17
50	1	3	1	5.75	4.91	4	5.33	2.33
51	1	3	1	4.75	4.55	4.78	4.4	4.25
52	1	3	1	3.75	4.64	5.11	6.13	3.08
53	1	3	1	5.5	3.18	5.22	5.4	2.33
54	1	3	1	5	5.45	5	4.93	3.5
55	1	3	1	4.75	5.73	6.44	6	3.08
56	1	4	1	4.5	5.82	5.56	5.33	3.08
57	2	1	1	6	4.64	4.44	5.8	1.42
58	2	1	1	3.5	6.18	5.44	4.8	1.17
59	2	1	1	5.75	6.09	3.56	5.87	2.25
60	2	1	0	5.25	6.91	4.78	5.53	3.42
61	2	3	1	6	5.64	4.56	5.4	3.42
62	2	3	1	6	6.27	6.56	5.53	2.17
63	1	1	1	4.25	6	4.11	5.6	3.5
64	1	3	1	6	4.73	6.33	5.67	3.17
65	2	1	1	5.5	6.82	6.89	5.47	1.33
66	1	3	1	3	5.09	5.33	5.6	3.75
67	1	1	0	5.75	5.64	5.78	5.8	2.67
68	1	1	1	4	5.82	4.33	5.27	1
69	1	2	1	5.75	6.27	6.44	5.53	2.42
70	1	4	0	6	5.27	5.56	5.53	1.67
71	2	1	0	6.25	1.55	5.11	6	1.17
72	1	4	1	6.5	6.55	6.67	6.13	3.42
73	1	4	0	4.75	1.91	6	5.47	2.33
74	2	3	1	6.5	5.36	6	5.4	2.42
75	2	2	1	3.25	4.82	4.89	3.4	1.92
76	2	1	1	6.75	5.82	6.22	4.27	2.25
77	2	1	0	4.5	5.82	6.67	6.4	1
78	1	4	1	5.5	4	5.33	5.87	4
79	1	3	1	4.5	3.55	4.56	5.13	5
80	1	3	1	3.75	3.45	4.78	5.2	2
81	2	3	0	4	6.82	7	5.87	2.33
82	1	4	1	4.5	6	6.22	5.8	1.5



83	1	3	1	6.25	4.82	3.56	4.53	2.92
84	2	4	1	5.5	5.64	5.56	6.33	1.75
85	1	4	1	7	4.55	5.44	5.8	2.42
86	1	4	1	4.5	5.91	4.89	5.87	1.67
87	1	3	0	4.75	5.45	4.33	6	2.83
88	2	4	1	3.5	3.18	4.78	5.27	1.75
89	1	3	0	6.25	6.27	6.11	6.2	2.58
90	1	3	1	4.25	4.64	5.67	5.6	3.83
91	2	2	1	4.5	5.55	5.56	5.4	3.67
92	1	4	1	6.75	3.82	4.22	5.73	4.83
93	2	2	0	4.25	1.91	3.11	4.67	3.42
94	2	1	1	4.5	6	5.89	5.33	4.17
95	1	3	1	4.25	5	5.78	4.93	3.75
96	1	2	1	6.75	5.09	5	6.27	1.5
97	1	4	1	3.75	5.36	5.33	5.13	2.25
98	1	3	1	5.5	5.18	5.33	5.27	2.67
99	1	3	1	6.75	5.18	4.56	6.53	4
100	1	3	0	5	4.09	5	5	2.33
101	1	3	0	4.5	4.36	5.44	4.73	2.42
102	1	4	1	4	5.45	4.33	5.6	2.42
103	2	3	1	6	6	6.22	6	2.58
104	1	1	0	5.5	2.82	6.22	5.73	1.92
105	1	3	0	4.5	5.91	3.56	4.6	2.83
106	1	4	0	5.25	5.82	5.22	5	2.33
107	1	3	1	2.25	5.09	4	4.2	3.25
108	2	4	1	5.25	4.55	5.44	5.87	1.5
109	1	3	1	3	6.64	6.22	6	2.83
110	2	4	1	5.75	2.64	4.33	4.93	2.58
111	1	4	1	4.5	4.73	4.56	6.13	1.83
112	1	4	1	4	4.91	4.89	5.53	3.33
113	2	4	0	4.25	6.82	6.33	6.13	3.08
114	1	3	1	5.75	4.82	5.56	5.07	2.25
115	1	3	1	5.5	6.18	6.22	5.93	2
116	1	1	1	6.5	6.27	6.11	6	2.33
117	1	3	1	3	6.18	5.78	6.87	4.67
118	1	4	1	4.25	4.91	5	5.53	2.75
119	2	3	0	6	7	6.89	6	1
120	1	4	1	5.5	3.55	4.33	5.4	2
121	1	3	1	5.25	4	3.44	4.6	1.58
122	1	3	0	5.75	4.91	5.44	5.73	3.42
123	1	4	1	6.5	5.18	5.33	5	2.25
124	1	3	1	3	4.91	4.89	4.6	3.42
125	1	1	1	6.75	6.64	5.89	6.47	2.5
126	2	3	1	5.25	3.36	5.22	5.87	2.42
127	1	3	1	7	4.55	4.33	6	1

128	1	4	1	5	3.73	5	5.13	1.92
129	1	4	1	6	5.36	4.67	5.93	3
130	2	3	0	4.25	4.45	4.56	4.47	4.25
131	1	2	1	5.25	5.45	5	5.2	2.33
132	2	4	1	3.75	5.82	5.22	4.67	3.17
133	1	3	1	4.25	5.27	4.89	5.07	2.92
134	2	1	0	6.5	7	6.56	6.6	1.17
135	1	4	1	4.5	4.36	5	4.27	4.08
136	1	3	1	4.25	5	4.89	5.07	2.67
137	1	4	1	3.75	3.82	4.89	5.67	2.5
138	1	3	1	4.5	6.45	5.78	4.53	1.33
139	1	4	0	6.5	5.55	4	6.27	1.5
140	1	1	1	4.75	4.64	4.89	5.4	2.33
141	2	3	1	4.5	2.09	5.56	5.6	3
142	1	3	1	4.5	3.73	5.67	5.4	2.33
143	1	2	1	5.75	3.55	5.22	5.27	3.33
144	1	3	0	6	6.64	6.11	5	1.83
145	2	2	1	4	5.55	5.67	5.33	2.17
146	2	3	1	5.75	3.27	4.11	4.07	5
147	1	4	1	2.75	2.82	6.11	7	5.92
148	1	3	1	5	5.36	5	4.47	2
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150	2	4	1	4.25	5.18	6.44	5	1
151	1	4	1	6.25	4.09	5	6.33	1.58
152	1	4	1	5.25	2.91	5.67	5.87	3.42
153	1	3	1	2.75	4.09	4	4.67	3.17
154	1	4	1	4.75	3.36	5.67	2.47	1
155	1	4	1	4.5	5	5.44	4.93	2.5
156	2	3	1	4.75	6.36	6.11	6.13	1.33
157	2	1	1	5.25	5.36	5.33	5.53	4.83
158	1	4	1	6.5	6.64	7	6.2	2.5
159	1	3	1	4.5	5.64	5.89	4.87	2
160	1	3	1	6	5.36	4.89	5.13	2
161	1	4	1	4.25	5.64	5.56	4.4	2.5
162	1	4	1	4.5	4.73	3.89	5.07	3.17
163	1	4	1	6	6.18	5.67	6.27	3.5
164	1	3	1	3.25	5.45	5.33	5.33	1.17
165	1	3	1	5.75	5.55	5.11	6.13	3.08
166	1	4	1	5	5.27	4.56	5.93	3.33
167	1	4	0	4.75	6	5.89	5.73	2.75
168	1	4	1	6	3.18	6.22	6.07	3
169	1	4	1	2.5	3.27	5	3.2	5.17
170	1	3	0	4.75	4.27	5.56	5.53	3
171	1	4	1	6.25	3.36	2.89	6.2	2.25
172	1	3	1	5.5	4.45	4.89	5.93	2.58

173	1	1	1	6.25	3.18	5.56	5.27	1.33
174	1	2	1	6.25	6.18	5.44	5.67	2
175	1	4	1	6.25	3.64	4.44	2.8	1.25
176	1	4	1	5.5	6.64	6.78	5.8	2.5
177	2	1	1	3.5	3.82	3.67	4.8	3.92
178	1	3	0	5.25	5.82	5.78	5.73	2.83
179	1	4	1	5	5.18	5.11	5.13	2.92
180	1	4	1	4.75	4.64	4.89	3.8	2.42
181	1	3	1	3.75	4.91	6.67	5.2	2.75
182	1	3	1	3.75	4.64	4.89	4.73	2.42
183	1	4	1	5.25	4.91	3.67	4.47	3.5
184	1	4	1	7	1.27	2.89	6.33	1.75
185	1	4	1	4.25	4.55	5.11	4.87	2.5
186	2	1	0	5	5.91	4.78	5.47	3.92
187	2	4	1	2.75	4.36	5.44	5	2.08
188	1	3	1	5.25	4.45	4.22	4.67	3.83
189	1	3	1	4.75	5.09	5.33	5.07	3.67
190	1	3	1	5.75	5.36	5.89	4.13	2.08
191	1	4	1	5.5	4.91	4.67	5.6	2.83
192	1	4	1	5.5	4.45	5.78	4.87	1.33
193	1	4	1	5.5	3.45	5.33	5.33	3.17
194	1	4	1	4	2.82	4	4.87	3.33
195	1	1	1	4.25	4.36	4.22	5	2.92
196	2	3	1	4.25	5.09	4	5	2.92
197	1	3	1	5	6.09	5.56	5.93	3.42
198	2	4	1	5.5	3.36	5.78	5.33	1
199	1	3	1	4.25	5.55	4.67	4.6	4.17
200	1	3	1	5.25	5.91	5.56	6.33	3.58
201	2	3	0	6.25	3.91	4.44	4.67	2.17
202	2	3	1	6.25	6.73	6	5.47	2
203	1	4	1	6	2.55	2.56	6	2.33
204	2	4	0	4.5	5.82	5.44	5.2	2.17
205	1	3	0	5.25	5.36	5	6.2	2.25
206	1	2	1	6.25	4.64	4.78	5.07	2.75
207	1	4	1	5.25	5.36	5.89	5.47	2.42
208	1	3	1	5	5.45	4.67	5	3.08
209	2	4	1	5.5	2.36	4.56	4.13	3.42
210	1	4	1	4.75	4.73	5.78	5.07	2.17
211	2	1	0	4.25	4	4.78	4.73	3.25
212	2	3	0	5.5	6.91	6.78	6	1.5
213	2	4	1	5	5.73	5.11	6.07	2.33
214	1	4	1	4.5	4.27	5.22	5.47	3
215	2	2	1	4.75	4	5.89	5	2
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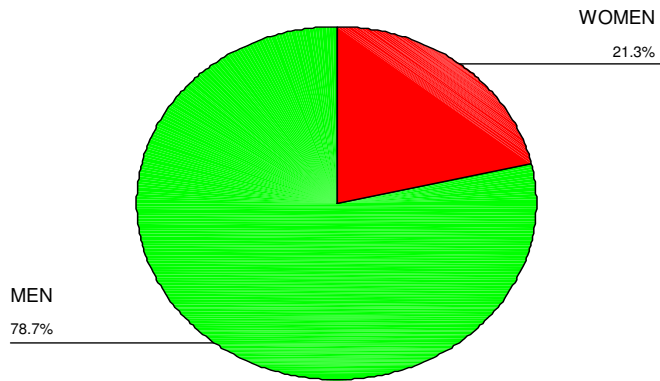
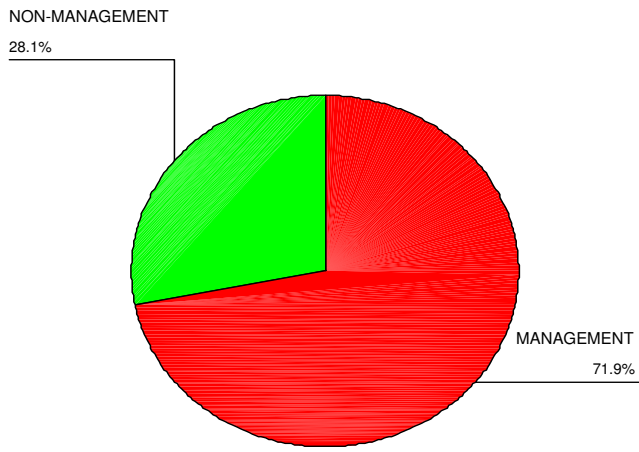
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221	1	1	1	6	6.45	6	6.67	1.5
222	1	4	0	5.25	4.45	4.78	5.53	2.08
223	1	3	0	6	5.27	6.22	5.8	2.08
224	1	4	1	5	4.45	5.67	5.93	2.92
225	1	4	1	4.25	5.45	5.89	5.67	3.25
226	2	1	1	5.75	6.27	5.89	5.93	3.17
227	1	4	1	6	5.27	6	5.47	3.08
228	1	4	1	6	6.09	6	5.67	2.83
229	2	1	0	5.75	4.91	4.89	5.2	1.58
230	1	4	1	2.5	2	4.78	5.93	3.42
231	1	3	1	6.25	4	4.44	6.67	3.58
232	1	4	1	3.25	4	4.33	4.8	4.75
233	1	3	0	3	3.45	6	6.47	2.5
234	2	1	0	5	4.27	6	5.2	1.17
235	2	1	0	4.5	3.09	5.67	6.07	4.17
236	1	4	1	5	4.82	5.33	5.27	1.83
237	1	4	1	4	4.91	6	5.6	2.33
238	1	4	1	4.75	3.36	3.78	5.27	1.83
239	1	3	1	3.5	1.82	4.56	3.87	4
240	1	1	1	5.25	6.09	5.22	6	1.17
241	1	4	0	4.5	4.36	5.44	5.2	3.08
242	1	4	1	4	3.18	5.22	5.2	4.83
243	1	4	1	4.75	4.82	4.78	4.53	3.25
244	1	3	1	6.25	5.45	4.67	6.2	3
245	2	1	0	6	5.64	6.56	5.73	1.17
246	1	3	1	5.25	2.82	4.56	5.13	3.08
247	1	3	0	6	5.18	5.33	4.67	2.33
248	2	2	0	6.75	4.55	5.33	5	1.75
249	1	4	1	6.25	6.36	5.78	6.67	2.58

NOTE:**Manager:** 1=Yes; 2=No**Experience:** 1=5 yrs or less; 2=6 to 10 yrs; 3=11 to 20 yrs; 4=more than 20 yrs**Gender:** 0=Women; 1=Men

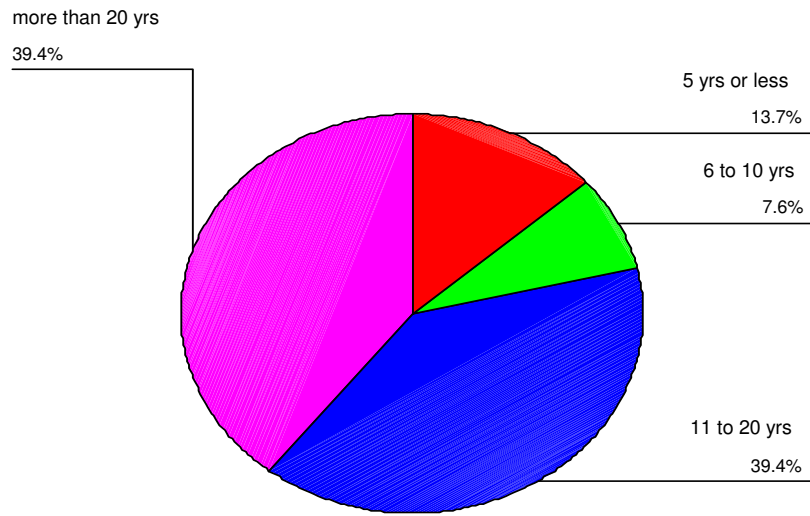
# APPENDIX D

## DEMOGRAPHIC DATA

### Demographic Data



YEARS OF EXPERIENCE



MGMT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	179	71.9	71.9	71.9
2	70	28.1	28.1	100.0
Total	249	100.0	100.0	

GENDER

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	53	21.3	21.3	21.3
1	196	78.7	78.7	100.0
Total	249	100.0	100.0	

WKYRS

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	34	13.7	13.7	13.7
2	19	7.6	7.6	21.3
3	98	39.4	39.4	60.6
4	98	39.4	39.4	100.0
Total	249	100.0	100.0	

## APPENDIX E

### TEST OF HOMOGENEITY OF VARIANCE

#### GENDER

##### Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
AUTONMY	5.062	1	247	.025
LEADRSH	2.202	1	247	.139
NETWORK	.973	1	247	.325
POSEMOTN	.189	1	247	.664
NEGEMOTN	.254	1	247	.615

#### MANAGEMENT

##### Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
AUTONMY	.762	1	247	.383
LEADRSH	3.101	1	247	.079
NETWORK	1.132	1	247	.288
POSEMOTN	.525	1	247	.469
NEGEMOTN	8.464	1	247	.004

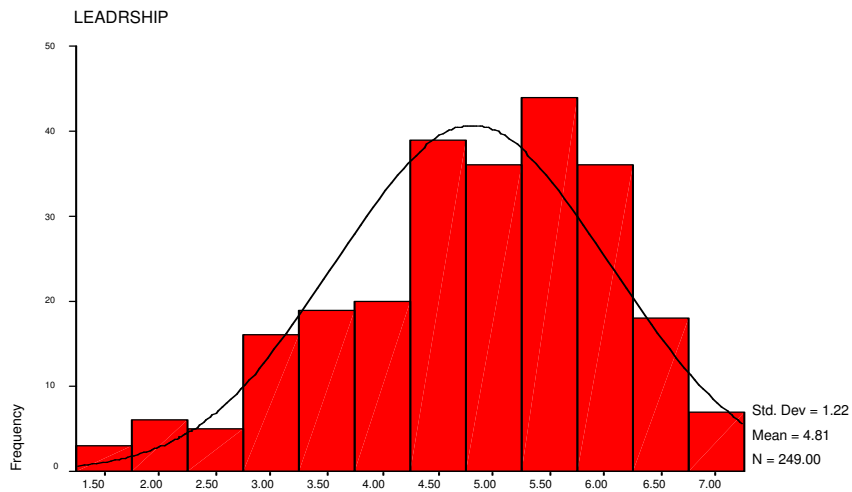
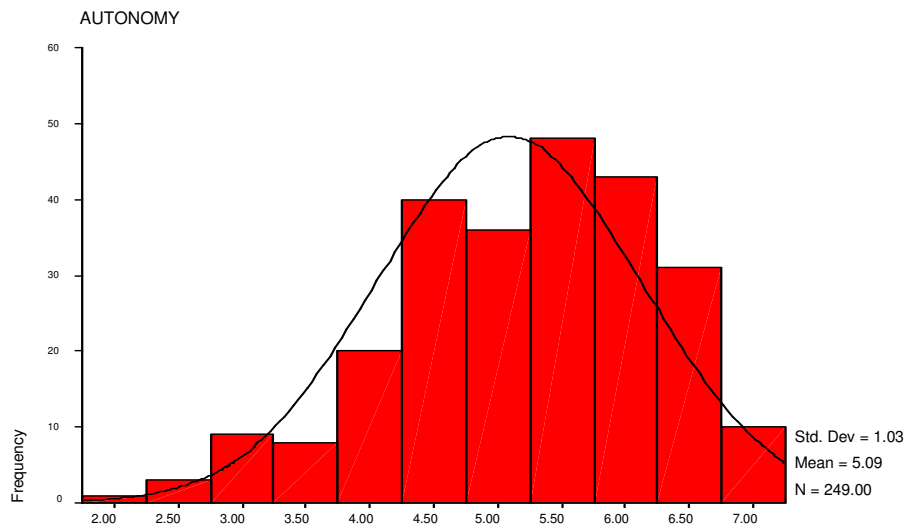
#### YEARS OF WORK EXPERIENCE

##### Test of Homogeneity of Variances

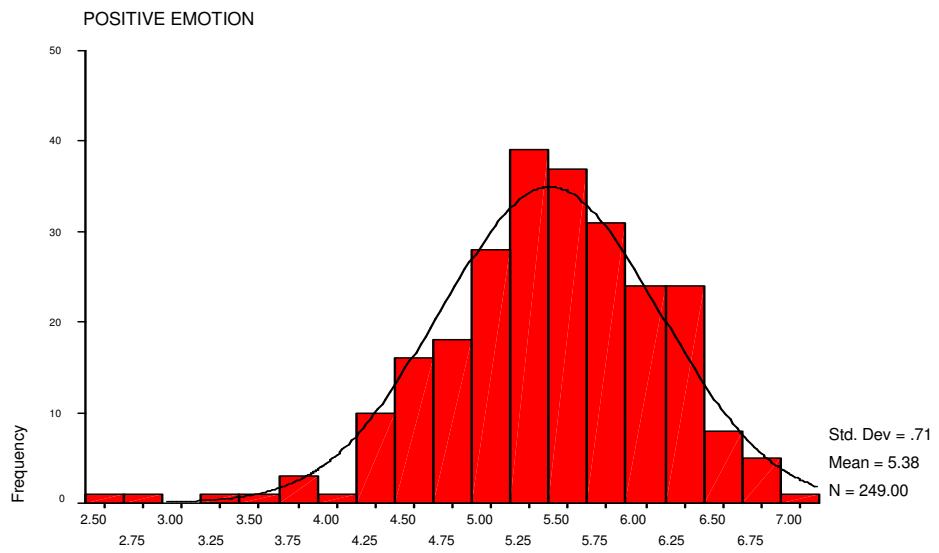
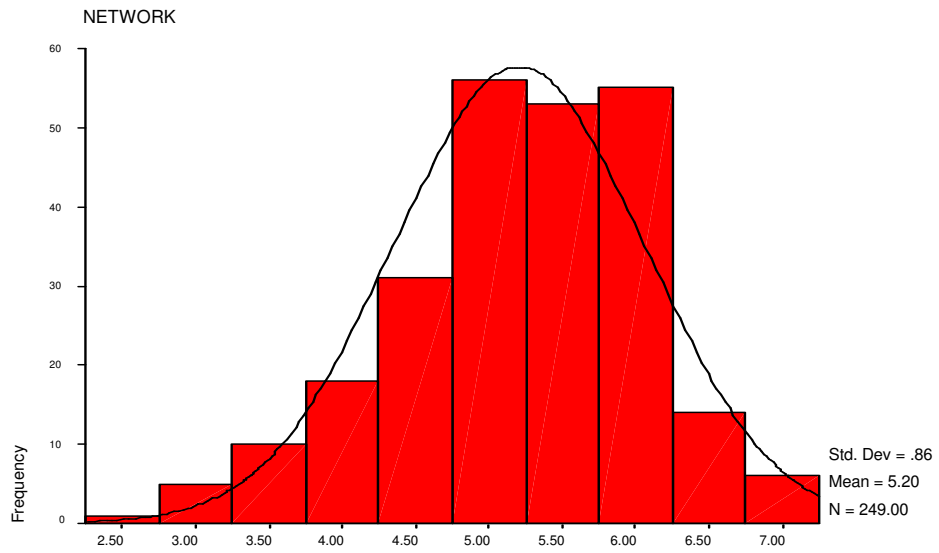
	Levene Statistic	df1	df2	Sig.
AUTONMY	.108	3	245	.955
LEADRSH	.904	3	245	.440
NETWORK	.574	3	245	.633
POSEMOTN	1.321	3	245	.268
NEGEMOTN	3.041	3	245	.030

## APPENDIX F

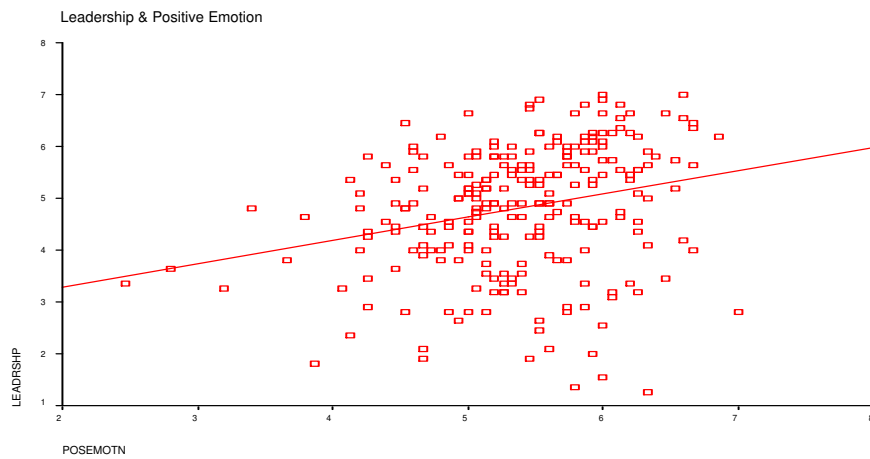
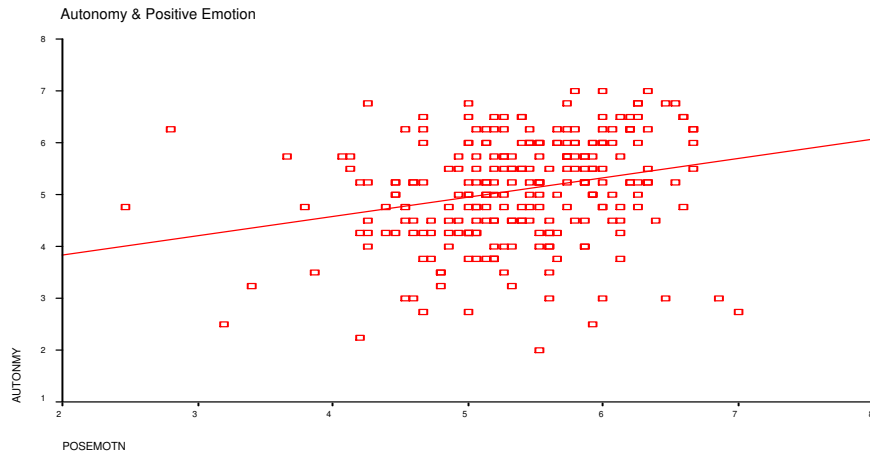
### HISTOGRAM AND LINE FIT RESULTS

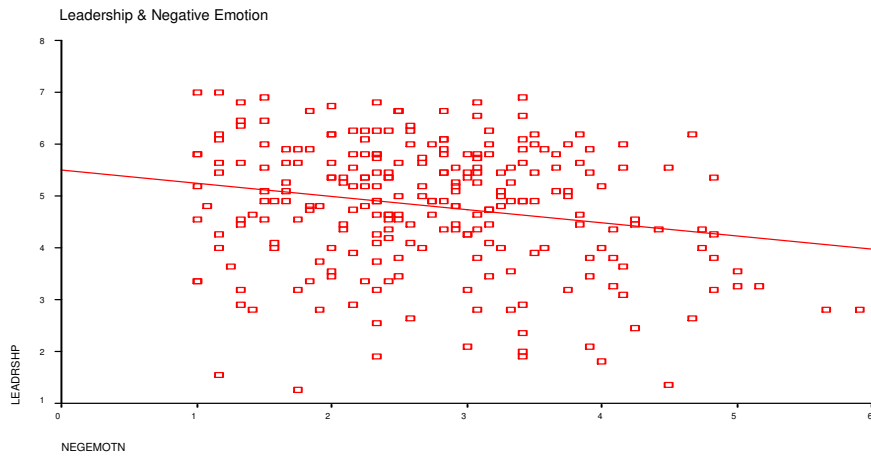
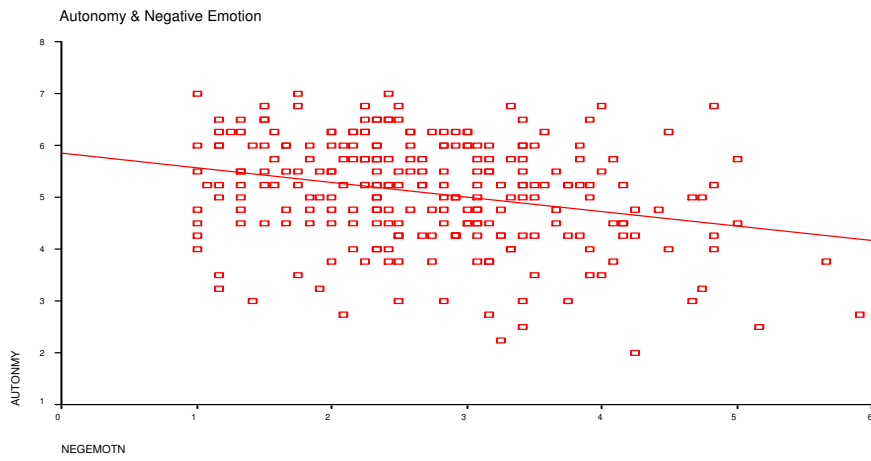
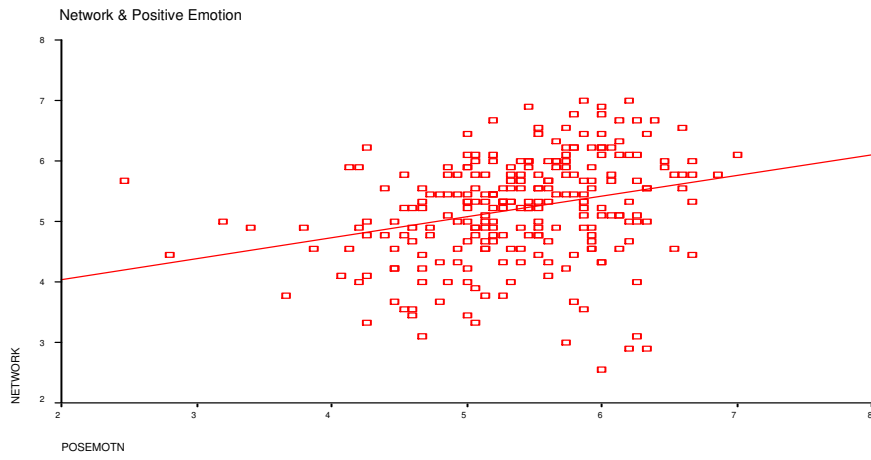


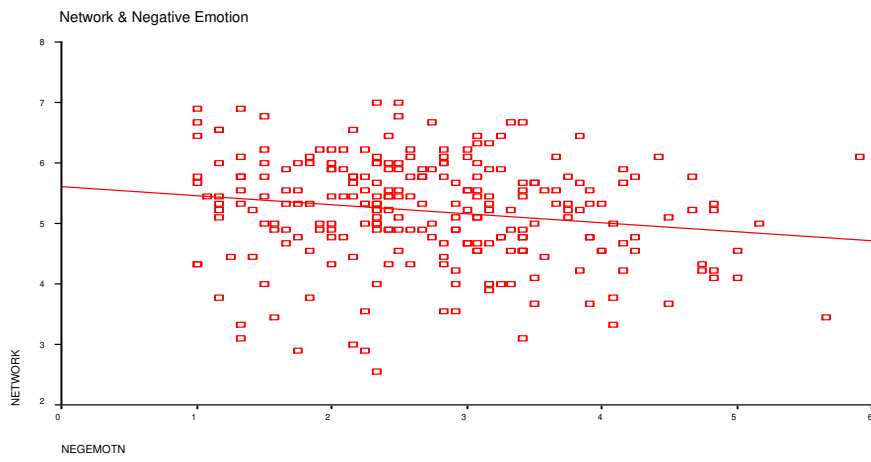




## Scatter Plots of Variable / Line Fit







## APPENDIX G

### RESULTS BY GENDER

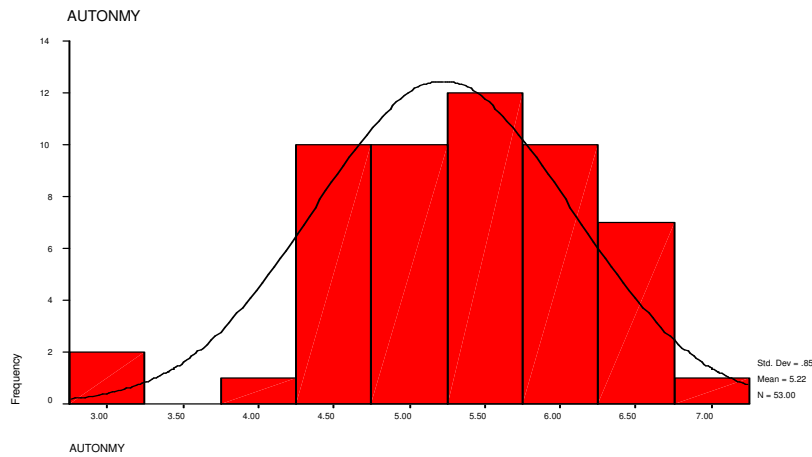
#### Female

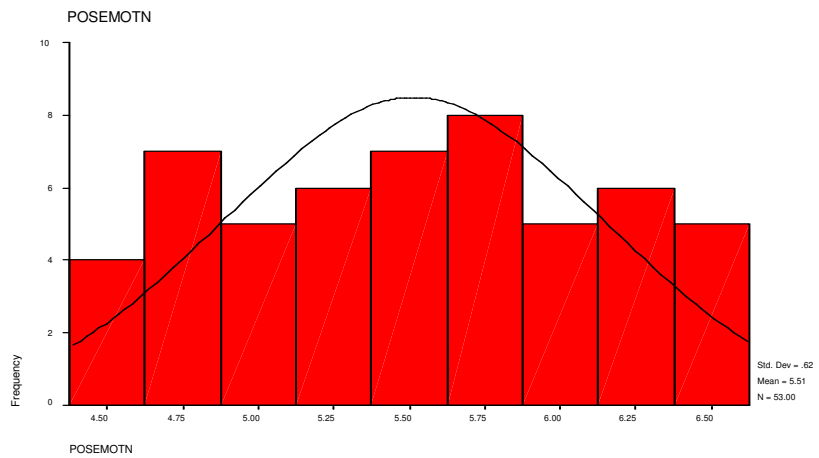
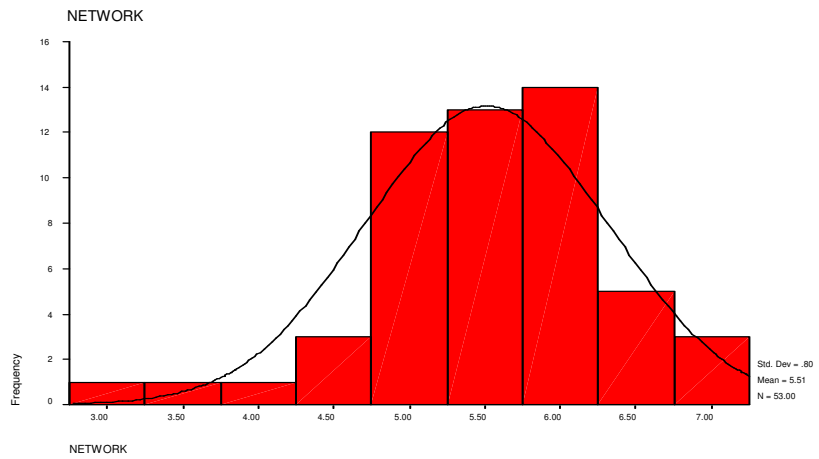
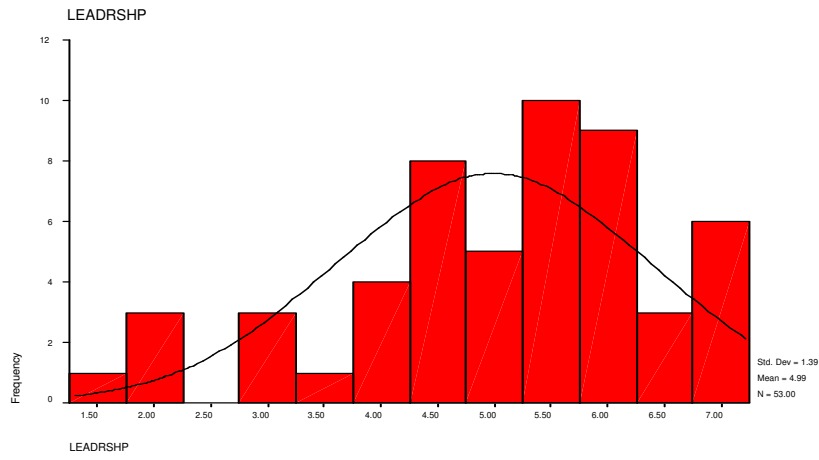
##### MGMT

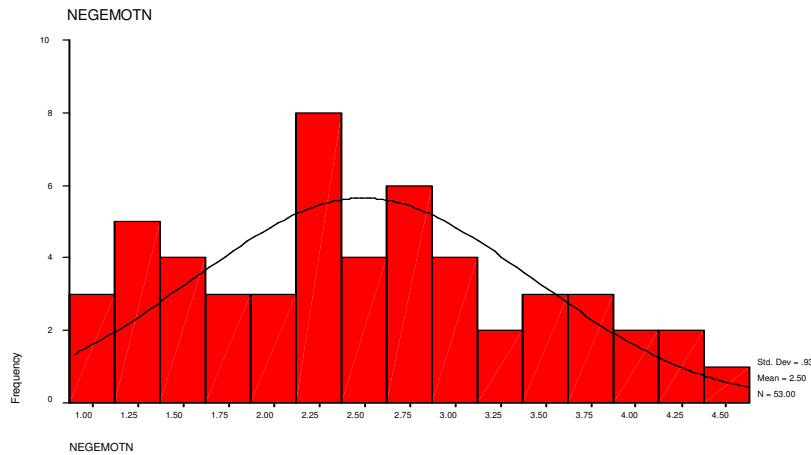
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	27	50.9	50.9	50.9
2	26	49.1	49.1	100.0
Total	53	100.0	100.0	

##### WKYRS

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	14	26.4	26.4	26.4
2	3	5.7	5.7	32.1
3	25	47.2	47.2	79.2
4	11	20.8	20.8	100.0
Total	53	100.0	100.0	







### Regression Results (Positive Emotions – female)

(Includes demographic variables: Management & Work Experience)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.547	.299	.225	.54749

a Predictors: (Constant), NETWORK, WKYRS, AUTONMY, LEADRSHP, MGMT

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.015	5	1.203	4.014	.004
	Residual	14.088	47	.300		
	Total	20.103	52			

a Predictors: (Constant), NETWORK, WKYRS, AUTONMY, LEADRSHP, MGMT  
b Dependent Variable: POSEMOTN

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	3.541	.800		4.426	.000			
	MGMT	-.221	.178	-.179	-1.239	.222	-.099	-.178	-.151
	WKYRS	-3.69E-02	.083	-.065	-.444	.659	.028	-.065	-.054
	AUTONMY	.188E-02	.093	.016	.128	.899	.072	.019	.016
	LEADRSH	7.986E-02	.059	.179	1.348	.184	.318	.193	.165
	NETWORK	.352	.100	.453	3.499	.001	.497	.455	.427

a. Dependent Variable: POSEMOTN

(Excludes demographic variables: Management &amp; Work Experience)

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525	.276	.231	.54518

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.539	3	1.846	6.212	.001
	Residual	14.564	49	.297		
	Total	20.103	52			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

b Dependent Variable: POSEMOTN

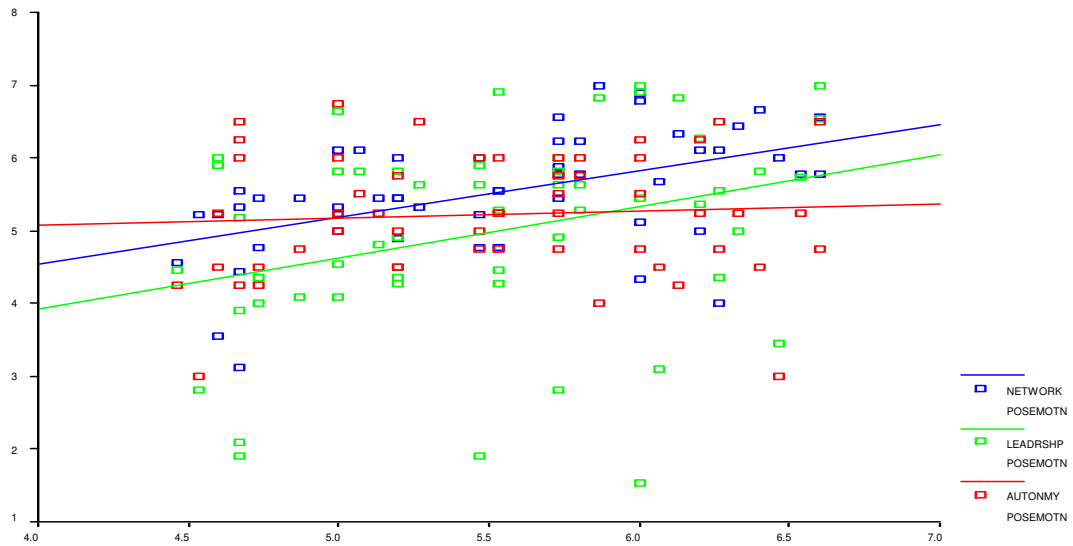
**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	3.212	.679		4.727	.000			
	AUTONMY	4.749E-03	.091	.006	.052	.959	.072	.007	.006
	LEADRSH	7.859E-02	.058	.176	1.347	.184	.318	.189	.164
	NETWORK	.342	.100	.441	3.431	.001	.497	.440	.417

a. Dependent Variable: POSEMOTN



Regression Lines for Context Variables vs. Positive Emotions (female)



Regression Results (Negative Emotions – female)

(Includes demographic variables: Management & Work Experience)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.377	.142	.051	.91062

a Predictors: (Constant), NETWORK, WKYRS, AUTONOMY, LEADRSHP, MGMT

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.449	5	1.290	1.555	.191
	Residual	38.974	47	.829		
	Total	45.422	52			

a Predictors: (Constant), NETWORK, WKYRS, AUTONOMY, LEADRSHP, MGMT

b Dependent Variable: NEGEMOTN

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	5.096	1.330		3.831	.000			
MGMT	3.366E-02	.296	.045	.282	.779	-.063	.041	.038
WKYRS	3.869E-02	.138	.104	.642	.524	.133	.093	.087
AUTONMY	-.283	.155	-.256	-1.828	.074	-.282	-.258	-.247
LEADRSH	1.222E-02	.099	.018	.124	.902	-.098	.018	.017
NETWORK	-.280	.167	-.240	-1.675	.101	-.252	-.237	-.226

a. Dependent Variable: NEGEMOTN

(Excludes demographic variables: Management & Work Experience)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.367	.134	.081	.89577

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.104	3	2.035	2.536	.067
	Residual	39.318	49	.802		
	Total	45.422	52			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

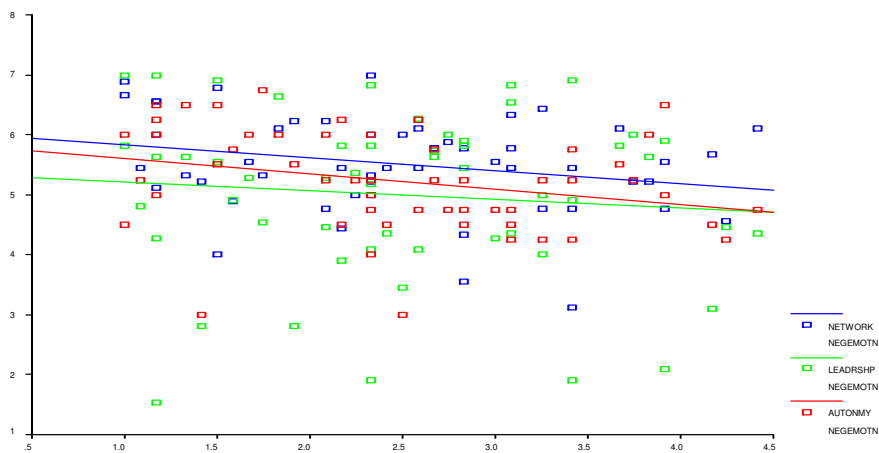
b Dependent Variable: NEGEMOTN

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	5.507	1.116		4.933	.000			
	AUTONMY	-.299	.149	-.271	-1.998	.051	-.282	-.275	-.266
	LEADRSHP	.166E-02	.096	.032	.226	.822	-.098	.032	.030
	NETWORK	-.283	.164	-.243	-1.731	.090	-.252	-.240	-.230

a. Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (female)



Bivariate Correlations Results (Parametric – Pearson)

## Correlations

		MGMT	WKYRS	AUTONMY	LEADRSH	NETWORK	POSEMOTN	NEGEMOTN
MGMT	Pearson Correlation	1	-.528**	.123	.015	.091	-.099	-.063
	Sig. (2-tailed)	.	.000	.380	.916	.515	.482	.654
	N	53	53	53	53	53	53	53
WKYRS	Pearson Correlation	-.528**	1	-.167	.093	-.034	.028	.133
	Sig. (2-tailed)	.000	.	.232	.506	.810	.841	.343
	N	53	53	53	53	53	53	53
AUTONMY	Pearson Correlation	.123	-.167	1	.192	.072	.072	-.282*
	Sig. (2-tailed)	.380	.232	.	.169	.608	.609	.041
	N	53	53	53	53	53	53	53
LEADRSH	Pearson Correlation	.015	.093	.192	1	.321*	.318*	-.098
	Sig. (2-tailed)	.916	.506	.169	.	.019	.020	.487
	N	53	53	53	53	53	53	53
NETWORK	Pearson Correlation	.091	-.034	.072	.321*	1	.497**	-.252
	Sig. (2-tailed)	.515	.810	.608	.019	.	.000	.069
	N	53	53	53	53	53	53	53
POSEMOTN	Pearson Correlation	-.099	.028	.072	.318*	.497**	1	-.134
	Sig. (2-tailed)	.482	.841	.609	.020	.000	.	.338
	N	53	53	53	53	53	53	53
NEGEMOTN	Pearson Correlation	-.063	.133	-.282*	-.098	-.252	-.134	1
	Sig. (2-tailed)	.654	.343	.041	.487	.069	.338	.
	N	53	53	53	53	53	53	53

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

\* . Correlation is significant at the 0.05 level (2-tailed).

## Bivariate Correlations Results (Non Parametric – Kendall's tau &amp; Spearman's rho)

## Correlations

			MGMT	WKYRS	AUTONMY	LEADRSH	NETWORK	POSEMOTN	NEGEMOTN	
Kendall's tau_b	MGMT	Correlation Coefficient	1.000	-.490**	.062	.038	.054	-.076	-.064	
		Sig. (2-tailed)	.	.000	.604	.742	.643	.515	.581	
		N	53	53	53	53	53	53	53	
	WKYRS	Correlation Coefficient	-.490**	1.000	-.130	.066	.001	.037	.079	
		Sig. (2-tailed)	.000	.	.241	.541	.993	.734	.467	
		N	53	53	53	53	53	53	53	
	AUTONMY	Correlation Coefficient	.062	-.130	1.000	.124	.056	.077	-.262**	
		Sig. (2-tailed)	.604	.241	.	.213	.572	.443	.008	
		N	53	53	53	53	53	53	53	
	LEADRSH	Correlation Coefficient	.038	.066	.124	1.000	.227*	.242*	-.043	
		Sig. (2-tailed)	.742	.541	.213	.	.020	.013	.656	
		N	53	53	53	53	53	53	53	
	NETWORK	Correlation Coefficient	.054	.001	.056	.227*	1.000	.380**	-.153	
		Sig. (2-tailed)	.643	.993	.572	.020	.	.000	.116	
		N	53	53	53	53	53	53	53	
	POSEMOTN	Correlation Coefficient	-.076	.037	.077	.242*	.380**	1.000	-.102	
		Sig. (2-tailed)	.515	.734	.443	.013	.000	.	.292	
		N	53	53	53	53	53	53	53	
	NEGEMOTN	Correlation Coefficient	-.064	.079	-.262**	-.043	-.153	-.102	1.000	
		Sig. (2-tailed)	.581	.467	.008	.656	.116	.292	.	
		N	53	53	53	53	53	53	53	
	Spearman's rho	MGMT	Correlation Coefficient	1.000	-.524**	.072	.046	.064	-.090	-.077
			Sig. (2-tailed)	.	.000	.608	.745	.648	.521	.586
			N	53	53	53	53	53	53	53
WKYRS		Correlation Coefficient	-.524**	1.000	-.164	.082	-.005	.061	.110	
		Sig. (2-tailed)	.000	.	.242	.559	.970	.663	.432	
		N	53	53	53	53	53	53	53	
AUTONMY		Correlation Coefficient	.072	-.164	1.000	.165	.065	.090	-.355**	
		Sig. (2-tailed)	.608	.242	.	.238	.646	.523	.009	
		N	53	53	53	53	53	53	53	
LEADRSH		Correlation Coefficient	.046	.082	.165	1.000	.320*	.323*	-.061	
		Sig. (2-tailed)	.745	.559	.238	.	.019	.018	.667	
		N	53	53	53	53	53	53	53	
NETWORK		Correlation Coefficient	.064	-.005	.065	.320*	1.000	.526**	-.223	
		Sig. (2-tailed)	.648	.970	.646	.019	.	.000	.108	
		N	53	53	53	53	53	53	53	
POSEMOTN		Correlation Coefficient	-.090	.061	.090	.323*	.526**	1.000	-.125	
		Sig. (2-tailed)	.521	.663	.523	.018	.000	.	.372	
		N	53	53	53	53	53	53	53	
NEGEMOTN		Correlation Coefficient	-.077	.110	-.355**	-.061	-.223	-.125	1.000	
		Sig. (2-tailed)	.586	.432	.009	.667	.108	.372	.	
		N	53	53	53	53	53	53	53	

\*\* . Correlation is significant at the .01 level (2-tailed).

\* . Correlation is significant at the .05 level (2-tailed).

### Results by Gender

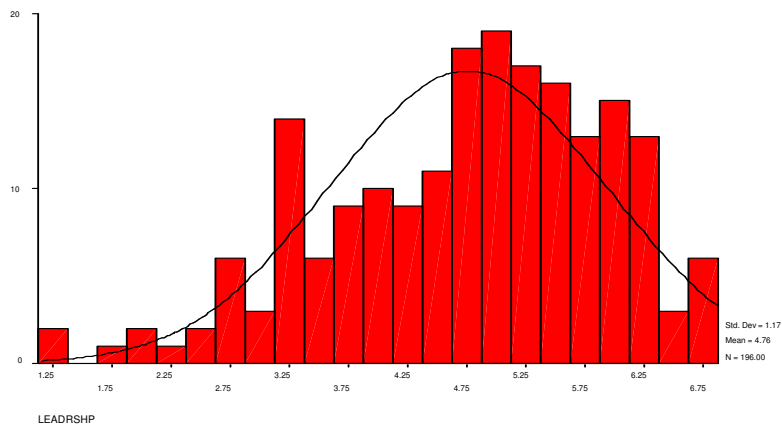
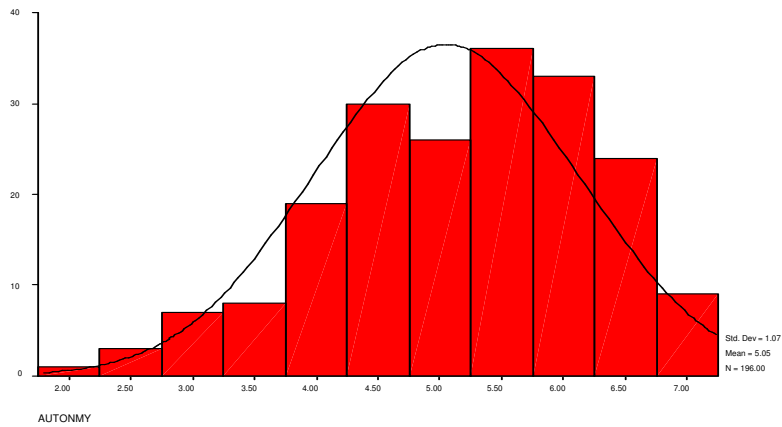
#### Male

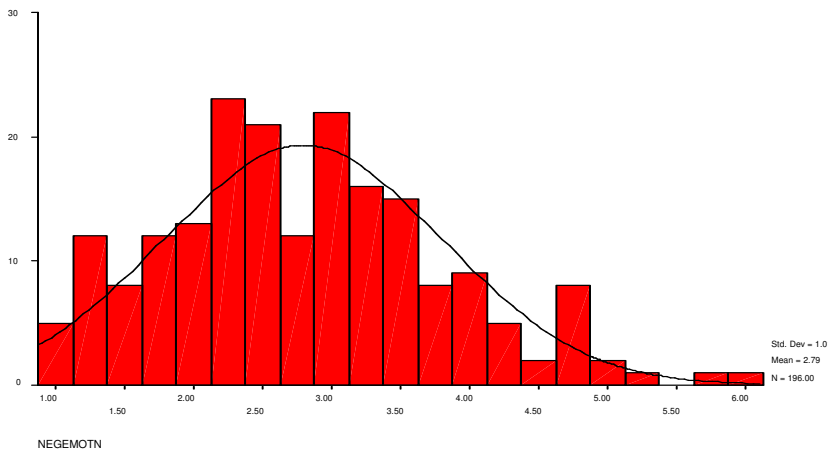
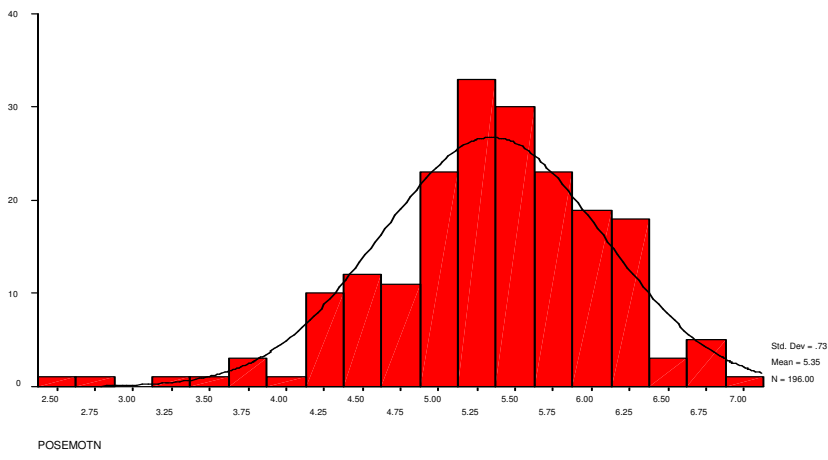
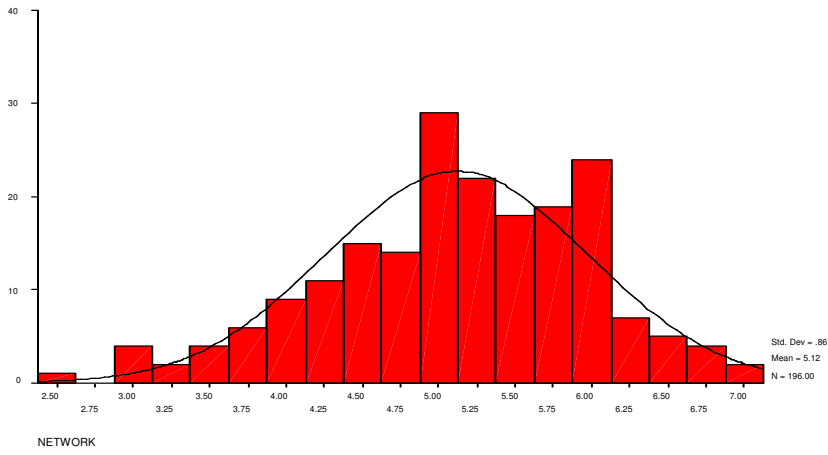
##### MGMT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	152	77.6	77.6
	2	44	22.4	100.0
Total	196	100.0	100.0	

##### WKYRS

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	10.2	10.2
	2	16	8.2	18.4
	3	73	37.2	55.6
	4	87	44.4	100.0
Total	196	100.0	100.0	





### Regression Results (Positive Emotions – male)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.366	.134	.120	.68390

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.869	3	4.623	9.884	.000
	Residual	89.803	192	.468		
	Total	103.671	195			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP  
 b Dependent Variable: POSEMOTN

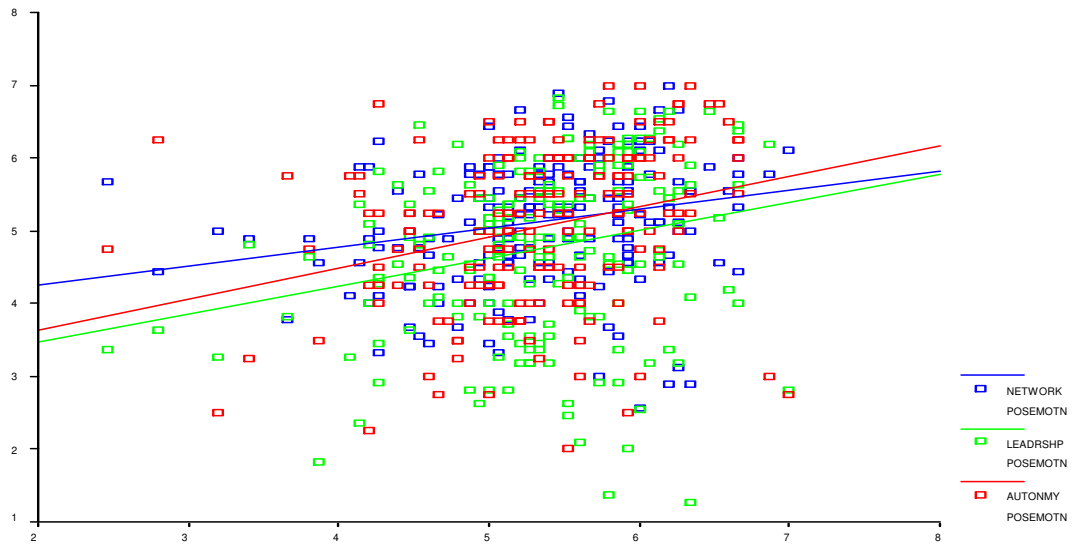
#### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error				Beta	Zero-order	Partial
1	(Constant)	3.499	.363		9.633	.000			
	AUTONMY	.173	.046	.254	3.721	.000	.286	.259	.250
	LEADRSHP	8.037E-02	.049	.129	1.625	.106	.241	.116	.109
	NETWORK	.115	.067	.136	1.735	.084	.222	.124	.117

a Dependent Variable: POSEMOTN



Regression Lines for Context Variables vs. Positive Emotions (male)



Regression Results (Negative Emotions – male)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.327	.107	.093	.96253

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.362	3	7.121	7.686	.000
	Residual	177.879	192	.926		
	Total	199.242	195			

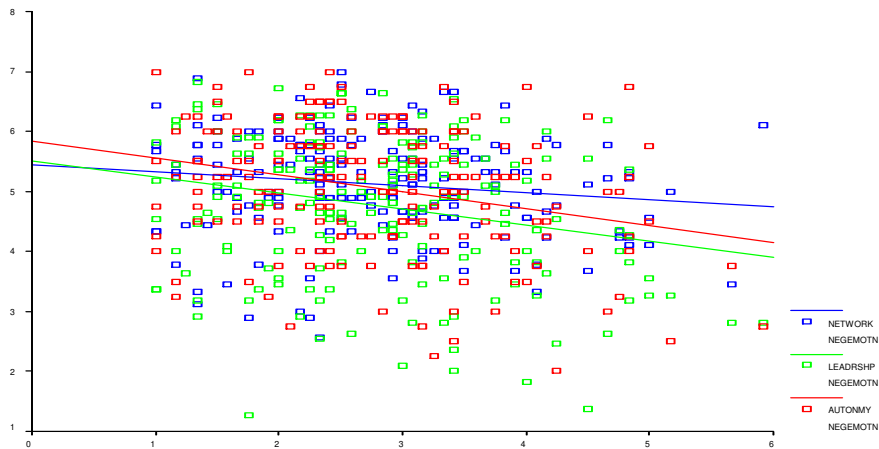
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
 b Dependent Variable: NEGEMOTN

Coefficients

Model		Unstand ardized Coeffie nts	Std. Error	Standardi zed Coeffien ts	t	Sig.	Correlations		
							Zero-order	Partial	Part
1	(Constant)	4.807	.511		9.403	.000			
	AUTONMY	-.221	.065	-.234	-3.379	.001	-.266	-.237	-.230
	LEADRSH	-.155	.070	-.179	-2.223	.027	-.232	-.158	-.152
	NETWORK	-3.154E-02	.094	-.027	-.337	.737	-.137	-.024	-.023

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (male)



## Correlations

		MGMT	WKYRS	AUTONMY	LEADRSH	NETWORK	POSEMOTN	NEGEMOTN
MGMT	Pearson Correlation	1	-.205**	.021	.111	.084	-.017	-.125
	Sig. (2-tailed)	.	.004	.766	.123	.239	.811	.082
	N	196	196	196	196	196	196	196
WKYRS	Pearson Correlation	-.205**	1	-.060	-.244**	-.037	-.013	.096
	Sig. (2-tailed)	.004	.	.402	.001	.610	.860	.182
	N	196	196	196	196	196	196	196
AUTONMY	Pearson Correlation	.021	-.060	1	.168*	.081	.286**	-.266**
	Sig. (2-tailed)	.766	.402	.	.019	.262	.000	.000
	N	196	196	196	196	196	196	196
LEADRSH	Pearson Correlation	.111	-.244**	.168*	1	.514**	.241**	-.232**
	Sig. (2-tailed)	.123	.001	.019	.	.000	.001	.001
	N	196	196	196	196	196	196	196
NETWORK	Pearson Correlation	.084	-.037	.081	.514**	1	.222**	-.137
	Sig. (2-tailed)	.239	.610	.262	.000	.	.002	.055
	N	196	196	196	196	196	196	196
POSEMOTN	Pearson Correlation	-.017	-.013	.286**	.241**	.222**	1	-.037
	Sig. (2-tailed)	.811	.860	.000	.001	.002	.	.605
	N	196	196	196	196	196	196	196
NEGEMOTN	Pearson Correlation	-.125	.096	-.266**	-.232**	-.137	-.037	1
	Sig. (2-tailed)	.082	.182	.000	.001	.055	.605	.
	N	196	196	196	196	196	196	196

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

\* . Correlation is significant at the 0.05 level (2-tailed).

## APPENDIX H

### RESULTS BY MANAGER STATUS

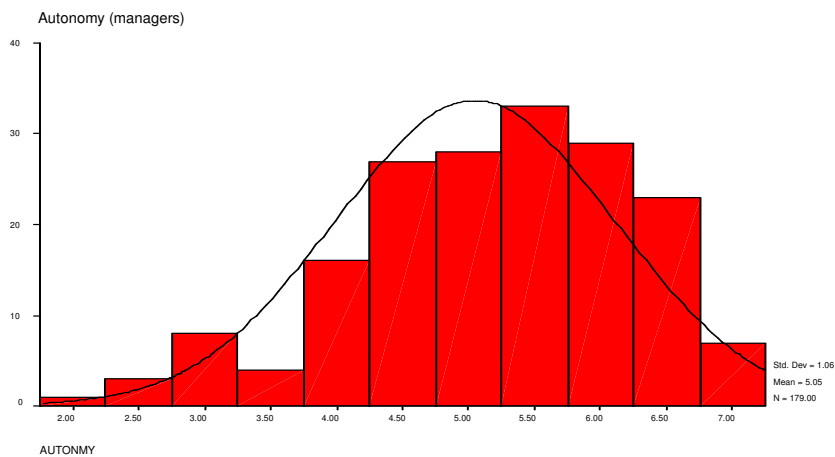
#### Manager

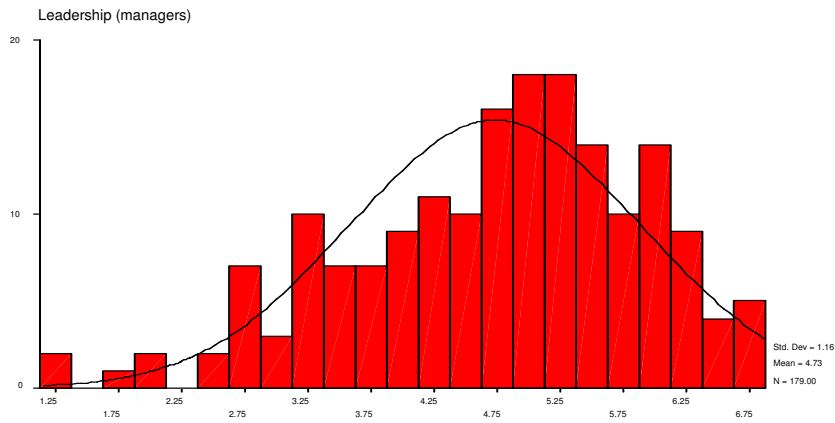
##### GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	27	15.1	15.1	15.1
	1	152	84.9	84.9	100.0
	Total	179	100.0	100.0	

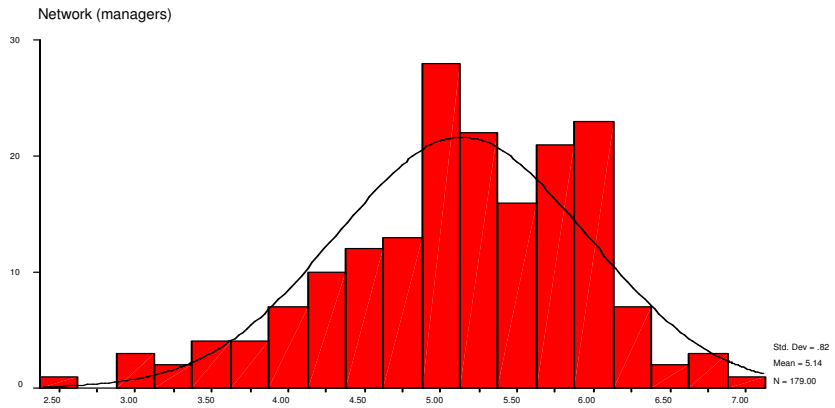
##### WKYRS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	7.3	7.3	7.3
	2	11	6.1	6.1	13.4
	3	73	40.8	40.8	54.2
	4	82	45.8	45.8	100.0
	Total	179	100.0	100.0	

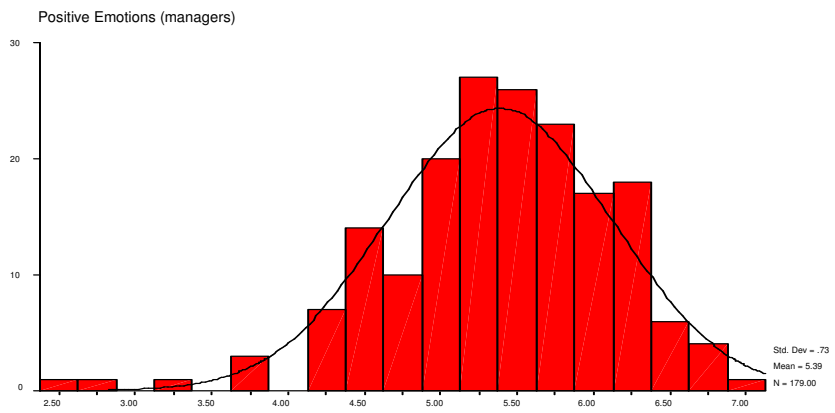




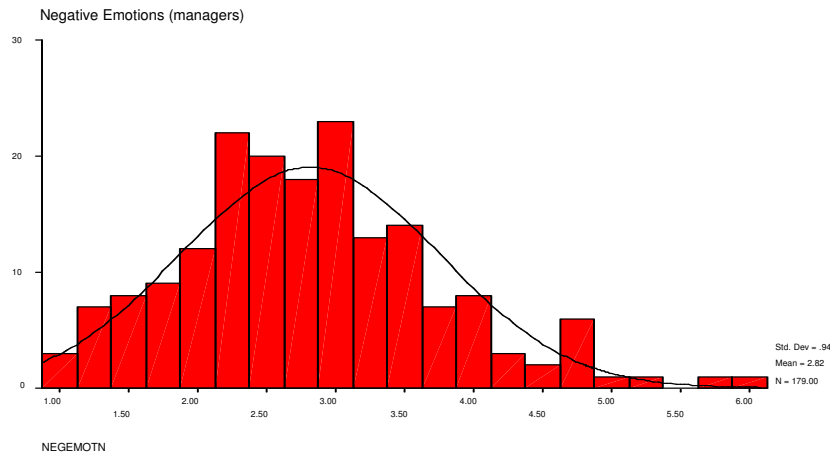
LEADRSH



NETWORK



POSEMOTN



### Regression Results (Positive Emotions – manager)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357	.128	.113	.68954

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.163	3	4.054	8.527	.000
	Residual	83.205	175	.475		
	Total	95.369	178			

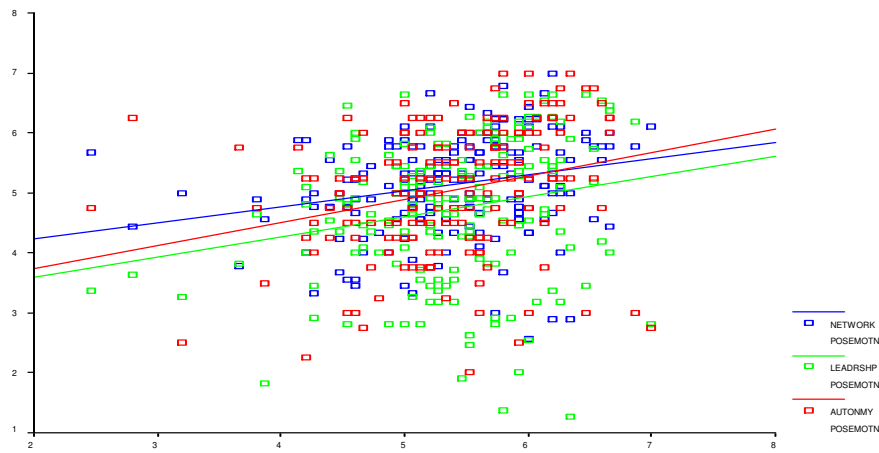
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: POSEMOTN

#### Coefficients

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Correlations			
		B	Std. Error	Beta		Zero-order	Partial	Part	
1	(Constant)	3.422	.401		8.525	.000			
	AUTONMY	.168	.050	.243	3.360	.001	.267	.246	.237
	LEADRSH	4.883E-02	.051	.077	.963	.337	.211	.073	.068
	NETWORK	.172	.070	.194	2.469	.015	.239	.183	.174

a Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (manager)



Regression Results (Negative Emotions – manager)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356	.127	.112	.88143

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	19.751	3	6.584	8.474	.000
Residual	135.961	175	.777		
Total	155.712	178			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

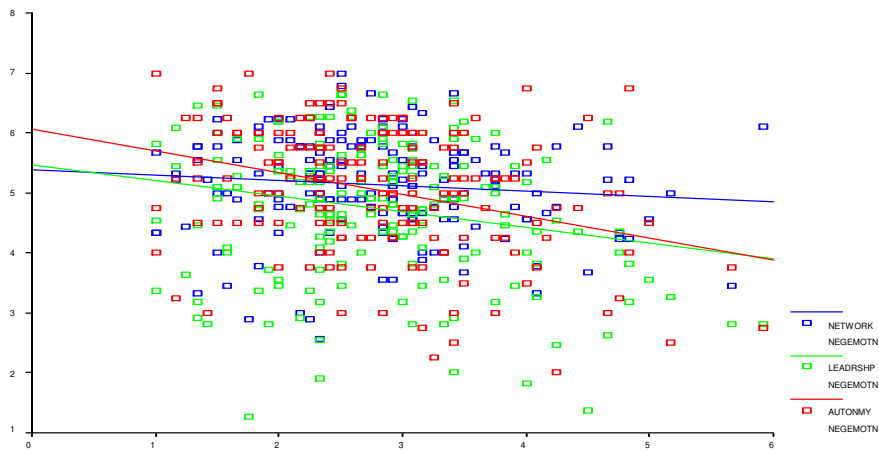
b Dependent Variable: NEGEMOTN

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Correlations		
		B	Std. Error	Beta				Zero-order	Partial	Part
1	(Constant)	4.827	.513			9.406	.000			
	AUTONOMY	-.259	.064	-.292		-4.049	.000	-.322	-.293	-.286
	LEADRSHP	-.113	.065	-.140		-1.741	.083	-.212	-.131	-.123
	NETWORK	-3.341E-02	.089	-.029		-.374	.709	-.104	-.028	-.026

a. Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (manager)





		Correlations							
		WKYR	AUTONM	LEADRS	NETWO	POSEMO	NEGEM	GENDER	MGMT
		S	Y	HP	RK	TN	OTN		
WKYRS	Pearson	1	-.058	-.163	-.019	-.035	.161	.032	.
	Correlation								
	Sig. (2-tailed)	.	.441	.029	.798	.647	.031	.668	.
	N	179	179	179	179	179	179	179	179
AUTONM	Pearson	-.058	1	.202	.047	.267	-.322	-.029	.
Y	Correlation								
	Sig. (2-tailed)	.441	.	.007	.534	.000	.000	.704	.
	N	179	179	179	179	179	179	179	179
LEADRS	Pearson	-.163	.202	1	.438	.211	-.212	-.088	.
HP	Correlation								
	Sig. (2-tailed)	.029	.007	.	.000	.005	.004	.242	.
	N	179	179	179	179	179	179	179	179
NETWO	Pearson	-.019	.047	.438	1	.239	-.104	-.156	.
RK	Correlation								
	Sig. (2-tailed)	.798	.534	.000	.	.001	.165	.037	.
	N	179	179	179	179	179	179	179	179
POSEMO	Pearson	-.035	.267	.211	.239	1	.018	-.108	.
TN	Correlation								
	Sig. (2-tailed)	.647	.000	.005	.001	.	.809	.150	.
	N	179	179	179	179	179	179	179	179
NEGEM	Pearson	.161	-.322	-.212	-.104	.018	1	.119	.
OTN	Correlation								
	Sig. (2-tailed)	.031	.000	.004	.165	.809	.	.113	.
	N	179	179	179	179	179	179	179	179
GENDER	Pearson	.032	-.029	-.088	-.156	-.108	.119	1	.
	Correlation								
	Sig. (2-tailed)	.668	.704	.242	.037	.150	.113	.	.
	N	179	179	179	179	179	179	179	179
MGMT	Pearson	.	.	.	.	.	.	.	.
	Correlation								
	Sig. (2-tailed)	.	.	.	.	.	.	.	.
	N	179	179	179	179	179	179	179	179

\* Correlation is significant at the 0.05 level (2-tailed).

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

## Results by Manager Status

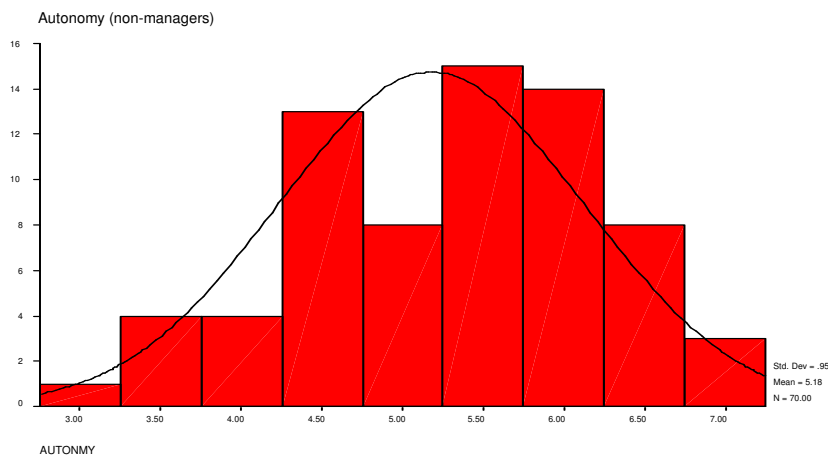
### Non-Manager

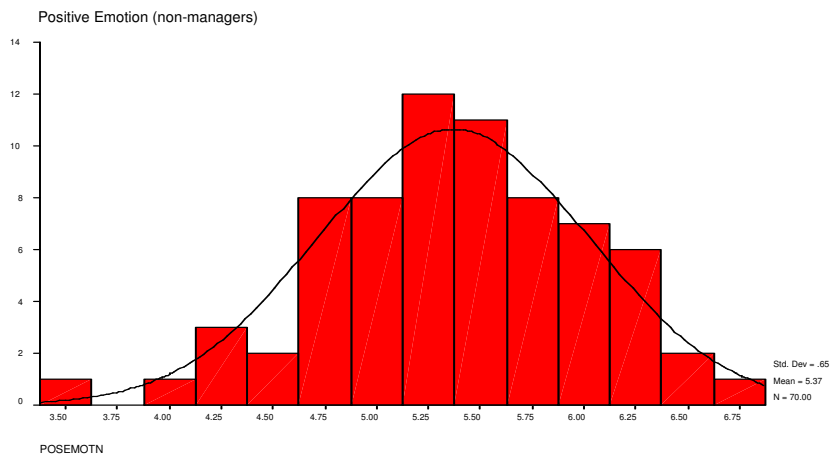
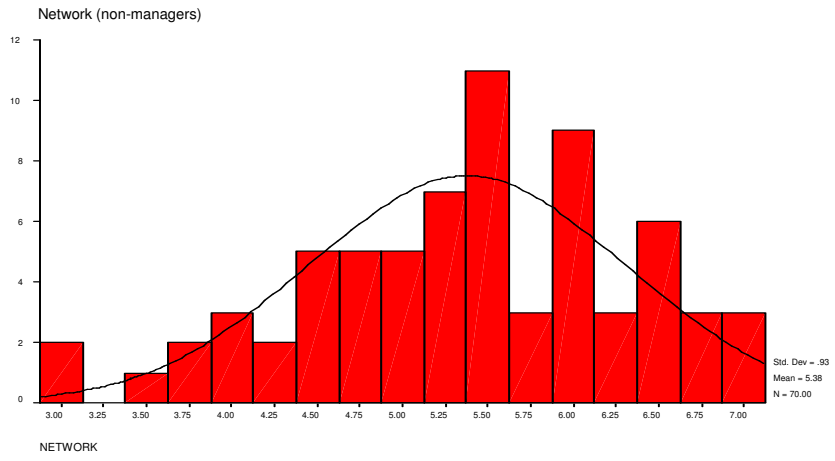
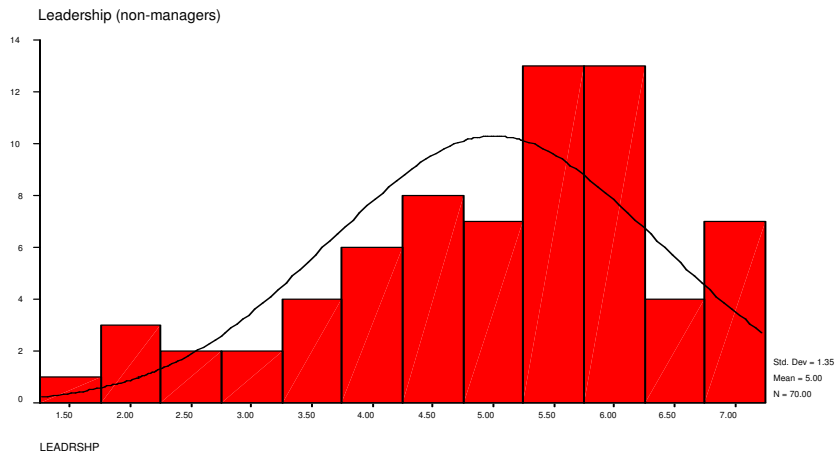
#### GENDER

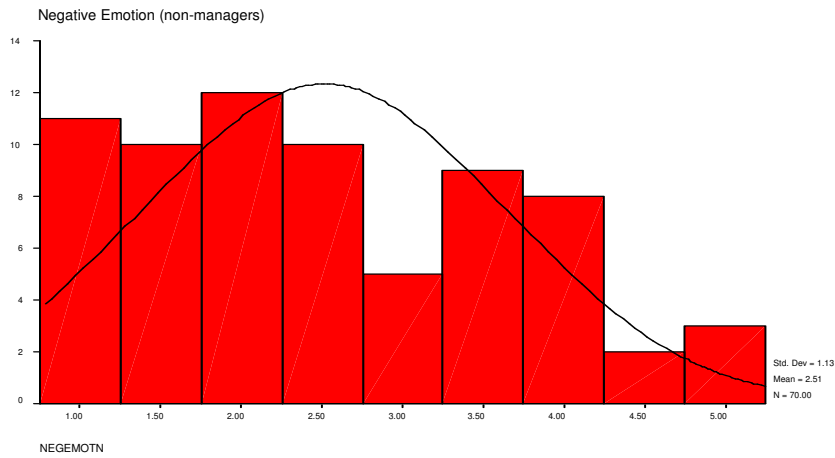
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	26	37.1	37.1
	1	44	62.9	100.0
Total	70	100.0	100.0	

#### WKYRS

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	30.0	30.0
	2	8	11.4	41.4
	3	25	35.7	77.1
	4	16	22.9	100.0
Total	70	100.0	100.0	







### Regression Results (Positive Emotions – non-manager)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491	.241	.207	.58290

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.136	3	2.379	7.001	.000
	Residual	22.425	66	.340		
	Total	29.561	69			

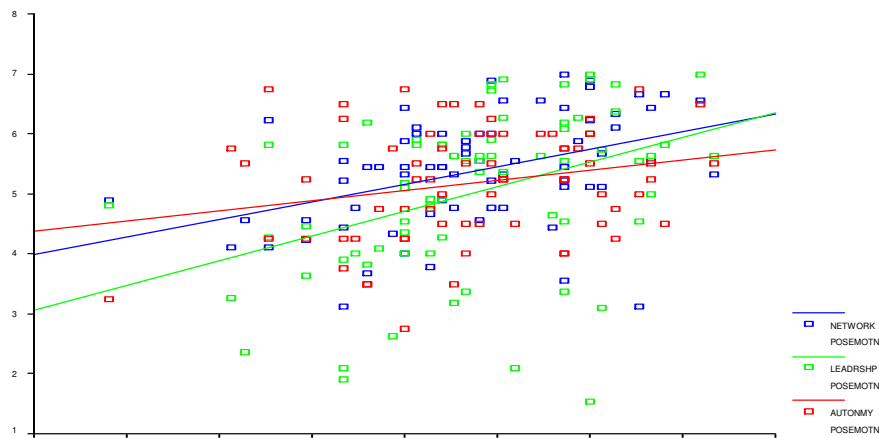
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP  
b Dependent Variable: POSEMOTN

Coefficients

Model	Unstand ardized Coeffi ents B	Stand ardized Coeffi ents Beta	t	Sig.	Correlati ons		
					Zero- order	Partial	Part
1 (Consta nt)	3.223		6.165	.000			
AUTON MY	.114	.164	1.504	.137	.233	.182	.161
LEADR SHP	.121	.251	1.999	.050	.398	.239	.214
NETWO RK	.177	.251	1.972	.053	.412	.236	.211

a. Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (non-manager)



Regression Results (Negative Emotions – non-manager)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296	.088	.046	1.10370

a. Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

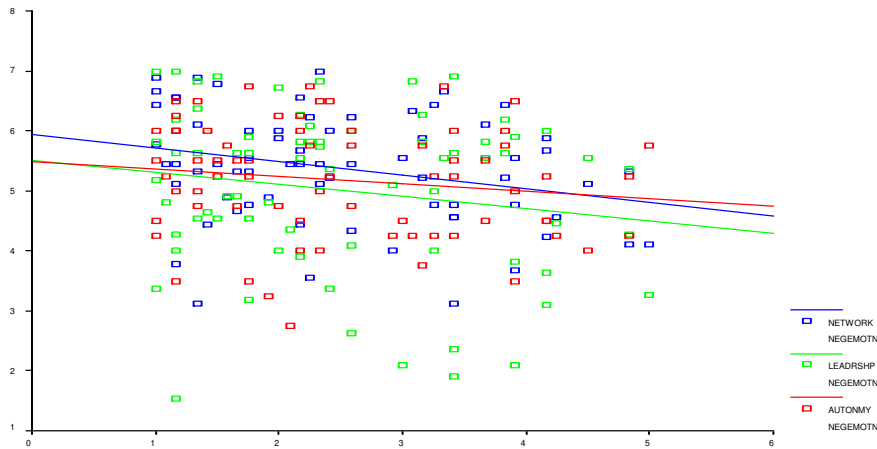
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.726	3	2.575	2.114	.107
Residual	80.399	66	1.218		
Total	88.125	69			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP  
 b Dependent Variable: NEGEMOTN

Model	Unstandardized Coefficients	Standard Error	Beta	t	Sig.	Zero-order	Partial	Part
1 (Constant)	4.873	.990		4.923	.000			
AUTONMY	-.125	.143	-.105	-.875	.385	-.151	-.107	-.103
LEADRSHP	-2.921E-02	.115	-.035	-.254	.800	-.170	-.031	-.030
NETWORK	-.291	.170	-.239	-1.712	.092	-.276	-.206	-.201

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (non-manager)



## Correlations

		WKYRS	AUTONMY	LEADRSH	NETWORK	POSEMOTN	NEGEMOTN	GENDER	MGMT
WKYRS	Pearson Correlation	1	-.129	-.109	-.064	-.022	-.029	.320**	. <sup>a</sup>
	Sig. (2-tailed)	.	.288	.371	.599	.857	.812	.007	.
	N	70	70	70	70	70	70	70	70
AUTONMY	Pearson Correlation	-.129	1	.095	.181	.233	-.151	-.122	. <sup>a</sup>
	Sig. (2-tailed)	.288	.	.436	.134	.052	.212	.316	.
	N	70	70	70	70	70	70	70	70
LEADRSH	Pearson Correlation	-.109	.095	1	.522**	.398**	-.170	-.006	. <sup>a</sup>
	Sig. (2-tailed)	.371	.436	.	.000	.001	.161	.962	.
	N	70	70	70	70	70	70	70	70
NETWORK	Pearson Correlation	-.064	.181	.522**	1	.412**	-.276*	-.173	. <sup>a</sup>
	Sig. (2-tailed)	.599	.134	.000	.	.000	.021	.151	.
	N	70	70	70	70	70	70	70	70
POSEMOTN	Pearson Correlation	-.022	.233	.398**	.412**	1	-.273*	-.096	. <sup>a</sup>
	Sig. (2-tailed)	.857	.052	.001	.000	.	.022	.431	.
	N	70	70	70	70	70	70	70	70
NEGEMOTN	Pearson Correlation	-.029	-.151	-.170	-.276*	-.273*	1	.054	. <sup>a</sup>
	Sig. (2-tailed)	.812	.212	.161	.021	.022	.	.659	.
	N	70	70	70	70	70	70	70	70
GENDER	Pearson Correlation	.320**	-.122	-.006	-.173	-.096	.054	1	. <sup>a</sup>
	Sig. (2-tailed)	.007	.316	.962	.151	.431	.659	.	.
	N	70	70	70	70	70	70	70	70
MGMT	Pearson Correlation	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>
	Sig. (2-tailed)	.	.	.	.	.	.	.	.
	N	70	70	70	70	70	70	70	70

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

\* . Correlation is significant at the 0.05 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

## APPENDIX I

### RESULTS BY YEARS OF EXPERIENCE

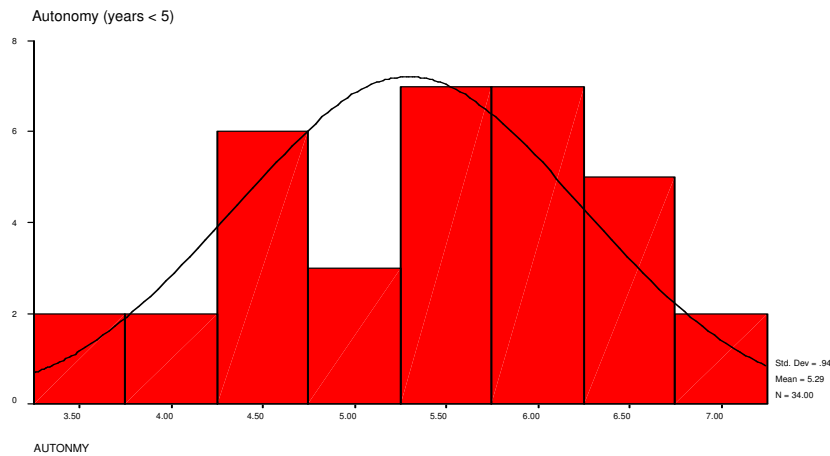
#### Years (less than 5)

##### GENDER

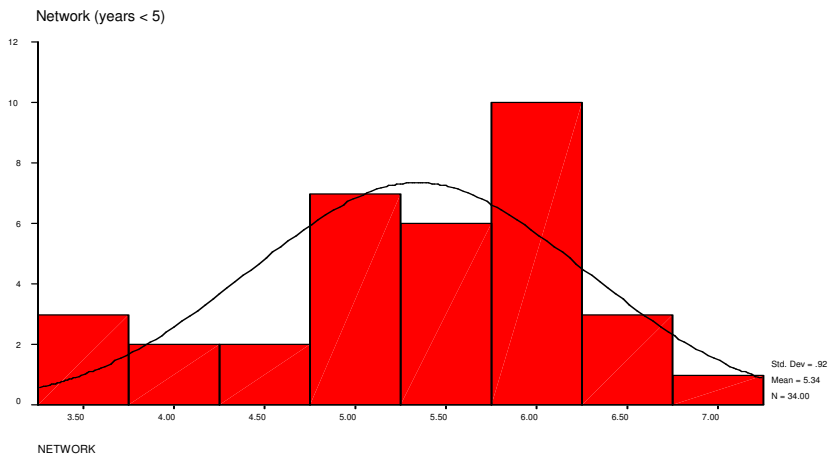
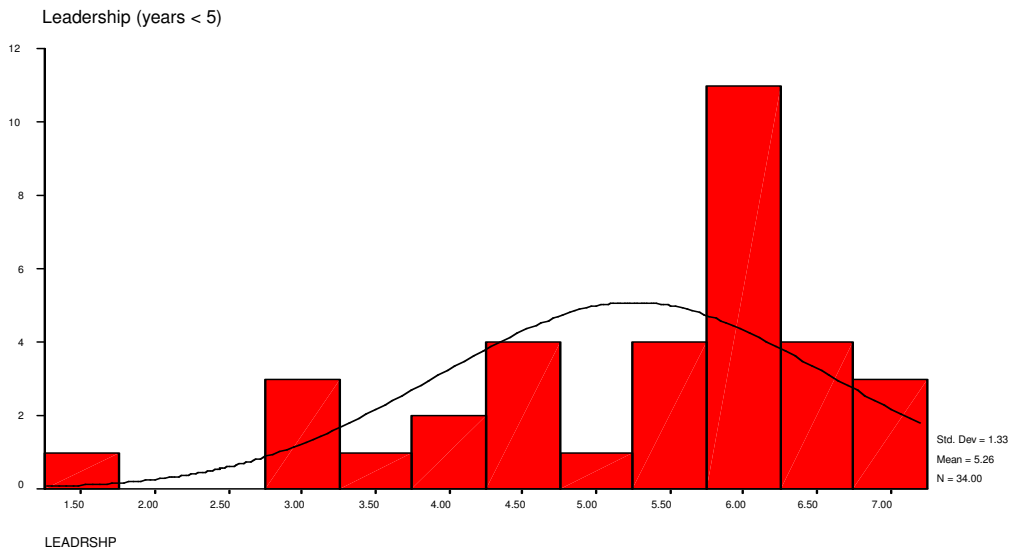
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	14	41.2	41.2	41.2
Valid 1	20	58.8	58.8	100.0
Total	34	100.0	100.0	

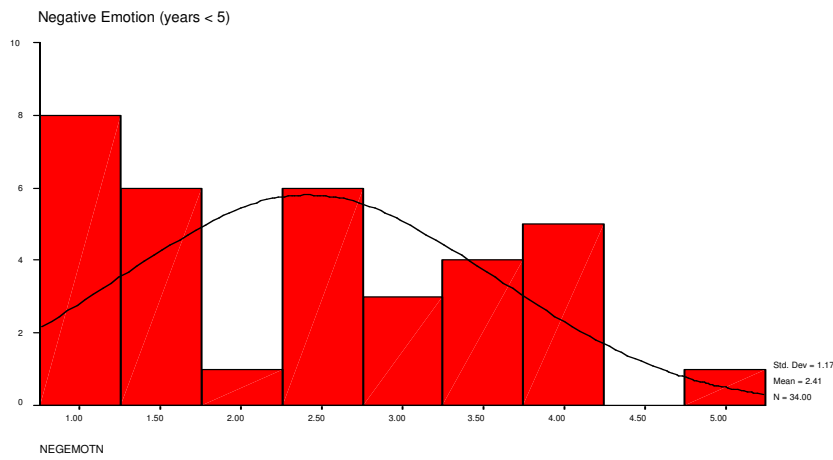
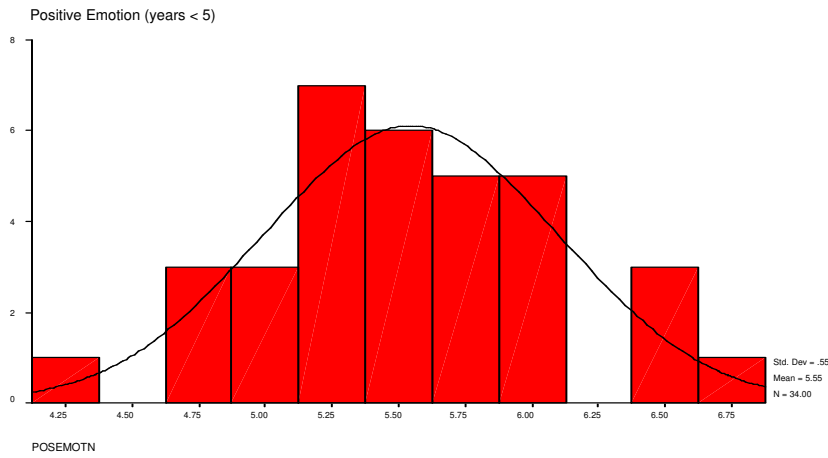
##### MGMT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	13	38.2	38.2	38.2
Valid 2	21	61.8	61.8	100.0
Total	34	100.0	100.0	









### Regression Results (Positive Emotions – less than 5)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.438	.192	.111	.52236

a Predictors: (Constant), NETWORK, LEADRSHP, AUTONMY

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.943	3	.648	2.374	.090
	Residual	8.186	30	.273		
	Total	10.129	33			

a Predictors: (Constant), NETWORK, LEADRSH, AUTONMY

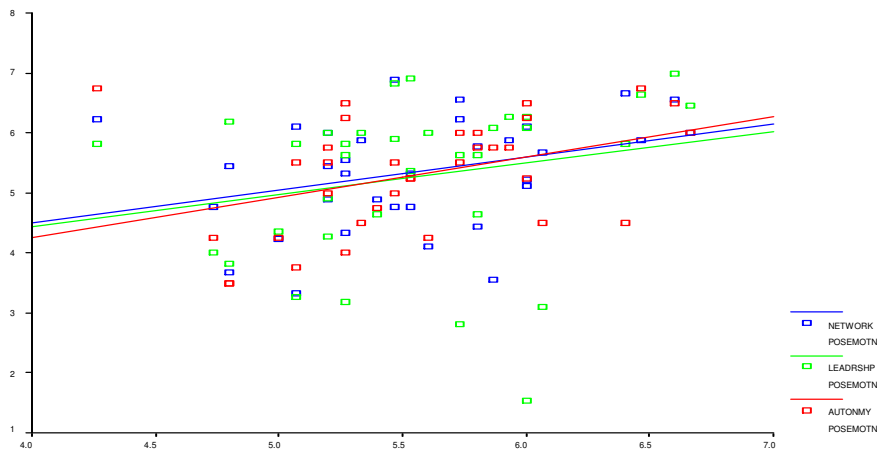
b Dependent Variable: POSEMOTN

Coefficients

Model	Unstand ardzied Coefficie nts	Std. Error	Standardiz ed Coefficient s	t	Sig.	Correlatio ns	Zero- order	Partial	Part
1	(Constant)	3.883	.639	6.078	.000				
	AUTONMY	.175	.112	.297	1.572	.127	.394	.276	.258
	LEADRSH P 02	4.707E-02	.072	.113	.658	.516	.218	.119	.108
	NETWORK K 02	9.100E-02	.116	.151	.782	.440	.330	.141	.128

a Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (less than 5)



## Regression Results (Negative Emotions – less than 5)

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408	.167	.083	1.11662

a Predictors: (Constant), NETWORK, LEADRSHP, AUTONMY

### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.475	3	2.492	1.998	.135
	Residual	37.405	30	1.247		
	Total	44.880	33			

a Predictors: (Constant), NETWORK, LEADRSHP, AUTONMY

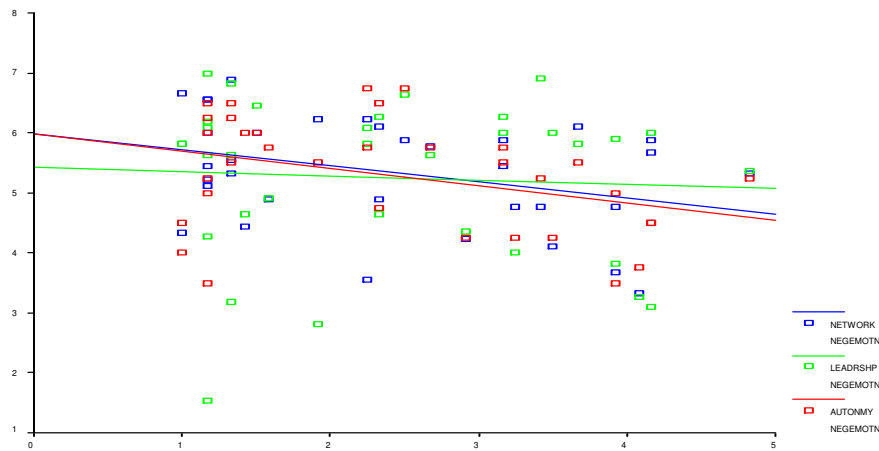
b Dependent Variable: NEGEMOTN

### Coefficients

Model		Unstandardized Coefficients	Std. Error	Beta	t	Sig.	Correlations	Zero-order	Partial	Part
1	(Constant)	5.390	1.366		3.946	.000				
	AUTONMY	-.317	.238	-.255	-1.331	.193		-.357	-.236	-.222
	LEADRSHP	5.105E-02	.153	.058	.334	.741		-.062	.061	.056
	NETWORK	-.294	.249	-.232	-1.180	.247		-.340	-.211	-.197

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (less than 5)



Correlations

	WKYRS	AUTONMY	LEADRSHI	NETWORK	POSEMOTN	NEGEMOTN	GENDER	MGMT
WKYRS Pearson Correla	.a	.a	.a	.a	.a	.a	.a	.a
Sig. (2-tailed)	.	.	.	.	.	.	.	.
N	34	34	34	34	34	34	34	34
AUTONMY Pearson Correla	.a	1	.204	.491**	.394*	-.357*	-.138	.021
Sig. (2-tailed)	.	.	.246	.003	.021	.038	.437	.905
N	34	34	34	34	34	34	34	34
LEADRSHI Pearson Correla	.a	.204	1	.294	.218	-.062	.209	.053
Sig. (2-tailed)	.	.246	.	.091	.215	.727	.235	.765
N	34	34	34	34	34	34	34	34
NETWORK Pearson Correla	.a	.491**	.294	1	.330	-.340*	-.291	.157
Sig. (2-tailed)	.	.003	.091	.	.056	.049	.095	.376
N	34	34	34	34	34	34	34	34
POSEMOTN Pearson Correla	.a	.394*	.218	.330	1	-.247	-.128	-.153
Sig. (2-tailed)	.	.021	.215	.056	.	.160	.471	.387
N	34	34	34	34	34	34	34	34
NEGEMOTN Pearson Correla	.a	-.357*	-.062	-.340*	-.247	1	.112	.048
Sig. (2-tailed)	.	.038	.727	.049	.160	.	.529	.789
N	34	34	34	34	34	34	34	34
GENDER Pearson Correla	.a	-.138	.209	-.291	-.128	.112	1	-.412*
Sig. (2-tailed)	.	.437	.235	.095	.471	.529	.	.015
N	34	34	34	34	34	34	34	34
MGMT Pearson Correla	.a	.021	.053	.157	-.153	.048	-.412*	1
Sig. (2-tailed)	.	.905	.765	.376	.387	.789	.015	.
N	34	34	34	34	34	34	34	34

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

\* .Correlation is significant at the 0.05 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

## Results by Years of Experience

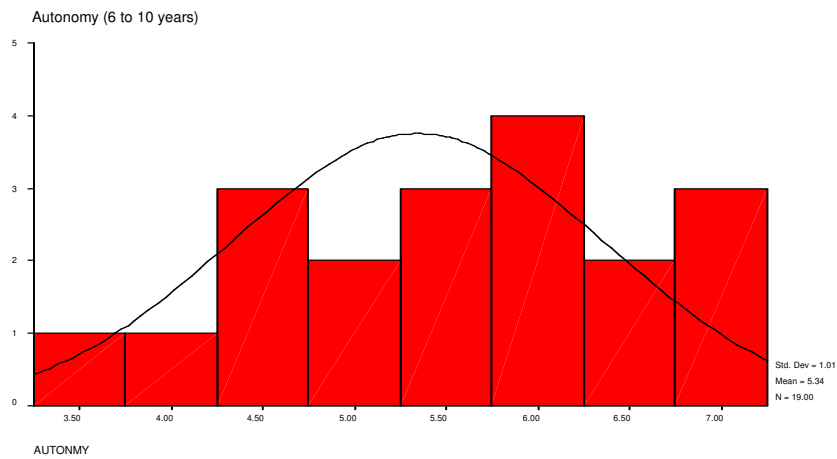
### Years (6 to 10)

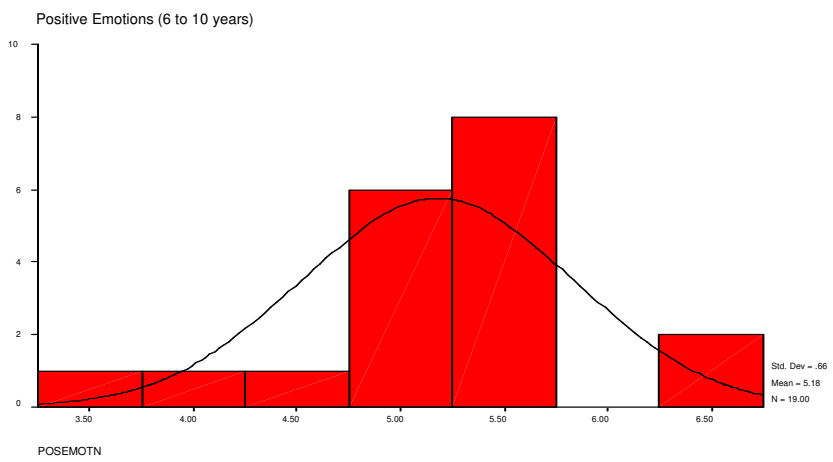
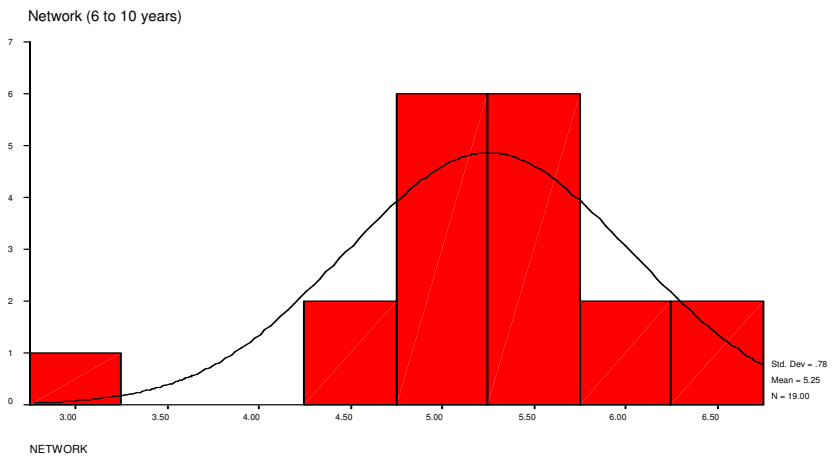
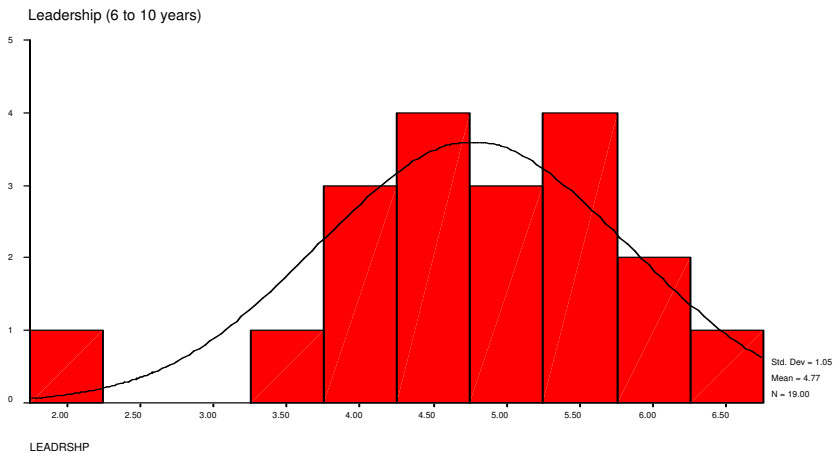
#### GENDER

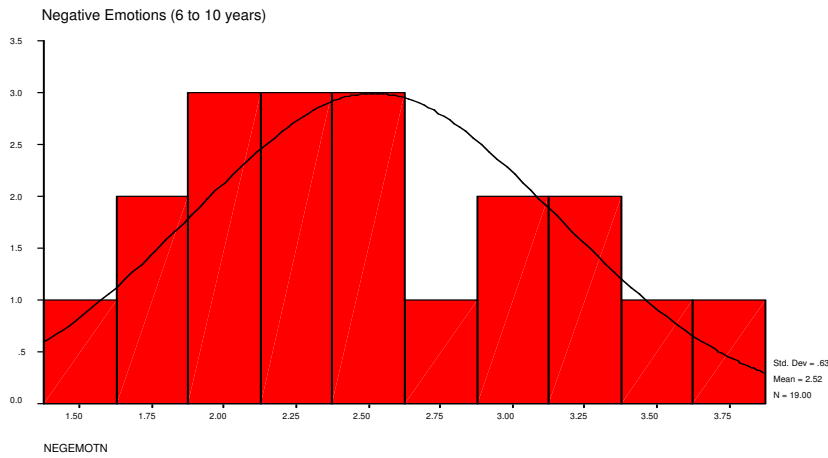
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	15.8	15.8
	1	16	84.2	100.0
Total	19	100.0	100.0	

#### MGMT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	57.9	57.9
	2	8	42.1	100.0
Total	19	100.0	100.0	







### Regression Results (Positive Emotions – 6 to 10)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.784	.615	.538	.44638

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.781	3	1.594	7.997	.002
	Residual	2.989	15	.199		
	Total	7.769	18			

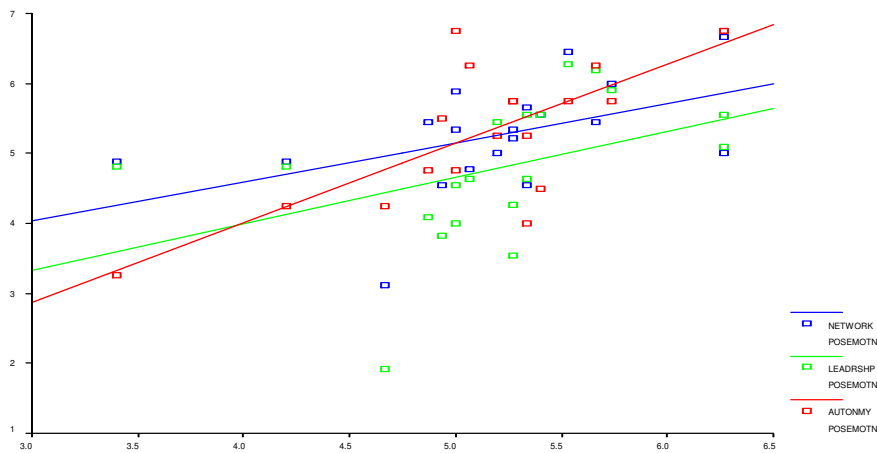
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: POSEMOTN



Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Correlations		
	B	Std. Error	Beta				Zero-order	Partial	Part
1 (Constant)	1.758	.800			2.197	.044			
AUTONMY	.424	.110	.650		3.851	.002	.737	.705	.617
LEADRSHP	8.070E-02	.144	.129		.561	.583	.414	.143	.090
NETWORK	.147	.199	.174		.739	.471	.473	.187	.118

a. Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (6 to 10)



Regression Results (Negative Emotions – 6 to 10)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.390	.152	-.017	.63745

a. Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.093	3	.364	.897	.466
	Residual	6.095	15	.406		
	Total	7.189	18			

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSHP

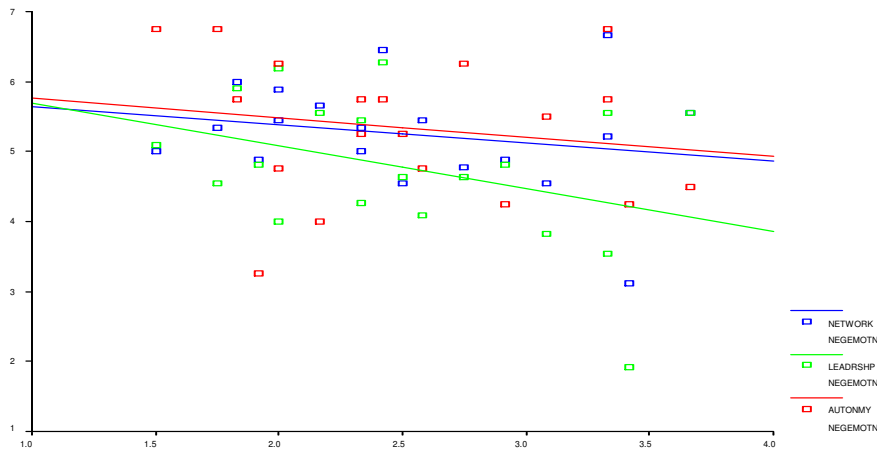
b Dependent Variable: NEGEMOTN

Coefficients

Model		Unstandardized Coefficients	Standard Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	3.531	1.143		3.089	.007			
	AUTONMY	-6.815E-02	.157	-.109	-.433	.671	-.172	-.111	-.103
	LEADRSHP	-.269	.205	-.447	-1.308	.211	-.367	-.320	-.311
	NETWORK	.120	.283	.148	.425	.677	-.207	.109	.101

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (6 to 10)



## Correlations

	WKYRS	UTONM	LEADRSH	NETWOR	POSEMOT	NEGEMOT	GENDER	MGMT
WKYRS Pearson Correl	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>	. <sup>a</sup>
Sig. (2-tailed)	.	.	.	.	.	.	.	.
N	19	19	19	19	19	19	19	19
AUTONM Pearson Correl	. <sup>a</sup>	1	.246	.317	.737*	-.172	.041	-.406
Sig. (2-tailed)	.	.	.309	.186	.000	.482	.869	.084
N	19	19	19	19	19	19	19	19
LEADRSH Pearson Correl	. <sup>a</sup>	.246	1	.718*	.414	-.367	.531*	-.225
Sig. (2-tailed)	.	.309	.	.001	.078	.122	.019	.354
N	19	19	19	19	19	19	19	19
NETWOR Pearson Correl	. <sup>a</sup>	.317	.718*	1	.473*	-.207	.355	.077
Sig. (2-tailed)	.	.186	.001	.	.041	.395	.135	.756
N	19	19	19	19	19	19	19	19
POSEMO Pearson Correl	. <sup>a</sup>	.737*	.414	.473*	1	-.050	.227	-.250
Sig. (2-tailed)	.	.000	.078	.041	.	.838	.351	.302
N	19	19	19	19	19	19	19	19
NEGEMO Pearson Correl	. <sup>a</sup>	-.172	-.367	-.207	-.050	1	-.046	.120
Sig. (2-tailed)	.	.482	.122	.395	.838	.	.851	.624
N	19	19	19	19	19	19	19	19
GENDER Pearson Correl	. <sup>a</sup>	.041	.531*	.355	.227	-.046	1	-.508*
Sig. (2-tailed)	.	.869	.019	.135	.351	.851	.	.026
N	19	19	19	19	19	19	19	19
MGMT Pearson Correl	. <sup>a</sup>	-.406	-.225	.077	-.250	.120	-.508*	1
Sig. (2-tailed)	.	.084	.354	.756	.302	.624	.026	.
N	19	19	19	19	19	19	19	19

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

\*Correlation is significant at the 0.05 level (2-tailed).

<sup>a</sup>Cannot be computed because at least one of the variables is constant.

### Results by Years of Experience

#### Years (11 to 20)

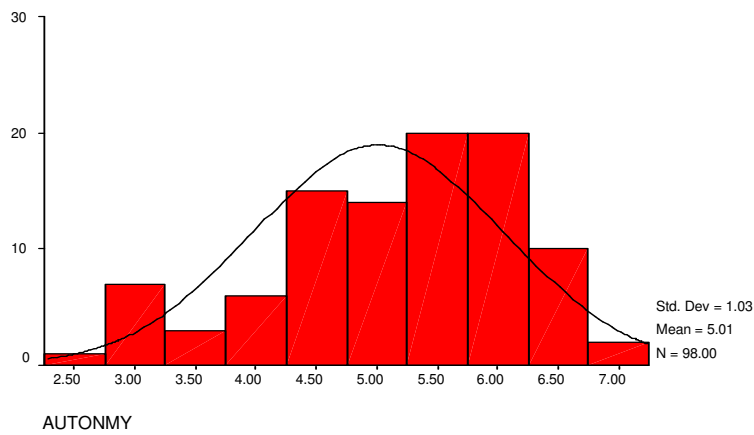
##### GENDER

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	25	25.5	25.5
	1	73	74.5	100.0
Total	98	100.0	100.0	

##### MGMT

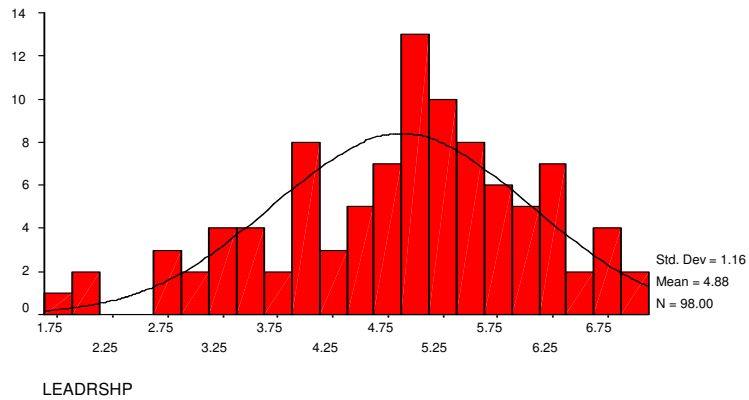
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	73	74.5	74.5
	2	25	25.5	100.0
Total	98	100.0	100.0	

#### Autonomy (years 11 to 20)



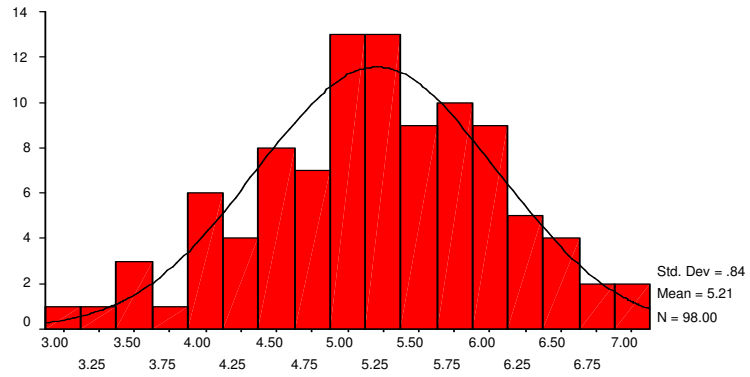
AUTONMY

#### Leadership (years 11 to 20)



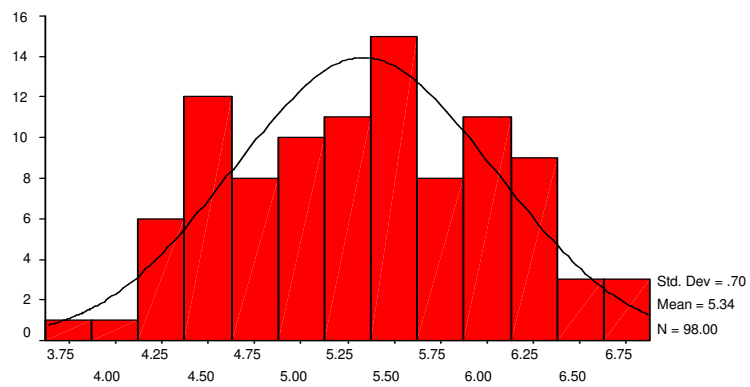
LEADRSHP

Network (years 11 to 20)

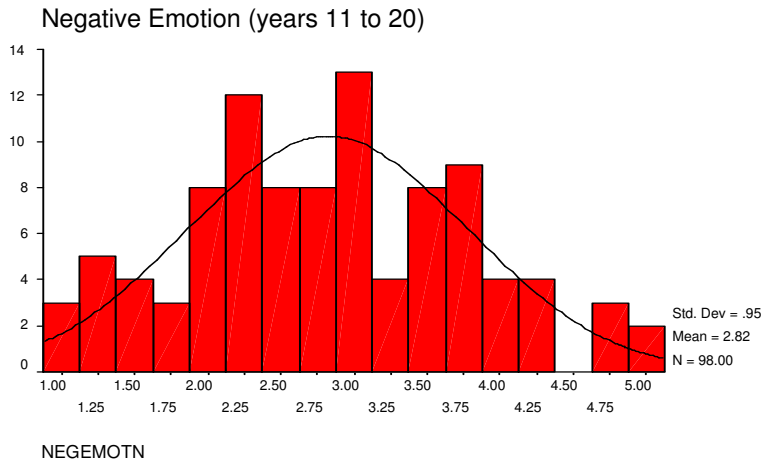


NETWORK

Positive Emotion (years 11 to 20)



POSEMOTN



### Regression Results (Positive Emotions – 11 to 20)

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.482	.233	.208	.62305

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

#### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.060	3	3.687	9.497	.000
	Residual	36.490	94	.388		
	Total	47.551	97			

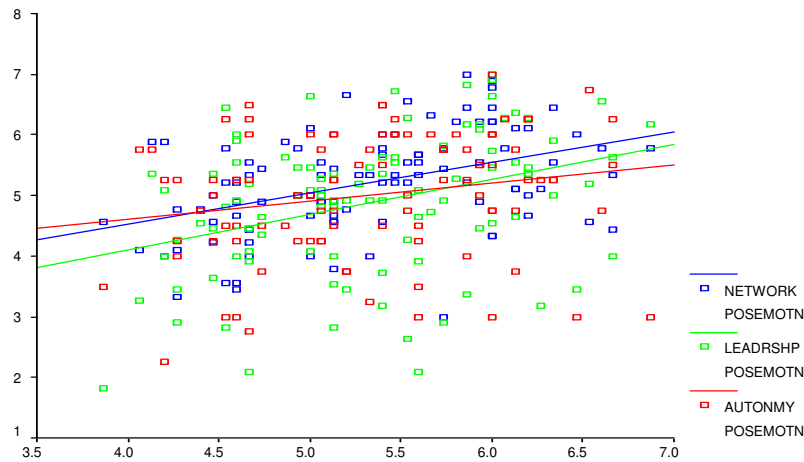
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: POSEMOTN

#### Coefficients

Model	Unstandardized Coefficient B	Standardized Coefficient Beta	t	Sig.
1 (Constant)	2.833		5.724	.000
AUTONMY	.114	.167	1.832	.070
LEADRSH	.102	.169	1.632	.106
NETWORK	.276	.332	3.233	.002

a Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (11 to 20)



Regression Results (Negative Emotions – 11 to 20)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296	.088	.058	.92631

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.735	3	2.578	3.005	.034
Residual	80.658	94	.858		
Total	88.393	97			

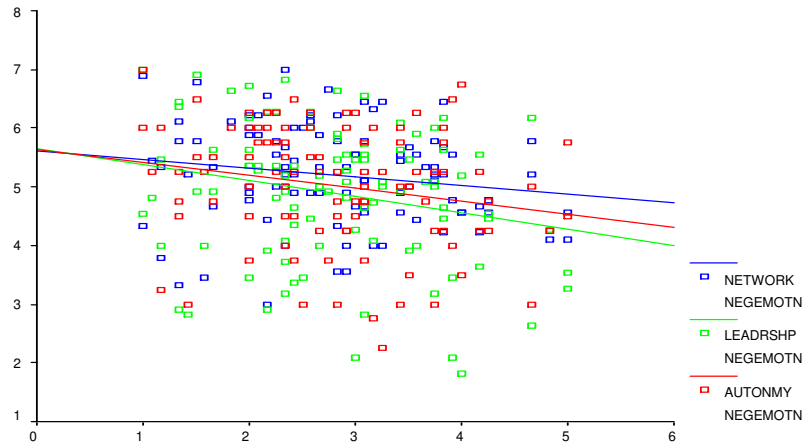
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: NEGEMOTN

Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
1 (Constant)	4.788		6.507	.000
AUTONMY	-.166	-.179	-1.794	.076
LEADRSH	-.135	-.164	-1.454	.149
NETWORK	-.9145E-02	-.081	-.721	.473

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (11 to 20)



Correlations

		MGMT	GENDER	AUTONMY	LEADRSHP	NETWORK	POSEMOTN	NEGEMOTN
MGMT	Pearson Correla	1	-.141	.238*	.072	.142	.041	-.066
	Sig. (2-tailed)	.	.167	.018	.483	.163	.690	.521
	N	98	98	98	98	98	98	98
GENDER	Pearson Correla	-.141	1	-.084	-.143	-.232*	-.088	.142
	Sig. (2-tailed)	.167	.	.410	.159	.022	.389	.164
	N	98	98	98	98	98	98	98
AUTONMY	Pearson Correla	.238*	-.084	1	.141	.038	.204*	-.205*
	Sig. (2-tailed)	.018	.410	.	.167	.709	.044	.043
	N	98	98	98	98	98	98	98
LEADRSHP	Pearson Correla	.072	-.143	.141	1	.475**	.351**	-.228*
	Sig. (2-tailed)	.483	.159	.167	.	.000	.000	.024
	N	98	98	98	98	98	98	98
NETWORK	Pearson Correla	.142	-.232*	.038	.475**	1	.419**	-.166
	Sig. (2-tailed)	.163	.022	.709	.000	.	.000	.103
	N	98	98	98	98	98	98	98
POSEMOT	Pearson Correla	.041	-.088	.204*	.351**	.419**	1	-.094
	Sig. (2-tailed)	.690	.389	.044	.000	.000	.	.360
	N	98	98	98	98	98	98	98
NEGEMOT	Pearson Correla	-.066	.142	-.205*	-.228*	-.166	-.094	1
	Sig. (2-tailed)	.521	.164	.043	.024	.103	.360	.
	N	98	98	98	98	98	98	98

\*.Correlation is significant at the 0.05 level (2-tailed).

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



## Results by Years of Experience

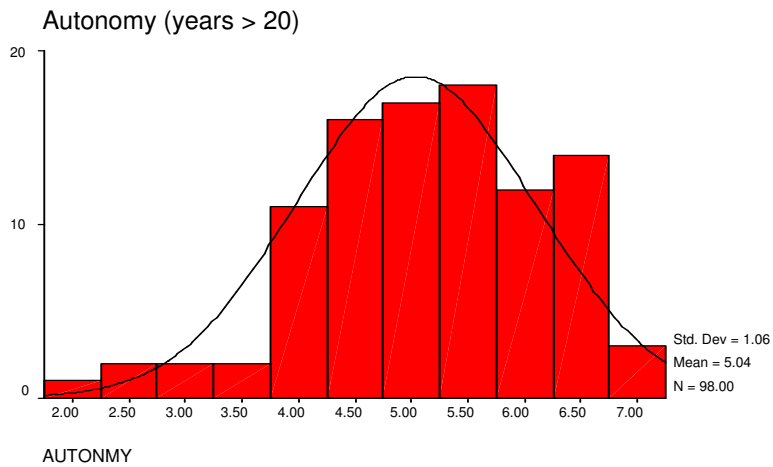
### Years (more than 20)

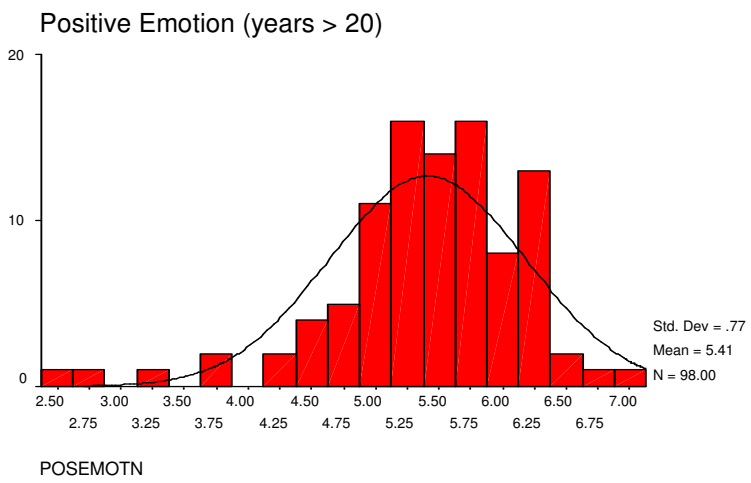
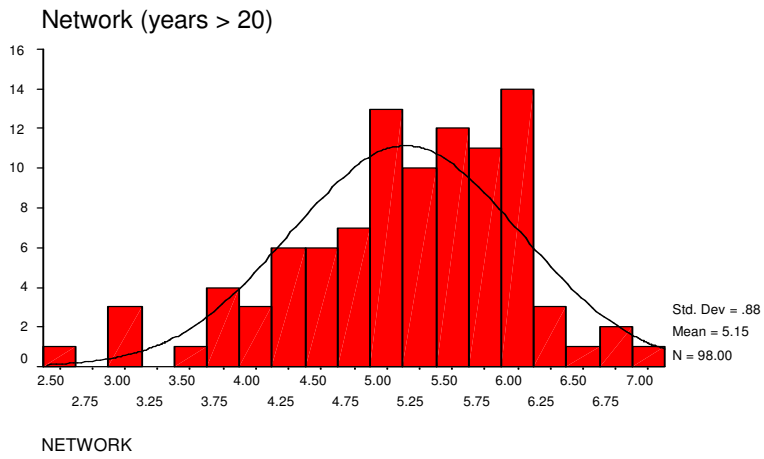
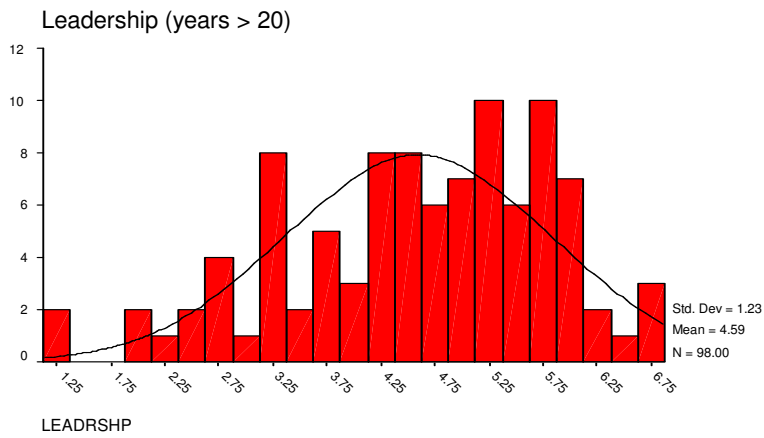
#### GENDER

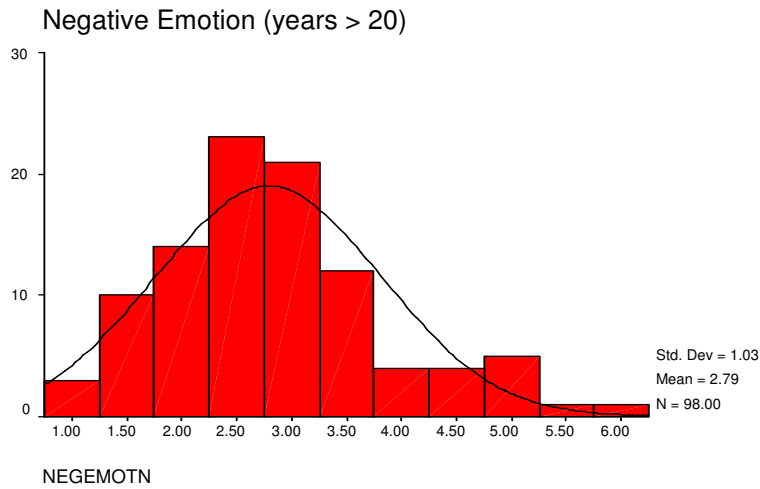
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	11.2	11.2
	1	87	88.8	100.0
Total	98	100.0	100.0	

#### MGMT

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	82	83.7	83.7
	2	16	16.3	100.0
Total	98	100.0	100.0	







Regression Results (Positive Emotions – more than 20)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.264	.070	.040	.75451

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.002	3	1.334	2.343	.078
	Residual	53.512	94	.569		
	Total	57.514	97			

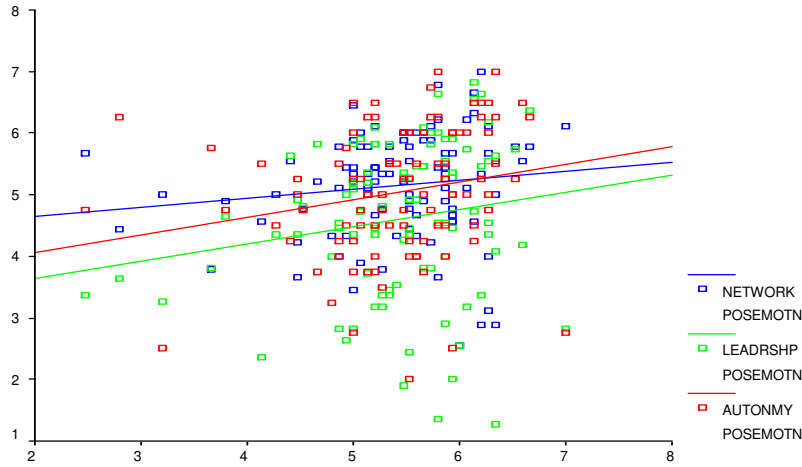
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: POSEMOTN

Coefficients

Model		Unstandardized Coefficient B	Std. Error	Standardized Coefficient Beta	t	Sig.
1	(Constant)	4.010	.596		6.726	.000
	AUTONMY	.143	.074	.196	1.925	.057
	LEADRSH	6.156E-02	.073	.098	.839	.403
	NETWORK	7.690E-02	.102	.087	.756	.452

a Dependent Variable: POSEMOTN

Regression Lines for Context Variables vs. Positive Emotions (more than 20)



Regression Results (Negative Emotions – more than 20)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338	.114	.086	.98202

a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.715	3	3.905	4.049	.009
	Residual	90.649	94	.964		
	Total	102.365	97			

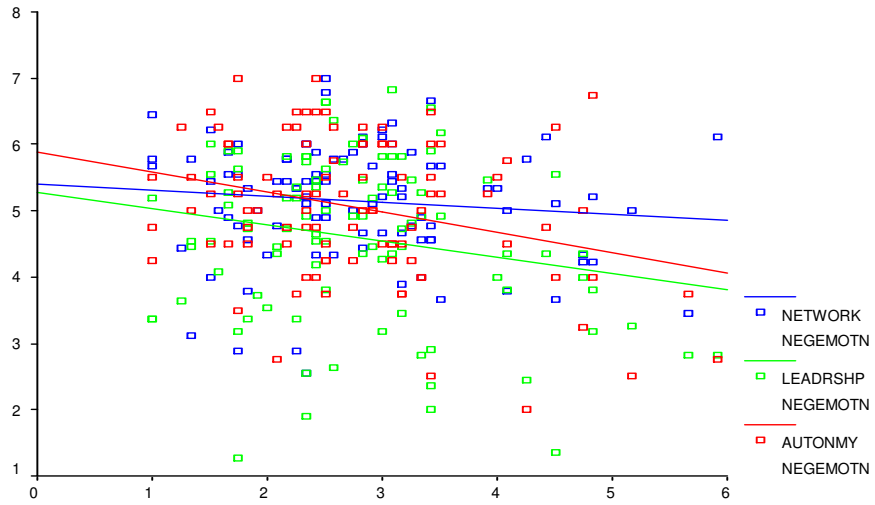
a Predictors: (Constant), NETWORK, AUTONMY, LEADRSH  
b Dependent Variable: NEGEMOTN

Coefficients

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
1	(Constant)	4.943	.776		6.370	.000
	AUTONMY	-.268	.097	-.275	-2.764	.007
	LEADRSH	-.114	.095	-.137	-1.196	.235
	NETWORK	-5.452E-02	.132	-.046	-.412	.682

a Dependent Variable: NEGEMOTN

Regression Lines for Context Variables vs. Negative Emotions (more than 20)



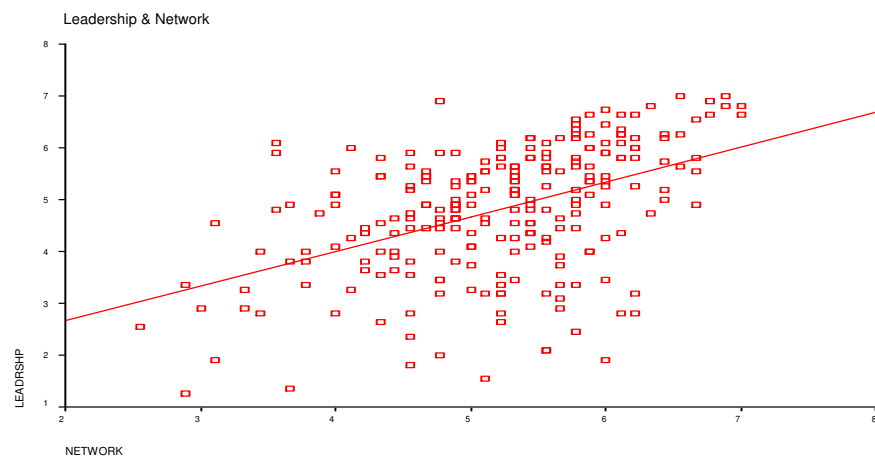
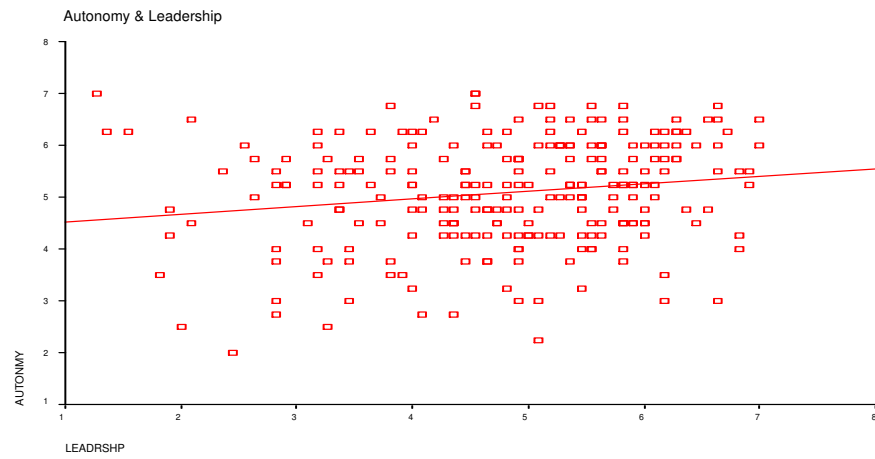
## Correlations

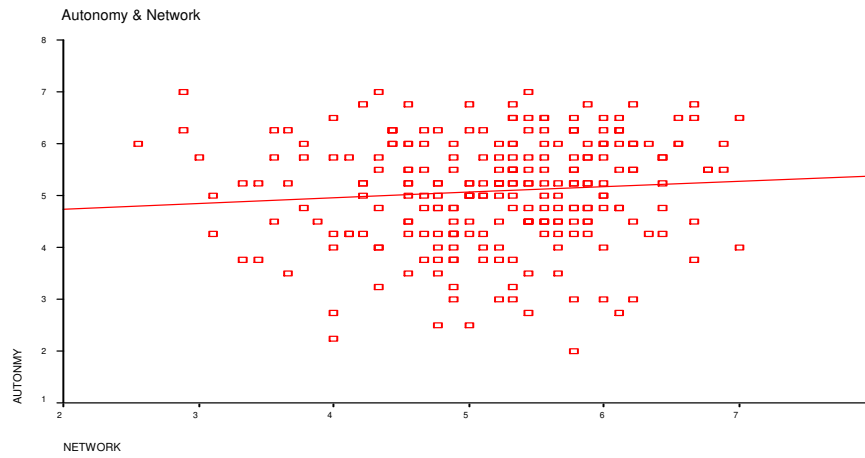
		MGMT	GENDER	AUTONMY	LEADRSH	NETWOR	POSEMO	NEGEMO
MGMT	Pearson	1	-.018	-.114	.085	.057	-.008	-.240
	Correlation							
	Sig. (2-tailed)	.	.862	.265	.403	.579	.935	.017
	N	98	98	98	98	98	98	98
GENDER	Pearson	-.018	1	-.011	-.147	-.147	-.142	.083
	Correlation							
	Sig. (2-tailed)	.862	.	.914	.149	.149	.164	.418
	N	98	98	98	98	98	98	98
AUTONMY	Pearson	-.114	-.011	1	.168	-.038	.210	-.296
	Correlation							
	Sig. (2-tailed)	.265	.914	.	.097	.709	.038	.003
	N	98	98	98	98	98	98	98
LEADRSH	Pearson	.085	-.147	.168	1	.495	.175	-.206
	Correlation							
	Sig. (2-tailed)	.403	.149	.097	.	.000	.085	.042
	N	98	98	98	98	98	98	98
NETWOR	Pearson	.057	-.147	-.038	.495	1	.129	-.104
	Correlation							
	Sig. (2-tailed)	.579	.149	.709	.000	.	.207	.310
	N	98	98	98	98	98	98	98
POSEMO	Pearson	-.008	-.142	.210	.175	.129	1	.019
	Correlation							
	Sig. (2-tailed)	.935	.164	.038	.085	.207	.	.855
	N	98	98	98	98	98	98	98
NEGEMO	Pearson	-.240	.083	-.296	-.206	-.104	.019	1
	Correlation							
	Sig. (2-tailed)	.017	.418	.003	.042	.310	.855	.
	N	98	98	98	98	98	98	98

\* Correlation is significant at the 0.05 level (2-tailed).

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

## Context Variables Only





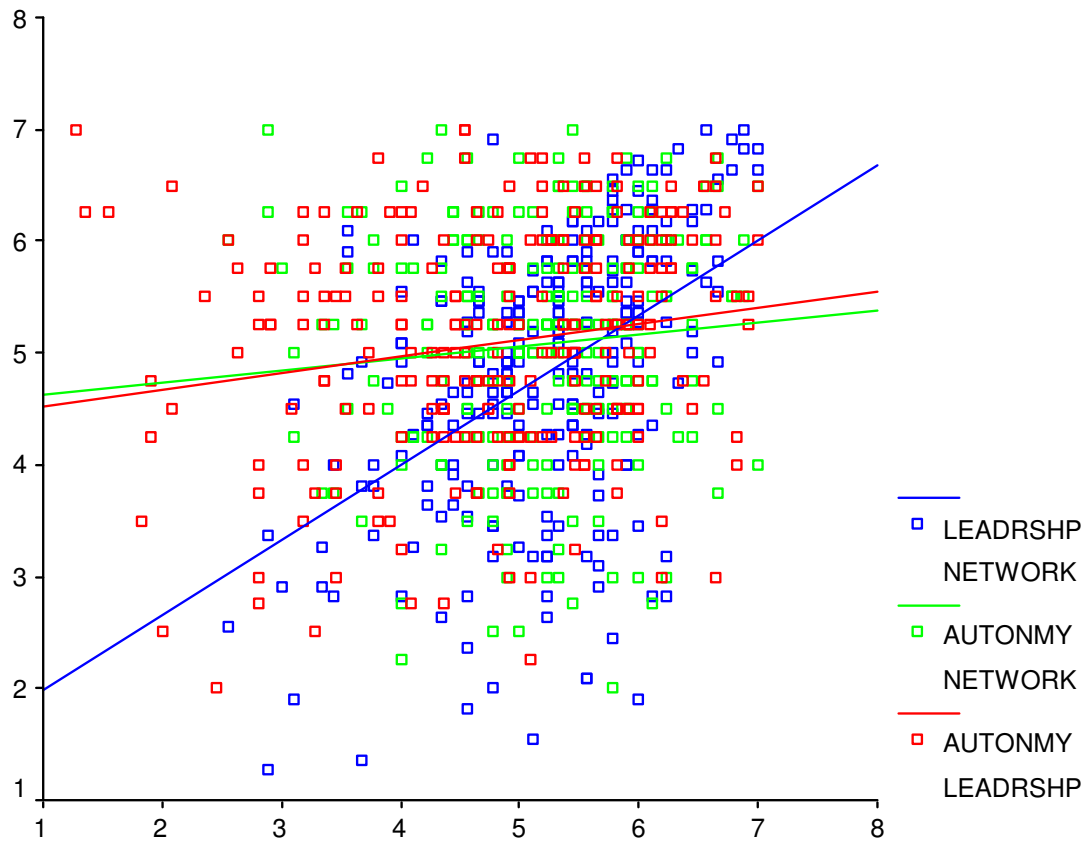
Correlations

		AUTONOMY	LEADRSHP	NETWORK
AUTONOMY	Pearson	1	.175	.090
	Correlation			
	Sig. (2-tailed)	.	.006	.155
	N	249	249	249
LEADRSHP	Pearson	.175	1	.473
	Correlation			
	Sig. (2-tailed)	.006	.	.000
	N	249	249	249
NETWORK	Pearson	.090	.473	1
	Correlation			
	Sig. (2-tailed)	.155	.000	.
	N	249	249	249

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







## VITA

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### **Education:**

- Texas A&M University – College Station, TX; PhD December 2005  
Major: Interdisciplinary Engineering – combination of Engineering Management & Organizational Development
- University of Texas – Dallas, TX; MBA (Executive Program), May 2000
- University of Texas – Austin, TX; Management Institute, May 1992
- University of Houston – Houston, TX; BS Mechanical Engr., May 1989

### **Publications, Proceedings, Workshops, Speaking and Consulting:**

- “Cultural Impact of Talent Management in a Learning Organization” – workshop at Emory University (02/2001)
- Co-Authored Tavis Smiley’s book, *Keeping the Faith* (published 10/2002)
- Huston-Tillotson University – “Teacher Effectiveness; Learner Success”
- AMERICORP – Raywood, Texas “Motivating Gen X Youth to Succeed”
- Conoco – Houston, Texas; London, England; Paris, France; “Organizational Wellness”; “Data Mining”

### **Employment:**

- Huston-Tillotson University (8/03-8/05); Consultant & Youth Program Co-Director
- Texas A&M University (8/00-8/03); Marketing Project Manager – Industrial Distribution Department, Graduate Research Assistant, Instructor-Intro. To Engineering
- TANCOE Resources Unlimited (6/99-Present); Engineering and Educational Consultant, Strategic Business Development, Motivational Speaker, Career Coach, Tutor
- Conoco, Inc.(6/01-5/02); International Consortium Project Manager, Engineering Mgr.
- Texas Instruments (6/96-7/00); Engineering Section Manager, Quality Engineer
- Motorola (7/89-6/96); Project Engineer, Production Manager
- Internships: Dow Chemical (summer 1988), Amoco Production (summer 1987), Houston Lighting and Power (summers 1985 & 1986)

### **Honors, Awards and Recognition:**

- University of Houston 2004 Distinguished Young Engineering Alumni
- 2000 Black Engineer of the Year Career Achievement–Emerging Leaders
- Liberty County Community Service Award for Youth Initiatives
- GEM Fellowship
- Founder of nationally recognized youth program, *FreshStart*, which has benefited more than 1000 young people since its genesis in 1992