

Managing Motivation in the Workplace:  
A Demographic Dissection of the Four Drive Theory  
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### Abstract

Pertinent theories of motivation are reviewed including Abraham Maslow's Hierarchy of Needs, Frederick Herzberg's Motivation-Hygiene Theory, and Clayton Alderfer's Existence, Relatedness, and Growth (ERG) Theory, with a focus on the more recent Four Drive Theory by Paul Lawrence and Nitin Nohria. This study includes a survey that determines if the innate drives to acquire (D1), bond (D2), comprehend (D3), and defend (D4) vary in importance based on demographic differences among employees. The findings could help managers increase motivation among employees by not only fulfilling each of the four drives, but also by focusing on which drives tend to be most important to employees of varying demographics.

Managing Motivation in the Workplace: A Demographic Dissection of the Four Drive Theory  
Literature Review

In today's workplace, a manager's strategy of increasing motivation is primarily based on behavioral management techniques that have been gaining popularity since the 1920s (Schermerhorn, 2008). This study includes a review of four significant motivation theories: Abraham Maslow's (1954) Hierarchy of Human Needs Theory, Frederick Herzberg's (1959) Motivation-Hygiene Theory, Clayton Alderfer's (1972) ERG Theory, and Paul Lawrence and Nitin Nohria's (2002) Four Drive Theory.

*Hierarchy of Needs Theory*

In *Motivation and Personality* (1954), Maslow introduces his Hierarchy of Needs Theory, which holds that people are motivated to satisfy individual needs, beginning with basic needs and progressing to more intricate psychological needs. The five needs, ordered from most primitive to most complex, include: physiological, safety, belongingness (or love), esteem, and self-actualization. According to Maslow, the most prominent human needs are physiologically based. To a person who does not have his or her physiological needs satisfied, any other human needs are suppressed. Maslow presents the example of a ravenous man who "...dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food, and he wants only food" (p. 37). In this sense, the hungry man seeks not his own safety or any higher need until his physiological need for food has been satisfied. Once the point of fulfillment has been reached, Maslow suggests that a higher need surfaces until it is fulfilled, at which point an even higher need surfaces, and so on, creating a hierarchy of needs.

Safety needs are satisfied when a person feels secure, stable, protected, and lacks fear, anxiety, and chaos (Maslow, 1954). Maslow asserts that due to our society, a healthy grown

person is fairly easily satisfied regarding safety needs. The laws, law enforcement, and general stability of society in the United States frequently instill a sense of safety among its members. Once safety needs are fulfilled, an individual moves up the hierarchy to fulfill needs of belongingness and love.

Maslow (1954) states that every human has an inherent desire to interact with other people, to both give and receive love and affection. When a person's physiological and safety needs reach a certain level of satisfaction, he or she will begin to understand the loneliness and rejection associated with the deprivation of healthy relationships. Maslow returns to the example of the hungry man who currently no longer hungers for food, but instead for companionship. He desires love "...more than anything else in the world and may even forget that once, when he was hungry, he sneered at love as unreal or unnecessary or unimportant" (p. 43). What was once deemed the most important thing in the world is no longer a motivator because that need has been satisfied and new desires have been awakened.

Progressing up the hierarchy, esteem needs are characterized as the "...desire for a stable, firmly based, usually high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others" (Maslow, 1954, p. 45). According to Maslow, when esteem needs are not met it generates a sense of weakness or inferiority of the individual in comparison with others. Maslow points out that esteem needs can be divided into desires for achievement and reputation. People aspire to make achievements that will prove that they are useful and competent when given a challenge. In turn, they also desire recognition from others, increased status, and long for people to think of them with high regard.

Maslow (1954) then focuses on the paramount need of self-actualization. He writes, "A musician must make music, an artist must paint, a poet must write, if he is to be ultimately at

peace with himself. What a man can be, he must be. He must be true to his own nature” (p. 46).

Self-actualization can be described as the need to fulfill our potential as unique individuals.

Clearly this is the most distinctive need among humans, and is expressed in various ways which serve to fulfill that individual’s potential.

In an act of clarification, Maslow (1954) states that a need not be entirely satisfied before the next highest need surfaces. In fact, most people have some level of satisfaction in all of the hierarchical needs. For example, if physiological needs are 10% satisfied, that may be that person’s only discernible need. As satisfaction of physiological needs increases, safety needs begin to surface. In turn, when safety needs reach a certain level of fulfillment, the next need will arise, and so on. At the end of his description of this motivational theory, Maslow includes a disclaimer that all behavior cannot be determined by physiological, safety, belongingness, esteem, and self-actualization needs, leaving room for further research concerning motivation.

#### *Existence, Relatedness, Growth Theory*

In 1972, Clayton Alderfer presented an alternative motivation theory to Maslow’s Hierarchy of Needs entitled *Existence, Relatedness, and Growth* (ERG). Alderfer restructures some of the main components of Maslow’s theory in hopes of creating a more sound theory of motivation. According to Alderfer, existence, relatedness, and growth are all primary needs that are programmed by nature rather than by nurture. He questions, however, whether the three primary needs have a biological basis. Every person possesses each of these three basic needs, but to differing degrees; the strength of each drive remains unclear.

The two main categories of variables in Alderfer’s (1972) research are satisfactions and desires. He defines satisfaction as “...the internal state of a person who has obtained what he was seeking and is synonymous with getting and fulfilling” (p. 7). The opposite of satisfaction is

frustration, which Alderfer describes as a reduction of gratification. Desires are like motives, entailing what a person wants or prefers. The three basic needs, Alderfer clarifies, include both desires and satisfactions, or frustrations.

Existence needs are defined by a person's desire to obtain material and physiological satisfaction (Alderfer, 1972). Alderfer describes additional existence needs related to the workplace, such as pay, fringe benefits, and work conditions. He goes on to talk about the nature of existence needs as a zero-sum game where limited resources cause one person's achievement to be counted as another's defeat. The fulfillment of existence needs is relative, depending on how much a person gets in comparison with what another receives in similar circumstances.

Relatedness needs can be described by a person's innate need to interact and have relationships with others (Alderfer, 1972). Alderfer points out that relations with family members, bosses, coworkers, friends, and enemies are common and are easily both satisfied and frustrated. When a person lacks satisfaction in relatedness needs, he or she experiences feelings of isolation. A key component of this basic need is that it can only be satisfied through mutual acceptance of the relationship.

According to Alderfer (1972), a person's growth needs are expressed through efforts for self-development and enhancement of his or her environment. The desire to grow requires a person to operate at his or her full potential while seeking to become the best he or she can be. When a person analyzes a problem or is placed in a situation in which requires utilization of his or her competencies, or must develop further knowledge, that individual is satisfying the need for growth. As a result, the person ultimately feels a higher level of fulfillment.

Alderfer (1972) makes his theory clear in regard to the relationship between satisfaction and desire. The ERG Theory assumes seven major propositions:

- P1. The less existence needs are satisfied, the more they will be desired.
- P2. The less relatedness needs are satisfied, the more existence needs will be desired.
- P3. The more existence needs are satisfied, the more relatedness needs will be desired.
- P4. The less relatedness needs are satisfied, the more they will be desired.
- P5. The less growth needs are satisfied, the more relatedness needs will be desired.
- P6. The more relatedness needs are satisfied, the more growth needs will be desired.
- P7. The more growth needs are satisfied, the more they will be desired (p. 13).

In addition, Alderfer includes more propositions in relation to each need:

- P8a. When existence materials are scarce, then the higher chronic existence desires are, the less existence satisfaction.
- P8b. When existence materials are not scarce, then there will be no differential existence satisfaction.
- P9a. In highly satisfying relationships, there is no differential relatedness satisfaction as a function of chronic relatedness desires.
- P9b. In normal relationships, persons very high and very low on chronic relatedness desires tend to obtain lower satisfaction than persons with moderate desires.
- P9c. In highly dissatisfying relationships, then, the higher chronic relatedness desires, the more relatedness satisfaction.
- P10a. In challenging discretionary settings, then, the higher chronic growth desires, the more growth satisfaction.
- P10b. In nonchallenging, nondiscretionary settings, there will be no differential growth satisfaction as a function of chronic growth desires (pp. 18-20).

In his book, Alderfer (1972) compares his ERG Theory with Maslow's Hierarchy of Human Needs Theory. Although the two theories are strikingly similar, there are four major

differences including "...how the categories of needs are formed, the presence or absence of a strict prepotency assumption, how frustration of higher-order needs affects lower-order desires, and how chronic desires relate to satisfaction" (p. 24).

Alderfer (1972) suggests that Maslow's theory contains unnecessary needs because they overlap with other needs. He points out that safety needs can easily be divided between existence and relatedness categories, while esteem needs can fit within relatedness and growth. Essentially, Alderfer suggests that safety needs can be broken down into material and interpersonal categories and fit into existence and relatedness needs, respectively. At the same time, esteem needs can be divided between interpersonal and self-confirmed and then placed in relatedness and growth categories, respectively. According to Alderfer, Maslow's assertion of basic needs is correct, barring the fact that safety and esteem needs stem from other needs that are not basic needs in and of themselves.

The second major distinction between the two theories concerns the strictness of Maslow's hierarchy (Alderfer, 1972). As stated before, Maslow (1954) suggests that the ravenously hungry man thinks solely in terms of satisfying his desire for his physiological need of food. Alderfer counters that "ERG Theory would say that a chronically hungry man can recognize whether he feels connected to primary groups and to society and whether he is able to engage in activities which enable him to use his skill and talents" (1972, p. 27). In essence, Alderfer does not support Maslow's claim that lower-order needs have to be met in order to progress to higher-order needs. Maslow even questioned his strictly ordered hierarchy, saying that there are exceptions. ERG's flexibility of satisfaction between need categories erases this criticism and allows people to obtain satisfaction between basic needs at various times rather than in a specified order.

The third difference, Alderfer (1972) notes, is how frustration of higher-order needs affects lower-order desires. Maslow asserts that after needs are satisfied they no longer influence behavior and decisions. Alderfer, however, believes that a satisfied need is still able to act as a motivator, for example, "...if it is activated through serving as a substitute for some other need which itself is not being fully satisfied" (p. 27). As propositions two and five point out, when a higher-order need is frustrated, the need directly below it becomes active again.

The final discrepancy between Maslow and Alderfer's theories is the relationship between chronic desires and satisfaction (Alderfer, 1972). Unlike Maslow's hierarchy, ERG Theory addresses how basic desires affect satisfaction (see Propositions 8-10). Maslow's theory fails to address this issue at all.

Alderfer's (1972) ERG Theory attracts less criticism than those of Maslow and Herzberg. In Aswathappa's (2005) book *Resource and Personnel Management*, Alderfer's theory is said to gain more support in that it incorporates strong points of the other theories while being less restrictive. The ERG Theory has undergone less research on the theory's validity than Maslow's groundbreaking Hierarchy of Needs. One criticism of the ERG Theory in Aswathappa's book is that its guidelines are ambiguous. This theory postulates that an individual will behave in a way that fulfills one of the three basic needs. However, due to the uniqueness of humankind, it is essential to determine how important each need is to a person in order to predict motivational factors. After this, the individual would behave in a certain way which would produce outcomes that could fulfill the needs most important to that person.

#### *Motivation-Hygiene Theory*

Herzberg, Mausner, and Snyderman developed the Motivation-Hygiene Theory in *The Motivation to Work* (1959). Herzberg et al. conducted a study among nine companies,

interviewing employees from each company. The interviewees were asked to describe a positive and a negative experience at work, whether it be a one-time occurrence or a string of events. The interviewer followed a sequence of questions as the employee related the experiences. After giving examples of both high and low job satisfaction experiences, the interviewee was given a rating scale to indicate how the experiences affected his or her attitude about work. The results indicated that there was a discrepancy between factors that caused satisfaction and factors that caused dissatisfaction, at which point he developed his motivation theory (Herzberg et al., 1959).

The Motivation-Hygiene Theory proposes that there are motivators that lead to job satisfaction, as well as hygiene factors that lead to dissatisfaction in the workplace (Herzberg et al., 1959). According to Herzberg et al., common factors among those surveyed that lead to dissatisfaction include: “company policy and administration, supervision, interpersonal relationships, working conditions, salary, status, and security” (p. 92). Those factors with intrinsic motivational value include: “achievement, recognition for achievement, the work itself, responsibility, and growth or advancement” (p. 92). *Harvard Business Review* published an article by Herzberg entitled “One More Time: How do you Motivate Employees?” reiterating the tenets of his Motivation-Hygiene Theory (2003). Herzberg asserts that because there are separate factors that lead to either satisfaction or dissatisfaction, that “The opposite of job satisfaction is not job dissatisfaction but, rather, *no* job satisfaction; and similarly, the opposite of job dissatisfaction is not job satisfaction, but *no* job dissatisfaction” (p. 91). In other words, when an employee’s job lacks opportunity for growth and recognition, the employee is not dissatisfied, but lacks satisfaction. The results of Herzberg’s study shows that satisfaction is brought about by motivators while unfulfilled hygiene factors are prone to produce job dissatisfaction. Herzberg’s theory places importance on the fact that hygiene factors do not motivate employees to go the

extra mile in performance on the job. In order for managers to increase motivation and satisfaction among employees, they must focus on giving opportunities for motivating factors and meet employees' expectations regarding hygiene factors so as to avoid dissatisfaction.

Robert House and Lawrence Wigdor (1967) address the criticisms and validity of the Motivation-Hygiene Theory. They claim that the main criticisms are: "First, that it is methodologically bound; second, that it is based on faulty research; and third, that it is inconsistent with past evidence concerning satisfaction and motivation" (p. 371). In 1966, Vroom attended to the methodological bounds of the research by saying that "People tend to take the credit when things go well, and enhance their own feeling of self-worth, but protect their self-concept when things go poorly by blaming their failure on the environment" (pp. 7-8). Vroom contends that Herzberg's method of listening to employees' stories does not produce valid, unbiased results.

House and Wigdor (1967) assert that there are also fundamental flaws in the research procedure because of the required interpretation by the interviewer. The rating scales that the interviewer used all require an interpretation of the supervisor's behavior, unless the interviewee offers a direct answer. Such evaluations by the interviewer can taint the data. Another criticism of the research is that there was no evaluation of overall satisfaction. Individual perceptions can lead to satisfaction or dissatisfaction under the same conditions.

The third criticism is that the theory lacks consistency with previous evidence. Vroom (1966) looked at 20 studies regarding the relationship between job satisfaction and performance. Seventeen of the studies showed that the higher the level of job satisfaction, the better the employee performs; however, three of the studies showed a negative correlation between the two. In essence, Herzberg has oversimplified the correlation between satisfaction and motivation.

*Four Drive Theory*

In their book *Driven*, Harvard Business School professors Paul Lawrence and Nitin Nohria (2002) present the Four Drive Theory of motivation. This theory postulates that there are four drives that are innate to humans, including the drive to acquire, the drive to bond, the drive to learn, and the drive to defend. The authors assert that the four drives are not derivatives of each other; therefore, the satisfaction of one drive does not result in the satisfaction of any of the other three drives. When humans focus on fulfilling all four drives they are able to lead more meaningful lives. Lawrence and Nohria believe that while the possibility of additional drives exists, the four drives “provide the ultimate motives—the what of human behavior—even as other parts of the human mind, such as skill sets and memory, provide the how” (p. 49).

All humans have an intrinsic drive to acquire (D1). It is in a person’s nature to desire to obtain material objects, possessions, and valuable experiences. This drive is at the root of positive qualities such as ambition, passion, and achievement. D1 also facilitates competition among humans. Lawrence and Nohria discuss the competitive nature that exists due to the limited resources available and conclude that the drive to acquire is never satisfied because a person can always seek more material goods and higher status.

Humans are prone to acquire immediately rather than waiting to acquire something that may be more profitable in the future. Lawrence and Nohria (2002) explain that in the workplace “Managers are more inclined to take short-term measures to improve firm performance—such as downsizing, or acquiring or divesting companies—than they are to undertake longer-term adaptive actions, such as investing in changing the culture of their firm” (p. 65). At the individual level, many think that true contentment would be achieved if they won the lottery or received a promotion. Although that person would experience immediate relief, after time the

desire to acquire sneaks back up and demands more. Naturally, a negative effect of D1 is addictions. People want a quick fix, and once they get it, they want more, and so on. This is a drive that cannot be fully satisfied and can quickly lead to a miserable lifestyle if not kept in check.

The drive to bond (D2) is expressed in a person's desire for mutual companionship among other humans in a social setting (Lawrence & Nohria, 2002). There are two parts to every relationship: the competitive part that relates to D1 and cooperative aspect that relates to D2. Therefore, even when D1 is satisfied, the D2 remains unfulfilled because humans desire cooperation as well. These competitive and cooperative elements butt heads at times, especially in the workplace. Does a manager lay off employees in order to keep out of the red? Decisions such as this are often not easy because D1 and D2 pull in different directions.

The drive to bond is not merely an emotion. In the article, "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation," Roy Baumeister and Mark Leary (1995) tested the drive to bond and found that "...people seem widely and strongly inclined to form social relationships quite easily without any special circumstances or ulterior motives" (p. 502). Humans generally seek mutual relationships and avoid harmful or broken relationships. Some of the most powerful emotions people experience are related to a human's innate drive to bond. Baumeister and Leary write that "...being accepted, included, or welcomed leads to a variety of positive emotions (e.g., happiness, elation, contentment, and calm), whereas being rejected, excluded, or ignored leads to potent negative feelings (e.g., anxiety, depression, grief, jealousy, and loneliness)" (1995, p. 508). In fact, people who do not fulfill their drive to bond generally have a higher chance of suicide and decreased mental and physical health.

Out of the drive to bond arises a sense of morality. James Q. Wilson (1993) suggests that "...these [moral] principles have their source in the parent-child relationship, wherein a concern for fair shares, fair play, and fair judgments arises out of the desire to bond with others" (p. 70). These principles, Wilson continues, are essential in resolving conflict and boosting cooperation between people. People desire to acquire, but at the same time are innately driven to build fair, moral relationships with others.

Lawrence and Nohria (2002) establish the drive to learn (D3) as a drive to "...satisfy their curiosity, to know, to comprehend, to believe, to appreciate, to develop understandings or representations of their environment and of themselves through a reflective process..." (p. 107). From infancy, humans possess a sense of curiosity and wonder about the world. This inquisitiveness leads people to research and process data in an attempt to explain things previously unfamiliar.

Cicero (1914) described the inquisitiveness of mankind as an "...innate love of learning and of knowledge...without the lure of any profit" (p. 48). In effect, a person can give knowledge without losing anything, while the recipient gains information (Lawrence & Nohria, 2002). Humans seek knowledge whether or not there is a solid answer. The authors explain that due to the lack of knowledge about where life came from and what happens when life ends, people find answers in which to believe. In fact, there is no known culture without creation and afterlife stories. When there is a topic that people have no clear answer for, they naturally attempt to fill that hole.

Carnegie Mellon Professor and psychologist George Loewenstein (1994) presents the information-gap theory which states that when people always carry around with them what they previously know. When they recognize an area in which they do not have knowledge, or an area

that is contradictory to what they know, they immediately begin the process of trying to fill that gap. When people solve the mystery or decipher the code, they have satisfied the drive to learn.

Humans' innate desire to learn can result in dangerous inventions in an attempt to satisfy the drive (Lawrence & Nohria, 2002). For example, the Manhattan Project during World War II led to the creation of nuclear technology, in essence creating something with immense destructive power. Lawrence and Nohria fear that there will be no limits to learning which could result in destructive behavior. Humans must balance this drive keeping humanity's best interest in mind rather than seeking knowledge for power.

Learning is certainly present at the organizational level. According to Lawrence and Nohria (2002), when new employees join an organization, "...they are gradually socialized and indoctrinated with the collective knowledge of the ongoing organization. New members also add their prior beliefs to the pool of knowledge as they convince others of the usefulness of the beliefs they bring in" (p. 118). Employees bring their learned ideologies and world views to the workplace, which allows for workplace diversity. People long for opportunities to contribute their ideas in the workplace, rather than merely doing what they are told and picking up their paycheck. Organizations should seek to promote employee contributions to improving processes in the workplace, not only to fulfill the drive to learn, but to improve the organization as a whole.

The drive to defend (D4) is prevalent in all societies. Authors Lawrence and Nohria (2002) assert that "...humans have an innate drive to defend themselves and their valued accomplishments whenever they perceive them to be endangered" (p. 130). The drive to defend is triggered by a subconscious process a person's brain goes through when faced with a threatening situation. Unlike the other drives, D4 is reactive. On an individual level, when a person feels endangered he or she has a physical reaction including rapid heartbeat and

heightened senses. It is at that moment that the individual will choose to stay and defend what was threatened or to back down. The drive to defend is related to all three drives in that we defend our material goods and experiences, our companions, and our knowledge. Clearly a person can be threatened in all areas and must learn to defend oneself in order to maintain fulfillment in all four drives.

The drive to defend presents itself in many ways at the organizational level, often in an aggressive manner (Lawrence & Nohria, 2002). The authors explain that “Defenses against mild threats can be expressed as intergroup rivalry, with verbal sparring and trickery; defenses against stronger threats can escalate into all-out conflict” (p. 132). Divisions within the organization often defend their area of expertise, the marketing department quarreling with the engineering and production departments over the budget. When individuals join organizations, they identify with that group as “my” organization. Therefore, whenever conflict arises or someone begins to defame that organization, they waste no time in defending their organization. People feel threatened when the core values and beliefs of the groups to which they belong are attacked, and naturally want to defend those people, groups, and values in which they believe.

The four drives previously described above make up Lawrence and Nohria’s (2002) Four Drive Theory. The authors go over four essential parts of the theory:

- (1) The four drives are innate and universal, found in some physical form in the brains of all human beings.
- (2) The four drives are independent, in the sense that goals they seek are not interchangeable, even though they are highly interactive with each other.
- (3) In the current configuration of the human brain, the drives are not derived from one another or from a single underlying mental drive.

(4) The four drives are a complete set (p. 145).

The authors (Lawrence & Nohria, 2002) theorize that over time the four drives have evolved in the human brain. Lawrence and Nohria cite the work of neurologist Antonio Damasio (1994), who has studied the relationship between the limbic brain center and the prefrontal cortex in regard to making decisions. He concluded that "...the affective signals originating in the limbic brain center are an essential part of the reasoning and decision-making process, providing two essential ingredients to the work of the prefrontal cortex, the seat of consciousness" (p. 46). This evidence has led doctors to believe that the limbic region of the brain is where subconscious drives are located, and that it works closely with the prefrontal cortex, where conscious decisions are made. Lawrence and Nohria (2002) describe the route of an incoming perception by traveling to the limbic center where it relates the perception to the basic human drives. Then it travels to the prefrontal cortex for evaluation. The mind goes through potential responses to the perception, which can travel to and from the limbic center for assessment of basic drive relevancy. Finally, the prefrontal cortex consciously makes a decision that is carried out by the brain's motor centers. This is significant because it is the first time anyone has attempted to explain biological drives that are vital to making decisions.

George Murdock (1945) did extensive anthropological research regarding cultural universals. Although cultures are vastly different, Murdock sought to find "The Common Denominator of Cultures," as the title of his paper suggests. He presented a list of universal cultural traits observed in 700 societies. Lawrence and Nohria (2002) had no trouble linking each of the cross-cultural similarities with one or more of the four drives. For example, athletic sports were correlated with D1 and D2, dancing was linked to D2, religious rituals were linked to D3, and law was associated with D4.

Regarding the second key assertion of the theory, the authors (Lawrence & Nohria, 2002) note that it is the independence of each drive that causes conflict between them. This independence "...necessitates an internal mental struggle among them that forces itself into consciousness for resolution. The struggle is resolved by the intentional act of will that leads to an action that is, in turn, energized by the relevant drives" (p. 156). When conflict arises between two or more of the drives, that person must choose which one(s) to satisfy in that moment.

Lawrence and Nohria (2002) assert that all valid theories need to follow Occam's razor which says to "...use as few variables as you can; as many as you must" (p. 261). The authors have attempted to condense the number of drives, in effect regarding one as a derivative of another. However, they believe that in doing so would remove inherent traits. Neither could the authors find any other drives that did not depend on or stem from the other four. While they admit that the theory is inevitably incomplete, they assure that humans innately possess all four drives.

W.E.B. Du Bois (1968) describes the importance of meaningful work by saying, "The return from your work must be the satisfaction which that work brings you and the world's need of that work....Without this—with work which you despise, which bores you, and which the world does not need—this life is hell" (p. 398). The Four Drive Theory has significant implications for today's workplace (Lawrence & Nohria, 2002). Organizations have the opportunity to facilitate satisfaction of each of the four drives in its employees, therefore significantly increasing employee motivation. The authors explain that every job needs to be designed in a way that provides the employee with the opportunity to acquire, to learn, to bond, and to defend. A common mistake among organizations is that too much attention is placed on the fulfillment of one drive to the neglect of the others. The authors assert that balancing the four

drives in the workplace "...requires hand-on steering by the leadership of the organization. Like riding a unicycle, it takes constant adjustment to move forward without falling right, left, front, or back" (p. 222). Satisfaction of all four drives is not easy, but rather is a continuous process that results in higher motivation and satisfaction on the job.

In the summer of 2008, *Harvard Business Review* published an article entitled "Employee Motivation: A Powerful Model" that can help managers everywhere better motivate their employees. Authors Nohria, Groysberg, and Lee (2008) conducted two in-depth studies involving international businesses and hundreds of Fortune 500 companies to determine specific steps managers might take to boost employee motivation. The survey was divided into four motivational indicators: engagement, satisfaction, commitment, and intention to quit. The results indicated that "...an organization's ability to meet the four fundamental drives explains, on average, about 60% of employees' variance on motivational indicators" (p. 80). Each indicator correlated with one of the four drives and showed that when scores on one section were low it affected the other three drives as well. The authors found that the best results occur when the four drives are simultaneously satisfied.

The authors name various organizational levers to provide managers with tools to better motivate employees (Nohria et al., 2008). A reward system that gives incentives for good performance is the best way to meet the drive to acquire. Rewards that widen the gap between exceptional and average employees and that give opportunities to ascend the corporate ladder satisfy the need to gain things like money and higher social status. When managers create an organizational culture that places importance on teamwork, reliance upon coworkers, and good office morale, they improve employees' satisfaction in the need to bond. The drive to comprehend is fulfilled in the workplace by creating jobs that are not mundane, but that are

challenging and of significance to the organization. When employees are able to use their knowledge to problem solve, they will be motivated to help improve the organization. The organizational lever that can fulfill the drive to defend focuses on just, open, and trustworthy performance-management and resource-allocation processes. Managers can use these organizational levers to significantly increase employee motivation (Nohria et al., 2008).

### Method

#### *Purpose of the Study*

The purpose of the study was to test the Four Drive Theory of motivation in order to determine if the drives to acquire, bond, comprehend, and defend varied in importance based on demographic differences among employees.

#### *Research Hypotheses*

The following hypotheses were tested with the data from the study and are expressed individually in the results section:

H<sub>0</sub>1a-H<sub>0</sub>1d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for males and females.

H<sub>a</sub>1a- H<sub>a</sub>1d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for males and females.

H<sub>0</sub>2a- H<sub>0</sub>2d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all age classifications.

H<sub>a</sub>2a- H<sub>a</sub>2d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all age classifications.

H<sub>0</sub>3a- H<sub>0</sub>3d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all marital statuses.

H<sub>a</sub>3a- H<sub>a</sub>3d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all marital statuses.

H<sub>0</sub>4a-H<sub>0</sub>4d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all lengths of employment.

H<sub>a</sub>4a- H<sub>a</sub>4d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all lengths of employment.

H<sub>0</sub>5a- H<sub>0</sub>5d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all levels of income.

H<sub>a</sub>5a- H<sub>a</sub>5d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all levels of income.

H<sub>0</sub>6a- H<sub>0</sub>6d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all industry roles.

H<sub>a</sub>6a- H<sub>a</sub>6d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all industry roles.

H<sub>0</sub>7a- H<sub>0</sub>7d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is the same for all levels of education.

H<sub>a</sub>7a- H<sub>a</sub>7d: The value of the drive to acquire, the drive to bond, the drive to comprehend, and the drive to defend is not the same for all levels of education.

### *Population*

The population for this study was employees or persons who had previously been employed. The number of individuals (n=315) who responded to the survey determined the size of the sample. The researcher used a convenience sample drawn from business contacts, students from Missouri Southern State University (MSSU), and members of social networking websites.

Initial contact with participants for this study included an email request and a link to access the online survey.

### *Instrument Development*

The researcher developed a survey instrument to collect student responses to a series of questions based on what motivates humans according to the Four Drive Theory of motivation. The instrument contained 36 items concerning the four drives and seven items designed to collect demographic information (total items=43). The instrument utilized a five-point Likert scale of one (*Strongly Disagree*) to five (*Strongly Agree*) as well as multiple choice questions for the demographic information section. The survey was then utilized in the content validity exercise.

Each item was evaluated for content validity by a panel of five professors. The researcher printed all items designed to evaluate what drives employees on sheets of paper with adequate spacing between each to allow her to cut the items into strips and repeated the process to create five sets of items cut into strips. Items related to demographics were discarded. The researcher placed one set of strips in an envelope labeled *Survey Questions*. The researcher obtained five additional envelopes large enough to contain the cut strips. Four of the envelopes were labeled with one of the four drives: *Acquire*, *Bond*, *Comprehend*, and *Defend*. The remaining envelope was labeled *Does Not Apply*.

The researcher assembled five sets of *Survey Questions* and the five additional envelopes. Each set was then hand delivered to each of the five participating professors along with a set of instructions. Each professor was instructed to read a statement and place it in the envelope labeled with the drive with which it was most associated. If, in the opinion of the professor, the question did not correlate with one of the four drives, he was to place it in the envelope labeled

*Does Not Apply.* The researcher opened each package upon its return and tabulated the results. Those items that did not receive a majority of votes were discarded (discarded items=12). The final instrument, found in Appendix A, used in the study contained 24 items related to the four drives and seven items used to measure demographics (total items=31).

A pilot study was conducted using participants from MSSU. The number of participants in the pilot study equaled 85. The results of the pilot study were used to assess scale reliability by running a Cronbach's alpha test using the statistical software Statistical Package for the Social Sciences (SPSS) on the 6 items that related to each of the four drives. The alpha coefficient for the drive to acquire equaled .584, bond equaled .722, comprehend equaled .691, and defend equaled .595. The overall alpha coefficient, measuring the reliability of all 24 items equaled .824. According to McMillan (2000), an alpha coefficient above .6 is acceptable, with a coefficient of .78 being considered highly reliable. Furthermore, in an article published in the *Journal of Personality*, Briggs and Cheek (1986) state that reliability coefficients are substantially lower when assessing less than 10 items. They conclude that a coefficient as low as .2 to .4 is acceptable in this instance. The detailed results of the Cronbach alpha are located in Appendix B. After concluding that the reliability of the survey was satisfactory, the researcher continued with the administration of the actual survey.

#### *Data Collection*

The data collection method implemented for this study was a self-administered, online survey. The researcher used an Internet-based survey tool called *SurveyMonkey* to administer the survey. *SurveyMonkey* collected the participants' survey responses as well as provided confidentiality of the data. The researcher sent e-mail messages describing the purpose of the study, a link to the online survey, and contact information of the researcher should the participant

need any clarification concerning the survey. Participation was voluntary and the participants were given a time span of two weeks to complete the survey. At the end of the second week, the number of surveys submitted totaled 315. The number of fully completed surveys totaled 289.

### Results

The data was downloaded from *SurveyMonkey* and imported into SPSS for analysis. A complete demographic analysis is presented in Table 1:

Table 1

*Demographic Frequencies of Respondents' Gender, Age, Marital Status, Income, Length of Employment, Role in Industry, and Education*

Demographic Information	Count	Percentage
<b>Gender</b>		
Male	106	33.70%
Female	209	66.30%
<b>Age</b>		
25 or under	74	23.50%
26-40	79	25.10%
41-55	111	35.20%
56 or older	51	16.20%
<b>Marital Status</b>		
Single	70	22.20%
Married	220	69.80%
Divorced	21	6.70%
Widowed	4	1.30%
<b>Length of Employment</b>		
0-3 years	101	32.10%
4-7 years	51	16.20%
8-11 years	34	10.80%
12 or more years	88	27.90%
Currently unemployed	41	13.00%

Income		
Under \$19,999	80	25.40%
\$20,000 - \$39,999	63	20.00%
\$40,000 - \$59,999	64	20.30%
\$60,000 - \$79,999	39	12.40%
\$80,000 - \$99,999	17	5.40%
Over \$100,000	29	9.20%
Would rather not say	23	7.30%
Role in Industry		
Upper management	21	6.70%
Middle management	61	19.40%
Junior management	28	8.90%
Student	42	13.30%
Trained professional	94	29.80%
Skilled laborer	19	6.00%
Temporary employee	7	2.20%
Self-employed	17	5.40%
Other	26	8.30%
Education		
High school	33	10.50%
Some college	117	37.10%
Undergraduate degree	101	32.10%
Graduate degree	64	20.30%

N=315

All data was coded for statistical analysis and the key can be viewed in Appendix C. Both t-tests and analyses of variance (ANOVA) were run in SPSS to determine if a statistical significance existed between the participants' demographic data and what drive they valued the most. According to Pearson (2010), statistical significance can be determined by the *p* value (or Sig.), which represents the probability of the occurrence of an event—in this case the null hypothesis. It is stated that *p* values less than .05 are said to be significant.

### *Gender*

H<sub>0</sub>1a: The value of the drive to acquire is the same for males and females.

H<sub>a</sub>1a: The value of the drive to acquire is not the same for males and females.

H<sub>0</sub>1b: The value of the drive to bond is the same for males and females.

H<sub>a</sub>1b: The value of the drive to bond is not the same for males and females.

H<sub>0</sub>1c: The value of the drive to comprehend is the same for males and females.

H<sub>a</sub>1c: The value of the drive to comprehend is not the same for males and females.

H<sub>0</sub>1d: The value of the drive to defend is the same for males and females.

H<sub>a</sub>1d: The value of the drive to defend is not the same for males and females.

Given there are no  $p$  values less than .05, fail to reject all null hypotheses. Table 2 shows the results of the t-tests:

Table 2

*Independent Samples T-tests by Gender*

Drive	t	Df	Sig. (2-tailed)
Acquire	0.805	287	0.421
Bond	0.338	287	0.735
Comprehend	0.934	287	0.351
Defend	-1.948	287	0.052

*Age*

H<sub>0</sub>2a: The value of the drive to acquire is the same for all age classifications.

H<sub>a</sub>2a: The value of the drive to acquire is not the same for all age classifications.

H<sub>0</sub>2b: The value of the drive to bond is the same for all age classifications.

H<sub>a</sub>2b: The value of the drive to bond is not the same for all age classifications.

H<sub>0</sub>2c: The value of the drive to comprehend is the same for all age classifications.

H<sub>a</sub>2c: The value of the drive to comprehend is not the same for all age classifications.

H<sub>0</sub>2d: The value of the drive to defend is the same for all age classifications.

H<sub>a</sub>2d: The value of the drive to defend is not the same for all age classifications.

Age groups included (1) 25 or under, (2) 26-40, (3) 41-55, (4) 56 or older. Fail to reject all null hypotheses, excluding H<sub>0</sub>2d. Reject H<sub>0</sub>2d because the ANOVA results in Table 3 show a

statistically significant relationship among responses relating to the drive to defend ( $p=.039$ ). The post-hoc analysis (Appendix D) shows that at the .1 significance level,  $p=.057$  between age groups 1 and 4. Additionally,  $p=.062$  between age groups 1 and 3.

Table 3

*Age ANOVA Results*

Drive	df	F	Sig.
Acquire	3	1.24	0.296
Bond	3	0.479	0.697
Comprehend	3	1.001	0.393
Defend	3	2.829	0.039

*Marital Status*

H<sub>0</sub>3a: The value of the drive to acquire is the same for all marital statuses.

H<sub>a</sub>3a: The value of the drive to acquire is not the same for all marital statuses.

H<sub>0</sub>3b: The value of the drive to bond is the same for all marital statuses.

H<sub>a</sub>3b: The value of the drive to bond is not the same for all marital statuses.

H<sub>0</sub>3c: The value of the drive to comprehend is the same for all marital statuses.

H<sub>a</sub>3c: The value of the drive to comprehend is not the same for all marital statuses.

H<sub>0</sub>3d: The value of the drive to defend is the same for all marital statuses.

H<sub>a</sub>3d: The value of the drive to defend is not the same for all marital statuses.

Marital status options included (1) Single, (2) Married, (3) Divorced, (4) Widowed. Fail to reject all null hypotheses, excluding H<sub>0</sub>3d. Reject H<sub>0</sub>3d because the ANOVA results in Table 4 show a statistically significant difference in responses relating to the drive to defend ( $p=.004$ ). The post-hoc analysis (Appendix D) shows that at the .05 significance level,  $p=.013$  between groups 1 and 2. At the .1 significance level,  $p=.057$  between groups 1 and 3.

Table 4

*Marital Status ANOVA Results*

Drive	df	F	Sig.
Acquire	3	0.567063	0.637134
Bond	3	0.352014	0.78772
Comprehend	3	1.240564	0.295243
Defend	3	4.497449	0.004212

*Length of Employment*

H<sub>0</sub>4a: The value of the drive to acquire is the same for all lengths of employment.

H<sub>a</sub>4a: The value of the drive to acquire is not the same for all lengths of employment.

H<sub>0</sub>4b: The value of the drive to bond is the same for all lengths of employment.

H<sub>a</sub>4b: The value of the drive to bond is not the same for all lengths of employment.

H<sub>0</sub>4c: The value of the drive to comprehend is the same for all lengths of employment.

H<sub>a</sub>4c: The value of the drive to comprehend is not the same for all lengths of employment.

H<sub>0</sub>4d: The value of the drive to defend is the same for all lengths of employment.

H<sub>a</sub>4d: The value of the drive to defend is not the same for all lengths of employment.

Length of employment at the employee's current organization ranged from (1) Currently Unemployed, (2) 0-3 years, (3) 4-7 years, (4) 8-11 years, (5) 12 or more years. Fail to reject all null hypotheses, excluding H<sub>0</sub>4b. Reject H<sub>0</sub>4b because the ANOVA results in Table 5 show a statistically significant difference in responses relating to the drive to bond ( $p=.009$ ). The post-hoc analysis (Appendix D) shows that at the .05 significance level,  $p=.021$  between groups 1 and 2 and  $p=.003$  between groups 1 and 5.

Table 5

*Length of Employment ANOVA Results*

Drive	df	F	Sig.
Acquire	4	1.622866	0.168552
Bond	4	3.436429	0.009192
Comprehend	4	0.524166	0.718052
Defend	4	0.769503	0.545816

*Income*

H<sub>0</sub>5a: The value of the drive to acquire is the same for all levels of income.

H<sub>a</sub>5a: The value of the drive to acquire is not the same for all levels of income.

H<sub>0</sub>5b: The value of the drive to bond is the same for all levels of income.

H<sub>a</sub>5b: The value of the drive to bond is not the same for all levels of income.

H<sub>0</sub>5c: The value of the drive to comprehend is the same for all levels of income.

H<sub>a</sub>5c: The value of the drive to comprehend is not the same for all levels of income.

H<sub>0</sub>5d: The value of the drive to defend is the same for all levels of income.

H<sub>a</sub>5d: The value of the drive to defend is not the same for all levels of income.

Levels of income ranges included (1) Would rather not say, (2) Under \$19,999, (3) \$20,000-\$39,999, (4) \$40,000-\$59,999, (5) \$60,000-\$79,999, (6) \$80,000-\$99,999, (7) Over \$100,000. Fail to reject all null hypotheses, excluding H<sub>0</sub>5b and H<sub>0</sub>5c. Reject H<sub>0</sub>5b and H<sub>0</sub>5c because the ANOVA results in Table 6 show a statistically significant differences in responses relating to the drives to bond ( $p=.031$ ) and comprehend ( $p=.005$ ). The post-hoc analysis (Appendix D) shows that at the .1 significance level,  $p=.085$  in the drive to bond between groups 2 and 6. Additionally, between groups 2 and 6 in the drive to comprehend a  $p=.018$ . The drive to comprehend shows additional statistical differences between groups 1 and 6 ( $p=.070$ ) and 2 and 5 ( $p=.067$ ).

Table 6

*Income ANOVA Results*

Drives	df	F	Sig.
Acquire	6	1.430674	0.202704
Bond	6	2.352322	0.031133
Comprehend	6	3.1921	0.004777
Defend	6	1.747355	0.11004

*Role in Industry*

H<sub>0</sub>6a: The value of the drive to acquire is the same among all industry roles.

H<sub>a</sub>6a: The value of the drive to acquire is not the same among all industry roles.

H<sub>0</sub>6b: The value of the drive to bond is the same among all industry roles.

H<sub>a</sub>6b: The value of the drive to bond is not the same among all industry roles.

H<sub>0</sub>6c: The value of the drive to comprehend is the same among all industry roles.

H<sub>a</sub>6c: The value of the drive to comprehend is not the same among all industry roles.

H<sub>0</sub>6d: The value of the drive to defend is the same among all industry roles.

H<sub>a</sub>6d: The value of the drive to defend is not the same among all industry roles.

Options for responses included (1) Upper Management, (2) Middle Management, (3) Junior Management, (4) Student, (5) Trained Professional, (6) Skilled Laborer, (7) Temporary employee, (8) Self-employed, (9) Other. Fail to reject all null hypotheses, excluding H<sub>0</sub>6c. Reject H<sub>0</sub>6c because the ANOVA results in Table 7 show a statistically significant difference in responses relating to the drive to comprehend ( $p=.046$ ). The post-hoc analysis (Appendix D) shows that at the .1 significance level,  $p=.084$  between groups 2 and 6. Additionally,  $p=.096$  between groups 5 and 6.

Table 7

*Role in Industry ANOVA Results*

Drive	df	F	Sig.
Acquire	8	1.538983	0.143475
Bond	8	1.317488	0.234432
Comprehend	8	2.006683	0.045699
Defend	8	1.833039	0.070873

*Education*

H<sub>0</sub>7a: The value of the drive to acquire is the same for all levels of education.

H<sub>a</sub>7a: The value of the drive to acquire is not the same for all levels of education.

H<sub>0</sub>7b: The value of the drive to bond is the same for all levels of education.

H<sub>a</sub>7b: The value of the drive to bond is not the same for all levels of education.

H<sub>0</sub>7c: The value of the drive to comprehend is the same for all levels of education.

H<sub>a</sub>7c: The value of the drive to comprehend is not the same for all levels of education.

H<sub>0</sub>7d: The value of the drive to defend is the same for all levels of education.

H<sub>a</sub>7d: The value of the drive to defend is not the same for all levels of education.

Options for highest level of education included (1) High school, (2) Some college, (3) Undergraduate degree, (4) Graduate degree. Fail to reject all null hypotheses, excluding H<sub>0</sub>7c. Reject H<sub>0</sub>7c because the ANOVA results in Table 8 show a statistically significant relationship among the drive to comprehend ( $p=.001$ ). The post-hoc analysis (Appendix D) shows that at the .05 significance level,  $p=.001$  between groups 1 and 4 and  $p=.014$  between groups 2 and 4.

Table 8

*Level of Education ANOVA Results*

Drive	df	F	Sig.
Acquire	3	1.432894	0.233352
Bond	3	1.870976	0.134622
Comprehend	3	5.814822	0.00072
Defend	3	1.121173	0.340788

### Discussion

After compiling the results, the researcher looked further into the demographic/drive correlations that were statistically significant using mean values (Appendix E). The drive to acquire had no statistically significant relationship with the various demographic information that was gathered.

The drive to bond varied in the categories of length of employment and income. According to the average responses, a person who is currently unemployed is less motivated by bonding with others or working in teams than is a person who has been working at his or her current organization for 0-3 years as well as for over 12 years. The participants who had worked at their current organization for over 12 years showed that they valued the drive to bond over the other lengths of employment. In the income category, participants who earn under \$19,999 annually do not value the drive to bond as much as employees earning \$80,000-\$99,999.

The drive to comprehend varied in the categories of income, role in the industry, and highest level of education. Persons earning between \$60,000 and \$99,999 annually placed higher value on the drive to comprehend than did employees earning under \$19,999. Employees labeled a trained professional and employees in a middle management role rated the drive to comprehend higher than did skilled laborers. Participants who had obtained a graduate degree valued the drive to comprehend more highly than those who had completed high school or some college.

The drive to defend varied in the categories of age and marital status. Participants older than 41 placed a higher importance on the drive to defend than did participants who were under 25 years old. Additionally, those who were married or divorced valued the drive to defend more than those who are single.

### Recommendations

The findings of this study have the potential to impact the way managers motivate their employees. As noted previously, the Four Drive Theory presents motivational levers that make it possible for managers to motivate their employees in ways on which they had not previously focused. Research has shown that motivation skyrockets when managers address all four drives in the workplace (Nohria et al., 2008). If an average firm's employees are 50% motivated as per the motivational indicators, focusing on fulfillment of one drive will only increase motivation by 6%. However, if all four drives are fulfilled in the workplace, employee motivation significantly rises to 88%.

In the study done by Nohria et al. (2008), the authors found that even if the environment of the organization is not conducive to high levels of motivation, direct managers can directly influence motivation. The study shows that although organizational policies deeply influence employee motivation, the direct manager plays an important role in the ability to fulfill the four drives. Employees do not necessarily expect managers to change organizational policies or culture, but managers can, for example, aid in fulfillment of the drive to acquire by tying performance to rewards of recognition or praise.

While it is true by the tenets of the Four Drive Theory that all humans are motivated in some way by the four basic drives, it is important to take into account that all employees are motivated by the four drives at differing levels. A manager with the intention of implementing the Four Drive Theory in the workplace should have employees tested to find out which of the drives are most important to the individual on down to which of the drives provides the least amount of motivation. The manager can then customize a motivational plan for each employee based on what motivates him or her the most. The results of this study done on demographic

differences and their effect on the importance of the four drives revealed significant differences that managers can factor in when motivating employees. Employees earning higher annual income will, on average, more greatly value the drives to comprehend and to bond than those with lower earnings per year. Persons who are employed for a longer period of time tend to value the drive to bond over those who are employed for a shorter period of time. Additionally, employees who have received a higher level of education will, on average, value the drive to comprehend more highly than those who have not received an undergraduate or graduate degree. As employees get older in age they place higher importance on the drive to defend.

The results of this study add to the collection of research done on the Four Drive Theory of motivation and revealed significant results that can be further examined and studied. The demographic factors can be expanded or combined with others to investigate further differences between the four drives and demographic factors. The study could be expanded to produce higher response rates with more varied demographic groups. Expansion and further research could better convey which demographic differences strongly affect what drives that person the most and how managers can increase employee motivation based on those differences.

### Conclusion

The purpose of this study was to dissect the Four Drive Theory of motivation in order to determine if the drives to acquire, bond, comprehend, and defend vary in importance based on demographic differences among employees. This study adds to the existing research on the Four Drive Theory. The results of this study reveal that there is a significantly different relationship between varying demographics and the importance of the four drives among employees. Managers may be able to use this information to increase motivation in the workplace by not only fulfilling all four drives, but also by implementing a specific focus on fulfillment of the

drive or drives which the employee values the most. Conducting the study with higher response rates of more varied demographic participants may produce better results and is worth further exploration.

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## Appendix A: Survey Questions with Content Validity Professor Ratings

1. What is your gender?

Male

Female

2. What is your age?

25 or under

26-40

41-55

56 or older

3. What is your marital status?

Single

Married

Divorced

Widowed

4. How long have you been employed at your current organization?

0-3 years

4-7 years

8-11 years

12 or more years

5. What is your current income in U.S. dollars?

Under \$19,999

\$20,000 - \$39,999

\$40,000 - \$59,999

\$60,000 - \$79,999

\$80,000 - \$99,999

Over \$100,000

Would rather not say

6. Which of the following best describes your role in industry?

Upper management

Middle management

Junior management

Student

Trained professional

Skilled laborer

Temporary employee

Self-employed

Other (please specify)

7. What is your highest level of education?

High school

Some college  
Undergraduate degree  
Graduate degree

**Acquire**

I would work harder if I knew that my efforts would lead to higher pay.	4	
When choosing a job, I usually choose the one that pays the most.	5	
I desire a job that allows me to be appropriately recognized for success.	5	24/30  .80
Competitive pay is of little importance to me.	4	
Exceptional performers in the workplace do not deserve exceptional pay.	3	
Personal recognition and rewards do not drive me to perform above average.	3	

**Bond**

It is vital to have opportunities to interact with other employees.	5	
I value collaboration of thoughts and the ideas of others to aid in completion of tasks.	5	26/30  .867
I am supportive of friendship among co-workers.	5	
I dread working in teams.	3	
I would not like working for a corporation that values collaboration and teamwork.	4	
There is no value in workplace friendships.	4	

**Comprehend**

If my job didn't include work that stimulated my mind, I would be unhappy.	5	22/30  .73
I enjoy learning new skills and knowledge.	4	
I like challenging work.	4	
The ability to exercise curiosity and express new ideas in the workplace is of little importance.	3	
Continuing education for my job is of no value to me.	3	
I would rather have a boring job than a meaningful, interesting, and challenging one.	3	

**Defend**

It is important that my firm's performance rating system is fair.	4	
I want to work for an organization that treats its employees fairly.	3	21/30  .71
I need to feel that my job is secure.	5	
I would defend my organization even if its policies and processes were unjust.	3	
When my organization is threatened, I feel no need to come to its defense.	3	
I don't get defensive when someone misrepresents the company for which I work.	3	

Appendix B: Cronbach's Alpha Results for Survey Reliability

Questions relating to the drive to acquire:

**Reliability Statistics**

Cronbach's Alpha	N of Items
.584	6

Questions relating to the drive to bond:

**Reliability Statistics**

Cronbach's Alpha	N of Items
.722	6

Questions relating to the drive to comprehend:

**Reliability Statistics**

Cronbach's Alpha	N of Items
.691	6

Questions relating to the drive to defend:

**Reliability Statistics**

Cronbach's Alpha	N of Items
.595	6

All questions relating to the four drives:

**Reliability Statistics**

Cronbach's Alpha	N of Items
.824	24

**Item Statistics**

	Mean	Std. Deviation	N
AP1	4.04	.621	81
AP2	3.84	.829	81
AP3	3.14	.997	81
AN1	3.85	.868	81
AN2	4.28	.810	81
AN3	3.96	.901	81
BP1	4.17	.667	81
BP2	4.16	.679	81
BP3	4.20	.557	81
BN1	3.81	.823	81
BN2	4.16	.732	81
BN3	4.02	.851	81
CP1	4.12	.533	81
CP2	4.46	.672	81
CP3	3.78	.894	81
CN1	4.32	.772	81
CN2	4.54	.613	81
CN3	3.96	.901	81
DP1	4.11	.652	81
DP2	4.58	.567	81
DP3	4.20	.621	81
DN1	3.81	.760	81
DN2	3.83	.818	81
DN3	3.58	.906	81

## Appendix C: Data Coding Key

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**Acquire P=positive (Strongly agree=5), N=negative (Strongly agree=1)**

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AP1: I desire a job that allows me to be appropriately recognized for success.

AP2: I would work harder if I knew that my efforts would lead to higher pay.

AP3: When choosing a job, I usually choose the one that pays the most.

AN1: Competitive pay is of little importance to me.

AN2: Exceptional performers in the workplace do not deserve exceptional pay.

AN3: Personal recognition and rewards do not drive me to perform above average.

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**Bond P=positive (Strongly agree=5), N=negative (Strongly agree=1)**

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BP1: I am supportive of friendship among co-workers.

BP2: It is vital to have opportunities to interact with other employees.

BP3: I value collaboration of thoughts and the ideas of others to aid in completion of tasks.

BN1: I dread working in teams.

BN2: There is no value in workplace friendships.

BN3: I would not like working for a corporation that values collaboration and teamwork.

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**Comprehend P=positive (Strongly agree=5), N=negative (Strongly agree=1)**

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CP1: I like challenging work.

CP2: I enjoy learning new skills and knowledge.

CP3: If my job didn't include work that stimulated my mind, I would be unhappy.

CN1: Continuing education for my job is of no value to me.

CN2: I would rather have a boring job than a meaningful, interesting, and challenging one.

CN3: The ability to exercise curiosity and express new ideas in the workplace is of little importance.

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**Defend P=positive (Strongly agree=5), N=negative (Strongly agree=1)**

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DP1: I need to feel that my job is secure.

DP2: I want to work for an organization that treats its employees fairly.

DP3: It is important that my firm's performance rating system is fair.

DN1: When my organization is threatened, I feel no need to come to its defense.

DN2: I would defend my organization even if its policies and processes were unjust.

DN3: I don't get defensive when someone misrepresents the company for which I work.

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Sex: Male=1, Female=2

Age: 25 or under= 1, 26-40=2, 41-55=3, 56 or older=4

Marital Status: Single=1, Married=2, Divorced=3, Widowed=4

Length of Employment: Currently Unemployed=1 0-3 years=2, 4-7 years=3, 8-11 years=4, 12 or more years=5

Income: Would rather not say=1, Under \$19,999=2, \$20,000 - \$39,999=3, \$40,000 - \$59,999=4, \$60,000 - \$79,999=5, \$80,000 - \$99,999=6, Over \$100,000=7

Role in Industry: Upper Management=1, Middle Management=2, Junior Management=3, Student=4, Trained Professional =5, Skilled Laborer=6, Temporary employee=7, Self-employed=8, Other=9

Education: High school=1, Some college=2, Undergraduate degree=3, Graduate degree=4

Appendix D: ANOVA Post Hoc Results (drives in which the *p* value was less than .05)

Post Hoc: Age

Tukey HSD

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Defend	1	2	-0.11196	0.065179	0.316332	-0.2804	0.056479
		3	-0.15152	0.060664	0.062414	-0.30829	0.005256
		4	-0.19183	0.075684	0.05684	-0.38741	0.003763
	2	1	0.11196	0.065179	0.316332	-0.05648	0.280398
		3	-0.03956	0.058386	0.90558	-0.19044	0.111329
		4	-0.07987	0.073871	0.701339	-0.27077	0.111036
	3	1	0.151515	0.060664	0.062414	-0.00526	0.308286
		2	0.039556	0.058386	0.90558	-0.11133	0.19044
		4	-0.04031	0.06992	0.939053	-0.221	0.140381
	4	1	0.191825	0.075684	0.05684	-0.00376	0.387413
		2	0.079866	0.073871	0.701339	-0.11104	0.270768
		3	0.04031	0.06992	0.939053	-0.14038	0.221001

Post Hoc: Marital Status

Tukey HSD

Dependent Variable	(I) Marital Status	(J) Marital Status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Defend	1	2	-0.17126	0.056146	0.013282	-0.31635	-0.02616
		3	-0.25526	0.100806	0.057179	-0.51577	0.005246
		4	-0.48333	0.226549	0.145038	-1.06879	0.102125
	2	1	0.171256	0.056146	0.013282	0.026159	0.316353
		3	-0.08401	0.091795	0.796782	-0.32123	0.153215
		4	-0.31208	0.222685	0.499476	-0.88755	0.263397
	3	1	0.255263	0.100806	0.057179	-0.00525	0.515773
		2	0.084007	0.091795	0.796782	-0.15321	0.321229
		4	-0.22807	0.237904	0.772989	-0.84287	0.386733
	4	1	0.483333	0.226549	0.145038	-0.10213	1.068792
		2	0.312077	0.222685	0.499476	-0.2634	0.887552
		3	0.22807	0.237904	0.772989	-0.38673	0.842873

Post Hoc: Length of Employment

Tukey HSD

Dependent Variable	(I) Length of Employment	(J) Length of Employment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Bond	1	2	-0.27423	0.09011	0.021391	-0.52162	-0.02684	
		3	-0.23452	0.101825	0.146876	-0.51407	0.045035	
		4	-0.26768	0.110799	0.114026	-0.57186	0.036508	
		5	-0.33558	0.092449	0.003079	-0.58939	-0.08178	
		2	1	0.274232	0.09011	0.021391	0.026844	0.521619
	2	3	0.039716	0.082132	0.98882	-0.18577	0.265201	
		4	0.006555	0.093025	0.999994	-0.24883	0.261944	
		5	-0.06135	0.070172	0.906144	-0.254	0.131297	
		3	1	0.234515	0.101825	0.146876	-0.04503	0.514065
		2	-0.03972	0.082132	0.98882	-0.2652	0.185769	
	3	4	-0.03316	0.104414	0.997786	-0.31982	0.253494	
		5	-0.10107	0.084692	0.755221	-0.33358	0.131443	
		4	1	0.267677	0.110799	0.114026	-0.03651	0.571861
		2	-0.00655	0.093025	0.999994	-0.26194	0.248834	
		3	0.033161	0.104414	0.997786	-0.25349	0.319817	
	5	5	-0.06791	0.095292	0.95351	-0.32952	0.193706	
		1	0.335584	0.092449	0.003079	0.081776	0.589391	
		2	0.061352	0.070172	0.906144	-0.1313	0.254001	
		3	0.101068	0.084692	0.755221	-0.13144	0.333579	
		4	0.067907	0.095292	0.95351	-0.19371	0.32952	

Post-Hoc: Income

Tukey HSD Dependent Variable	(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
Bond	1	2	0.053582	0.118902	0.999361	-0.29953	0.406692	
		3	-0.16123	0.121606	0.839404	-0.52237	0.199916	
		4	-0.11361	0.121861	0.967066	-0.47551	0.248287	
		5	-0.14133	0.130727	0.933268	-0.52955	0.246901	
		6	-0.29989	0.156426	0.470667	-0.76444	0.164656	
		7	-0.18028	0.136068	0.839829	-0.58437	0.223811	
		2	1	-0.05358	0.118902	0.999361	-0.40669	0.299528
	2	3	-0.21481	0.080957	0.114366	-0.45523	0.025616	
		4	-0.16719	0.08134	0.382323	-0.40875	0.074366	
		5	-0.19491	0.094103	0.372753	-0.47437	0.084557	
		6	-0.35347	0.127417	0.084612	-0.73187	0.024924	
		7	-0.23386	0.101393	0.244511	-0.53497	0.067251	
		3	1	0.161225	0.121606	0.839404	-0.19992	0.522366
		2	0.214807	0.080957	0.114366	-0.02562	0.45523	
	3	4	0.047613	0.085244	0.997839	-0.20554	0.300768	
		5	0.0199	0.097498	0.999994	-0.26965	0.309445	

		6	-0.13867	0.129944	0.93715	-0.52457	0.247236
		7	-0.01905	0.104551	0.999997	-0.32954	0.291437
4		1	0.113612	0.121861	0.967066	-0.24829	0.47551
		2	0.167193	0.08134	0.382323	-0.07437	0.408753
		3	-0.04761	0.085244	0.997839	-0.30077	0.205541
		5	-0.02771	0.097816	0.999957	-0.3182	0.262776
		6	-0.18628	0.130183	0.784671	-0.57289	0.200332
		7	-0.06667	0.104847	0.995566	-0.37804	0.244705
5		1	0.141326	0.130727	0.933268	-0.2469	0.529552
		2	0.194907	0.094103	0.372753	-0.08456	0.474372
		3	-0.0199	0.097498	0.999994	-0.30944	0.269646
		4	0.027714	0.097816	0.999957	-0.26278	0.318204
		6	-0.15856	0.138516	0.913576	-0.56993	0.252796
		7	-0.03895	0.115032	0.999878	-0.38057	0.302663
6		1	0.29989	0.156426	0.470667	-0.16466	0.764437
		2	0.353472	0.127417	0.084612	-0.02492	0.731869
		3	0.138665	0.129944	0.93715	-0.24724	0.524567
		4	0.186279	0.130183	0.784671	-0.20033	0.57289
		5	0.158565	0.138516	0.913576	-0.2528	0.569925
		7	0.119612	0.143568	0.981306	-0.30675	0.545975
7		1	0.180278	0.136068	0.839829	-0.22381	0.584367
		2	0.23386	0.101393	0.244511	-0.06725	0.534972
		3	0.019053	0.104551	0.999997	-0.29144	0.329544
		4	0.066667	0.104847	0.995566	-0.2447	0.378038
		5	0.038953	0.115032	0.999878	-0.30266	0.380569
		6	-0.11961	0.143568	0.981306	-0.54597	0.306751
Comprehend	1	2	-0.02264	0.109721	0.999993	-0.34848	0.30321
		3	-0.13958	0.112217	0.876295	-0.47283	0.193679
		4	-0.21007	0.112452	0.503285	-0.54403	0.123883
		5	-0.27125	0.120633	0.273237	-0.6295	0.087004
		6	-0.41129	0.144348	0.069504	-0.83997	0.017385
		7	-0.18421	0.125562	0.7641	-0.5571	0.188678
2		1	0.022636	0.109721	0.999993	-0.30321	0.348482
		3	-0.11694	0.074706	0.704539	-0.3388	0.104918
		4	-0.18744	0.075059	0.164236	-0.41034	0.035472
		5	-0.24861	0.086838	0.067022	-0.5065	0.009276
		6	-0.38866	0.117579	0.018267	-0.73784	-0.03948
		7	-0.16157	0.093564	0.598575	-0.43944	0.116289
3		1	0.139578	0.112217	0.876295	-0.19368	0.472835
		2	0.116941	0.074706	0.704539	-0.10492	0.338801
		4	-0.07049	0.078662	0.972939	-0.3041	0.163113
		5	-0.13167	0.08997	0.766185	-0.39886	0.13552
		6	-0.27172	0.119911	0.264377	-0.62782	0.08439
		7	-0.04463	0.096478	0.999257	-0.33115	0.241885
4		1	0.210073	0.112452	0.503285	-0.12388	0.544029
		2	0.187436	0.075059	0.164236	-0.03547	0.410344
		3	0.070495	0.078662	0.972939	-0.16311	0.304103
		5	-0.06117	0.090264	0.993721	-0.32924	0.206886

	6	-0.20122	0.120131	0.633314	-0.55798	0.155539
	7	0.025862	0.096752	0.99997	-0.26147	0.313192
5	1	0.271248	0.120633	0.273237	-0.087	0.629499
	2	0.248611	0.086838	0.067022	-0.00928	0.506498
	3	0.13167	0.08997	0.766185	-0.13552	0.398859
	4	0.061175	0.090264	0.993721	-0.20689	0.329236
	6	-0.14005	0.127822	0.929053	-0.51965	0.239553
	7	0.087037	0.10615	0.982781	-0.2282	0.402277
6	1	0.411294	0.144348	0.069504	-0.01738	0.839973
	2	0.388657	0.117579	0.018267	0.039477	0.737838
	3	0.271716	0.119911	0.264377	-0.08439	0.627822
	4	0.201221	0.120131	0.633314	-0.15554	0.557982
	5	0.140046	0.127822	0.929053	-0.23955	0.519645
	7	0.227083	0.132483	0.607205	-0.16636	0.620526
7	1	0.184211	0.125562	0.7641	-0.18868	0.557099
	2	0.161574	0.093564	0.598575	-0.11629	0.439437
	3	0.044633	0.096478	0.999257	-0.24188	0.33115
	4	-0.02586	0.096752	0.99997	-0.31319	0.261468
	5	-0.08704	0.10615	0.982781	-0.40228	0.228203
	6	-0.22708	0.132483	0.607205	-0.62053	0.16636

Post-Hoc: Role in Industry

Tukey HSD

Dependent Variable	(I) Role in Industry	(J) Role in Industry	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Comprehend	1	2	0.04023	0.109273	0.99999	-0.30138	0.381843
		3	0.038889	0.128207	0.999998	-0.36192	0.439696
		4	0.11982	0.117226	0.983518	-0.24666	0.486298
		5	0.0603	0.104091	0.999691	-0.26511	0.385713
		6	0.373684	0.135852	0.135311	-0.05102	0.798389
		7	0.372222	0.198618	0.632199	-0.2487	0.993149
		8	0.072727	0.159695	0.99995	-0.42652	0.571972
		9	0.231944	0.128207	0.67615	-0.16886	0.632751
		2	1	-0.04023	0.109273	0.99999	-0.38184
	3		-0.00134	0.104138	1	-0.3269	0.324219
	4		0.07959	0.090275	0.993772	-0.20263	0.361812
	5		0.02007	0.072405	0.999999	-0.20629	0.246427
	6		0.333454	0.113417	0.083794	-0.02111	0.688022
	7		0.331992	0.184002	0.679375	-0.24324	0.907226
	8		0.032497	0.141103	1	-0.40862	0.473619
	9		0.191715	0.104138	0.654763	-0.13385	0.517275
	3		1	-0.03889	0.128207	0.999998	-0.4397
		2	0.001341	0.104138	1	-0.32422	0.326901
		4	0.080931	0.112455	0.99849	-0.27063	0.432493

	5	0.021411	0.098687	1	-0.28711	0.32993
	6	0.334795	0.131757	0.217157	-0.07711	0.746699
	7	0.333333	0.19584	0.744913	-0.27891	0.945576
	8	0.033838	0.156226	1	-0.45456	0.522239
	9	0.193056	0.12386	0.826176	-0.19416	0.580272
4	1	-0.11982	0.117226	0.983518	-0.4863	0.246658
	2	-0.07959	0.090275	0.993772	-0.36181	0.202632
	3	-0.08093	0.112455	0.99849	-0.43249	0.270632
	5	-0.05952	0.083929	0.998641	-0.3219	0.202861
	6	0.253864	0.121098	0.477927	-0.12472	0.632447
	7	0.252402	0.188834	0.91946	-0.33794	0.842742
	8	-0.04709	0.147348	0.999997	-0.50774	0.413554
	9	0.112125	0.112455	0.985945	-0.23944	0.463687
5	1	-0.0603	0.104091	0.999691	-0.38571	0.265114
	2	-0.02007	0.072405	0.999999	-0.24643	0.206287
	3	-0.02141	0.098687	1	-0.32993	0.287109
	4	0.05952	0.083929	0.998641	-0.20286	0.321902
	6	0.313385	0.108433	0.095527	-0.0256	0.652372
	7	0.311923	0.180973	0.731558	-0.25384	0.877687
	8	0.012428	0.137129	1	-0.41627	0.441127
	9	0.171645	0.098687	0.721658	-0.13687	0.480164
6	1	-0.37368	0.135852	0.135311	-0.79839	0.051021
	2	-0.33345	0.113417	0.083794	-0.68802	0.021113
	3	-0.3348	0.131757	0.217157	-0.7467	0.077109
	4	-0.25386	0.121098	0.477927	-0.63245	0.124718
	5	-0.31338	0.108433	0.095527	-0.65237	0.025603
	7	-0.00146	0.200927	1	-0.62961	0.626686
	8	-0.30096	0.162558	0.647697	-0.80915	0.207239
	9	-0.14174	0.131757	0.97725	-0.55364	0.270164
7	1	-0.37222	0.198618	0.632199	-0.99315	0.248705
	2	-0.33199	0.184002	0.679375	-0.90723	0.243242
	3	-0.33333	0.19584	0.744913	-0.94558	0.278909
	4	-0.2524	0.188834	0.91946	-0.84274	0.337937
	5	-0.31192	0.180973	0.731558	-0.87769	0.253841
	6	0.001462	0.200927	1	-0.62669	0.62961
	8	-0.29949	0.217758	0.906263	-0.98026	0.381269
	9	-0.14028	0.19584	0.99854	-0.75252	0.471965
8	1	-0.07273	0.159695	0.99995	-0.57197	0.426517
	2	-0.0325	0.141103	1	-0.47362	0.408624
	3	-0.03384	0.156226	1	-0.52224	0.454562
	4	0.047093	0.147348	0.999997	-0.41355	0.507739
	5	-0.01243	0.137129	1	-0.44113	0.416272
	6	0.300957	0.162558	0.647697	-0.20724	0.809153
	7	0.299495	0.217758	0.906263	-0.38127	0.980259
	9	0.159217	0.156226	0.983822	-0.32918	0.647618
9	1	-0.23194	0.128207	0.67615	-0.63275	0.168862
	2	-0.19171	0.104138	0.654763	-0.51727	0.133846
	3	-0.19306	0.12386	0.826176	-0.58027	0.194161

4	-0.11212	0.112455	0.985945	-0.46369	0.239438
5	-0.17164	0.098687	0.721658	-0.48016	0.136875
6	0.14174	0.131757	0.97725	-0.27016	0.553644
7	0.140278	0.19584	0.99854	-0.47196	0.75252
8	-0.15922	0.156226	0.983822	-0.64762	0.329183

Post-Hoc: Education

Tukey HSD Dependent Variable	(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
						Comprehend	1
		3	-0.24351	0.095317	0.053967	-0.48984	0.00281
		4	-0.38873	0.100572	0.000789	-0.64864	-0.12883
	2	1	0.182239	0.094384	0.217468	-0.06167	0.42615
		3	-0.06127	0.05981	0.735231	-0.21584	0.093288
		4	-0.20649	0.067872	0.013604	-0.38189	-0.03109
	3	1	0.243514	0.095317	0.053967	-0.00281	0.489837
		2	0.061275	0.05981	0.735231	-0.09329	0.215838
		4	-0.14522	0.069164	0.1557	-0.32395	0.03352
	4	1	0.388731	0.100572	0.000789	0.128827	0.648635
		2	0.206492	0.067872	0.013604	0.031094	0.38189
		3	0.145217	0.069164	0.1557	-0.03352	0.323955

Appendix E: Descriptive statistics with mean values

Descriptive Statistics for Age in Defend Responses

Drive		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
Defend	1	66	4.048485	0.351951	0.043322	3.961965	4.135005
	2	75	4.160444	0.388911	0.044908	4.070964	4.249925
	3	105	4.2	0.414997	0.0405	4.119688	4.280312
	4	43	4.24031	0.356909	0.054428	4.13047	4.35015
	Total	289	4.16113	0.38985	0.022932	4.115994	4.206267

Descriptive Statistics for Marital Status in Defend Responses

Drive		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
Defend	1	60	4.016667	0.334321	0.043161	3.930303	4.103031
	2	207	4.187923	0.39698	0.027592	4.133524	4.242322
	3	19	4.27193	0.373549	0.085698	4.091885	4.451975
	4	3	4.5	0.333333	0.19245	3.671954	5.328046
	Total	289	4.16113	0.38985	0.022932	4.115994	4.206267

Descriptive Statistics for Length of Employment in Bond Responses

Drive		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
Bond	1	36	3.888889	0.338062	0.056344	3.774505	4.003273
	2	94	4.163121	0.493263	0.050876	4.06209	4.264151
	3	47	4.123404	0.472731	0.068955	3.984605	4.262203
	4	33	4.156566	0.35094	0.061091	4.032128	4.281003
	5	79	4.224473	0.495872	0.05579	4.113403	4.335542
	Total	289	4.138524	0.46746	0.027498	4.084402	4.192645

Descriptive Statistics for Income in Bond and Comprehend Responses

Drive		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
Bond	1	19	4.04386	0.499512	0.114596	3.803102	4.284617
	2	72	3.990278	0.458187	0.053998	3.882609	4.097946
	3	59	4.205085	0.498189	0.064859	4.075256	4.334913
	4	58	4.157471	0.474528	0.062309	4.0327	4.282242
	5	36	4.185185	0.432376	0.072063	4.03889	4.33148
	6	16	4.34375	0.387149	0.096787	4.137453	4.550047
	7	29	4.224138	0.401574	0.07457	4.071387	4.376888
	Total	289	4.138524	0.46746	0.027498	4.084402	4.192645
Comprehend	1	19	4.149123	0.372242	0.085398	3.969708	4.328538
	2	72	4.171759	0.431385	0.050839	4.070389	4.27313
	3	59	4.288701	0.417189	0.054313	4.179981	4.397421
	4	58	4.359195	0.430967	0.056589	4.245878	4.472512
	5	36	4.42037	0.440222	0.07337	4.271421	4.56932

6	16	4.560417	0.43703	0.109258	4.32754	4.793294
7	29	4.333333	0.422577	0.078471	4.172594	4.494073
Total	289	4.300461	0.435021	0.025589	4.250095	4.350828

Descriptive Statistics for Role in Industry in Comprehend Responses

Drive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		
Comprehend	1	21	4.4	0.442217	0.0965	4.198705	4.601295
	2	58	4.35977	0.413692	0.05432	4.250995	4.468545
	3	24	4.361111	0.51468	0.105059	4.143781	4.578441
	4	37	4.28018	0.48816	0.080253	4.11742	4.442941
	5	89	4.3397	0.388206	0.04115	4.257924	4.421477
	6	19	4.026316	0.468986	0.107593	3.800272	4.25236
	7	6	4.027778	0.221527	0.090438	3.7953	4.260256
	8	11	4.327273	0.492571	0.148516	3.996359	4.658186
	9	24	4.168056	0.379738	0.077514	4.007706	4.328405
Total	289	4.300461	0.435021	0.025589	4.250095	4.350828	

Descriptive Statistics for Education in Comprehend Responses

Drive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		
Comprehend	1	25	4.069333	0.384048	0.07681	3.910806	4.22786
	2	106	4.251572	0.471205	0.045768	4.160824	4.342321
	3	96	4.312847	0.40275	0.041105	4.231243	4.394452
	4	62	4.458065	0.386141	0.04904	4.360003	4.556126
Total	289	4.300461	0.435021	0.025589	4.250095	4.350828	