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## Using Self Determination Theory to Predict Employee Job Satisfaction in a State Psychiatric Hospital

Paul A (Paul Anthony) Callens

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USING SELF DETERMINATION THEORY TO PREDICT EMPLOYEE JOB  
SATISFACTION IN A STATE PSYCHIATRIC HOSPITAL

By

Paul Anthony Callens

A Dissertation  
Submitted to the Faculty of  
Mississippi State University  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy  
in Educational Psychology  
in the Department of Counseling,  
Educational Psychology, and Special Education

Mississippi State University

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2008

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SATISFACTION IN A STATE PSYCHIATRIC HOSPITAL

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The role of motivation and its relationship with desired outcomes has been studied in a variety of contexts as evidenced in the literature. Motivation, its origin, type, and its effect, has been theorized to range from non-existent to the main driving force behind all behavior. Self-determination theory, a more recent motivational theory, posits that motivation is a driving force of behavior; however, the amount of control one has to perform freely a given task determines whether this motivation is internally (autonomously) generated or externally (controlled) generated.

The idea of motivation affecting outcomes is clearly evidenced in research geared toward finding the role of motivation on satisfaction of a given job, task, or assignment. This research reviewed studies that focused on motivation and its role in job satisfaction. A theoretical thread was postulated that intrinsic motivation is as good as, if not better in most instances, than extrinsic motivation in determining job satisfaction. Also, job satisfaction leads to greater lengths of tenure in a given job. Both of these statements

were affirmed from a review of the literature. However, one question remains: what type of intrinsic motivation factors best correlate to job satisfaction (and its potential effect of improving tenure)?

Therefore, the overall objective of this study was to determine whether various forms of intrinsic motivation correlate with an employee's satisfaction with his or her job or career. The study was conducted using a survey method that incorporated the participation of 172 participants from two very similar psychiatric hospitals in the southeastern United States. Multiple linear regression was used to determine if any relationship existed between three intrinsic motivation factors (autonomy, competence, and relatedness) and job satisfaction. The results of this study suggest that positive relationships do exist between that of autonomy and relatedness intrinsic motivation factors and job satisfaction scores. The combined predictor factors (autonomy, competence, and relatedness) yielded an  $R^2 = .145$ , indicating that almost 15% of the total job satisfaction scores can be explained by these three variables. Additional, exploratory regression analyses were conducted using experimental statements and selected demographic information. Conclusions and recommendations for future research are also given.

Keywords: Self-Determination Theory, Intrinsic Motivation, Job Satisfaction, Job Tenure, Multiple linear regression

## DEDICATION

I dedicate this research to my beautiful and loving wife, Renea, whose love, support, and driving determination always provides me the motivation to succeed. I further dedicate this research to my parents, Robert and Mary Ellen Callens, and my three beautiful daughters, Alaina Cathryn, Lianna Morgan, and Olivia Brooke Callens. With these individuals in my life, success has already been given to me in full measure.

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CHAPTER I  
INTRODUCTION

***“People often say that motivation doesn’t last. Well neither does bathing—that’s why we recommend it daily.” --Anonymous***

Employees are often considered the lifeblood of an organization. Success or failure of the organization usually resides in the hands of those whom are employed to carry out the routine functions of that organization. However, in many instances, when the leadership of an organization focuses on improvement it usually looks in other areas than employees (or employee motivation) such as productivity, efficiency, conservation, or statistics for solutions (Deci & Ryan, 1985). Having a focus in these areas is certainly worthy of investigation, but many times the fundamental element for these issues is overlooked—the employee.

Employees in any work environment tend to be the staple that leads an organization to achieve its goals or fail miserably at them. But what type of employee is most desirable? Often, organizations (employers) will develop a set of criteria (or qualities) that an individual must possess in order to perform a certain job or task appropriately. These criteria can vary depending upon the task and the level of skill required to complete the task. Qualifications ranging from years of experience working

in similar environments or performing similar tasks to a certain number of years of formal training (schooling in a recognized educational system) can be required of prospective employees looking for an opportunity to receive remuneration. But even the best set of criteria used to determine the most appropriate individual for a given task is unable to account for the individual differences in employees (or prospective employees), and it is these differences that often lead to success or failure of that individual employee and ultimately the organization (Amabile, 1993). For example, an employer can require two individuals pursuing two identical positions at a given organization to possess a certain number of years of experience in a given field, possess a specific degree from an institution of higher learning, hold a specific license or certification, and be available to work at a certain time period of a given day, but even with all of these requirements being met this employer is unable to explain why the two individuals working side by side one another are so completely different in their level of success at their jobs.

Individual differences are the simplest explanation for this employer's dilemma. These "differences" can be evidenced in a variety of different ways. They can range from differences in socioeconomic status (e.g., one may have had more advantages growing up than the other; De Bruin, Parker, & Fischhoff, 2007) to differences in brain chemistry such as intelligence (Zhang, 2001); creativity (Kirby & Richard, 2000); or pathological problems (Posner & Rueda, 2002). Other differences could include personality (Furnham & Bramwell, 2006); physical strength or ability (Lochbaum, Bixby, Lutz, Parsons, & Akerhielm, 2006); ethics (Lucas & Friedrich, 2005); enthusiasm (Underwood, 2003); or motivation (Rundle-Gardiner & Carr, 2005). Many of these differences could be considered almost innate, and thus, not subject to external



manipulation, while other differences may be considered fluid, or situational, and potentially manipulated. But why would an employer want to influence those individual differences that are subject to manipulation? The reason would be in order to encourage growth of the differences that positively affect, and to minimize, or extinguish the differences that negatively affect one's job performance. Knowing the individual qualities that make a good employee and, subsequently those that make a bad employee, is information every employer wants at his or her disposal. Realizing that so many individual differences cannot be manipulated, an employer must strive to find those specific differences that can be influenced for improvement.

While realizing that efforts to improve the performance of employees are likely to be commonplace in almost all work settings, the focus of this research is geared toward the healthcare setting—specifically, acute care psychiatric settings. This is a unique environmental setting with very specific challenges (e.g., working with psychiatric patients, dealing with psychiatric emergencies, and lacking a guaranteed work schedule) and a wide array of individuals serving those suffering with mental illness (Aronson, Sieveking, Laurenceau, & Bellet, 2003; Aronson, Laurenceau, Sieveking, & Bellet, 2005). Motivation, an individual difference mentioned previously (e.g., Rundle-Gardiner & Carr, 2005), was the main aspect that served as the focal point for this research. What motivates an employee to do a good job? More importantly, are there factors (or aspects of one's environment) that can be manipulated that will actually affect one's motivation to perform well or poorly on a given job? These questions linger in the minds of those responsible for the care and well-being of patients being served in these settings. It is hoped that the results of this research will yield beneficial information about employee

motivation, and the context in which it exists in the workplace (e.g., through autonomy, competence, relatedness), which will enable the facilitation of new and innovative ideas that will ultimately result in improved care being provided to the patients being served in the psychiatric facility.

### Statement of the Problem

Every aspect that involves the maintenance of quality employees in a healthcare organization plays a critical role in that organization's overall success. Employee recruitment, training, retention, and maintaining a positive minded workforce all work together to enable quality services to be provided to customers that, in turn, will feel confident to return to (or recommend) these services in the future, if needed (MHP Industry Alert, 2001). Much research has been conducted in the past seeking answers on how to improve employee retention (or increase job satisfaction) for those quality employees that management desires (e.g., Agho, Price, & Mueller, 1992; Amabile, 1993; Brough & Frame, 2004; Ellickson, 2002; Glenn & Weaver, 1982; King, Hautaluoma, & Shikiar, 1982; Lawler, 1970; Mason, 2001; Orpen, 1984; Petty, Brewer, & Brown, 2005; Posner & Randolph, 1979; Saad & Isralowitz, 2001; Saleh & Hyde, 1969; Sheridan, 1992; Spencer, 1986; Stockard & Lehman, 2004; Van Yperen & Hagedoorn, 2003; Voydanoff, 1980; Wharton, Rotolo, & Bird, 2000). These studies all relate to one common factor—the individual who is the employee. While quality employees are much desired by management, the task of doing difficult jobs still presents a challenge to even the best of employees. Jobs must be completed, but should they be completed at the

expense of the employee doing the job? Healthcare duties are extremely difficult in certain sectors of this field—namely inpatient psychiatric facilities.

Maintaining an acute-care, inpatient, state-operated psychiatric facility has its share of ongoing problems. Typically, it provides a unique environment for employees that can consist of excitement, danger, oddity, and setback (Aronson et al., 2003). The inpatient psychiatric hospital work environment is truly one like no other work environment that exists today. One particular issue that arises from this highly unusual work environment is that of identifying quality employees—specifically, how to retain those quality employees in whom so much effort has been invested. Having difficulty competing with other entities in the healthcare industry (e.g., because of factors such as salary, patient population, stigma), inpatient, state-operated psychiatric facilities must look at other factors that entice employees to stay at their current employment (Aronson et al., 2005). Hospital administrators are faced with this dilemma on a daily basis. Research that would shed more light on how to improve retention of good employees would be of great benefit to hospital administrators operating acute-care, inpatient, state-operated psychiatric facilities. Presently, no such research has been conducted that would provide these answers.

If the retention of quality employees is the key to an organization's success, then the intent of administrators should be to determine what makes a successful employee. Deci and Ryan (1985) proposed that motivated employees make the most successful employees. If motivated employees make the most successful employees, then this dynamic creates several interesting questions that must be answered. Such questions as “What motivates an employee,” or “What type of motivating factors work best?,” are just

a few that will arise when attempting to find successful employees to improve an organization. Much research has been conducted in order to answer the second question just presented, “what type of motivating factors work best?” (e.g., Car, McLoughlin, Hodgson, & MacLachlan, 1996; Cooper, Clasen, Silva-Jalonen, & Butler, 1999; Deci & Ryan, 1985; Gorn & Kanungo, 1980; Houkes, Janssen, de Jonge, & Nijhuis, 2001; James, 2005; King et al., 1982; Ryan & Deci, 2000c; Saleh & Hyde, 1969; Van Yperen & Hagedoorn, 2003). Review of this literature, along with other literature will also help to answer the first question of “What motivates an employee?” These two questions essentially encapsulate the problem (discussed earlier) that exists in psychiatric inpatient hospitals today.

### Objectives of the Study

Based on the above stated problem, the literature review was completed to determine if intrinsic motivation is as good as or better than extrinsic motivation in producing successful employees in the healthcare organization that are satisfied with what they are doing. If the review of the literature affirmed that intrinsic motivation is as good as or better than extrinsic motivation in producing successful employees who are satisfied in their jobs, then would this satisfaction lead to a more lengthy tenure with the organization? Obviously, if a satisfied employee is a successful employee, the organization would want to keep them employed as long as possible. If these assumptions are substantiated by the literature review then, in order to complete the successful loop of satisfied, successful employees, it must be determined if certain aspects of the given work

environment can be manipulated to have a positive effect on the employee's intrinsic motivation.

In order to accomplish this task, this research was intended to lay some groundwork associated with motivation in order to establish the above proposed relationships. Therefore, this study involved a review of past efforts in understanding job satisfaction through the concept of motivation as viewed through the theoretical construct of self-determination theory introduced by Deci and Ryan (1985), define intrinsic motivation, review studies that looked at factors that may influence intrinsic motivation in job settings, and the possible role intrinsic motivation may play in overall job or career satisfaction for the healthcare employee. The overall purpose of this research was geared toward determining whether various forms of intrinsic motivation correlate with an employee's satisfaction with their job or career.

### Justification and Usefulness of the Study

From an educational psychology perspective, motivation is a key aspect associated with how humans learn. Knowing more about how motivation influences our decisions, behaviors, and our thinking (especially outside of a laboratory setting) will only serve to help research advance in such a way that will enable us to accentuate positive learning (motivating) environments and diminish the damaging features of environments that inhibit intellectual growth. With the knowledge (if determined by the review of the literature) that intrinsic motivation is as good as or better than extrinsic motivation in determining job satisfaction, researchers would have another mechanism to

use in order to determine if job satisfaction also leads to longer tenure with an organization. If intrinsic motivation does have a positive effect, ultimately on job tenure through job satisfaction, then certain aspects of the work environment could potentially be manipulated in order to increase the positive effects that intrinsic motivation has to an organization's success. If the positive effects of intrinsic motivation that contribute to an organization's success can be determined, then future research might develop refined strategies for creating intrinsically motivating environments (for work or the classroom setting) in order to gain the best potential product from an individual. From a practical standpoint, in a highly competitive world job market and a rapidly growing healthcare industry, quality employees are integral to an organization's success. Being able to have one additional weapon in management's arsenal that helps them gain an edge in being successful is paramount. Ultimately, a psychiatric hospital administrator's job is to ensure the highest quality care for those individuals receiving care. The absolute best way to ensure that this happens is to attract, recruit, and retain the best, most qualified employees (MHP Industry Alert, 2001). Toward that end, a hospital administrator needs to know what motivates individuals so that these factors can be addressed in order to produce a meaningful work environment that will result in the best possible yield from the employees.

Motivation is often the drive that moves individuals to action. Several studies have researched the role of motivation in the context of an inpatient psychiatric hospital (e.g., Aronson et al., 2003; Aronson et al., 2005; Corrigan, Holmes, & Luchins, 1995; Dongen, 2001; Hatton & Emerson, 1993; Jeanneau & Armelius, 2000; Kirkcaldy & Siefen, 1991; Miller, Ellis, Zook, & Lyles, 1990; Simpson & Simpson, 1959; Thorp,

1985; Zautra, Reynolds, & Eblen, 1987). Many of these studies looked at various aspects of a psychiatric employee's position and the factors that affected them. However, none of these studies addressed the role of Self Determination Theory, as introduced by Deci and Ryan (1985), on the intrinsic motivational factors that influence an individual to stay in a position at a psychiatric hospital. With so many external factors appearing to work against any motivation to persist in a difficult position, why do psychiatric hospital employees continue in their endeavors? This was the theme throughout this investigation, to determine whether psychiatric hospital employees actively engage in activities that motivate them to continue doing their job, or whether they are passive participants in the daily activities that encompass their jobs which would tend to decrease their overall job contentment based on experiencing a lower level of intrinsic motivation (Deci & Ryan). If this was determined, then the present study results will be beneficial for opening new areas of opportunity for hospital administrators to utilize in order to retain quality employees longer.

#### Specific Research Question/Hypothesis

If the literature review reveals that intrinsic motivation is as good as or better than extrinsic motivation in explaining differences in job satisfaction in employees working in a psychiatric hospital setting, then intrinsic motivation should help explain differences in tenures of employment. If so, what intrinsic factors can be manipulated in order to keep a psychiatric hospital employee working in this environment? This was addressed by focusing on three specific intrinsic motivating factors. The intrinsic factors that were

scrutinized in this study included autonomy, competence, and relatedness. For the purpose of this study, the stated research hypothesis was, “Intrinsic motivation factors are positively related to inpatient psychiatric healthcare workers’ overall level of job satisfaction.”

### Definition of Terms

Certain terminology used in this study will now be defined as it pertains specifically to this study only. For the purpose of this particular study, the following terms are defined as follows:

Intrinsic motivation – is defined as, “. . . an internal state that arouses us to action, pushes us in particular directions, and keeps us engaged in certain activities” (Ormrod, 2004, p. 425). In this study, intrinsic motivation was considered synonymous with autonomous motivation—the internal drive that is volitional in nature and compels one do something for their own pleasure.

Extrinsic Motivation – is defined as “. . . motivation [that] is based on something extrinsic to the activity [or] . . . something extrinsic to the person” (Sansone & Harackiewicz, 2000, p. 445).

Job satisfaction – is defined as a favorable view of one’s present job. In this study, job satisfaction consisted of a favorable view of a combination of factors (e.g., perceived freedom to do the job prescribed, perceived ability to do the job prescribed, and perceived positive interactions with peers and other workers) that the participant feels they can control.



Self-determination (i.e., self-determination theory) – is defined as the perceived control one feels they have to behave freely in a given situation. The more perceived freedom that is experienced in a given situation the higher the level of perceived self-determination to perform a task. When freedom of choice is perceived to be minimal or absent in a given situation then self-determination decreases and individuals feel compelled by external forces to perform a given task. (The scope of this study focused on how one’s perceived self-determination affects their intrinsic motivation to perform work. A fundamental aspect of self-determination is a contrast between autonomous motivation and controlled motivation (Gagné & Deci, 2005). In this study, autonomous motivation was treated as synonymous with intrinsic motivation—the internal drive that is volitional in nature and compels one do something for their own pleasure. If autonomous motivation is viewed similarly with intrinsic motivation, then controlled motivation can likewise be associated with extrinsic motivation. Gagné and Deci describe controlled motivation as follows, “. . . being controlled involves acting with a sense of pressure, a sense of ‘having to’ engage in the actions” (p. 334).)

Autonomy – is defined as a sense of volition that is experienced when doing something without coercion (Ryan & Deci, 2000b). In this study, autonomy will be associated with the participants’ perception of their ability to choose whether to engage in certain aspects of their job.

Competence – is associated with a sense of ability that is considered a basic psychological need in order to achieve volitional behavior. In this study,

competence was represented by participants' perception of their ability to do quality work, and the skills associated with doing quality work.

Relatedness – refers to the socialization aspects of human needs that also are associated with the achievement of volitional behavior. In this study, relatedness referred to the participants' perception about how they fit in the social scheme of the healthcare organization, in particular their work unit.

Volitional – is defined as voluntary, or under one's control; freedom of choice to engage in a given activity.

### Context of the Study

This study focused primarily on employees who work in acute-care, inpatient psychiatric facilities and normally perform some clinical aspect of patient care. This study did not include participants who do not have a primary role in clinical healthcare, e.g., auditors, secretaries, payroll clerks, human resource personnel. The therapeutic clientele in these sites consists of a mixture of adult males and females eighteen years of age and above with a variety of axis I psychological disorders ranging from schizophrenia to depression. The participants in this study were likewise a mixture of adult males and females with varied educational backgrounds, varied experience, and varied professions. As mentioned earlier, all participants held clinical positions that work, in some aspect, directly with the psychiatric patient.

Because the working environment of an acute-care, inpatient psychiatric facility is so unique compared to other non-healthcare working environments but otherwise very

similar across most acute-care, inpatient psychiatric facilities, the results of this study should generalize across most similar environments. Also, this study should generalize to these other similar environments regardless of the location of a facility, gender configuration of the participants, or any economic factors that may affect some psychiatric facilities but not others, e.g., managed care, Joint Commission on Accreditation of Healthcare Organizations, fiscal soundness. However, the results of this study are less likely to be generalizable outside of the healthcare arena. Within the healthcare arena, the results most likely may not generalize to other specific healthcare programs that serve a different inpatient clientele, e.g., child and adolescent programs, alcohol and drug programs, aged and infirmed programs. The reason for this lack of generalizability across other non-psychiatric adult programs is the difference in the patient receiving services and the motivation driving an employee to provide those services. There may be a completely different driving force behind an individual wanting to serve adult psychiatric patients versus child/adolescent patients. Many times alcohol and drug inpatient treatment programs attract employees who have battled with addictions themselves, while having a psychiatric disorder is by no means a prerequisite for being motivated to work with psychiatric patients. It is hoped that the results of this study will shed more light on these generalizability issues, which are further discussed in Chapter five.

## CHAPTER II

### LITERATURE REVIEW

Much has been written about both job satisfaction and motivation. A quick review of any popular internet search engine will yield thousands of sources for both of these topics. Therefore, research for this literature review was limited to only that of peer reviewed scholarly journals, authored books from the leading names in the study of motivation (i.e., Deci and Ryan), and edited books on the subject of motivation. Much of this research involved the use of electronic databases such as ERIC, PsycInfo, Academic Search Premier, Dissertation Abstracts International, Health Source: Nursing/Academic Edition, MasterFILE Premier, and MEDLINE, which were accessed through the university's database resource EBSCOhost. While a few references that will be cited in this chapter are somewhat dated (e.g., prior to 1980), the vast majority of this literature review is focused on research conducted within the past 15 years.

Based on the voluminous amount of literature on this subject, it was imperative to maintain a clear focus on the objectives of this research. Simply stated, the goal of the review of the literature was to become familiar with existing studies on job satisfaction and motivation in general, while also making a determination about the efficacy of the chosen research question. Between these two points the focus of this review will be to

bridge the gap between existing literature and the specific research question. In order to easily guide the reader through this chapter, it is subdivided into the following sections:

1. Defining motivation
2. Theories of motivation in the workplace
3. Description of Self-Determination studies
4. Description of intrinsic motivation studies
5. Description of general job satisfaction studies
6. Description of job satisfaction studies in a psychiatric hospital environment
7. Description of job tenure studies
8. Summary and Gaps in the Literature

### Motivation Defined

Motivation is a component of an individual's self that is as unique as their fingerprint, yet individuals are often motivated by similar stimuli to do things in similar ways. The word 'motivation,' at a basic level, indicates the act of moving; thus to investigate one's motivation is to review what moves someone to action (Eccles & Wigfield, 2002). Answers to questions about the explanation or causes of certain behaviors have enticed the psychological field for many years. According to Deci (1975), "[The] 'why' questions fall within the field of motivation, and psychologists working in the field have provided various kinds of answers to these questions" (p. 3). The concept of motivation has been studied from every conceivable angle ranging from a

completely passive approach (e.g., the individual is purely led (or motivated) by external forces beyond their control) to an active approach that surmises that individuals are completely in control of what motivates them. Depending on the basis of a given theoretical construct, motivation can be defined in many different ways. For the purpose of this particular research study, motivation will be defined and conceptualized from the perspective of the individual being an active participant in what motivates them in their environment.

In its most general sense (from an active participant perspective), motivation can be defined as the internal drive that compels an individual to accomplish something. According to Ormrod (2004), motivation is, “. . . an internal state that arouses us to action, pushes us in particular directions, and keeps us engaged in certain activities” (p. 425). Deci and Ryan (1985) have spent much of their time dedicated to the study and development of motivation theories. They contend that in order for a psychological theory of motivation to be pertinent it must contain an emphasis on both the source of where motivation is derived as well as in what direction it leads. Deci and Ryan further surmise

Energy in motivation theory is fundamentally a matter of needs. An adequate theory of motivation must therefore take into account both the needs that are innate to the organism (i.e., those that must be satisfied for the organism to remain healthy) and those that are acquired through interactions with the environment. Direction in motivation theory concerns the processes and structures of the organism that give meaning to internal and external stimuli, thereby directing action toward the satisfaction of needs. Simply stated, then, the field of

motivation explores all aspects of an organism's needs and the processes and structures that relate those needs to behavior; motivational theories organize the findings of those explorations. It has often been said that the study of motivation is an inquiry into the "why" of behavior. Indeed, the field of motivation is concerned with answering "why" questions, although there are theories that have offered non-motivational answers by focusing only on direction, to the exclusion of energization. These theories, therefore, are not motivation theories. (p. 3)

Much like the focus of so many of Deci and Ryan's studies, motivation will be conceptualized in this research much the same way.

In order to gain a complete understanding of this particular conceptualization of motivation, it is imperative to also understand some of the competing theories that attempt to explain motivation. There are many such theories that have been introduced over time that yield some explanation of the origins and purpose of motivation. The purpose of the next section is to investigate five alternative theories of motivation to determine other viewpoints for consideration in this study.

### Theories of Motivation in the Workplace

Several different theories of motivation have been postulated in the past fifty years. Motivation theories have been researched in different environments and contexts across this span of time (Linnenbrick & Pintrich, 2002). Laboratory settings, classroom settings, and work settings have all been areas of focus for researchers aiming to learn more about motivation and how it affects individuals. While the concept of motivation is

the same across these differing environments, the settings in which motivation can be manipulated are quite different. For example, techniques that may be effective for improving motivation for students in a classroom may not necessarily translate to employees in a work setting and vice versa.

It would be an arduous task to attempt to summarize all motivation theories (or psychological theories that can be adapted to the concept of motivation) in this particular research. However, in order to lay the proper foundation for the focus of this study it is necessary to discuss a few such theories. The theories that were included for discussion in this research were chosen because of their particular focus in order to compare and contrast competing views of motivation, its origins, and its purpose. Also, considering that this research would be centered around a workplace setting, the theories that were chosen for discussion were felt to be most closely associated with, and applicable to the workplace. Certainly other theories of motivation could have been chosen as well, and could possibly be more applicable given another setting. The theories that were chosen for further discussion are: a) Maslow's Hierarchy of Needs, b) Alderfer's ERG Theory, c) McClelland's AAP Theory, d) Herzberg's Two-Factor Theory and e) Theory X and Theory Y. In addition, the motivational theory that was introduced by Deci and Ryan (1985) known as Self-Determination Theory will be introduced. Self-Determination theory will be the chosen theoretical construct used in this research study.



## *Maslow's Hierarchy of Needs*

One particular psychological theory very familiar to professionals across a variety of disciplines is Abraham Maslow's (as cited in Bensen & Dundis, 2003) theory pertaining to a Hierarchy of Needs. This theory has many psychological applications across several professional settings. It has been taught in most college level business courses, psychology courses, sociology courses, and many different educational courses. In its application, this hierarchy of needs has been applied to cognitive development, motivation, and professional development. As an overview, recall that Maslow's hierarchy of needs is a tiered approach to both internal and external forces that compels individuals to act in certain ways (Gagne & Deci, 2005). The model consists of five stacking needs, one interdependent on the one prior, that allow an individual to progress to a continual higher level of achievement and satisfaction. The first four levels, which are a) physiological needs, b) safety needs, c) love and belongingness needs and d) esteem needs, can be categorized into one broadly defined group referred to as deficiency needs, or extrinsic needs (Ormrod, 2004). In these four steps the need appears in an external format (e.g., food, shelter, attention) that compels action from an individual. Maslow's theory postulates that until the most basic of these needs are met an individual is incapable of progressing to the next justifiable level. In other words, safety and shelter cannot be attained until basic needs such as breathing, eating, and the consumption of water has been attained.

The last level in Maslow's hierarchy of needs is the need for self-actualization, often separated from the other list of needs as being more of a growth need rather than a

deficiency need. Self-actualization, from a motivational standpoint, would be considered more of an intrinsic, rather than extrinsic, need. The essential motivational drive with self-actualization is to advance oneself by way of a selfless persona that seeks to improve or help society in some general or specific way. Maslow (as cited in Benson & Dundis, 2003), related these five need stages to the business climate by adjusting slightly the terminology, while maintaining a correspondence to the original model. In essence, he referred to his hierarchy of needs in a business setting by the following terms: a) wages, b) safety on the job (both physical and mental), c) social belongingness, d) Self-esteem based on appraisals, and e) self-actualization (maximizing one's potential on the job).

Benson and Dundis (2003) reviewed the potential advantages of utilizing Maslow's Hierarchy of Needs model in the healthcare industry—an area they feel is rapidly changing for a variety of reasons. Using the specific 'business' terminology of this motivational theory, these authors believed that it would help equip leaders in healthcare to better motivate their employees by paying them a decent wage, providing them a safe work environment, and allowing them to maximize their work potential. The tenets of this argument are not disputed, but can they be used to explain why some employees in a given work environment remain (or become) motivated to complete a task even when the above factors (e.g., decent wage, safety, advancement) are not present? In short, this model is unable to explain this phenomenon. Also, another fallacy of this theory is the rigidness involved with advancement up the 'need ladder' in work settings. Surely an individual employee can receive a sub-par wage, yet remain socially connected with their peers and be at their maximum potential for doing their job. Landy (1985) contends that Maslow's Hierarchy of Needs is more applicable to a broad theory of

development rather than a description of work motivation. The following two theories seek to address the hierarchical nature of Maslow's theory by looking at motivation more on a continuum.

### *Alderfer's ERG Theory*

While Maslow's theory on paper appears sound, Alderfer (1969) recognized its shortcomings. He recognized that there were blurred boundaries between some of Maslow's need levels and condensed his five levels into three. Essentially, he combined Maslow's lower two levels (physiological and safety needs) into one level he referred to as existence. He then incorporated the third level and part of Maslow's fourth level (social and external esteem needs) into a second level he called relatedness. Finally, he included the remaining part of the fourth level (internal esteem needs) with Maslow's fifth level of self-actualization and referred to it as growth.

This new ERG (Existence, Relatedness, and Growth) Theory was now better equipped to address where individuals were in relation to their needs being met and motivated to perform a given task. In addition to appearing more refined than Maslow's theory (i.e., having fewer levels), ERG Theory also acknowledged the complexity of mankind in that an individual could, and often did, possess the desire to attain multiple needs simultaneously. One interesting aspect of this theory is that, much like Maslow's theory, it kept some of the hierarchical context in its description. In other words, Alderfer (1969) would contend that existence needs would have priority over relatedness needs and relatedness needs would have priority over growth needs. However, he still

argued that an individual could address multiple levels at the same time and move flexibly up and down the continuum of needs.

This much more refined and practically applicable theory appeared to address most of the recognized fallacies of Maslow's theory. It remains a popular theoretical approach to understanding human motivation in certain settings. Arnolds and Boshoff (2002) conducted a study in which they utilized the concepts introduced in Alderfer's ERG Theory to assess the level of job satisfaction of both frontline and management staff on need satisfaction (as introduced by Alderfer, 1969). They found strong evidence of need satisfaction (growth, relatedness, existence) being met before any substantial level of job satisfaction could be attained (see Figure 1). ERG Theory remains a viable approach to research when the appropriate assumptions have been made about where the influence of motivation is generated. ERG Theory, like Maslow's theory as well as the remaining theories to be discussed are all based to some extent on the passive nature (or environmental influence) of motivation. While ERG is likely a better explanation of motivated behavior, it may falter in underutilizing the significance of the energy source that generates motivation in people by keeping some of its attention on external forces.

#### *McClelland's AAP Theory*

Another need based theory of motivation that looks at need attainment from a slightly different angle is McClelland's AAP (Achievement, Affiliation, Power) Theory sometimes referred to as the three needs theory or the learned needs theory (NetMBA,

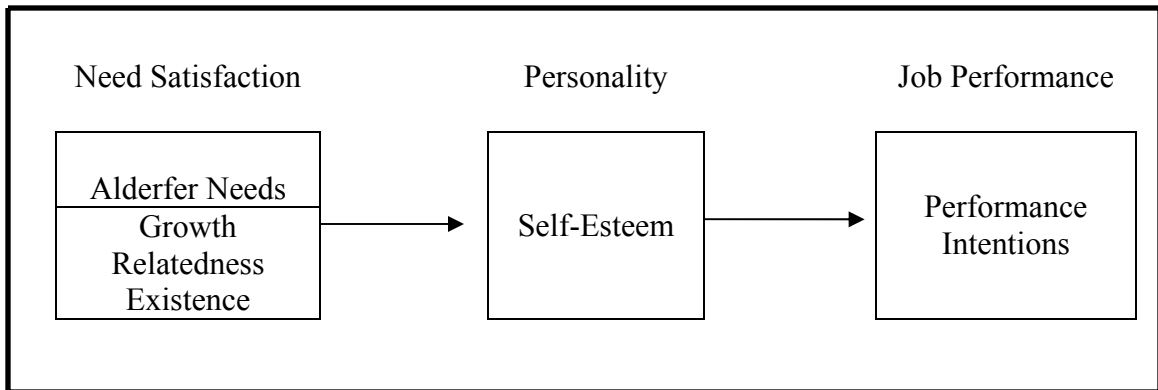


Figure 1 Hypothesized Model of Arnolds and Boshoff (2002) to Explain the Role of Alderfer's ERG Theory on Job Satisfaction

2006). According to McClelland (1961), achievement as a need is a unique characteristic that can be found more in some people and less in others, but also can be distinguished from other types of needs. Power, is another motivational need that drives individuals to excel and is closely associated with McClelland's concept of achievement (McClelland & Burnham, 1976). Affiliation, according to Dai, Moon, and Feldhusen (1998), is also a powerful drive that affects motivation and one's drives toward achieving particular goals. McClelland's AAP theory also takes most of the focus off of a hierarchical framework and instead acknowledges three specific needs that tend to drive motivation in individuals.

This theory divides one's needs into one of three areas: a) achievement, b) affiliation, and c) power. It contends that over time an individual's needs are met and shaped by life experiences. The apparent focus of this theory is clearly centered on external influences on individual drives and needs that compel one to act. This theory, much like the earlier theories discussed, places an emphasis on external characteristics

that serve as the energy source for motivation while diluting, to some extent, the presence of internal energies that may drive a particular behavior. In the work setting, individuals perform acts that will sometimes fall into one of these categories (achievement, affiliation, or power), but oftentimes managers are left scratching their heads wondering why an individual has done something in a particular way.

Granted management can focus on these three areas, but do these three areas address the ‘why’ of driven behavior in a work environment? In many cases, it may well be able to, but not all motivated behavior can be neatly categorized into one of these three labels. Other research has been conducted that used McClelland’s theory (e.g., Pang & Schultheiss, 2005; Schultheiss & Brunstein, 2001; Winter, 2005); however, most of this research focused on motivation in classroom settings, political settings, or a variety of other settings that would not necessarily translate well into a work setting. Recognizing these shortcomings, motivation research began to direct its focus specifically to work environments and continued honing in on the individual employee as the source of energy for motivation.

### *Herzberg’s Two-Factor Theory*

The next motivational theory placed its focus in the work environment. Fredrick Herzberg was interested in finding different factors in a work environment that cause satisfaction or dissatisfaction (Lloyd, 2005; NetMBA, 2006). From his research, he discovered that issues that lead employees to a sense of satisfaction were motivating in nature, while other issues that did not necessarily lead to satisfaction had to be viewed

favorably in order to avoid a sense of dissatisfaction (e.g., company policy, salary, working conditions; Herzberg, 1968). In other words, he found that these two factors (later referred to as motivating factors and hygiene factors) did not necessarily have a reciprocal relationship. These hygiene factors (which were considered maintenance factors in a work setting that prevented dissatisfaction) did not, on their own merits, seek to cause an employee to be satisfied. In contrast, issues such as achievement, recognition, and the work itself did have the capacity to satisfy employees, thus leading to a higher level of motivation to continue to improve.

This theory certainly recognizes the location of where motivation is generated—inside the individual. But critics have argued that, “. . . the two-factor result is observed because it is natural for people to take credit for satisfaction and to blame dissatisfaction on external factors” (NetMBA, 2006, p. 2). Herzberg’s Two-factor Theory does not appear to have been researched in any significant detail over the past 30 years. However, Lloyd (2005) revived this theory from obscurity by his recent research that sought to determine if Herzberg’s theory had any merit in the 21<sup>st</sup> century. In fact, what he found from this survey study was that employees are not particularly motivated by money or recognition, but rather by intrinsic type factors which is similar to what Herzberg argued nearly 50 years ago. Despite the earlier criticisms about this theory it still provides a good explanation about how employees are motivated, how to maximize the potential of these employees, and improve overall productivity at the same time.

### *Theory X and Theory Y*

The next theoretical approach to motivation in the workplace is a concept introduced by Douglas McGregor that he referred to as Theory X and Theory Y (Halepota, 2005; NetMBA, 2006; Truss, Gratton, Hope-Hailey, McGovern, & Stiles, 1997). The basic premise of this motivational theory is simply the managerial approach that one takes toward motivating an employee to complete a job. Both management styles begin from the same standpoint, which is product oriented with a focus on the “bottom line” (Deci & Ryan, 1985). However, from that point on the approaches differ greatly. The Theory X manager views the employees as lacking ambition, disliking work, and not taking responsibility for their actions. Theory X managers are not at all concerned with esteem or self-concept issues, and thus do not optimize any of these traits in order to motivate their employees. In fact, they rely heavily on monetary enticements to breed productivity only to have that very enticement thrown back at them as a major complaint. For example, if an employee is working for a manager that subscribes to the Theory X philosophy of motivating employees they could expect to be paid exactly what they earned (thus that need has been met). They will quickly see no opportunity to have any higher order motivational needs met and then begin to resent the very thing that originally met one of their needs (NetMBA, 2006). Hence, X is a believer in (restricted) extrinsic motivation.

In stark contrast, the Theory Y manager takes a very different approach to motivating employees to complete a job. Their view of the employee is entirely different from that of the Theory X manager. The Theory Y manager views their employees as



self-directed, responsible, committed, and somewhat creative individuals that, when given the opportunity to be successful will succeed. The motivation that is experienced by an individual being supervised by this type of manager differs from the motivation of an individual being supervised by a Theory X manager in that they are able to internalize (“own”) production goals which provides them more incentive to be successful than that of their Theory X managed counterparts. Deci and Ryan (1985) talked about the advancement in our thinking over the past 25 years in the work place. With Japan seemingly revolutionizing productivity standards and quality measures, many viewed their approach to management as an extension of the Theory Y concept, calling it Theory Z. Simply put, this approach further focuses on the individual employee, team building, trust and autonomy. It is quite evident that these approaches are a much better view of how to appropriately motivate someone rather than by coercing them. However, one issue with this approach in total (as it pertains to this particular research) is that it is more geared for an approach to management rather than an approach to motivation. Its focus still rests in the styles of particular managers and only addresses an individual employee’s motivation as secondary to the manager’s personality style. Its primary goal (for both Theory X and Theory Y) still remains that of productivity and the bottom line, not a search for the origins or energy associated with motivation. This theory is not necessarily concerned with tapping into those resources, which would also improve the bottom line.

## *Self-Determination Theory*

Of the five theories that have been discussed, the underlying theme of most of them is a focus, at least in part, on external factors that influence motivation in an individual (a passive approach or extrinsic). Through the progression of the discussion of these theories, recognition of internal sources slowly emerged in conjunction with external effects as well. Self-determination theory, on the other hand, takes a fundamentally different approach to human motivation. Still recognizing external circumstances and events in our environment, self-determination theory focuses almost solely on the driving forces of motivation that come from within an individual, and the control of these driving forces that are often at the fingertip of our own volition. Much of the research in this area has come from Deci and Ryan (1985, 1987, 1991, 1996, 2000) in which they acknowledge that the development of this theory has been a work in progress for many years.<sup>1</sup> The emphasis that they make about this theory is that it is focused on choice (self-determination), rather than control (recognizing that control is involved in choice, but they are not the same thing).

Utilizing an active approach as the basis of this theory, self-determination theory distinguishes itself from other motivational or need theories. In order to conceptualize self-determination theory, Deci and Ryan (1985) describe it as follows:

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<sup>1</sup>For additional information about the history and development of Self-determination Theory please refer to chapter 2 of the Deci and Ryan (1985) book entitled, “Intrinsic Motivation and Self-Determination in Human Behavior.”

Self-determination is a quality of human functioning that involves the experience of choice, in other words, the experience of an internal perceived locus of causality. It is integral to intrinsically motivated behavior and is also in evidence in some extrinsically motivated behaviors. Stated differently, self-determination is the capacity to choose and to have those choices, rather than reinforcement contingencies, drives, or any other forces or pressures, be the determinants of one's actions. But self-determination is more than a capacity; it is also a need. We have posited a basic, innate propensity to be self-determining that leads organisms to engage in interesting behaviors, which typically has the benefit of developing competencies and of working toward a flexible accommodation with the social environment. (p. 38)

Clearly the concept of Self-determination, as it is presented in this theoretical construct, addresses many of the shortcomings of earlier motivation or need theories.

This concept has grown and evolved over the past 30 years and has developed quite an interest in the psychological profession, especially in the area of motivation. As a result of this evolution and increased interest, many studies have been conducted using the theoretical construct of self-determination as will be discussed in an upcoming section. Ryan and Deci (2000d) developed a World Wide Web site that serves as a hub of information about this theory.<sup>2</sup> This web site consists of different areas of useful

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<sup>2</sup>For additional information about the current status of Self-determination theory, publications, controversies, questionnaires, etc. please refer to <http://www.psych.rochester.edu/SDT/>

information pertaining to self-determination theory. In comparison to earlier writings of these authors (e.g., Deci & Ryan, 1985), their authored website provides a further, more detailed description of self-determination theory. Its introductory pages about the theory describe self-determination theory as:

[Self-determination Theory] SDT is a general theory of motivation and personality that evolved over the past three decades as a set of four mini-theories that share the organismic-dialectical meta-theory and the concept of basic needs. Each mini-theory was developed to explain a set of motivationally based phenomena that emerged from laboratory and field research focused on different issues. Cognitive evaluation theory addresses the effects of social contexts on intrinsic motivation; organismic integration theory addresses the concept of internalization especially with respect to the development of extrinsic motivation. Causality orientations theory describes individual differences in people's tendencies toward self-determined behavior and toward orienting to the environment in ways that support their self-determination. And basic needs theory elaborates the concept of basic needs and its relation to psychological health and well-being. Together these mini-theories constitute SDT. (Ryan & Deci, 2000d, p. 2)

Active involvement (control) is clearly present in this theoretical approach to motivation. While no theory is free from criticism, Self-determination theory aims to keep the individual as its focus and centered on any motivational success that may occur in one's life.

Some controversy surrounding the premise of self-determination theory has been debated for the past 30 years. Two such areas of controversy that have been argued over the years with regard to the position of the self-determination theorist is that of rewards (or overjustification) and high-stakes testing. Overjustification, according to Lepper, Greene, and Nisbett (1973), “[is] the proposition that a person’s intrinsic interest in an activity may be undermined by inducing him to engage in that activity as an explicit means to some extrinsic goal” (p. 130). Behaviorists have adamantly opposed this idea contending that rewards and reinforcement in no way adversely affect one’s intrinsic motivation (e.g., Calder & Staw, 1974; Carton, 1996; Dickinson, 1989; Flora, 1990; Reiss & Sushinsky, 1975; Scott, 1975). They have done so despite the nearly 100 published studies over the past 20 years that have verified the undesirable effects of rewards on intrinsic motivation (Ryan & Deci, 2000a). At the core of this controversy, it is evident that the theoretical construct of each of these schools of thought is the reason for the disagreement. Self-determination theorists view the individual as an active participant in their environment and their motivation is derived from the control of choices they face in that environment. On the other hand, behaviorists clearly view individuals as passive participants in their environment that wax and wane based on environmental changes completely out of their control.

The high stakes testing controversy is similar in nature to the rewards controversy. Its premise is based on teachers and students losing motivation to teach and learn for the appreciation of these acts because the results of test scores now take precedence (Ryan & Deci, 2000d). The major premise behind this, from a self-determination standpoint, is that volitional drives that motivate teachers to teach and

students to learn are replaced by external motivators (i.e., the test). Behaviorists again would disagree with this concept stating that individuals can be conditioned to perform in any given circumstance if the right reinforcement is provided.

The long term effects of teaching “to the test” could have exponential consequences on both the teacher and the student. For example, teachers in both North Carolina (Jones et al., 1999) and Ohio (Rapp, 2002) have adamantly voiced their disdain for high stakes testing and its long-term unintended consequences. Many other states have similar views to high stakes testing. If teachers only ‘teach to the test’ there is a possibility that the motivation associated with creative ways to teach students would be stifled. Likewise, if students only learn material for the purpose of a test score, not for altruistic purposes, the likelihood of continued pursuit of knowledge diminishes significantly especially that of learning for the sake of learning (since there is no associated test score for this type of learning). Teachers and students alike need to feel effective (or competent) in what they are doing or attempting to do, as well as feeling connected to others with a sense of ownership in order to claim success in teaching and learning (Ryan & Deci, 2000d). Despite either of these controversies, self-determination theory has weathered the criticisms through years of debate and research and has become widely accepted as a theory of human motivation.

### Self-Determination Studies

As stated previously, voluminous research has been conducted in the area of job satisfaction and motivation. Likewise, over the past 20 years much has been written and

researched in the area of self-determination theory. Experiments, reviews, critiques, and even meta-analyses about this theory have been penned. Nearly 100 experiments have been conducted in the past 20 years that utilize self-determination theory as its basic theoretical construct (Ryan & Deci, 2000d). While the intent of this research is much more limited (focusing primarily on the possible correlation between intrinsic motivation and job satisfaction), this study will focus only on a select few studies that were based on self-determination theory in order to provide an overview of how the theory is implemented in actual studies pertaining to human motivation.

Before reviewing selected self-determination theory studies, more detail is needed in reference to the specific framework associated with this theory. Ryan and Deci (2000b), in their 30 years of studying this subject, have argued that factors associated with intrinsic motivation, self-regulation, and overall well-being can be reduced to three basic psychological needs: autonomy, competence, and relatedness. They continue by stating, “. . . [These factors] appear to be essential for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being” (Ryan & Deci, 2000b, p. 68). Other writings as well collaborate this theoretical stance (e.g., Deci & Ryan, 1987; Deci & Ryan, 1991; Deci & Ryan, 2000; Deci, Vallerand, Pelletier, & Ryan, 1991). Autonomy, competence, relatedness, as well as intrinsic and extrinsic motivation will all be discussed in relation to self-determination theory.

## *Autonomy*

In order to describe autonomy in terms of how it is used in the realm of self-determination theory, it is important to first describe what it is not. “Autonomy refers not to being independent, detached, or selfish but, rather to the feeling of volition that can accompany any act, whether dependent or independent, collectivist or individualist” (Ryan & Deci, 2000b, p. 74). Realizing how self-determination theorists view the concept of autonomy, it is evident that autonomy is not necessarily synonymous with independence or individualism. It is simply used in order to describe (internally) how individuals view their specific purpose in a given task. If an individual completes a task because they want to instead of completing a task because of coercion or guilt, then they are said to approach that task from a volitional (or autonomous) standpoint. Autonomy expresses an inner ownership of one’s actions that they control (Baard, Deci, & Ryan, 2004; Deci & Ryan, 1987). Essentially, autonomy is a self exercise in regulation of behavior based on choice and not based on control from some external source. Deci and Ryan continue with a few examples that attempt to delineate between autonomy and control. They use the example of an anorexic person that starves himself. While there is clearly intentionality (or control) present, this individual in no way could be considered to be acting autonomously because they are responding to a compulsion. According to deCharms (1968, as cited in Deci & Ryan, 1987), “When controlled, people are . . . ‘pawns’ to desired outcomes, even though they intend to achieve those outcomes” (p. 1025). In order for one to be autonomous they must internalize and take ownership for the reasons why they are performing a given behavior.



## *Competence*

Competence is another psychological need addressed by self-determination theorists that is essential for well being. Autonomy must accompany competence however, for competence to be effective in improving one's intrinsic motivation. Competence is affected by social-contextual events such as feedback, communication, or rewards, and can have both a positive or negative effect in their presentation (Ryan & Deci, 2000b). If such events are positive in nature they tend to increase intrinsic motivation for that particular behavior, and research by Vallerand and Reid (1984, as cited in Ryan & Deci, 2000b) showed that this increased intrinsic motivation for a given activity was based on perceived competence for that activity. Obviously, if an individual feels adept at completing a given task they will be much more likely to repeat that task than if they are not adept. (Competence, in self-determination theoretical terms, is similar in nature to that of automaticity in Piagetian terms or mastery in social learning theory terms.) As stated earlier, it is imperative that competence not be viewed solely as a means to increase intrinsic motivation without considering autonomy as well. While competence can enhance intrinsic motivation, it can only do so accompanied with autonomy (Deci & Ryan, 1991). Another study states that one can be highly competent and motivated, but not be self-determined because the source of their motivation is external and thus not autonomous in nature (Deci et al., 1991). As an example, a teenage boy can be astutely adept at a given sport (e.g., baseball or basketball) but if this teenage boy is only playing because of the prompting, coercion, or threat from his father his competence to play the sport is in no way improving his intrinsic motivation to continue playing or improving his

game. Self-determination is clearly absent in this example since there is an absence of control and the perceived driving force behind the action is coming from an external source.

### *Relatedness*

The last psychological need that is addressed by self-determination theorists is the need of relatedness. We are all social beings that are subject to rules, laws, mores, and customs that intensely dictate our actions in many instances. This psychological need, although a less critical need than that of autonomy and competence when pertaining to self-determination, does affect (positively or negatively) intrinsic motivation. In one study, children were given an interesting activity to work on in the presence of an adult researcher. When the researcher ignored the children's attempts to engage them in the activity the children then displayed a very low level of intrinsic motivation for that interesting activity (Anderson, Manoogian, & Reznick, 1976, as cited in Deci & Ryan, 2000). In fact, relatedness can, at times, actually compete with autonomy for its appearance in a given activity (Deci & Ryan, 2000). In another discussion about the role of relatedness in regard to infants' exploratory behavior and their mothers, Ryan and Deci (2000b) stated, "[Self-determination theory] SDT hypothesizes that a similar dynamic occurs in interpersonal settings over the lifespan, with intrinsic motivation more likely to flourish in contexts characterized by a sense of security and relatedness" (p. 71). Robbins (1994) conducted a study that investigated the role of teamwork in classroom settings and its effect on intrinsic motivation. She discovered that students that were placed in teams

often had an increased sense of meaningfulness and community, which are concepts definitely akin to that of relatedness.

Where this psychological need shows a little less importance than that of competence and autonomy is in areas where self-determined behavior can be displayed by way of competence and autonomy in a solitary environment (e.g., reading, playing a game, puzzles). While relatedness may be distal in terms of its effect on intrinsic motivation compared with that of competence and autonomy, it is clearly evident to affect intrinsic motivation in certain circumstances. Each of these psychological needs is integral in self-determination theory along with the role they play in affecting motivation. Much of the discussion of these needs has been centered around their affect on intrinsic motivation, almost to the exclusion of extrinsic motivation. The next section will discuss the relationship between intrinsic and extrinsic motivation and how self-determination theory approaches both.

### *Self-Determination Continuum of Motivation*

Self-determination theory views intrinsic motivation as an innate characteristic that is subject to social contexts akin to autonomy, competence, and relatedness (Ryan & Deci, 2000b). Motivation, in general, is viewed on a continuum with no motivation (e.g., amotivation) on one end and intrinsic motivation on the other. Motivational theories that were discussed in an earlier section often viewed intrinsic and extrinsic motivation in a dichotomous relationship with one influential force coming from within one's self, while the other influential force coming from some external source. Self-determination theory

introduces an interesting view of extrinsic motivation in that it does not completely dismiss extrinsic motivation in terms of leading someone to self-determined behavior if that individual can somehow internalize the extrinsic motivation and make it their own. Several studies (Deci & Ryan, 2000; Rigby, Deci, Patrick, & Ryan, 1992; Ryan & Deci, 2000b; and Ryan & Deci, 2000c) have further subdivided extrinsic motivation into four subcategories: a) external regulation, b) introjected regulation, c) identified regulation, and d) integrated regulation. In Figure 2, Ryan and Deci (2000b) demonstrate the self-determination continuum showing the different types of motivation with regulatory styles and their perceived locus of causality.

External regulation would be the regulatory category most often associated with extrinsic motivation. The idea portrayed here is that one's motivation is perpetuated because of some external driving force leading that behavior (i.e., an employee's salary). Introjection is simply taking in the external driving force and "swallowing" it whole without taking ownership of the driving force by digesting it (Deci & Ryan, 2000). Identification and integration as regulatory functions of extrinsic motivation are most closely associated with how individuals use intrinsic motivation. The first is simply the accepting of the external force and the latter is taking ownership of it. Ironically, the general concepts of intrinsic and extrinsic motivation that were once thought to be diametrically opposed to one another are now being determined that, in some circumstances, can coexist together (if the extrinsic motivating factor is internalized) or even enhance one another (Vansteenkiste, Lens, & Deci, 2006). Now that the details of self-determination theory have been discussed a few studies will be highlighted that demonstrate self-determination theory in actual research settings.

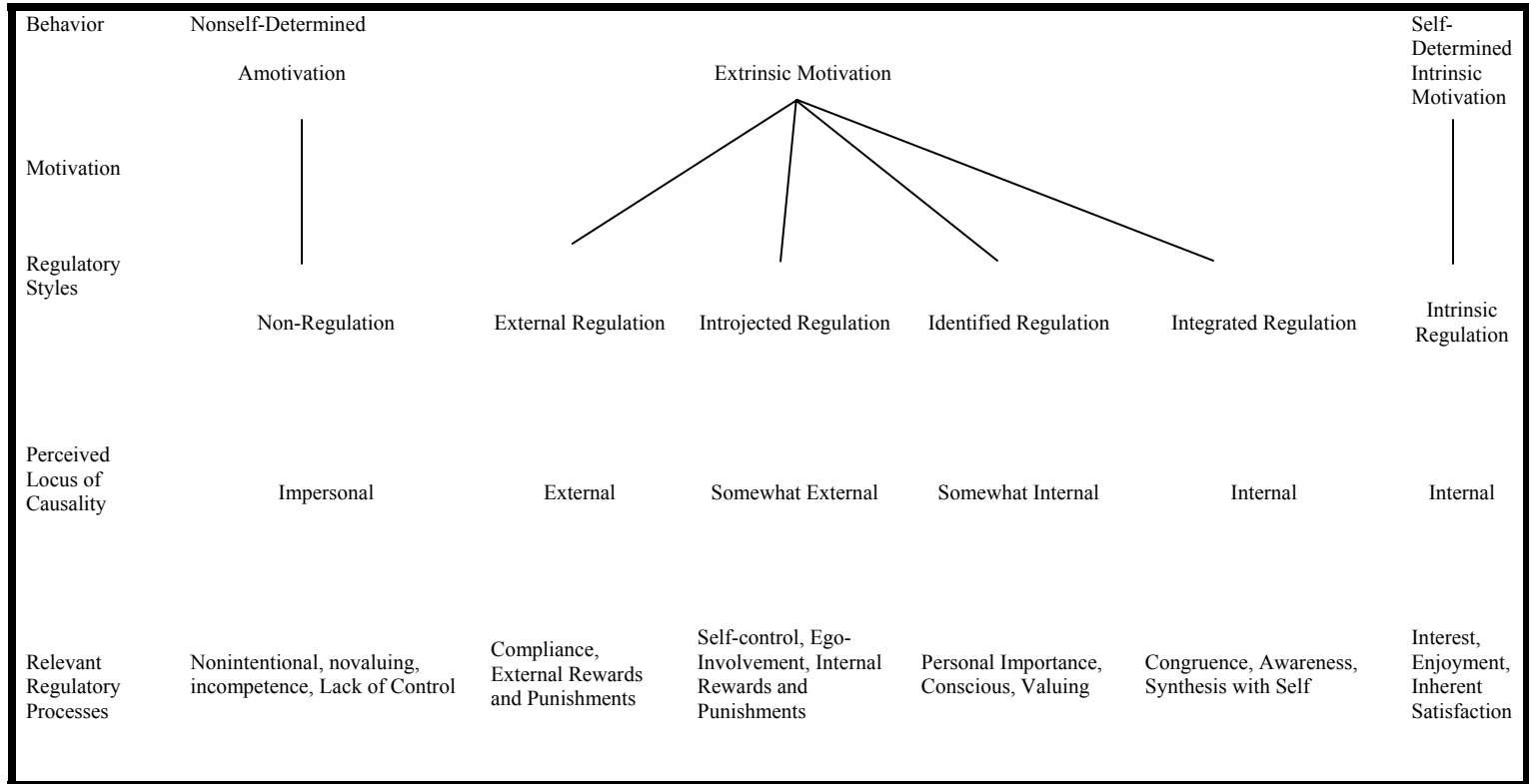


Figure 2 The Self-Determination Continuum Showing Types of Motivation with Their Regulatory Styles, Loci of Causality, and Corresponding Processes (Ryan and Deci, 2000b)

### *Academic Studies that Incorporated Self-determination Theory*

Self-determination studies have been conducted both in lab and field settings, as well as academic and work settings. The review of the literature for this research is limited to a few studies focused on the improvement of motivation from both academic as well as work settings. Vansteenkiste et al. (2006) reviewed several studies that dealt with academic motivation in a variety of classroom settings. Business students, for example, were given a reading exercise on communication and told that it would help them to achieve greater success in the business community upon graduation. The results of this study indicate that this extrinsically motivating force (future success) did not have the intended effect on employee job satisfaction, which indicated that the students' autonomy had somehow been undermined which, in turn, adversely affected their intrinsic motivation to succeed in their chosen field.

Another study (Grouzet, Vallerand, Thill, & Provencher, 2004) sought the academic field using self-determination theory as its construct to determine the validity of an integrated sequence that purports to utilize environmental factors to influence psychological factors, motivation, and consequences. In this study, the researchers asked college students to complete a series of puzzles. After being told that they would complete five puzzles they are interrupted and asked to complete a questionnaire about their experiences with this task. As a result of this experiment, it was determined through the manipulation of the puzzles (some received puzzles with guarantees of success, while other received puzzles with guarantees of failure) that perceived competence in completing the puzzle task lead to a greater sense of autonomy and ownership of the task.

They continue by stating, “[the] implication is that the results provide strong support for Deci and Ryan’s (1985, 1991) [self-determination theory] SDT with respect to how the environment influences motivation” (340).

Two other studies, one that focused on obese children’s view of their appearance (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005), and one concerned with children’s learning of material about working for a charity organization (Timmermans, Vansteenkiste, & Lens, 2004, as cited in Vansteenkiste et al., 2006), also drew the same conclusion; when the autonomy of an individual is limited by way of extrinsically motivating enticements it often reduces the individual’s internal desire to accomplish the goal. Vansteenkiste et al. summarize these studies by stating

In short, the studies herein reviewed provide initial evidence for [Self-determination Theory’s] SDT’s point that promoting extrinsic goals yields considerable learning costs regardless of whether the individuals are extrinsically or intrinsically oriented . . . In sum, the findings from the . . . studies fit well with SDT’s contention that . . . extrinsic goals [are] associated with poorer learning, presumably because they are less likely to satisfy people’s basic psychological needs. (27)

These studies show the academic benefit that can be gained by implementing self-determination theory in the classrooms with the goal being to promote more autonomous ownership of the learning in which the individual engages.

Another academic study that utilized the principles associated with self-determination theory looked at the potentially negative effects associated with externally imposed deadlines for work product in the classroom (Burgess, Enzle, & Schmaltz,

2004). The crux of this study compared the differences between students that were given externally imposed deadlines (but did not internalize them) to students that could internalize these deadlines and convert them to self-imposed deadlines of some sort (e.g., subdivide the overall deadline into smaller deadlines, self-impose a more stringent deadline than the external deadline). Rewards associated with externally imposed deadlines have been thought to reduce the negating effects of the external deadline. However, in an earlier study conducted by Enzle, Roggeveen, and Look (1991), they indicated rewards typically undermine intrinsic motivation when administered by external sources but not when self-administered (e.g., the Premack principle, Ormrod, 2004). Overall, the consensus of the study revealed that the students that were able to internalize the externally imposed deadline, either by subdividing the overall deadline or making a more stringent deadline, were much more likely to maintain their internal autonomy for the task which maintained an overall positive effect on their intrinsic motivation for completing the task that was required of them.

#### *Work-Related Studies that Incorporated Self-determination Theory*

This need for autonomy in the previous academic studies also translates into a series of work related studies that used self-determination theory as its theoretical basis. One such study conducted by Deci et al. (2001) state clearly that workplaces that support autonomy in its workers have a much higher level of overall job satisfaction, increased intrinsic motivation, and overall balance in the workplace. Another study (Bono, 2001) found that employees that are managed by a transformational leader (someone that



possesses the ability to make productive change in an organization) often experience an increase in their job satisfaction through an increase of their perceived autonomy. This is accomplished by the individual employee's ability to internalize the extrinsic motivator (the transformational leader) and make it their own. Bono states, "In general, the followers of transformational leaders viewed their work as more important, more self-congruent, and they reported higher levels of internal self-regulation" (p. 2). In the Deci et al. study, they determined that supported autonomy in the workplace is perpetuated by such things as choice, optimal challenge, informational feedback, interpersonal involvement, and acknowledgement of feelings. Autonomy in this context could be considered synonymous with self-regulation. If an employee is supported by their superiors in doing their job this self-regulated autonomy (i.e., intrinsic motivation and/or identified or integrated extrinsic motivation) will be the driving force that compels them to succeed. They must feel as though their acts are volitional for there to be intrinsic motivation at the core of the compelling source.

To further detail the Deci et al. (2001) study, participants from foreign companies (former Eastern Bloc nations) and American companies completed questionnaires that asked about work engagement, anxiety, general self-esteem, among several other topics. A correlation matrix was developed from this study that compared relationships among the variables on the questionnaires from both the eastern bloc countries and the American company. Supervisor autonomy support correlated very highly with both environment support and total autonomy support for the eastern bloc companies (0.74 and 0.81 respectively). Likewise, the same variables correlated highly with the American company

(0.49 and 0.79 respectively). This clearly shows how important autonomous self-regulation is to employees across cultures in doing and being successful in their jobs.

Career indecision in individuals entering the job market is another aspect of the workforce in which self-determination theory was investigated (Guay, Senecal, Gauthier, & Fernet, 2003). In this study, questionnaires were completed by participants about to enter the workforce. The researchers were attempting to analyze the effects of parental and peer influence (control) on the participant's self-efficacy and autonomy. The results indicated that participants living in environments associated with peer and parental autonomy support (e.g., providing choice, communication, and involvement) were much more likely to develop the self-confidence necessary in making career decisions. This is yet further support for the basis of self-determination theory and its contention that social-environmental factors play a significant role in our overall motivation and success. In concluding this review of self-determination research conducted from an academic and work setting, Ryan and Deci (2000b) nicely summarize the overall premise of this research project by stating, "We maintain that by failing to provide supports for competence, autonomy, and relatedness, not only of children but also of students, employees, patients, and athletes, socializing agents and organizations contribute to alienation and ill-being" (p. 74).

Intrinsic motivation is the cornerstone of self-determination theory. The leading researchers in the field agree that the internal processes associated with intrinsic motivation or the internalized/integrated external forces that affect motivation are at the heart of what drives our most basic psychological needs: autonomy, competence, and relatedness. Deci and Ryan (1996) have concluded that "when intrinsically motivated,

people feel wholly autonomous and volitional in behaving—they experience the behavior as an expression of themselves” (p. 167). In the next section, a closer review of studies that focused primarily on intrinsic motivation will be discussed.

### Intrinsic Motivation Studies

Intrinsic motivation has often been paired with extrinsic motivation in a dichotomous fashion to signify almost an adversarial relationship between both concepts. Through the years, research (e.g., Deci & Ryan, 2000; Rigby et al., 1992; Ryan & Deci, 2000b; Ryan & Deci, 2000c) has expanded this idea to not necessarily view these concepts as opposing forces, but rather view them as origination points from where motivational energy derives. Where the opposing concepts originate is in what individuals in turn experience as a result of where the motivational force originated. In this section motivation will be clearly defined in terms of both an intrinsic as well as an extrinsic perspective. From this, further analysis of intrinsic and extrinsic motivation will be discussed which looks at the positive and negative characteristics of both. Finally, the factors that positively or negatively affect motivation to some extent will be further discussed.

In order to better understand these terms, a common definition must be established to define these terms narrowly for the purpose of this present research. In its simplest context, extrinsic motivation can be defined as “. . . motivation [that] is based on something extrinsic to the activity [or] . . . something extrinsic to the person” (Sansone & Harackiewicz, 2000, p. 445). Attempting to define intrinsic motivation may be more

difficult in light of the many differing views from researchers as to what it is and how it should be defined. Before defining intrinsic motivation, Deci (1975) in his book entitled, “Intrinsic Motivation” sought to better understand intrinsically motivating behaviors. He states

Intrinsically motivated behaviors will be of two general kinds. When there is no stimulation people will seek it. A person who gets no stimulation will not feel competent and self-determining; he will probably feel “blah.” So he seeks out the opportunity to behave in ways which allow him to feel competent and self-determining. He will seek out challenge. The other general kind of intrinsically motivated behavior involves conquering challenges or reducing incongruity. (p. 61)

Sansone and Harackiewicz (2000), in a more recent writing, did apply a defining constraint on intrinsic motivation. While not everyone agrees with this definition, for the purposes of this research intrinsic motivation will be defined as “. . . when an activity satisfies basic human needs for competence and control, which makes the activity interesting and likely to be performed for its own sake rather than as a means to an end” (p. 444). Now that these definitions have been established it is imperative to discuss the nature of their interaction. Are they diametrically opposed to one another? Is one type better than another (or just as good)? Each of these questions will be addressed in the following section.

### *Intrinsic Motivation Versus Extrinsic Motivation*

In attempting to answer the above stated questions, no research evidence was located that empirically demonstrated that intrinsic and extrinsic motivation were diametrically opposed to one another (i.e., extrinsic motivation cannot exist in the presence of intrinsic motivation and vice versa). However, there has been much research conducted that pertains to the perceived value or function of each (granted, more from the standpoint of intrinsic motivation being more valuable or functional than extrinsic motivation). In one study, however, the researchers found a contrary view to the prevailing thought of the day. Gorn and Kanungo (1980) conducted a study in a work setting that compared managers that possessed salient extrinsic needs versus salient intrinsic needs and found that those managers with salient extrinsic needs were more satisfied with their jobs than their counterparts with salient intrinsic needs. A further review of the literature did not reveal any follow-up studies on this research that would corroborate its findings. However, another study (Gibbs, 1980) was found that did corroborate the Gorn and Kanungo study indirectly with regard to overall extrinsic rewards having a positive effect on individuals. In this research, Gibbs found, that by comparing participants from different groups that were involved with completing an intrinsically interesting work task, that the introduction of extrinsic rewards had a higher impact on overall job satisfaction than when the extrinsic rewards were not received. Research conducted on the different aspects of extrinsic motivation (e.g., Deci & Ryan, 2000; Rigby et al., 1992; Ryan & Deci, 2000b; Ryan & Deci, 2000c) that further subdivides extrinsic motivation (this subject was discussed in the previous section on

self-determination theory) may give the most reasonable explanation to these two findings. In other words, the managers with salient extrinsic needs or the participants in the Gibbs study may have been either internalizing or integrating these extrinsic needs which, in essence, then became salient intrinsic needs.

Much more research has been conducted that would view intrinsic motivation as possessing more power to influence behavior in individuals than that of extrinsic motivation. Studies of motivation in early childhood (e.g., Carlton & Winsler, 1998) indicate the importance of intrinsic motivation (mastery) for a child's discovery process, and that by the time most children enter school much of this type of motivation is lost and replaced with extrinsically motivating learning strategies. This was not considered optimal for enhancing children's love of learning and their ability to assimilate new learning experiences. Lepper et al. (1973) conducted a study that investigated a phenomenon known as the overjustification hypothesis which simply states that intrinsic needs are inherently compromised with the introduction of extrinsic rewards into an otherwise intrinsically motivating event. For example, if a child loves to read books for the simple enjoyment it brings (intrinsic motivation) and a parent to that child attempts to encourage the child to continue reading by giving them money (extrinsic reward) each time they complete a book they have unwittingly undermined the inherent motivation that moved that child to read in the first place.

This "overjustification" effect can be seen in other environments as well, especially in the work environment. In a study conducted by James (2005), evidence is provided that supports this notion that external rewards can have a detrimental effect on employee's intrinsic motivation. Likewise, King et al. (1982) found that, in some cases,

giving pay (a starting salary), or salary increases can actually reduce one's intrinsic motivation to work. At the core of this battle between extrinsic motivation factors having a negative effect on intrinsic motivation is the issue of control. Externally introduced motivation to a situation is often perceived as controlling (e.g., salary, bonuses, and rewards) and thus crippling to one's intrinsic desire to complete a task.

Three additional studies (Carr et al., 1996; Cooper et al., 1999; Ryan et al., 1999) also reflect on the positive effect that intrinsic motivation has on an individual and the possible deleterious effects that external factors may cause on intrinsic motivation. In each of these studies the underlying theme that was prevalent across a number of settings (e.g., business school, work settings, and cross-cultural settings) was the fact that intrinsic motivation was almost always associated with perceived satisfaction in the individual. In the Ryan et al. study, it was determined that individuals valuing extrinsic goals over intrinsic ones experienced less well-being than those that value intrinsic goals. Likewise, Carr et al. drew similar conclusions in their study on the effects of compensation on work. They tested and discovered that when individuals are either underpaid or overpaid (and they are aware of it) their level of intrinsic motivation is greatly diminished. Cooper et al. investigated the effects of intrinsic versus extrinsic approaches to improving creativity in a work setting. They found that extrinsic rewards did not necessarily stifle creativity, but did not improve it either. On the other hand, presence of intrinsic factors such as "creative-performance feedback; and verbal elaboration of creative performance on a work-related task" (p. 52), was associated with improving creativity in this setting. These studies show both the positive and negative effects of intrinsically based

motivation versus extrinsically based motivation. Can they co-exist together? The next section will attempt to answer this question.

### *Intrinsic Motivation and Extrinsic Motivation – A Continuum*

With the advent of more recent research (e.g., Deci & Ryan, 2000; Rigby et al., 1992; Ryan & Deci, 2000b; Ryan & Deci, 2000c), the common research practice now does not appear to pit intrinsic and extrinsic motivation against one another. In fact, great strides have been made in gaining a better understanding of extrinsic motivation by further subdividing it into four different facets of motivation, and by viewing motivation in terms of a continuum (Figure 2) rather than a dyad (as previously discussed).

In a study conducted by Lin and McKeachie (1999), both intrinsic as well as extrinsic motivation were analyzed in a series of classroom settings to determine the effectiveness of both on studying and learning. Results from this study indicated that ‘moderate’ levels of extrinsic motivation and intrinsic motivation overall were well suited for helping to achieve the given task in the study. While not discussed in this particular study, it is likely that the ‘moderate’ levels of extrinsic motivation the researchers were analyzing very well could be the higher level extrinsic motivation (e.g., internalized or integrated regulation) referred to by several studies previously mentioned (e.g., Deci & Ryan, 2000; Rigby et al., 1992; Ryan & Deci, 2000b; Ryan & Deci, 2000c). Additionally, Kranzusch (1997) found similar results that extrinsic and intrinsic motivation can both play an important role in positively influencing behavior. Studies such as these help to



validate the more recent research supporting motivation on a continuum ranging from no motivation (amotivation) to fully internalized motivation (intrinsic motivation).

Interestingly, Hilker (1993) contends that one's perspective toward a motivational precept (either intrinsic or extrinsic) can be manipulated and changed when exposed over time to an environment with a particular orientation. In his particular study sixth grade students were grouped and analyzed based on whether they were in an extrinsically motivating group (as evidenced by the enticement of rewards) or an intrinsically motivating group (as evidenced by teacher giving constructive feedback, open communication, and student input on attainable deadlines). The individuals in these groups were further analyzed based on the results of a survey they had previously completed that categorized them as having either intrinsic or extrinsic tendencies. In some cases (not all), students that were in groups that were in opposition to their natural tendencies switched their tendencies to the group's and were productive as a result. Motivation is obviously complex and beneficial in any form, provided the individual internalize it somehow so that control (volition) is not hindered in any way.

Up to this point, the discussion has been about what intrinsic or extrinsic motivation is, or how they compare. In order to hone the scope of this research, the focus will shift to intrinsic motivation in the workplace and what aspects of the work environment affect it somehow. For some time researchers have known that certain characteristics or attributes in work environments can have profound effects on individuals working in that environment (e.g., Agho et al., 1992; Amabile, 1993; Brough & Frame, 2004; Ellickson, 2002; Glenn & Weaver, 1982; King et al., 1982; Lawler, 1970; Mason, 2001; Orpen, 1984; Petty et al., 2005; Posner & Randolph, 1979; Saad &

Isralowitz, 2001; Saleh & Hyde, 1969; Sheridan, 1992; Spencer, 1986; Stockard & Lehman, 2004; Van Yperen & Hagedoorn, 2003; Voydanoff, 1980; Wharton et al., 2000). In addition to these more general studies, other studies focused more on certain work characteristics or attributes that affected specifically intrinsic motivation (Alexandris, Tsorbatzoudis, & Grouios, 2002; Houkes et al., 2001; Tripathi, 2001). In these studies, such characteristics as interpersonal constraints (Alexandris et al.), work content (such as skill variety, autonomy, task identity, and feedback; Houkes et al.), and competition (Tripathi, 2001) were all found to have significant effects (either positively or negatively) on intrinsic motivation. Other work characteristics have been researched that can positively or negatively affect an employee's intrinsic motivation. Two such studies (Spencer, 1986; Van Yperen & Hagedoorn, 2003) were found that looked at the role of intrinsic motivators on nursing personnel in general care hospitals. The results of these studies will be discussed in the closing section (Gaps in the Literature) of this chapter.

### General Job Satisfaction Studies

It should appear quite obvious that satisfaction in a job would lead to improved tenure. Job tenure is just one aspect of work that has been scrutinized in the research literature over the past decade. General studies focusing primarily on (or sometimes as a secondary factor) job satisfaction have looked at several factors that may influence it positively or negatively such as: role ambiguity (Posner & Randolph, 1979); affectivity (Agho et al., 1992); age (Orpen, 1984); autonomy (Agho et al., 1992; Posner &

Randolph, 1979); gender (Chusmir, 2001; Mason, 2001; Petty et al., 2005; Saad & Isralowitz, 2001; Wharton et al., 2000; Voydanoff, 1980); retention (Peterson & Ruiz-Quintanilla, 2003; Sheridan, 1992); educational level (Glenn & Weaver, 1982; Petty et al., 2005); and, intrinsic motivation (Amabile, 2001; Spencer, 1986; Thomas & Velthouse, 1990). Several of these variables will be discussed in further detail, with the goal being to show the evolution of the research over the years and concluding with an overview of job satisfaction studies that found some relationship between satisfaction and job tenure (for a broad overview of these studies and others refer to Table 1).

### *Role Ambiguity Studies*

In order to get at the heart of what contributes to job satisfaction it is imperative to know exactly what a given job entails. Many job seekers (especially early in their working careers) experience problems early in the process of settling into a job of not knowing exactly what is required of them. Role ambiguity is often reported as a source of distress or dissatisfaction among employees. However, according to Posner and Randolph (1979), role ambiguity is often an unavoidable consequence of an organization's structure. Often times, large organizations automatically generate a certain level of role ambiguity simply based on their size and level of bureaucracy. Two simple combatants to this problem are teamwork and communication (Posner & Randolph, 1979). Both of these variables simply arm an individual with more information enabling them to gain a better understanding of where they fit in the overall scheme. While role ambiguity may

Table 1 Overview of Job Satisfaction Studies

Studies	Setting	Type of Participant (n), if given	Measure Used	Year of Study	Correlation Between Job Satisfaction and Job Tenure	Given r or r <sup>2</sup>
Agho et al.	Work	Healthcare employees (550)	Survey	1992	N/A	N/A
Aronson et al.	Work	Psychiatric employees (3024)	Survey	2003	N/A	N/A
Baird, Zelin, & Marzen	Work	Accountants (507)	Survey	1998	Men – Yes Women - No	Not Given
Brough & Frame	Work	Police officers (400)	Survey	2004	No	r = .14
Denton & Kleiman	Work	Production workers (76)	Survey	2001	No	Not Given
Ellickson	Work	Government employees (1227)	Survey	2002	N/A	N/A
Gibbs	Acad.	Students (74)	Exp.	1980	N/A	N/A
Glenn & Weaver	Work	National Survey (2086)	Survey	1982	N/A	N/A
Klein et al.	Work	Middle managers (54)	Survey	1977	Yes	Not Given
Lee & Wilbur	Work	Not given (n = ?)	Exp.	1985	No	Not Given
Mason	Work	Multiple types (13574)	Survey	2001	N/A	N/A
Mueser et al.	Work	Mentally ill clients (204)	Interview	2001	Yes	Not Given
Orpen	Work	Middle managers (25)	Exp.	1984	Yes	r = .40
Pecora	Work	School psychologists (228)	Survey	1997	Yes	R <sup>2</sup> = .22
Petty et al.	Work	Youth development employees (332)	Survey	2005	No	r = -.11
Posner & Randolph	Work	Nurses (138)	Survey	1979	N/A	N/A
Reddy	Work	Secretaries (228)	Int./Surv.	1997	Yes	Not Given
Resnick & Bond	Work	Mentally ill clients (71)	Survey	2001	Yes	r = .56
Saad & Isralowitz	Work	Teachers (373)	Survey	2001	No	r = .13
Saleh & Hyde	Work	Not given (1200)	Survey	1969	N/A	N/A
Sheridan	Work	Accountants (904)	Exp.	1992	Yes	Not Given
Stockard & Lehman	Work	Teachers (n = ?)	Survey	2004	Yes	r = .46
Traut & Feimer	Work	Fire fighters (123)	Survey	2000	Yes	r = .71
Voydanoff	Work	Not given (1301)	Interview	1980	N/A	N/A
Wharton et al.	Work	Coll. employees (373)	Survey	2000	No	r = .03
Xie et al.	Work	Mentally ill clients (85)	Int./Surv.	1997	Yes	r = .94

be unavoidable in some organizations, it certainly can be positively manipulated resulting in a more satisfied employee (Agho et al., 1992). In fact, Posner and Randolph (1979) found in their study of 138 nurses in a Veterans Administration hospital that the more a nurse was involved in the communication loop (decision making process) the higher the level of overall job satisfaction. No employee appreciates being left in the dark—to do so implies an aura of distrust and complete lack of respect (variables that certainly do not yield high levels of job satisfaction).

### *Affectivity-related Studies*

While role ambiguity is a factor that an employee meets at the ‘front door’ of the job, what factors do employees bring with them that may affect their level of job satisfaction? The next several sections will investigate external factors specific to the individual employee that may play a role in job satisfaction. To begin, an individual’s mood (or affect) plays a significant role in satisfaction. Agho et al. (1992) suggest, “. . . that employees who are predisposed to be happy (positive affectivity) are more likely to have higher job satisfaction than those who are predisposed to experience discomfort (negative affectivity)” (p. 186). Mood tends to permeate across many fronts. In other words, if an individual is having a good day (and is in a good mood because of it) the effects tend to be experienced wherever the individual may go (e.g., work, home, gym, restaurant). Other social factors that have been studied and determined to play a role in job satisfaction are autonomy (a term introduced earlier by Deci & Ryan, 1985 that is simply the opportunity an employee is given to make decisions) and group cohesion (another

term introduced by Deci & Ryan, 1985, that they referred to as ‘relatedness,’ which is simply how well an employee gets along with their work group). Strong positive aspects of these two factors have also been found to have a positive outcome for overall job satisfaction (Agho et al., 1992; Glenn & Weaver, 1982). While these two factors tend to be specific in a given situation, they differ from affectivity for that very reason. Mood is a powerful and somewhat fluid factor that can be difficult to manipulate in the work environment setting.

### *Age-related Studies*

While mood, autonomy, and other factors have been compared to their relationship with job satisfaction, age is another factor that has been looked at in some detail. Overall, it appears that the consensus about age and its relationship to job satisfaction is that it ranges from a statistically significant positive effect on job satisfaction to no effect whatsoever (Petty et al., 2005). One study was found that essentially factored out age as a contributing factor to job satisfaction (Orpen, 1984). In this longitudinal study, changes in levels of job satisfaction were noted. However, they were attributed to several other factors, not age. Age, in and of itself, is a constantly changing factor. It would be extremely difficult to tease out other potential factors contributing to job satisfaction while attempting to attribute age as accounting for some level of job satisfaction. One older study categorized this relationship between age and job satisfaction as having a U-shape function (see Figure 3; Herzberg, 1968; as cited in

Petty et al., 2005). Through his years of cross-sectional study on the subject of age and job satisfaction, Herzberg suggested that

Job satisfaction at a young age was originally high, dipped in middle age, and returned to high status later. Morale was high for young employees entering the workforce and then slowly dropped due to boredom and a perception of decreasing opportunities before rising again as the employees continued their jobs. (p. 61)

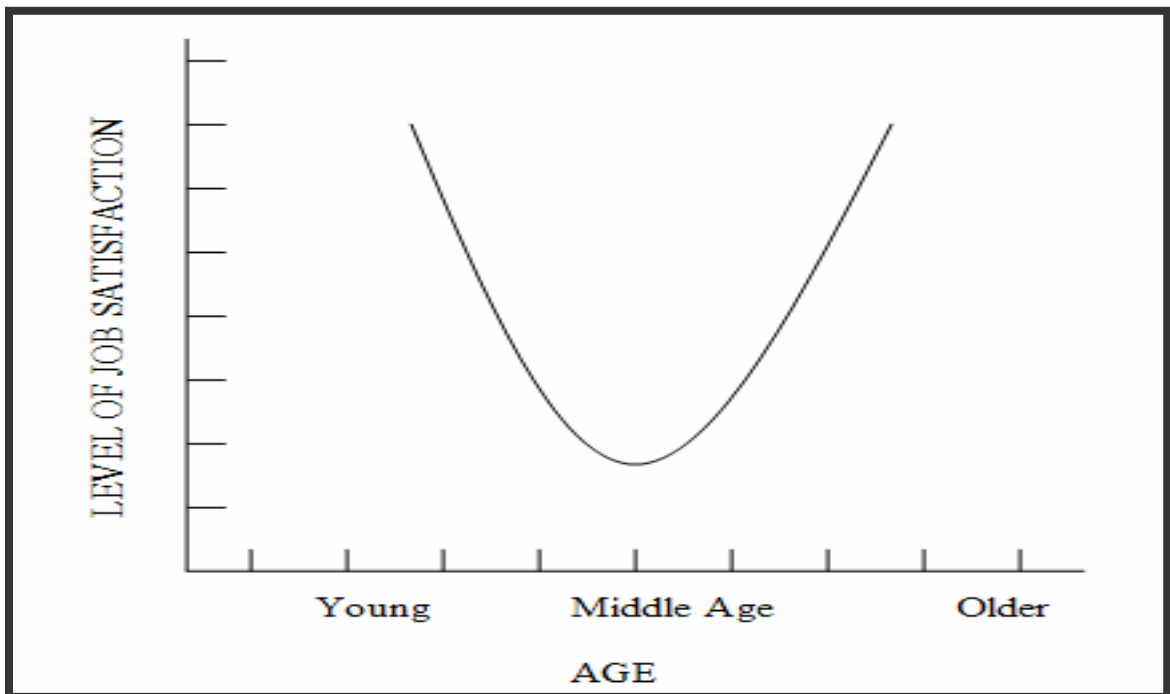


Figure 3 Herzberg's 1968 U-Shape Model of Age Related to Job Satisfaction

This somewhat brief overview of the possible relation of age to job satisfaction further demonstrates the complexity of this subject. It does appear that job satisfaction,

and every possible factor that can be associated with it, has been thoroughly examined over the past several decades. It would stand to reason that this particular topic, based on the voluminous amount of research that has been conducted, is extremely important to many individuals across almost every field of work. From earlier cited studies on age and its relation to job satisfaction, it appears that there is not a consensus as to the role of age in job satisfaction. Results range, on one end of the spectrum, finding statistically significant correlation between age and job satisfaction, to the other end of the spectrum, no significant relationship at all.

### *Gender-related Studies*

The next variable, gender, appears to be a hotly contested topic among researchers in this particular field of study. Several studies have been conducted which concluded that there are significant differences in job satisfaction based on gender (e.g., Brough & Frame, 2004; Petty et al., 2005; Saad & Isralowitz, 2001; Wharton et al., 2000). Still other studies contend that there are no statistically significant differences at all in job satisfaction based on gender (e.g., Chusmir, 2001; Ellickson, 2002; Eskildsen, Kristensen, & Westlund, 2003; Stockard & Lehman, 2004; Voydanoff, 1980). In a study conducted by Mason (2001), she found results that could be categorized somewhere in the middle of the other studies. Essentially, she determined that job satisfaction depended on other variables such as the type of job. This study revealed that men and women typically did not differ in their level of job satisfaction at the managerial level. However,



the study did conclude that there were differences based on gender in the clerical positions.

In the gender studies that did not find differences (Chusmir, 2001; Ellickson, 2002; Eskildsen et al., 2003; Stockard & Lehman, 2004; Voydanoff, 1980), the general view was that both men and women are very similar in the workplace and what motivates one gender typically motivates the opposite gender as well. Chusmir looked at gender differences on job commitment and noted, “Although the data here show some differences in results, an individual’s sex does not appear to have had any effect on job commitment” (p. 92). Voydanoff conducted a correlational study that investigated relationships between certain variables and job satisfaction among men and women. While noting some differences overall, men and women were very similar in nature to certain factors that contributed to overall job satisfaction.

In contrast, the four studies mentioned previously that did find significant differences in job satisfaction based on gender (e.g., Brough & Frame, 2004; Petty et al., 2005; Saad & Isralowitz, 2001; Wharton et al., 2000), paint quite a different picture. Equal pay for equal work seems to be the thesis in studies such as these. Men and women alike appear to experience or perceive differences in their levels of overall job satisfaction; and much of this experience or perception is based on gender. One study found that the more heterogeneous a given work group was, based on gender or race, the lower the level of job satisfaction for the individuals in the group (Wharton et al., 2000). The results of this study lend heavy implications to social factors that are also at play.

### *Profession-related Studies*

Even in a given profession, gender differences are refuted with little agreement as to their role. Teaching, for example, typically yields differences in the level of job satisfaction based on gender, according to Petty et al. (2005, as cited in Lambert, 1991) who note, “. . . that female teachers reported higher job satisfaction than male teachers” (p. 61). The type of teacher (e.g., elementary, secondary, college professor) that was reviewed in this study was not given. In contrast, Stockard and Lehman’s (2004) research pertaining to the influences on the satisfaction and retention of first year teachers conclude that gender, among other demographic variables, has no effect on overall job satisfaction. Gender, as a variable influencing job satisfaction, is still a confusing factor to investigate from an empirically based framework. There is simply not enough compelling evidence one way or the other that would lead to conclusions that gender somehow influences overall job satisfaction.

### *Level of Education Studies*

One additional variable that has received much scrutiny from the research literature is the effect that an individual’s level of education has on their overall level of job satisfaction. A study conducted by Glenn and Weaver (1982) hypothesized that the higher the level of education the more dissatisfied an individual would be with a given job. They indicated that, “The view that education tends to contribute to job satisfaction by increasing both the extrinsic and intrinsic rewards of work but tends to diminish

satisfaction by raising expectations appears frequently in the literature, but there has been little research to test it” (p. 47). The results of this study indicate that this was simply not the case; in fact, it was quite the opposite. The study went further to indicate that women in particular tend to experience a great deal more job satisfaction when possessing higher levels of education. Petty et al. (2005) would contend from their research that the view of the level of one’s education has been met with mixed results: some studies they found indicated a positive relationship to the level of education and job satisfaction; some studies found a negative relationship to the level of education and job satisfaction; and, still other studies did not find that educational level had any effect on job satisfaction. More recently, Saad and Isralowitz (2001) conducted a study on teachers’ job satisfaction in which they found that the higher the level of education of the teacher, the more satisfied they were with the job they had chosen. Educational level, much like gender, is inconsistent across studies in its impact on job satisfaction. Many of these hotly contested variables are likely to continue to be contested because of an inability to account for individual differences in a specific participant pool. In other words, a researcher could screen (obviously not randomly) and select a set of participants that appear almost identical (e.g., all female adult women with master’s degrees in biology doing the same job at very similar companies making the same amount of money), and still see difference in reported results from the participants as a result of their individual differences. This does not necessarily disavow any role that gender or educational level may have on job satisfaction, but it certainly generates more questions about what other factors could influence job satisfaction.

In concluding this section, the focus should not be lost from the earlier overview of these different studies. The contention is still the same—that job satisfaction positively contributes to more productive employees with greater lengths of tenure over time. Several studies (Bluedorn, 1982; Mueller & Price, 1990; Sheridan, 1992; Stockard & Lehman, 2004) have shown a positive correlational relationship between job satisfaction and job tenure. Stockard and Lehman, for example, discovered from their research of first year teachers' surveys completed both from a national resource as well as a state resource that “. . . the measure of teachers' satisfaction was the most important influence on retention intentions and decisions, with 1<sup>st</sup>-year teachers who were highly satisfied with their work being much more likely to plan to stay in teaching (statewide sample) and to actually do so (national sample)” (p. 762).

Sheridan (1992) found similar results in his study where newly hired accountants were tracked from six different accounting firms in the same city over a six year period. His contention was that the organizational climate at an organization would significantly contribute to employee job satisfaction or dissatisfaction, which in turn, would directly affect job tenure. From the six different public accounting organizations he found

They [participants] reported that some organizations have cultures that emphasize values of teamwork, security, and respect for individual members. These values foster loyalty and long-term commitment to the organizations among all employees, regardless of their job performance. Other organizations have cultures that emphasize personal initiative and individual rewards for accomplishing specific work objectives. These values foster an entrepreneurial norm whereby the

organization does not offer long-term security and the employees do not promise loyalty. (p. 1038)

As a result of this particular study, Sheridan concluded that “Professionals hired in the firms emphasizing the interpersonal relationship values stayed 14 months longer than those hired in the firms emphasizing the work task values” (p. 1050).

Job satisfaction clearly is an integral component in determining whether employees stay in or leave jobs. While this may appear to be an obvious statement, one study was found that, unlike the studies just discussed, did not find a definitive relationship between job satisfaction and job tenure (Brough & Frame, 2004). Granted, finding a relationship between job satisfaction and job tenure was not the primary purpose (not even the secondary or tertiary purpose) of this study, however, their results from a statistical analysis did not reveal a positive relationship between job satisfaction and job tenure. This study focused primarily on police officers from New Zealand, a primarily male dominated group, that were dealing with several job factors such as: supervisors’ attitudes, danger of loss of life on the job, sexual harassment (mostly experienced by the female officers that represent the minority in this sample), and burnout. It is certainly possible that any relationship between job satisfaction and tenure was simply lost in the confusion of all of the other, much more serious variables that were being analyzed. If this was not the case, no other studies were found that replicated these particular results. Only seven studies (Baird, Zelin, & Marxen, 1998; Brough & Frame, 2004; Denton & Kleiman, 2001; Lee & Wilbur, 1985; Petty et al., 2005; Saad & Isralowitz, 2001; Wharton et al., 2000) were found from an exhaustive search that gave even the slightest indication that job satisfaction does not lead to longer job tenure. As

stated earlier, these studies likewise could have had a different focus in which the relationship between job satisfaction and job tenure were not carefully scrutinized. Therefore, it is probably safe to conclude that, despite finding a few studies that did not primarily focus on the relationship between job tenure and job satisfaction, job tenure is greatly influenced in a positive way by job satisfaction. (Refer to Table 1 for an overview of the studies used in this research and their reported results.)

### Job Satisfaction Studies in a Psychiatric Hospital Environment

Overall job satisfaction of employees working in psychiatric hospitals has, for many years now, been grossly under-researched (Buffum & Konick, 1982; Sarrata, 1974; as cited in Aronson et al., 2005). As far back as 1959 it was recognized that placing high value on certain aspects, skills, and perquisites for mental health professionals working in psychiatric hospital settings greatly affected (positively) job satisfaction (Simpson & Simpson, 1959). Surprisingly, not many studies have been conducted that empirically researched job satisfaction in a psychiatric hospital setting. One study that focused on job satisfaction was found and will be discussed, while other studies looked at job satisfaction in an indirect manner in a psychiatric hospital setting. No study was found that used any concepts from self-determination theory to determine any level of job satisfaction from an intrinsic motivation perspective in a psychiatric hospital setting.

Little research has been conducted through the years in psychiatric hospital settings pertaining to the measured job satisfaction of personnel that work in this environment. One series of studies (Aronson et al., 2003; Aronson et al., 2005) was found

however, that addressed this very issue. The researchers in this study surveyed over 3000 psychiatric hospital employees from 39 different psychiatric hospitals (all owned by the same private, for-profit parent company) using a 100-item survey tool specifically developed for this study that was not validated using traditional psychometric techniques. Results from the data indicated that the majority of employees were moderately satisfied across several different variables, ranging from perceived actions and attitudes of management, supervision, teamwork, and general satisfaction to opinions about the doctors, quality of the facility, compensation, and the overall opinion about the parent company. Interestingly, the study also reported that compensation was not as important a determinant of job satisfaction as was originally suspected. This study is obviously limited in its generalizability due to the fact that a non-validated survey instrument was used in the study. It also only included private, for-profit psychiatric hospitals, not non-profit or state-operated psychiatric hospitals.

Other studies were found in the literature that researched employees in psychiatric hospital settings. However, they either did not pertain to job satisfaction or only indirectly pertained to job satisfaction. Stress and burnout appeared to be hot topics for discussion in the area of psychiatric hospital employees (Corrigan et al., 1995; Jeanneau & Armelius, 2000; Kirkcaldy & Siefen, 1991; Miller et al., 1990). In each of these studies, job satisfaction was alluded to, but was not the primary purpose of the research focus, nor did it appear that any viable statistical measures were used to assess job satisfaction. Two other studies (Thorp, 1985; Zautra et al., 1987) researched psychiatric hospital employee morale and turnover respectively, and gave no discussion about overall job satisfaction of the employee.

From this review of the literature, not much research has been conducted in this area (job satisfaction for employees in a psychiatric hospital setting). Even more so, no research has been conducted in this area that used the principles associated with self-determination theory to analyze psychiatric hospital employees' opinions about their work, working environment, and relationships with others (e.g. coworkers, patients, supervisors, and hospital administration). This issue will be discussed in further detail in an upcoming section of this chapter.

### Job Tenure Studies

As discussed earlier, job satisfaction has sufficiently been shown through empirical studies to be connected with job tenure. This is somewhat of an obvious statement—if a person is satisfied with their job they would usually stay in that job longer than they would a job in which they were not satisfied. To further strengthen that thread between job satisfaction and job tenure, additional studies will be discussed that have addressed this issue. Some studies addressed the issue from an indirect approach (they were researching some other topic of interest and also discovered this relationship between job satisfaction and job tenure), while other studies took the topic head on and specifically investigated the relationship between the two. This theoretical thread continues to be part of this particular study and will be further evidenced by additional studies found in this section.

Work-related research studies can begin by researching a specific question, yet also yield interesting information about another topic or research question as a



supplemental benefit. Some of those particular studies were found that did that very thing. Indirectly, four studies were found that researched some other aspect of a working environment, but in turn found some interesting results related to job tenure. Reddy (1997) conducted a research project that investigated the relationship between training and job turnover among secretarial personnel. Among several factors that she was investigating, she discovered that job satisfaction did positively affect turnover rates (which is another way of describing job tenure). Another study conducted by O'Reilly and Caldwell (1981) investigated certain aspects of job tenure based on post-decisional justification for staying in that particular job. What they concluded was that employees' perceptions that their decision to take that particular job and their inability to ever change jobs had a negative affect on job tenure. Inversely, their results yielded the same conclusions as many other studies claiming to have found a positive relationship between job satisfaction and job tenure. They simply stated it from a negative perspective with the idea of the employee's perception of being trapped in a job is akin to job dissatisfaction.

Much more evidence was found that directly focused on the relationship between job satisfaction and job tenure. These results were found in a variety of different settings ranging from middle managers and municipal employees to psychologists and individuals suffering from mental illness attempting to reenter the work force through vocational rehabilitation programs. Three such studies (Mueser, Becker, & Wolfe, 2001; Resnick & Bond, 2001; Xie, Dain, Becker, & Drake, 1997) relating to individuals with mental illness reentering the workforce through vocational rehabilitation programs came to the same conclusion: overall job satisfaction does have a positive effect on the amount of time an employee is willing to stay at a given job (job tenure). Granted, each of these

studies had a slightly different focus, but at the crux of each study was the notion that job satisfaction leads to longer job tenure.

Additional studies give further support to this relationship in other work contexts. A study conducted by Klein and Wiener (1977) used middle managers from various work settings to analyze their perceptions of their satisfaction with the supervision they received from their superiors. Results indicated that their level of satisfaction (job satisfaction) “correlated positively with job tenure . . .” (p. 96). Pecora (1997) found similar results when she measured the opinions of over 200 school psychologists with a questionnaire that measured many aspects of their work including job satisfaction. When this measure was compared with job tenure the results indicated a positive relationship between the two. Finally, a third study investigated the relationship between job satisfaction and job tenure by utilizing survey responses from municipal employees (fire fighters) of a medium-size city (Traut, Larsen, & Feimer, 2000). These authors concluded that, while slight differences were found in the level of job satisfaction when compared to job tenure in newer versus more seasoned employees, the overall effect of the relationship was positive.

The literature has been quite explicit in terms of the established relationship between job satisfaction and longer periods of staying with a particular job. This result has been evident across many different landscapes that comprise the work environment. Researchers with different plans or research agendas have directly or indirectly come to very similar conclusions about this relationship between job satisfaction and job tenure. As has been part of the theme of this research throughout the introduction and review of the literature, job satisfaction does positively impact on greater lengths of stay at a

position. Not only does this make sense from a practical standpoint (if a person likes their job they are most likely to stay in it), but also from an empirical standpoint as has been shown from the review of the literature. What has yet to be discussed are areas in the literature that do not address the research question that is being posed in this study. A review of this will follow in the next section.

### Gaps in the Literature

To summarize up to this point, motivation has been defined for the purposes of this study, in addition to being delineated between both intrinsic and extrinsic motivation. Competing theories of motivation have been discussed that looked at their strengths as well as their weaknesses. Competing theories were compared with one another and based on the strengths, weaknesses, and overall validity of the theory it was determined that self-determination theory was the most advanced in terms of its views toward motivation, its origins, and the factors that play a role in affecting it.

Several studies were analyzed that researched various topics such as intrinsic motivation, job satisfaction, job tenure, and self-determination theory. The purpose for the review of studies from each of these areas was to determine if a specific theoretical thread might exist in the literature. Specifically, the intent of this portion of the literature review was to determine a) if intrinsic motivation was equal to, if not better than, extrinsic motivation for determining job satisfaction in a work setting, b) job satisfaction leads to prolonged job tenure, and c) certain aspects of the work environment can be manipulated that will improve employee's intrinsic motivation leading to higher levels of

job satisfaction and tenure. After sufficiently verifying (through the literature review) this commonality between intrinsic motivation, job satisfaction and job tenure, the review will now focus on specific areas that research has not yet investigated.

### *The Governmental Workplace*

One area of the workforce that has been slighted when it comes to research being conducted on job satisfaction is in the area of governmental employees. One such study set out to change this by undertaking the very large task of evaluating 1200 municipal employees to determine what motivators are important to their overall job satisfaction (Ellickson, 2002). In this study, Ellickson looked at both internal and external motivators and found that the two most important motivators were intrinsic in nature. Departmental pride was described as being the most powerful determinant of job satisfaction, while advancement opportunity was the second most powerful motivator. Both of these factors would be considered intrinsic motivational factors that lead to a positive outlook on overall job satisfaction.

### *The Healthcare Industry*

In this same vein (workforce areas that have been under-analyzed), the healthcare industry has just begun to catch up with the industrial side of the United States' workforce in looking at the motivating factors for job satisfaction. At one time, it was simply assumed that a person must have a 'calling' to work in the healthcare field—

extrinsic motivators certainly were not a factor. As previously mentioned in an earlier section, two such studies (Spencer, 1986; Van Yperen, & Hagedoorn, 2003) were found that looked at the role of intrinsic motivators on nursing personnel in general care hospitals. The results of these studies indicate that there are factors that can influence employee's intrinsic motivation in a hospital setting, thus impacting employee's level of overall job satisfaction. The implication here is if these factors that affect intrinsic motivation, adversely or otherwise, are known, then efforts can be made to manipulate these factors. By manipulating factors such as high job demands, stress or fatigue (Van Yperen & Hagedoorn, 2003), administrators can positively influence employee's intrinsic motivation which influences overall job satisfaction, leading to longer lengths of tenure with the organization. In the Spencer (1986) study, nurses that were given opportunities to vent dissatisfaction with certain aspects of their jobs or employers were effectively more satisfied with their jobs, and subsequently stayed longer with that organization. Again, the managerial implication here is to give nursing employees opportunities to express grievances, and in the long run their overall job satisfaction will increase leading to a productive employee staying in the job for a longer period of time.

### *The Inpatient Acute-care Psychiatric Hospital*

Job dissatisfaction often looms heavy over healthcare organizations (Corrigan et al., 1995; Jeanneau & Armeluis, 2000; Kirkcaldy & Siefen, 1991; Miller et al., 1990; Thorp, 1985; Zautra et al., 1987). It is often a 'lose-lose' proposition for both the organization as well as the employee. Research indicates that job dissatisfaction typically

leads to low organizational commitment, low employee morale, increased job turnover, increased absenteeism, and employee frustration (Petty et al., 2005). Couple job dissatisfaction with employee shortages in key professional healthcare areas (i.e. doctors, nurses), and the problem becomes exponential in its magnitude. According to one healthcare industry resource (MHP Industry Alert, 2001), “. . . a new Robert Wood Johnson funded study [indicates] a shortage of 794,000 nurses by 2008 . . . and well ahead of the increase in demand for nursing services that the aging ‘Baby Boomers’ will have on the system in the 2010-2020 period” (p. 1). This issue compounds the problem of employee retention through increased levels of job satisfaction simply by subtracting from the available work pool. Another more recent study by Goodin (2003), also confirms the gloomy outlook with regard to the impending nursing shortage facing the United States. However, Goodin does lay out a game plan for addressing these shortages. She suggests looking at recruitment efforts, retention efforts, improving the overall image of the profession of nursing, and lobbying for legislation to address this shortage problem in the future.

More specifically, employee retention, improved employee morale, and overall job satisfaction are critical elements that need more extensive research in a more specific area of the healthcare industry—inpatient acute care psychiatric settings. Employee burnout, low morale, clientele, and low job prestige value are just a few of the elements working against administrators responsible for the productivity of these organizations. Daily discussions of psychiatric hospital leadership focus on employee morale, vacancy rates, turnover rates, retention rates, and recruitment efforts (Aronson et al., 2003; Aronson et al., 2005). If an administrator were armed with a knowledge of either specific

types of intrinsic motivators or other factors that positively influenced intrinsic motivation, they could single-handedly increase productivity, improve morale, and generally improve the overall prestige of the field. Gone are the days of sitting idly by waiting for the individuals that are “called” to this line of work. Competition and scarcity of resources have forced hospital administrators to find the cutting edge recruitment and retention techniques that enable their organizations to maintain a level of success.

Knowing the problems associated with maintaining quality employees in this environment, it is imperative to learn what types of intrinsic motivators attract as well as keep these quality employees. The problem that arises is attempting to determine which factors are useful to overall employee job satisfaction and which factors are irrelevant. In summary, the problem that is evidenced by a review of the research literature pertaining to this area is maintaining quality employees. Every aspect that involves the maintenance of quality employees in a healthcare organization plays a critical role in that organization’s overall success. Healthcare duties are extremely difficult in certain sectors of this field—namely inpatient psychiatric facilities. Having difficulty competing with other entities in the healthcare industry (e.g., because of factors such as salary, patient population, stigma), inpatient, state-operated psychiatric facilities must look at other factors that entice employees to stay at their current employment. Hospital administrators are faced with this dilemma on a daily basis. Research that would shed more light on how to improve retention of good employees would be of great benefit to hospital administrators operating acute-care, inpatient, state-operated psychiatric facilities. Presently, no such research has been conducted that would provide these answers.

The lack of this research places acute-care, inpatient, state-operated psychiatric facilities at a distinct disadvantage which ultimately hinders their ability to provide quality care to the customers. As stated previously, the overall purpose of this research will be geared toward determining whether various forms of intrinsic motivation correlate with employees' satisfaction with their job or career. The theoretical thread under consideration thus far is to determine whether intrinsic motivation is as good as or better than extrinsic motivation in explaining differences in job satisfaction, then whether job satisfaction in turn explains differences in employment tenure. The review of the literature clearly indicates that intrinsic motivation is equal to, and in most cases, much better than extrinsic motivation at explaining variation in overall job satisfaction for individuals (Carlton & Winsler, 1998; Carr et al., 1996; Cooper et al., 1999; James, 2005; King et al., 1982; Lepper et al., 1973; Ryan, et al., 1999). Additionally, job tenure was also found to be positively associated with overall job satisfaction (see Table 1). However, limited evidence of such relationships has been reported for inpatient psychiatric settings.

With the literature review indicating the important role of intrinsic motivation for job satisfaction and the relationship of job satisfaction and tenure, the remainder of this study will focus on the relationship of three components of intrinsic motivation (autonomy, competence, and relatedness) with overall job satisfaction. If a correlational relationship is demonstrated for any of these indicators with job satisfaction then future research could be conducted to determine what intrinsic factors can be manipulated in order to keep a psychiatric hospital employee working in this environment. Knowing the relationship between these variables offers the opportunity for improvement in the work



environment that ultimately may provide a better chance of ensuring the longevity of top quality employees providing the best services for their customers—the patients.

CHAPTER III  
METHODOLOGY

**Participants**

Because this study focused on employees who work in an acute-care, inpatient, state-operated psychiatric facility, participants were recruited from two very similar hospitals located in rural parts of the southeastern United States. The mission, policies, operational practices, and programmatic makeup of the hospitals were very similar because they both fell under the auspices of the same state agency (Mississippi Department of Mental Health). Both hospitals treated the same population of patients: men and women ages 18 and above suffering from some form of mental illness who had been involuntarily committed by their county of residence. The process of involuntary commitment involves some interested party (e.g., family member, friend, local official) going to their local chancery clerk's office to file an affidavit of commitment on the grounds the individual in question is either a danger to themselves or others. Once this has been completed, a therapist and two doctors examine the individual in order to determine if the individual meets either of the above mentioned commitment criteria. Finally, a chancery judge reviews the information, including testimony by the individual

in question and makes a final determination to involuntarily commit this individual to inpatient psychiatric care or choose some alternate plan of action.

The participants in this study were adults age 18 or above who work directly (in some capacity) with the psychiatric patients. A total of 172 individuals participated in this study from both hospitals. The participant sample included more females than males (62% females compared to 35% males); however, this was representative of the overall population. The majority of participants were Caucasian (69%), between the ages of 25-55 (77%), held positions of nurse or mental health technician (78%) and had been on the job three years or fewer (63%). Additional demographic information pertaining to the participant sample can be found in the next chapter. This study excluded any administrative staff (or staff that did not work directly with patient care in some way) because the nature of the work performed by these individuals was considered similar to administrative work performed in areas outside the mental health arena. The work performed by those employees (participants) who work directly with patient care was the area of focus that was considered unique to any other work environment. None of the physicians at either of the two sites participated in the study.

The participants for this study were recruited by the Community Services director at one of the sites by a written announcement that was prominently displayed on several bulletin boards throughout both hospitals. Using the community services director instead of the primary investigator greatly diminished any potential adverse influence that could have been experienced by a participant because of the primary researcher's position within the state agency. Since the community services director had no supervisory authority over any potential individual that participated in this study, the community

services director also served as the research project's official survey administrator. The solicitation of participation made it clear that participation was strictly voluntary on their part with no added incentive or pressure to comply with any instructions from this research study. The community services director (survey administrator) was given a written set of instructions (see Appendix A) that included a script to read to all individuals that participated in the study. Participants were given an informed consent form (see Appendix B) which explained the study in detail to them; provided contact information for any further questions; made aware that their participation was strictly voluntary and they could terminate their participation in the study at any time without fear of adverse consequences; and informed of the expected duration of time it would take them to participate in this study.

In order to determine, *a priori*, an adequate sample size, several indicators were investigated. To begin, a power analysis was conducted in order to address this issue of sample size. According to Cohen (1992), "Statistical power analysis exploits the mathematical relationship among these four variables in statistical inference: power, alpha [Type I risk level], sample size, and effect size. The relationship is such that when any three of them are fixed, the fourth is determined" (p. 98). Using a desired power level of 0.90 and proposed alpha of 0.05, the anticipated effect size would then need to be determined. In order to accomplish this, the previously discussed studies that have looked at job tenure and satisfaction were analyzed to determine an average effect size from those reported in this previous research (e.g., Mueser et al., 2001; Orpen, 1984; Resnick & Bond, 2001; Sheridan, 1992; Stockard & Lehman, 2004; Traut et al., 2000; Wharton et al., 2000; Xie et al., 1997). From the data given in these studies for the respective

relationships between job satisfaction and tenure, a mean, median, and range of correlations were calculated in order to determine a predictable effect size for this study. These studies combined to produce a mean of 0.517, a median of 0.51, and range from 0.032 to 0.94. Based on these values, the target effect size ( $R^2 = 0.27$ ) was considered a reasonable threshold to adopt. Cohen's (1992) guidelines would characterize such an effect as "large."

Now having three of the four measures necessary to complete the power analysis, an adequate sample size could be determined that was most beneficial to this study by utilizing the minimum amount of participants necessary to determine a significant result without a tremendous waste in resources. A free, *a priori*, sample size calculator was located on the internet (Soper, 2004) capable of calculating the minimum required sample size, given other pre-established data (i.e., alpha level, number of predictor variables, anticipated effect size, and desired statistical power level). [Note: This statistical calculator calculates effect size based on a given Cohen's  $f^2$  statistic. However, it will allow the user to convert  $R^2$  to  $f^2$ . By making this conversion prior to the input of the other needed data, an  $R^2$  of 0.27 was converted to an  $f^2$  of 0.37.] Using an alpha level of 0.05, a total of three independent or predictor variables (autonomy, competence, and relatedness), an anticipated effect size of  $R^2 = 0.27$  ( $f^2 = 0.37$ ), and a desired statistical power level of 0.90, the minimum required sample size was found to be 43. Given the participant pool at each location, allowing for a small percentage of dropouts or refusals to participate in the study, and unanticipated occurrences, a somewhat larger sample was solicited. In all, 80 employees from the southern research site and 92 employees from the northern site, for a total sample size of 172, participated in this study.

## Materials

The participants were asked to complete two survey instruments—one that measures participants' levels of intrinsic motivation and one that measures overall job satisfaction. They were also asked to complete a small set of experimental survey statements geared toward the specific work environment that participants experienced inside a psychiatric hospital.

### *Intrinsic Motivation Inventory*

The Intrinsic Motivation Inventory (IMI), developed by Deci and Ryan (1985), was the first survey instrument chosen for this study (see Appendix C). This inventory took approximately 10-20 minutes to complete. The IMI is comprised of 45 statements related to various aspects of intrinsic motivation. The statements in this survey were measured with a seven point Likert-type scale with the potential responses ranging from 'Not at all true,' 'Somewhat true,' to 'Very true' that are intended to capture the participant's level of agreement with each statement. Survey statements that are similar in nature are categorized according to one of seven different subscales in this inventory. These seven subscales include: (a) Interest/Enjoyment, (b) Perceived Competence, (c) Effort/ Importance, (d) Pressure/Tension, (e) Perceived Choice, (f) Value/Usefulness, and (g) Relatedness (see Figure 4). Each of these subscales includes five to eight statements that the participant was asked to rate using the above mentioned rating scale. The scores that were of particular interest in this study came from the subscales, "Perceived

Competence” (items # 8-13), “Perceived Choice” (items # 24-30), and “Relatedness” (items # 38-45). These three subscale scores represented each of the three predictor variables referred to as competence, autonomy, and relatedness respectively. However, since this inventory was relatively brief, the entire instrument was administered to the participants.

<b>Subscales</b>	<b>Example Statement</b>							
Interest/ Enjoyment	I enjoy doing my job very much	1	2	3	4	5	6	7
Perceived Competence	I think I am pretty good at my job.	1	2	3	4	5	6	7
Effort/ Importance	I put a lot of effort into my job.	1	2	3	4	5	6	7
Pressure/ Tension	I feel very tense while doing my job.	1	2	3	4	5	6	7
Perceived Choice	I do my job because I want to.	1	2	3	4	5	6	7
Value/ Usefulness	I think my job is an important activity.	1	2	3	4	5	6	7
Relatedness	I feel close to my coworkers.	1	2	3	4	5	6	7

Figure 4 Example Survey Items from the Intrinsic Motivation Inventory (IMI)

This survey instrument has been used in a variety of settings (lab, classroom, and work), and the instrument itself has been altered to offer the most efficient means of generating results with a minimal input of data. In other words, researchers (e.g., Plant & Ryan, 1985; Ryan, Connell & Plant, 1990; Ryan, Koestner & Deci, 1991; Ryan, Mims & Koestner, 1983) who have used this instrument have taken portions of the inventory, while leaving other parts of it in order to best suit their particular study. In all cases, the

psychometric properties (i.e., validity and reliability) of this instrument were found comparable, making it a flexible instrument with uses in many settings.

The psychometric properties of this survey instrument were tested in two particular studies (i.e., McAuley, Duncan, & Tammen, 1989; Tsigilis & Theodosiou, 2003) and found to be psychometrically valid and reliable. In each of these studies undergraduate students from physical education programs (116 participants in one and 144 participants in the other) participated in some physical activity and were then asked to complete a particular version of the Intrinsic Motivation Inventory (IMI). Both research studies conducted some type of reliability analysis prior to conducting their main analysis. For example, McAuley et al. looked at the internal consistency of both the subscales on the Intrinsic Motivation Inventory, as well as the overall scale. As a result, internal consistency reliability (i.e., coefficient alpha) revealed a range of 0.68 to 0.80 for the subscales in the instrument, and the total scale yielded a reliability coefficient of 0.85. Upon further analysis of their data, McAuley et al. were able to use item deletion procedures on certain items and actually increase the reliability of the instrument, indicating resilience for the reliability indicators for this instrument. This procedure further demonstrated the reliability of this inventory. However, no item deletion techniques were used in this study.

Likewise, Tsigilis and Theodosiou (2003) looked at internal consistency of the subscales and overall scale of the Intrinsic Motivation Inventory prior to their main analysis. The resulting internal consistency reliability (i.e., coefficient alpha) revealed a range of 0.78 to 0.84 for the subscales in the instrument, and the total scale yielded a reliability coefficient of 0.82. Item deletion procedures were also used in this study and



likewise improved the reliability of the scale. They also used a test-retest reliability strategy to ensure accuracy. The results were positive; however, less than half the participants were involved in this reliability estimate ( $n = 57$ ). Both studies used factor analysis methods to determine that the Intrinsic Motivation Inventory was a factorially stable instrument, and their respective analyses revealed strong psychometric properties making this a flexible, yet useful measure.

Because the present study was geared toward learning more about intrinsic factors that affect job satisfaction which leads to increased tenure in a healthcare work setting, a complete version of the IMI (using all 45 items across all seven subscales) was used for this study (see Appendix C). The potential range of total scores for this survey instrument varied from a potential maximum score of 315 to a potential minimum score of 45. However, the subscale scores associated with the intrinsic properties of competence, autonomy, and relatedness were the scores used in the statistical analysis. A score obtained in the high range of this total score, or any subsequent subscale score simply means a higher level of intrinsic motivation, whereas a low score indicates the presence of lower levels of intrinsic motivation (E. L. Deci, personal communication, May 5, 2007). It should be noted that the inventory listed in Appendix C shows subscale headings (for grouping purposes) as well as reverse score indicators (signified by an “R”). The version of this inventory that was used by the participants did not have this information present (see Appendix D). The statements were randomly sequenced on the survey form, in numbered order (item 1-45); also, the survey instrument did not contain the title that is shown in Appendix C. The title for the participant issued survey simply read, “Work Survey.” The justification for this was to not, in any way, influence the

participants' preconceived ideas about anticipated performance output for the survey. In doing this, it was hoped that any potential response bias associated with the administration of these instruments was limited (or nonexistent).

### *Job Satisfaction Survey*

The second survey instrument to be used in this study was the Job Satisfaction Survey (JSS) developed by Spector (1985; see Appendix E). This survey was developed by Spector as a result of his ongoing research that led him to the conclusion that existing job satisfaction survey instruments did not adequately translate into healthcare settings. This was evidenced by earlier studies that used existing job satisfaction surveys such as the Job Descriptive Index and the Minnesota Satisfaction Questionnaire (e.g., Smith, Kendall & Hulin, 1969, as cited in Spector) to assess satisfaction levels in places of business (other than healthcare organizations). The absence of such a survey instrument led him to the development of a 36-item inventory aimed at reflecting participants' opinions about overall job satisfaction and many factors associated with, or that have an effect on job satisfaction.

The survey used a six point Likert-type scale with responses ranging from 'Disagree very much' to 'Agree very much' that were intended to capture the participant's level of agreement with each statement. The statements in this survey are categorized according to a set of nine subscales composed of similar statements in each respective subscale. These nine subscales include: (a) pay satisfaction, (b) promotion satisfaction, (c) supervision satisfaction, (d) fringe benefits satisfaction, (e) contingent

rewards satisfaction, (f) operating conditions satisfaction, (g) coworkers satisfaction, (h) nature of work satisfaction, and (i) communication satisfaction (see Figure 5).

<b>Subscales</b>	<b>Example Statement</b>	
Pay Satisfaction	I feel I am being paid a fair amount for the work I do.	1 2 3 4 5 6
Promotion Satisfaction	There is really too little chance for promotion on my job.	1 2 3 4 5 6
Supervision Satisfaction	My supervisor is quite competent in doing his/her job.	1 2 3 4 5 6
Fringe Benefits Satisfaction	I am not satisfied with the benefits I receive.	1 2 3 4 5 6
Contingent Rewards Satisfaction	I do not feel that the work I do is appreciated.	1 2 3 4 5 6
Operating Conditions Satisfaction	My efforts to do a good job are seldom blocked by red tape.	1 2 3 4 5 6
Coworkers Satisfaction	I like the people I work with.	1 2 3 4 5 6
Nature of Work Satisfaction	I like doing the things I do at work.	1 2 3 4 5 6
Communication Satisfaction	Communications seem good within this organization.	1 2 3 4 5 6

Figure 5 Example Survey Items from the Job Satisfaction Survey (JSS)

The Job Satisfaction Survey is categorized by these nine subscales, having four statements in each category. The potential range of scores for this survey instrument varied from a potential maximum score of 216 to a potential minimum score of 36. A high score on this instrument indicated a high level of job satisfaction. Likewise, low scores on this survey indicated a low level of job satisfaction. For this instrument, the overall job satisfaction score (total score) was the item of interest (dependent variable). The items with an “R” beside the number indicate statements that were reversed scored. The heading and reverse scoring indicators, as seen in Appendix E, were not present in

the instrument given to the participants (see Appendix F). In a similar manner to that described for the IMI survey administration, the title for the participant issued survey simply read, “Work Survey – II.” The justification for this was to not, in any way, influence the participants’ preconceived ideas about anticipated performance output for the survey. In doing this, it was hoped that any potential response bias associated with the administration of these instruments was limited (or nonexistent).

In a study conducted by Spector (1985), prior to copyrighting and releasing the survey instrument for use, he determined the psychometric reliability and validity of this measure. He collected data from 19 separate samples, including both healthcare and non-healthcare jobs, which totaled 3148 participants. From these samples, he included

[e]mployees . . . from human service, public and nonprofit sector organizations, including community mental health centers, state psychiatric hospitals, state social service departments, and nursing homes. They [the participants] represented all levels from administrators and department managers to line and support personnel, including nurses, mental health counselors, social workers, clerks, secretaries, trainers, research specialists, and maintenance personnel. (p. 696)

Spector reported estimates of internal consistency reliability (i.e., coefficient alpha: 0.60 to 0.91) for each subscale in the instrument and that the total scale score correlated well with another validated measure of job satisfaction known as the Job Descriptive Index ( $r = 0.91$ ). He also used a test-retest reliability procedure on a small sample ( $n = 43$ ) in which the participants were given the survey originally, then again 18 months later. Surprisingly, the correlation coefficients between both administrations of the survey were

high, “. . . yielding a range of 0.37 to 0.74 for the subscales and 0.71 for the entire scale” (p. 700).

Spector also looked at the validity of this instrument which determines its accuracy. “The major evidence for discriminant and convergent validities was provided by a multitrait-multimethod analysis of the Job Satisfaction Survey and the Job Descriptive Index . . . [which yielded] validity correlations between equivalent subscales from both instruments . . . [that] were of reasonable magnitude, 0.61 to 0.80” (p. 701).

As with the Intrinsic Motivation Inventory, the Job Satisfaction Survey took approximately 10-20 minutes to complete. Each participant completed this entire survey (all 36 items) and not an altered version that contained fewer than the original 36 items (see Appendix E).

### *Experimental Survey Items*

Having completed the IMI and JSS, participants were then asked to complete six additional survey statements that were experimental in nature and focused specifically on the unique nature of the participants’ experience in a psychiatric hospital work environment. Given the opportunity to conduct research in this unique work environment, more specific information pertaining to this environment was collected and analyzed from these additional statements. These six additional experimental statements that pertain specifically to work in a psychiatric hospital were added to the end of the JSS survey instrument. These additional statements used the same six-point Likert-type scale as the Job Satisfaction Survey (see Appendix G). Convenience and applicability were the

primary reasons for placing the items in this inventory rather than allocating a separate inventory for these few survey items. The participants were given both instruments (the IMI and the JSS with additional experimental statements) during their routine work schedule in a single session of approximately 20-40 minutes.

### Design

The design of this study was correlational in nature—investigating the relationship of intrinsic motivational factors to overall job satisfaction. The dependent variable was overall job contentment/satisfaction. The independent variables for this study were three aspects of intrinsic motivation (e.g., autonomy, competence, relatedness). Multiple regression analysis was the best suited statistical procedure for use in this study since its goal is to determine the relationship (or explanatory power) between multiple independent variables (autonomy, competence, relatedness) and scores on a single dependent variable (job contentment). In reviewing the different multiple regression strategies available, and having chosen the number of predictors (independent variables) *a priori*, a forced entry regression technique including all the predictor variables was used in the analysis of the data for this research study.

There are several assumptions associated with multiple linear regression techniques. The issues of linearity, normality, and homoscedasticity being met are all pertinent to producing a meaningful result that can be accurately interpreted for this study and any future studies. Linearity simply refers to the relationship between the dependent variable and the independent variables (does this relationship form a line, as opposed to a

curve). In contrast to this, multicollinearity is not desirable in a research study such as this. Multicollinearity is simply the presence of strong correlations among the independent variables. This is not a desirable result since multiple regression analysis is attempting to predict variance between an independent variable and a dependent variable. If two independent variables are highly correlated, it is difficult to determine which independent variable better predicts the dependent variable.

Normality is another assumption that must be met which focuses on the distribution of the observed residuals after the regression model is determined. Ideally, the raw data collected here would form the shape of a “bell-shaped curve” indicating that the individual data points are evenly distributed across the mean of this data set. These measured scores for each of the independent variables were also assumed to be measured without error. Each of these two assumptions (linearity and normality) can be determined by a number of graphs such as scatterplots, bar graphs, or line graphs. It should be noted that a large sample size will generally address these two assumptions. The last assumption, homoscedasticity, is described by Pedhazur (1997) as “the variance of errors at all values of [the independent variables] is constant, that is, the variance of errors is the same at all levels of [the independent variable]” (p. 33). In simple terms, this assumption refers to an equal spread between data (residuals) of a given independent variable to the dependent variable. The presence of heteroscedasticity would not necessarily invalidate this study, but would weaken the overall result.

All assumptions related to multiple linear regression were assessed based on the data collected. For purposes of interpretation of the results of this study, the analysis consisted of a review of the output generated by SPSS which includes measures such as

the variance explained (e.g.,  $R$ ,  $R^2$ , adjusted  $R^2$ ), regression coefficients, and ANOVA results generated in conjunction with regression analysis to determine if a statistically significant result occurred.

### Procedure

The IMI, the JSS (with experimental statements attached), instructions, demographic forms, and informed consent were administered in groups of 2-15 employees at a time. The reason for the wide range in potential group members was to account for staffing issues and any work circumstances that may have occurred simultaneously with this survey process. Staffing and patient issues were expected to present an obstacle to this study simply because of the nature and dynamics of this particular healthcare field. Choosing this small group approach meant several administrations of the inventory and instructions would be required in order to accommodate so many participants and their schedules. The participant groups were seated in a conference room at a table and provided all materials necessary to carry out the requested tasks. There was only one experimenter in the room administering the inventory and instructions for this study.

The most appropriate individual to oversee the administration of the survey experiment was an individual that had no supervisory authority over any potential participant and had been trained by an institutional research review board to conduct such experiments. The community services director at one of the research sites was therefore chosen for this role. This individual has no supervisory authority over any perspective



participant and recently received her certification to conduct research experiments from a university's institutional research review board. This individual served as the survey administrator for both research sites. This was done due to the nature of the primary researcher's relationship with these agencies (serves as hospital administrator of one of the research sites) and the potential for participants feeling obligated to participate which would negate the voluntary tone of this research altogether.

As the survey process began, the survey administrator asked the participants to sit quietly and await further instructions that were given by the survey administrator from a pre-scripted set of written instructions developed by the primary investigator (see Appendix A). The participants' anonymity was assured (even though the survey was conducted in small groups) by having adequate space (at least one chair) between each participant in the room, and by having no identifiable information (i.e., informed consent) associated with the survey instrument. They were given the informed consent document and asked to read and sign verifying that they acknowledge the context of this study. Once they had read and signed the informed consent, the survey administrator collected the consent forms and then distributed a demographic form along with the survey instruments as one stapled packet. The participants were then asked to complete both the demographic form as well as all survey items. There was not a time limit for the administration of these inventories. Participants were free to leave the room upon completion (or voluntary termination of the experiment) of the inventories.

The survey process was conducted as planned in small groups on repeated occasions to account for unforeseen obstacles during the study. The surveys were

administered across every work shift over a several day period. Both sites employed individuals that worked one of four shifts: (a) Monday-Friday, 8:00 a.m. to 5:00 p.m., (b) 7:00 a.m. to 3:30 p.m., (c) 3:00 p.m. to 11:30 p.m., or (d) 11:00 p.m. to 7:30 a.m. At these sites, the schedules (b)-(d) have a varied work schedule but all employees will work a minimum of 80 hours in a 14 day period. No major obstacles were encountered by the survey administrator in conducting this study at either research site.

Because this study used two straightforward inventory (survey) instruments with oral instructions at the beginning, there was not a need to have a debriefing period with any participant. However, the overall results of the study are to be shared with any interested participant who expressed a desire to know. They were able to express this interest at the beginning of experiment by checking the appropriate box on the informed consent form. The raw data collected from this study were kept in a secure, locked cabinet behind a locked door for the time required to complete the study and data analysis.

## CHAPTER IV

### RESULTS

#### Introduction

A total of 172 individuals participated in this study. From this sample, 92 (53%) participants were employed at the northern location, while 80 (47%) participants were employed at the southern location. As anticipated, considerably more females ( $n = 106$ ) participated in this study than did males ( $n = 60$ ). (Note: Six individual participants did not indicate gender on their demographic form.) This discrepancy in the distribution of males and females in this study was expected and is representative of the total population. In the sample, 62% of participants were female, whereas 35% of all eligible employees at the combined sites were male. Approximately 69% of the participants were Caucasian, with an additional 26% of the sample represented as African-American. The remaining participants included Hispanic, Asian, other, or unspecified (see Table 2). One hundred and sixty four of the participants in this study (from the total sample of  $N = 172$ ) indicated their age by selecting one of the age range categories on the demographic form. From this group, almost 77% of the sample falls in the age range of 25-55. In this subset, the age range of 25-35 made up the largest single portion of the group (28%, see Table 3).

Table 2 Ethnicity of Participants

Ethnic Group	Frequency	Percent
Caucasian	118	68.6
African American	44	25.6
Hispanic	1	.6
Asian	2	1.2
Other	1	.6
No Response	6	3.4
<b>Total</b>	<b>172</b>	<b>100.0</b>

(*N* = 172)

Table 3 Age Distribution of Participants

Age of Participant	Frequency	Percent
18 - 24	17	9.9
25 - 35	49	28.5
36 - 45	34	19.8
46 - 55	43	25.0
56 - Above	21	12.2
No Response	8	4.6
<b>Total</b>	<b>172</b>	<b>100.0</b>

(*N* = 172)

Almost 80% of the participants in this study were either nurses or mental health technicians (positions that assist the nurses and work most closely with the psychiatric patients). Table 4 gives the frequencies and percents of total sample by discipline for this study, as well as instances of non-response from participants. From the total sample, 159 of the participants indicated their current years of experience at either of the research sites. Through summary statistics, it appears that the largest portion (45%) of the participants' experience with their current jobs falls into the range of one to three years (see Table 5). The values on this demographic variable are positively skewed, with many

participants being relatively new in their present jobs. This result can further be explained by the fact that both research sites are still relatively new (both less than 10 years old) in their operations. Likewise, participants' total healthcare years of experience was positively skewed with approximately 64% of the participants having 12 years of experience or fewer (see Table 6).

Table 4 Professional Discipline of Participants

Professional Discipline	Frequency	Percent
Nurse Practitioner	6	3.5
Nurse	53	30.8
MHT	81	47.1
Psychologist	9	5.2
Social Worker	10	5.8
Recreational Therapist	4	2.3
Other	1	.6
No Response	8	4.7
Total	172	100.0

(*N* = 172)

Table 5 Current Job Experience of Participants

Current Job Experience	Frequency	Percent
Less than 1 year	31	18.3
1 – 3 Years	77	45.0
4 – 6 Years	30	17.4
7 Years or more	21	12.2
No Response	13	7.1
Total	172	100.0

(*N* = 172)

Table 6 Overall Healthcare Experience of Participants

Overall Job Experience	Frequency	Percent
0 – 3 Years	46	26.9
4 – 8 Years	37	21.5
9 – 12 Years	27	15.7
13 Years or more	53	31.3
No Response	9	4.6
<b>Total</b>	<b>172</b>	<b>100.0</b>

(*N* = 172)

Once the survey instruments had been completed by the participants, an initial visual screening of the raw data revealed missing information. It was unclear whether this information was purposely omitted or whether it was an oversight (e.g., some statements on a given survey instrument had two choices marked which appeared to indicate the participant’s inability to scan and choose the correct line of survey responses for the given survey statement). This was not, however, a prevalent problem with this study—only 45 statements were left blank (or improperly answered) from a total of 14,964 survey statements answered (87 survey statements from both instruments times 172 participants). In order to address the problem of missing data, mean substitution was chosen as the corrective action (see Appendix H). Where missing data was located (for each participant), the remaining scores from the given subscale group of statements were averaged for that participant and that number was used in place of the missing data. Given that the statements grouped together in each subscale are similar in nature, it was assumed that the participant most likely would have answered the omitted statement similarly to the other statements in that subscale. Though this method tends to bias

estimates of variance (Velicer & Colby, 2005), the low prevalence of missing data points (0.3%) makes it unlikely that doing so distorted the results.

After completing the mean substitution process to account for any missing data in the participants' responses, the subscale scores and total scores were computed. Responses for each of the experimental statements and the total score were also computed. Table 7 provides the summary statistics for both surveys as well as the experimental statements. From inspection of mean scores for the predictor variables (autonomy, competence, and relatedness scores), it appears that the predictor variables yielded moderate to high means across participants. Although no studies were found that used the IMI with this particular group of participants or their environment, the moderate to high mean scores observed were similar to the findings of other research studies that used this inventory (e.g., McAuley et al., 1989, and Plant & Ryan, 1985). Interestingly, the mean responses to the experimental statements appeared to be very high, with the exception of statement six (a perception of the job as "Dangerous work") that yielded a moderate mean result. Further correlational analysis may reveal that these statements have some predictive qualities for job satisfaction in an inpatient psychiatric hospital as well.

Table 7 Descriptive Statistics for IMI Survey, JSS Survey, Experimental Statements, and Survey Totals

	# of Items/Scale	Minimum	Maximum	Mean	Standard Deviation
Subscore1 – Interest/Enjoyment	7	19	49	39.58	6.73
Subscore2 – Competence	6	21	42	35.99	4.49
Subscore3 – Effort/Importance	5	18	35	32.74	3.29
Subscore4 – Pressure/Tension	5	5	34	14.15	5.75
Subscore5 – Choice/Autonomy	7	13	49	35.45	8.21
Subscore6 – Value/Usefulness	7	25	49	42.76	5.48
Subscore7 – Relatedness	8	11	56	41.77	9.32
IMI – Total Score	45	171	282	242.47	22.90
Subscore1 – Pay Satisfaction	4	4	24	15.59	5.08
Subscore2 – Promotion Satisfaction	4	4	24	12.06	4.61
Subscore3 – Supervision Satisfaction	4	4	24	19.85	4.66
Subscore4 – Fringe Benefits Satisfaction	4	4	24	16.53	4.68
Subscore5 – Contingent Rewards Sat.	4	4	24	16.31	5.29
Subscore6 – Operating Conditions Sat.	4	7	24	15.91	3.62
Subscore7 – Coworkers Satisfaction	4	4	24	17.92	3.75
Subscore8 – Nature of Work Satisfaction	4	10	24	20.92	3.05
Subscore9 – Communication Satisfaction	4	5	24	17.43	4.35
JSS – Total Score	36	84	211	152.55	28.02
Exp. Statement #1 - Challenging Patients	1	2	6	5.52	.75
Exp. Statement #2 - Exciting Environment	1	1	6	5.27	.94
Exp. Statement #3 - Discouraging Atmosphere*	1	1	6	5.26	1.14
Exp. Statement #4 - Psychological Improvement	1	3	6	5.62	.64
Exp. Statement #5 - Helping People	1	1	6	5.07	1.29
Exp. Statement #6 - Dangerous Work*	1	1	6	3.81	1.60
Experimental Statements – Total	6	18	36	30.58	4.10

(N = 172) \*Reverse coded statements.



## Results

### *Summary Statistics*

Upon inspection and initial analysis of the data after the missing data issue was addressed, estimates of reliability of scores from the measures used in this study were calculated. The three predictor variables used in this study (competence, autonomy, and relatedness subscale scores from the IMI) yielded relatively high Cronbach's alpha reliability estimates of .646, .740, and .860 respectively. The overall internal consistency reliability for the IMI yielded an estimate of .830 for this sample. The JSS yielded an overall internal consistency reliability estimate of .875. Both measures yielded high reliability estimates from the sample in this particular study which gives added assurance for the use of the measures in this study.

### *Multiple Regression Analysis*

Before conducting the regression analysis, all assumptions were reviewed to ensure that the data adhered to the restrictions and limitations of this statistical procedure. Both the linearity and normality assumptions associated with multiple linear regression were met with this data set (see Appendix I). This was demonstrated by visual inspection of both normality histograms and quantile-quantile plots that showed reasonably normally distributed sets of participant responses. Multicollinearity, the presence of a strong correlational relationship between two or more independent variables (Lipovetsky

& Conklin, 2005), was not indicated in the initial analysis (see Table 8 and 9). The maximum observed correlation among predictor variables was .218, which is well below usual thresholds for asserting collinearity (Table 8). Likewise, variance inflation factor values (VIF) were all well below usual values (10 or more) suggested by some (e.g., O'Brien, 2007) as evidence of collinearity (Table 9). Finally, from a visual inspection of a scatterplot comparing standardized residuals with standardized predicted values (see Appendix J), the homoscedasticity assumption also appears to have been adequately met.

A forced entry multiple regression analysis was performed with the JSS total score as the dependent variable and competence, autonomy, and relatedness scores (the chosen subscale measures on the IMI) as the predictor (independent) variables. The correlation analysis revealed statistically significant correlations for the relationship between the JSS total score and two predictor variables (autonomy and relatedness; see Table 8). Of the three independent (predictor) variables, the estimated regression coefficients were statistically significantly different from zero for two: autonomy and relatedness scores (see Table 9). This result is consistent with finding significant zero-order correlations for these scores with the JSS score. The unstandardized regression coefficients indicate that for every point scored higher on the autonomy and relatedness subscales, we would estimate a job satisfaction score that is about one-half or one full point higher, respectively when other independent variable scores are held constant. The estimated regression coefficient for competence scores was not significantly different from zero (see Table 9).

Table 8 Pearson Correlations among IMI and JSS Scores

Correlations				
	JSS Total Score	Competence	Autonomy	Relatedness
JSS Total Score	1.000			
Competence	-.003	1.000		
Autonomy	.225*	.106	1.000	
Relatedness	.349*	.004	.218	1.000

Note: \* $p < .05$  ( $N = 172$ )

Table 9 Estimated Regression Coefficients for the Three Intrinsic Motivation Scores Predictor Model for Estimating Job Satisfaction Scores

Predictor	Correlation with JSS	Unstandardized Regression Coefficient	Standardized Regression Coefficient	Significance	Collinearity Statistics	
					Tolerance	VIF
(Constant)		98.674		0.000*		
Competence	-0.003	-.132	-0.021	0.768	.988	1.012
Autonomy	0.225*	.540*	0.158	0.033*	.942	1.062
Relatedness	0.349*	.945**	0.314	0.000**	.952	1.050

Note: \* $p < .05$ , \*\* $p < .01$

The overall regression analysis revealed a smaller effect size (e.g., according to Cohen (1988, 1992) who categorized effect size ( $f^2$ ) for regression analysis as: small effect size = .02 (corresponding  $R^2 \approx .02$ ); medium effect size = .15 ( $R^2 \approx .13$ ); and large effect size = .35 ( $R^2 \approx .26$ ) than initially predicted, but did yield an overall statistically significant result. The multiple  $R$  for this regression analysis was .381 and the  $R$  squared

was .145, corresponding to a Cohen’s  $f^2$  value of .17. Stated differently, approximately 14.5% of the total variance in job satisfaction scores can be explained by these three predictor variables. By Cohen’s guidelines, this represents a “medium” effect size. The ANOVA table (Table 10) indicates a statistically significant result from this multiple regression analysis,  $p < .001$ . Upon inspection of the regression coefficients generated from the multiple regression analysis, it would appear that at least two of the original predictor variables (autonomy and relatedness scores) do contribute to the explanation of some of the variation in overall job satisfaction scores. Therefore, the original research hypothesis for this study, “Intrinsic motivation factors (i.e., autonomy and relatedness) are positively related to healthcare workers’ overall level of job satisfaction,” is substantiated in these findings.

Table 10 ANOVA Table for Multiple Regression Model (Using Three Intrinsic Motivation Scores) to Estimate Job Satisfaction Scores

ANOVA					
	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	19513.198	3	6504.399	9.516	.000
Residual	114836.452	168	683.550		
Total	134349.650	171			

Note:  $p < .05$

### *Multiple Regression Analysis Using Demographic Variables*

An additional, exploratory multiple regression analysis was conducted using the demographic data collected for this study. The demographic variables of ‘Employer’ (e.g., hospital work site), ‘Gender,’ ‘Ethnicity,’ ‘Professional Discipline,’ ‘Age,’ ‘Current Work Experience,’ and ‘Total Work Experience’ were used as independent variables and job satisfaction score was used as the dependent variable. Several of the demographic variables (all except ‘Age,’ ‘Current Work Experience,’ and ‘Total Work Experience’) in this study were categorical variables; therefore, dummy coding was used to convert these categorical variables to variables that could be analyzed with the remaining metric demographic variables. The variables of ‘Employer’ and ‘Gender’ were not dummy coded because each of these variables only contained two categories. A simple recoding of each item (category) for a given categorical variable was used by inserting a series of “ones” and “zeros” when a particular categorical value was present, or not. Including the dummy-coded variables, this yielded a total of 14 independent variables.

Results of this analysis, when comparing significance tests of the regression coefficients (see Table 11), indicated that only two variables (age and current experience) showed statistical significance in the model for predicting the dependent measure (JSS total score). The overall regression analysis revealed a moderate effect size, according to Cohen’s (1988, 1992) guidelines, yielding a multiple  $R$  of .450 and an  $R$  squared of .202. The correlations between the demographic variables and job satisfaction scores can be observed in Table 11. An ANOVA table (Table 12) was likewise constructed with this regression analysis and it also resulted in a statistically significant result,  $F(14,150) =$

2.46,  $p = .004$ . A correlation matrix for all of the demographic variables is given in Appendix K.

Table 11 Estimated Regression Coefficients for Fourteen Demographic Variables Predictor Model for Estimating Job Satisfaction Scores

Predictor	Corr. with JSS	Unstandardized Regression Coefficient	Standardized Regression Coefficient	Significance	Collinearity Statistics	
					Tolerance	VIF
(Constant)		179.112		.000**		
Employer	-.122	-3.735	-.069	.405	.874	1.14
Gender	.157*	9.394	.165	.069	.724	1.38
Age	.074	6.351	.290	.008**	.500	1.99
Current experience	-.212**	-3.747	-.329	.000**	.769	1.30
Total experience	-.035	-.395	-.148	.181	.486	2.05
Caucasian	-.035	-42.538	-.691	.109	.032	31.1
African American	-.019	-42.077	-.660	.118	.033	29.9
Hispanic	.145	15.504	.046	.675	.485	2.06
Asian	.052	-17.634	-.074	.586	.318	3.14
Nurse practitioner	.111	8.132	.058	.520	.716	1.39
Registered nurse	.025	-6.829	-.119	.291	.467	2.14
Psychologist	-.087	-13.170	-.109	.195	.844	1.18
Social worker	-.108	-11.927	-.109	.193	.845	1.18
Rec. therapist	.072	15.242	.090	.267	.900	1.11

Note: \* $p < .05$ , \*\* $p < .001$

The variable of years of ‘Current Experience’ yielded a statistically significant regression coefficient, the sign of which implies a negative association with job satisfaction scores. The variable ‘Age’ also yielded a statistically significant regression coefficient, the sign of which implies a positive association with job satisfaction scores. The remaining demographic variables yielded estimated regression coefficients that were

Table 12 ANOVA Table for Multiple Regression Model (Fourteen Demographic Variables) for Estimating Job Satisfaction Scores

ANOVA					
	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	22545.460	14	1610.390	2.460	.004
Residual	89013.265	136	654.509		
Total	111558.726	150			

Note:  $p < .05$

not significantly different from zero. The appropriate conclusion, based on the results is that the independent variables of ‘Ethnicity,’ ‘Employer’ (e.g., hospital work site), ‘Gender,’ ‘Total Years of Experience,’ and ‘Professional Discipline’ (job position) did not serve to help explain differences in job satisfaction.

#### *Multiple Regression Analysis Using the Experimental Statements*

An additional, exploratory multiple regression analysis (forced entry method) was conducted using the six experimental statements developed specifically for this study (refer to Appendix E). These items were attached to the end of the JSS survey and were designed specifically for assessing the participant’s views about the unique work environment associated with a psychiatric hospital as it relates to their job satisfaction. For the following tables that have these experimental statements in the output, an abbreviated, more meaningful title was given for ease of reading, e.g., experimental statement #1 is “Challenging patients”, experimental statement #2 is “Exciting

environment”, and experimental statement #3 is “Discouraging atmosphere,” for example. This shortened title is the essence of what the statement was intended to capture from the participant working in the psychiatric hospital (see Appendix G). In this analysis, the six experimental statements were used as independent variables while the overall job satisfaction scores again served as the dependent variable. Correlations and regression coefficients among the experimental statement responses and job satisfaction scores are given in Tables 13 and 14.

Table 13 Pearson Correlations Among Experimental Statements and JSS Scores

	JSS Total Score	Challenging Patients	Exciting Environment	Discouraging Atmosphere	Psychological Improvement	Helping People	Dangerous Work
JSS Total Score	1.000						
Challenging patients	.164*	1.000					
Exciting environment	.282**	.697**	1.000				
Discouraging atmosphere	.392**	.507**	.600**	1.000			
Psychological improvement	.225**	.525**	.535**	.418**	1.000		
Helping people	.215**	.397**	.316**	.255**	.493**	1.000	
Dangerous work	.265**	.067	.056	.193*	.090	.024	1.000

Note: \* $p < .05$ , \*\* $p < .001$  ( $N = 172$ )

All six experimental statements produced statistically significantly positive zero-order correlations with JSS scores, which suggests further predictive qualities that the particular dynamic associated with these statements is associated with level of employee job satisfaction. In particular, experimental statement three, “The atmosphere of a



Table 14 Estimated Regression Coefficients for the Six Experimental Statements Predictor Model for Estimating Job Satisfaction Scores

Predictor	Corr. with JSS	Unstandardized Regression Coefficient	Standardized Regression Coefficient	Significance	Collinearity Statistics	
					Tolerance	VIF
(Constant)		92.068		.000**		
Challenging patients	.164*	-6.811	-.183	.072	.409	2.44
Exciting environment	.282**	4.702	.159	.139	.595	1.68
Discouraging atmosphere	.392**	7.490	.306	.001**	.574	1.74
Psychological improvement	.225**	.754	.017	.847	.728	1.37
Helping people	.215**	3.165	.146	.071	.955	1.04
Dangerous work	.265**	3.563	.204	.004**	.460	2.17

Note: \* $p < .05$ , \*\* $p < .001$

psychiatric hospital is discouraging to me and makes me want to seek another job,” and statement six, “Psychiatric hospitals are violent (or dangerous) places to work,” both had regression coefficients that were statistically significantly different from zero. These were both reverse scored items (Item three –  $M = 5.26$ ,  $SD = 1.14$ ; Item six –  $M = 3.81$ ,  $SD = 1.60$ ) that were included to account for possible negative aspects of working in this particular environment. The relatively high mean score, after reverse scoring, for item #3 (“discouraging atmosphere”) for this sample indicates that the participants did not perceive the environment as discouraging or as a motivation to seek another job. The mean score and frequency distribution (not given) for item #6 suggests that the participants differed in their opinion of whether psychiatric hospitals are dangerous places to work, with about 49% indicating some level of agreement (slight, moderate or

very much) and 51% indicating some level of disagreement. Knowing that participants who did not feel discouraged or threatened by their work environment tend to have higher estimated levels of job satisfaction clearly indicates two areas of attention in a psychiatric hospital setting that hospital leadership can continue to focus on in order to ensure continued job satisfaction.

The regression analysis that incorporated the unique (“experimental”) statements addressing characteristics of the psychiatric hospital environment, when compared to the regression analysis of the original (IMI subscores) predictor variables, yielded an even higher effect size for its relationship to job satisfaction. The multiple  $R$  for this regression analysis was .474 and the  $R$  squared was .224. This result indicates that approximately 22.5% of the total variance in job satisfaction scores can be explained by responses to these experimental statements. The ANOVA table (Table 15) indicates a statistically significant result from this multiple regression analysis. These results do indicate that these experimental statements are “tapping” into unique qualities of the job environment specific to the inpatient psychiatric hospital work settings that can predict the level of employee job satisfaction. As a set, the experimental statements also appear to have more predictive value than the original intrinsic motivation variables (autonomy, competence, and relatedness subscores) that were used in this research study.

#### *Multiple Regression Analysis Using All Predictor Variables*

One final, exploratory multiple regression analysis was conducted on the data that included all the independent variables (i.e., original three intrinsic motivation score

Table 15 ANOVA Table for Multiple Regression Model (Six Experimental Statements) for Estimating Job Satisfaction Scores

ANOVA					
	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	30148.626	6	5024.771	7.957	.000
Residual	104201.024	165	631.521		
Total	134349.650	171			

Note:  $p < .05$

variables, six experimental statements, and 14 coded demographic variables) with job satisfaction scores as the dependent variable. Initial results indicated a large effect size using Cohen’s (1988, 1992) “rule of thumb” for effect size classification with a multiple  $R$  of .642 and an  $R$  squared of .412. These results would initially look as though all of these variables combined would account for approximately 41% of the total variance in the job satisfaction scores. Upon inspection of the resulting regression coefficients, it appears that many of same variables that showed statistical significance in individual regression analyses also appear to stand out when combined with all of the other independent variables (e.g., relatedness subscores, current years of experience and experimental statement #3 – “Discouraging atmosphere”; see Table 16). The overall model yielded an  $R$  squared that was statistically significantly different from zero,  $F(23, 150) = 3.87, p < .001$ .

Table 16 Estimated Regression Coefficients for all Independent Variables Predictor Model for Estimating Job Satisfaction Scores

Predictor	Corr. with JSS	Unstandardized Regression Coefficient	Standardized Regression Coefficient	Sig.	Collinearity Statistics	
					Tolerance	VIF
(Constant)		99.336		.004**		
Competence	.036	-.220	-.037	.641	.727	1.38
Autonomy	.257	.270	.082	.301	.742	1.35
Relatedness	.335**	.651	.228	.004**	.781	1.28
Challenging patients	.152	-5.819	-.161	.140	.394	2.54
Exciting environment	.292*	5.530	.191	.079	.396	2.53
Discouraging atmosphere	.423*	5.966	.242	.012*	.516	1.94
Psychological improvement	.244	.384	.009	.929	.434	2.30
Helping people	.219	2.198	.099	.293	.525	1.91
Dangerous work	.296*	2.328	.136	.082	.773	1.29
Employer	-.122	-6.203	-.114	.135	.811	1.23
Gender	.157	1.675	.029	.732	.630	1.59
Age	.074	4.102	.187	.077	.420	2.38
Current experience	-.212*	-2.245	-.197	.018*	.677	1.48
Total experience	-.035	-.353	-.132	.182	.479	2.09
Caucasian	-.035	-23.458	-.381	.331	.030	33.0
African American	-.019	-18.710	-.293	.445	.032	31.6
Hispanic	.145	15.003	.045	.650	.476	2.01
Asian	.052	-13.295	-.056	.647	.311	3.21
Nurse practitioner	.111	3.075	.022	.788	.688	1.45
Registered nurse	.025	-6.036	-.105	.308	.439	2.28
Psychologist	-.087	-3.349	-.028	.717	.805	1.24
Social worker	-.108	-13.172	-.121	.113	.811	1.20
Recreation therapist	.072	3.176	.019	.799	.857	1.17

Note: \* $p < .05$ , \*\* $p < .001$ . Other demographic variables were excluded from the analysis due to missing data occurrences.

In summary, the results from the analyses appeared to show some predictive relationship of the intrinsic motivation scores for job satisfaction score. Likewise, a few

independent variables (e.g., the demographic variables of years of ‘Current Experience’ and experimental statement #3) also appeared to show some relationship to the job satisfaction scores. From all of the analyses conducted for this research project, it appears that, as a set, the experimental statements, especially #3, ‘Discouraging atmosphere,’ and #6, ‘Dangerous work,’ contribute as much or more to the prediction of job satisfaction for employees working in an inpatient psychiatric hospital as do the measures of intrinsic motivation that were evaluated. A further discussion of these results is given in the next chapter.

CHAPTER V  
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

*“Whenever a theory appears to you as the only possible one, take this as a sign that you have neither understood the theory nor the problem which it was intended to solve.” ~ Karl Popper*

Summary

Throughout this entire research process an attempt was made to determine, both through a review of the literature as well as by empirical analysis, whether intrinsic motivation was a good predictor of job satisfaction in a psychiatric hospital environment. Two psychometrically sound survey instruments were used to assess certain aspects of intrinsic motivation and job satisfaction, and then were compared to determine if any predictive qualities existed between these two variables.

The review of the literature was organized to establish a theoretical thread that would lead up to the design of this study. The thread that was clearly established through the literature was that intrinsic motivation is as good as or better than extrinsic motivation at influencing job satisfaction in the workplace. Second, that higher levels of job satisfaction lead to longer tenures of service on the job. Most of the literature reviewed

for this study helped clearly establish this theoretical thread that led to testing the hypothesis of this study which was, intrinsic motivation is positively correlated with the psychiatric hospital employees' overall level of job satisfaction.

The research design that was utilized to answer this hypothesis was a survey design geared toward capturing key information related to both intrinsic motivation and job satisfaction. Two very similar psychiatric hospitals were located in the southeast region of the United States and hospital staff members were recruited for participation in this study. Because of their similarity, it is believed that the results from either location would generalize, not only to either location, but also to other psychiatric hospitals that possess similar characteristics (e.g., staffing, acuity level, clientele, census) as well. A total of 172 individuals participated in the survey process. The participants were recruited on a voluntary basis, but were screened for meeting one prerequisite requirement. All the participants in this study had to have a "clinically-based" job that required them to work in the actual psychiatric units with patients (this was the unique environment being investigated). Recognizing that these hospitals had other ancillary staff (e.g., administrators, secretaries, housekeeping, security) employed, this screening of participants was required in order to maintain the "unique" work environment that is the inpatient psychiatric hospital unit. The ancillary staff likely would have had similar jobs to individuals in settings other than that of a psychiatric hospital.

The individuals that participated in the study did so in a small group format where they were asked to complete two surveys: the Intrinsic Motivation Inventory (IMI) and the Job Satisfaction Survey (JSS). Also, six additional experimental statements were developed and attached to the JSS that focused specifically on the unique work

environment of a psychiatric hospital. Once the survey data were collected at both locations, coded and screened, a multiple regression analysis was performed on the data to determine the relationship between the chosen intrinsic motivation variables used in this study (competence, autonomy, and relatedness scores) and the dependent measure (job satisfaction score). The IMI yielded the three intrinsic motivation scores for this study, while the JSS was used as the dependent measure of job satisfaction. Prior to conducting the multiple regression analysis, data were inspected to determine whether the statistical assumptions associated with multiple regression were satisfied. Through both visual inspection as well as statistical analysis the data appeared sound and ready for manipulation in this study.

Results of the statistical analysis revealed that the three intrinsic motivation variables effectively explained 14.5% of the total variance found in the job satisfaction scores. Specifically, autonomy and relatedness scores had regression coefficients that were statistically significantly different from zero. This result was similar to results found in many other studies that focused on intrinsic motivation (e.g., Amabile, 2001; Carr et al., 1996; Cooper et al., 1999; James 2005; King et al., 1982; Ryan et al., 1999; Spencer, 1986; Thomas & Velthouse, 1990) and job satisfaction (e.g., Bluedorn, 1982; Mueller & Price, 1990; Sheridan, 1992; Stockard & Lehman, 2004; also refer to Table 1 in Chapter 2); however, past research did not focus on the specific variables analyzed in this study. The intrinsic motivation subscore of competence was not a statistically significant predictor of job satisfaction in this sample. Part of the reason may lie in the skewed distribution of responses on this subscale; 60% of the participants gave very high responses that averaged to a value of “6” or “7”, where a 7 would indicate that the



respondent considered the statement to be “very true.” Thus, the IMI subscale of competence may suffer a bit of a ceiling effect with this population and therefore may not be the best possible measure of perceived job competence for psychiatric hospital workers. Finally, the estimated internal consistency reliability of the competence scores, .65, is not as high as would be desired for a measure.

Other, exploratory regression analyses were performed on the demographic data as well as the experimental statements developed especially for this research study. Correlations with job satisfaction scores were observed for some of the demographic variables. Similar results were found in other studies that compared some of the chosen demographic variables from this study with job satisfaction scores, e.g., age (Orpen, 1984); experience (Reddy, 1997; O’Reilly & Caldwell, 1981; Mueser et al., 2001; Resnick & Bond, 2001; Xie et al., 1997); and gender (Chusmir, 2001; Mason, 2001; Petty et al., 2005; Saad & Isralowitz, 2001; Wharton et al., 2000; Voydanoff, 1980). In the regression analysis, only the variables of age (positively related) and years of current experience (negatively related) were found to have regression coefficients significantly different from zero. However, higher levels of correlation (zero-order correlation) were found between the experimental statements and job satisfaction scores. In the regression analysis, the reversed scored statements of “#3 – Discouraging atmosphere” and “#6 – Dangerous work” were found to have regression coefficients that were statistically significantly different from zero. In each case, disagreement with the statement corresponded to higher job satisfaction scores whereas agreement with the statement tended to correspond to lower observed job satisfaction scores. That is, respondents who did not perceive the psychiatric hospital setting as discouraging, or as representing

dangerous work, tended to have higher levels of job satisfaction. More explanatory power was demonstrated via the set of six experimental statements for job satisfaction score than was obtained using the original intrinsic motivation variables. The literature reviewed earlier in chapter 2, did not include studies that used comparable statements; so this finding is, thus far, unique. This result is further discussed in the next section.

### Conclusions

The following conclusions were drawn from the results of this study:

1. The intrinsic motivation scores used in this study as the predictor variables (competence, autonomy, and relatedness scores) do have a moderate, positive relationship with job satisfaction scores as evidenced by an  $R$  squared of .145. However, based on an *a priori* analysis of previous similar research studies a higher effect size was anticipated (target  $R$  squared = .27). Although the combined explanatory power of the chosen predictor variables did not yield a large effect size (here defined as  $R^2 = .27$ ), the results still show a moderate relationship ( $R^2 = .145$ ) of the intrinsic motivation variables with the dependent variable of overall job satisfaction. It may be concluded from this moderate effect size that intrinsic motivation (with a statistically non-zero emphasis on two of the three intrinsic motivation scores used in this study—autonomy and relatedness scores) does positively relate to overall job satisfaction in a psychiatric hospital.

Although the intrinsic motivation scores associated with the predictor variable of ‘competence’ did not yield statistically significant results, conclusions can be drawn from the output. One possible explanation is simply that the survey instrument used in this

study (the IMI) was not adequately adapted to fit the environment of work inside a psychiatric hospital and thus was too vague to yield considerable predictive information. As mentioned earlier, another possibility is that of a ceiling effect for the competence scale of the IMI. A related explanation is that the initial and refresher training, monthly in-service, annual recertification and appropriate supervision at these two sites may result in employees who perceive themselves as competent in performing their job and that perceptions of job competence might therefore not play a substantive role in accounting for differences in perceived job satisfaction.

2. The predictor variables of “autonomy” and “relatedness” scores from the IMI did yield a statistically significant result (again, as evidenced by the significance of the regression coefficients estimated from the multiple regression analysis) indicating that these predictor variables do have a positive correlation with job satisfaction scores of employees working in a psychiatric hospital. This finding indicates that psychiatric hospital employees tend to be more satisfied with their jobs when they perceive that they are allowed to do their jobs without over-supervision. Other factors associated with specific hospital positions may allow for instances of autonomy in job-related actions and decisions. For example, nurses have certain duties that others can not perform (e.g., charting, medication preparation). Those holding supervisory positions within a discipline may sense a higher degree of autonomy than do those whom they supervise. Possibly time of day (e.g., evening hours, when the physicians, nurse practitioners and psychiatrists are typically not on the job) or day of the week would also differentiate the level of perceived autonomy. Such factors, by their own nature, could provide the hospital employee with a sufficiently autonomous work environment that could be

satisfying to him or her. The presence of the relatedness score as a predictor suggests that hospital employees also seem to be more satisfied with their jobs when they feel socially accepted as part of the “group” (the shift, discipline, or unit with which they might associate themselves).

3. The predictor variable of “relatedness” score had the highest correlation with job satisfaction scores and was given the most emphasis of the three intrinsic motivation scores in the multiple regression model for measured employee job satisfaction.

However, no test was conducted comparing the strength of the IMI subscore correlations with job satisfaction scores to one another. The correspondence of relatedness scores with job satisfaction would suggest that an employee who feels like an outcast or not a part of a group or clique would find it harder to experience high levels of relatedness on the job and, hence their overall level of job satisfaction may suffer as a result. From a practical standpoint, this result makes sense; if an employee feels (socially) a sense of belonging to a given work unit, shift, or discipline, certain aspects of the job will appeal to them which could possibly positively influence their overall level of job satisfaction.

4. Selected demographic variables were tried as predictors of job satisfaction scores and analyzed by using a multiple regression technique. The results, after incorporating the categorical data as dummy-coded variables, indicated that several of the demographic variables made a statistically significant contribution to the explanation of differences in job satisfaction scores (see Table 11). Age was found to have a positive regression coefficient, whereas years of current experience yielded a negative regression coefficient in the model. These two were the only demographic variables having regression coefficients significantly different from zero. That age was a statistically significant

predictor in the model, whereas the Pearson correlation of age and job satisfaction was not significantly different from zero, suggests that age may have functioned as a suppressor variable in the model. The other demographic categories—gender, employer (hospital work site), total years of experience, ethnicity and professional discipline were not statistically significant explanatory variables for differences in job satisfaction scores.

5. The scores from the six experimental statements were analyzed using multiple linear regression in comparison to job satisfaction. Results indicated a larger effect size ( $R$  squared = .224) for the relationship between these variables and job satisfaction scores than the original three intrinsic motivation score variables and job satisfaction scores. This result shows promising explanatory power for the experimental statements, which were developed to capture the unique essence of working in a psychiatric hospital, and the employees' overall level of job satisfaction. These six experimental statements collectively help to explain 22.5 % of the total variance in job satisfaction scores. These provide more explanatory value than the original three intrinsic motivation variables used in this study. Of the six statements, two yielded statistically non-zero regression coefficients, “#3 – Discouraging atmosphere” and “#6 – Dangerous work.”

These experimental statements related to issues relative to psychiatric hospital environments such as excitement, compassion for the patient, danger, success or failure, and even self-actualization (e.g., as evidenced by experimental statement five which states, “I enjoy work which involves helping people in need”) clearly affected participants' job satisfaction scores. Knowing that nearly 23% of the variance in job satisfaction scores can be explained from participants' perceptions on issues such as these certainly arms administrators with valuable information to utilize in the constant efforts

to improve the services provided to the patient. These efforts could include a heightened focus in hospital staff development so that much training/in-service time is specifically devoted to enhancing the work environment to promote the improvement of job satisfaction through these recognized intrinsic factors. Patient services may potentially be improved when administrators focus their attention on issues such as those just mentioned. Finding new ways to improve the employee's overall level of job satisfaction may help to improve the overall service to the patient, though the proposition requires empirical support.

6. The theoretical thread that has been discussed throughout this research, the idea that intrinsic motivation is as good as or better than extrinsic motivation in determining job satisfaction and that job satisfaction leads to longer job tenure, has been shown through the review of the literature. This present study underscores the utility of intrinsic motivation as a predictor of job satisfaction in the unique setting of a state-operated, acute-care psychiatric hospital. Therefore, if additional intrinsic motivating factors could be discovered that positively correlate with job satisfaction then presumably those factors could be manipulated in order to help improve job satisfaction—which we would predict to lead to greater lengths of job tenure. The only empirical finding that did not appear to fit this thread was that of the small, but statistically significant negative correlation of years on the current job and job satisfaction. This result calls for further investigation. The results of this original analysis certainly give credence to that proposed relationship between intrinsic motivation and job satisfaction (at least in two of the three intrinsic motivation scores). This theoretical thread, based on this present research, for the most part remains viable and should be explored further.

## Recommendations

Given the information obtained through this research study, the following recommendations are given for further study:

1. Replicate this study in different geographic locations in order to determine if similar results occur. Although finding two almost identical research sites for this study is admittedly rare, it would be interesting to check the generalizability of these results with other study sites that are similar in nature.
2. Conduct a similar study in another healthcare setting (e.g., alcohol and drug treatment program, child and adolescent psychiatric facility, regional residential retardation facility) in order to determine if these results would generalize to other healthcare settings that also possess very unique work environments.
3. Modify the IMI survey so that the subscales are more pertinent to the somewhat unique environment of a psychiatric hospital in particular, or healthcare settings in general. In addition, the multiple scales from IMI may be freely chosen as pertinent to a particular study without threatening the psychometric quality of the subscale scores.
4. Develop additional survey statements related to working in a psychiatric hospital that could eventually be psychometrically validated for use (whether commercially or not) in this workplace. This could be a possible tool for hospital administrators to utilize in securing and maintaining the highest quality employees possible. The “experimental” statements developed for this study could serve as the base set for such measures.
5. Conduct individual research studies surrounding both of the predictor variables that were found to have a statistically significant correlation with job satisfaction

(autonomy and relatedness scores). Further analysis is needed (possibly using an experimental design) with these variables. At the same time, exploration of other, possibly more suitable, measures of competence might be worthwhile.

Knowing how to make an employee more autonomous, or knowing how to create an environment that welcomes and promotes autonomy would be especially beneficial for future hospital employers looking for ways to improve the job satisfaction and, ultimately, the job tenure rating of their most qualified and successful employees. Likewise, learning more about ways to manipulate the psychiatric hospital work environment that would positively influence the way employees feel about working in that environment is tantamount to ensuring longevity and success for many years. Knowing we are social creatures, any research to help improve how we interact, associate, or otherwise engage fellow workers will be beneficial to the overall healthcare industry. Finally, it is important to know whether changes in intrinsic motivation would correspond to changes in job satisfaction.

6. Follow-up research should be conducted to investigate the negative correlation found in this research study between years of current experience and job satisfaction scores among psychiatric hospital employees. Potentially interesting findings could be generated that may provide further guidance to administrators pertaining to employee schedules, vacation time, work shifts, training, and other factors associated with employment.

7. More specific research should be conducted that focuses on additional components of intrinsic motivation not covered in this research study that might have significant effects on levels of job satisfaction and job tenure for the psychiatric hospital



employee. In the present study, a positive correlation between certain aspects of intrinsic motivation and job satisfaction was observed for clinical workers in a psychiatric hospital. Based on the literature review, it is assumed that higher levels of job satisfaction will lead to greater lengths of tenure. As mentioned in recommendation #6, in this study, a puzzling finding of a negative correlation of job tenure (years of current experience) and job satisfaction scores was observed. Future research may help to clarify this result. If the link identified from the literature can be affirmed, this would underscore the important role of intrinsic motivation in the workplace and the need to cultivate it by encouraging administrators to become sincerely interested in helping employees succeed in their jobs and careers.

This research has yielded beneficial information for the advancement of knowledge concerning the relationship between intrinsic motivation and job satisfaction. Ultimately in hospital administration, the goal should always be to do those things that improve the lives of those being cared for in the hospital. No single variable that touches the lives of every patient being served in a psychiatric hospital is more important or influential than the employees working directly with the patients. Any information that helps improve not only the quality of that employee, but the longevity of that employee aids in making that ultimate goal a success—quality care for the patients being served. Throughout this research process a theoretical thread has been posited that one such aspect which influences employees in a psychiatric hospital is intrinsic motivation. Being able to manipulate situations, environments, or training opportunities to improve the intrinsic motivation of an employee may ultimately benefit the patient through a better quality of care.

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APPENDIX A  
INSTRUCTIONS FOR THE SURVEY ADMINISTRATOR

**NOTE: Make sure that participants in this study are employees at each research site and that they are working in the capacity of a clinical staff member (e.g., someone that works with psychiatric patients on a regular basis). Administrative, maintenance, housekeeping, and any other staff that do not work directly with patients on a daily basis are to be excluded from this study.**

1. Ask participants to be seated (leaving a chair between them and the next participant if space allows).
2. Pass out Informed Consent form.
3. **Read aloud the following statement: “Thank you for your time and willingness to participate in this research project. This project is being conducted by a doctoral student at Mississippi State University as a partial requirement for graduation. Please take a moment to read the ‘Consent Form’ that provides more detail about this research. Once you have done this I will be happy to answer any questions that you may have. I would like to emphasize two key points from the ‘Consent Form’ – Confidentiality and Voluntary participation. Please be assured that your anonymity is extremely important to us and no participant’s responses will be associated with the signed consent forms. Also, your participation in this research is strictly voluntary. You may stop at any point in this process and are assured that no negative consequence will be associated with your decision to stop your participation in this study. Thank You.”**
4. After they have signed the consent form, collect them from each participant and place them in a manila envelope.
5. Hand out the survey instruments (includes two surveys entitled, “Work Survey,” and “Work Survey – II,” and a demographic sheet).
6. Provide pencils if the participants do not have one (they can complete the demographic sheet and survey instruments with any writing instrument – pen or pencil).
7. There is no time limit for completion of the survey instruments.
8. Once a participant has completed the survey packet, collect their packet and store them in a separate folder from the consent forms.
9. The participant is excused from this research study and may leave the room (it is not necessary for them to stay in the room until everyone completes the survey packet).

APPENDIX B  
CONSENT FORM



### Title of Study

Using Self Determination Theory to Understand Employee Job Contentment in a State Psychiatric Hospital: The Role of Intrinsic Motivation

### Study Site

North Mississippi State Hospital, Tupelo, MS and South Mississippi State Hospital, Purvis, MS

### Name of Researcher & University affiliation

Paul A. Callens, Mississippi State University

### Project Purpose

The purpose of this research project is to study the effects of motivation on employees' overall job satisfaction.

### How the research will be conducted

Each participant will be asked to complete two separate surveys that will take approximately 10-20 minutes each to complete. The survey instruments are self explanatory and will instruct you to circle the answer that most closely reflects your view of a given statement.

### Risks of Participation

There are NO foreseeable risks or discomforts that might occur as a result of your participation in this research project.

### Benefits of Participation

There are no tangible benefits (e.g., money, coupons, time off) for your participation in this research project. However, the broader benefits of your participation include the value of additional scientific findings in this specific area of research.

### Confidentiality

The information attained from participants' completed surveys will be completely anonymous and the raw data (survey forms) and demographic information will be kept in a locked filing cabinet behind a locked door for a period of time until this research is completed. This information will not be attached to the signed consent form in order to maintain anonymity. The demographic form is not intended to specifically identify any participant in this study. However, if you feel that completing some or all of the demographic information will violate your anonymity you are free to leave blank any such items. NOTE: The Mississippi State University Institutional Review Board for the Protection of Human Subjects in Research (IRB) may be allowed access to any data material for audit purposes upon request.

Further Information

If you should have any questions about this research project, please feel free to contact Paul A. Callens at (662) 690-4260. For additional information regarding your rights as a research subject, please feel free to contact the MSU Regulatory Compliance Office at 662-325-5220.

Voluntary Participation

Please understand that your **participation is voluntary**, your **refusal to participate will involve no penalty or loss** of benefits to which you are otherwise entitled, and you **may discontinue your participation** at any time without penalty or loss of benefits. **Upon request, you will be given a copy of this form for your records.**

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Investigator Signature

\_\_\_\_\_  
Date

- Please place a “check mark” in the box to the left if you would like a summary of the overall results of this study.

APPENDIX C  
INTRINSIC MOTIVATION INVENTORY (IMI)

For each of the following statements, please indicate how true it is for you, using the following scale:

1	2	3	4	5	6	7
not at all true			somewhat true			very true

#### Interest/Enjoyment

- |        |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|
| 1.     | I enjoy doing my job very much                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2.     | This job is fun to do.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. (R) | I think this job is boring.                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. (R) | This job does not hold my attention at all.                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5.     | I would describe my job as very interesting.                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6.     | I think my job is quite enjoyable.                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7.     | While I am doing my job, I am thinking about how much I enjoy it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

#### Perceived Competence

- |         |  |   |   |   |   |   |   |   |
|---------|--|---|---|---|---|---|---|---|
| 8.      | I think I am pretty good at my job.                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9.      | I think I do pretty well at my job, compared to other employees. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10.     | After working at my job for awhile, I felt pretty competent.     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11.     | I am satisfied with my performance on the job.                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12.     | I am pretty skilled at doing my job.                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. (R) | This is a job that I can't do very well.                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

#### Effort/Importance

- |         |   |   |   |   |   |   |   |   |
|---------|---|---|---|---|---|---|---|---|
| 14.     | I put a lot of effort into my job.          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. (R) | I don't try very hard to do well at my job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16.     | I try very hard to do my job.               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17.     | It is important to me to do well at my job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. (R) | I don't put much energy into my job.        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

#### Pressure/Tension

- |         |  |   |   |   |   |   |   |   |
|---------|--|---|---|---|---|---|---|---|
| 19. (R) | I do not feel nervous at all while doing my job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20.     | I feel very tense while doing my job.            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. (R) | I am very relaxed in doing my job.               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

22. I am anxious while working at my job. 1 2 3 4 5 6 7  
 23. I feel pressure while doing my job. 1 2 3 4 5 6 7

Perceived Choice

24. I believe I have some choice about doing my job. 1 2 3 4 5 6 7  
 25. (R)I feel like it is not my own choice to do my job. 1 2 3 4 5 6 7  
 26. (R)I don't really have a choice about doing my job. 1 2 3 4 5 6 7  
 27. (R)I feel like I have to do my job. 1 2 3 4 5 6 7  
 28. (R)I do my job because I have no choice. 1 2 3 4 5 6 7  
 29. I do my job because I want to. 1 2 3 4 5 6 7  
 30. (R)I do my job because I have to. 1 2 3 4 5 6 7

Value/Usefulness

31. I believe my job is of some value to me. 1 2 3 4 5 6 7  
 32. I think that doing my job is useful for helping others. 1 2 3 4 5 6 7  
 33. I think my job is important to do because it can advance my career. 1 2 3 4 5 6 7  
 34. I would be willing to continue doing my job because it has some value to me. 1 2 3 4 5 6 7  
 35. I think doing my job could help me to become a better person. 1 2 3 4 5 6 7  
 36. I believe doing my job could be beneficial to me. 1 2 3 4 5 6 7  
 37. I think my job is an important activity. 1 2 3 4 5 6 7

Relatedness

38. (R)I feel really distant to my coworkers. 1 2 3 4 5 6 7  
 39. (R)I really doubt that my coworkers and I would ever be friends. 1 2 3 4 5 6 7  
 40. I feel like I can really trust my coworkers. 1 2 3 4 5 6 7  
 41. I'd like a chance to interact with my coworkers more often. 1 2 3 4 5 6 7  
 42. (R)I'd really prefer not to interact with my coworkers in the future. 1 2 3 4 5 6 7  
 43. (R)I don't feel like I can really trust my coworkers. 1 2 3 4 5 6 7  
 44. It is likely that my coworkers and I could become friends if we interacted a lot. 1 2 3 4 5 6 7  
 45. I feel close to my coworkers. 1 2 3 4 5 6 7

APPENDIX D  
WORK SURVEY

For each of the following statements, please indicate your response by marking a number (e.g., check mark, circle, shade) for how true it is for you, using the following scale:

	1	2	3	4	5	6	7
	not at all		3	somewhat			very
	true			true			true
1. I am very relaxed in doing my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I believe my job is of some value to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I try very hard to do my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I think that doing my job is useful for helping others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel very tense while doing my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I believe I have some choice about doing my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I think this job is boring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I don't try very hard to do well at my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I believe doing my job could be beneficial to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I think my job is important to do because it can advance my career.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel pressure while doing my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. This job is fun to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I do my job because I want to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

GO ON TO THE NEXT PAGE

	1	2	3	4	5	6	7
	not at all			somewhat			very
	true			true			true
14. I don't put much energy into my job.	1	2	3	4	5	6	7
15. I am pretty skilled at doing my job.	1	2	3	4	5	6	7
16. I would describe my job as very interesting.	1	2	3	4	5	6	7
17. I am anxious while working at my job.	1	2	3	4	5	6	7
18. While I am doing my job, I am thinking about how much I enjoy it.	1	2	3	4	5	6	7
19. I would be willing to continue doing my job because it has some value to me.	1	2	3	4	5	6	7
20. After working at my job for awhile, I felt pretty competent.	1	2	3	4	5	6	7
21. I really doubt that my coworkers and I would ever be friends.	1	2	3	4	5	6	7
22. I enjoy doing my job very much.	1	2	3	4	5	6	7
23. I feel really distant to my coworkers.	1	2	3	4	5	6	7
24. I feel close to my coworkers.	1	2	3	4	5	6	7
25. I think my job is an important activity.	1	2	3	4	5	6	7
26. This job does not hold my attention at all.	1	2	3	4	5	6	7
27. I feel like I have to do my job.	1	2	3	4	5	6	7
28. I am satisfied with my performance on the job.	1	2	3	4	5	6	7
29. I'd really prefer not to interact with my coworkers in the future.	1	2	3	4	5	6	7

GO ON TO THE NEXT PAGE



	1	2	3	4	5	6	7
	not at all		somewhat				very
	true		true				true
30. I think I do pretty well at my job, compared to other employees.	1	2	3	4	5	6	7
31. I don't feel like I can really trust my coworkers.	1	2	3	4	5	6	7
32. I think my job is quite enjoyable.	1	2	3	4	5	6	7
33. I do not feel nervous at all while doing my job.	1	2	3	4	5	6	7
34. It is important to me to do well at my job.	1	2	3	4	5	6	7
35. I don't really have a choice about doing my job.	1	2	3	4	5	6	7
36. I'd like a chance to interact with my coworkers more often.	1	2	3	4	5	6	7
37. I think I am pretty good at my job.	1	2	3	4	5	6	7
38. It is likely that my coworkers and I could become friends if we interacted a lot.	1	2	3	4	5	6	7
39. I feel like I can really trust my coworkers.	1	2	3	4	5	6	7
40. I do my job because I have to.	1	2	3	4	5	6	7
41. This is a job that I can't do very well.	1	2	3	4	5	6	7
42. I feel like it is not my own choice to do my job.	1	2	3	4	5	6	7
43. I think doing my job could help me to become a better person.	1	2	3	4	5	6	7
44. I do my job because I have no choice.	1	2	3	4	5	6	7
45. I put a lot of effort into my job.	1	2	3	4	5	6	7

STOP

APPENDIX E  
JOB SATISFACTION SURVEY

Please circle the one number for each question that comes closest to reflecting your opinion about it.

1 = Disagree very much  
2 = Disagree moderately  
3 = Disagree slightly

4 = Agree slightly  
5 = Agree moderately  
6 = Agree very much

1. I feel I am being paid a fair amount for the work I do. 1 2 3 4 5 6
2. (R) There is really too little chance for promotion on my job. 1 2 3 4 5 6
3. My supervisor is quite competent in doing his/her job. 1 2 3 4 5 6
4. (R) I am not satisfied with the benefits I receive. 1 2 3 4 5 6
5. When I do a good job, I receive the recognition for it that I should receive. 1 2 3 4 5 6
6. (R) Many of our rules and procedures make doing a good job difficult. 1 2 3 4 5 6
7. I like the people I work with. 1 2 3 4 5 6
8. (R) I sometimes feel my job is meaningless. 1 2 3 4 5 6
9. Communications seem good within this organization. 1 2 3 4 5 6
10. (R) Raises are too few and far between. 1 2 3 4 5 6
11. Those who do well on the job stand a fair chance of being promoted. 1 2 3 4 5 6
12. (R) My supervisor is unfair to me. 1 2 3 4 5 6
13. The benefits we receive are as good as most other organizations offer. 1 2 3 4 5 6
14. (R) I do not feel that the work I do is appreciated. 1 2 3 4 5 6
15. My efforts to do a good job are seldom blocked by red tape. 1 2 3 4 5 6
16. (R) I find I have to work harder at my job because of the incompetence of people I work with. 1 2 3 4 5 6

17. I like doing the things I do at work. 1 2 3 4 5 6
18. (R) The goals of this organization are not clear to me. 1 2 3 4 5 6
19. (R) I feel unappreciated by the organization when I think about what they pay me. 1 2 3 4 5 6
20. People get ahead as fast here as they do in other places. 1 2 3 4 5 6
21. (R) My supervisor shows too little interest in the feelings of subordinates. 1 2 3 4 5 6
22. The benefit package we have is equitable. 1 2 3 4 5 6
23. (R) There are few rewards for those who work here. 1 2 3 4 5 6
24. (R) I have too much to do at work. 1 2 3 4 5 6
25. I enjoy my coworkers. 1 2 3 4 5 6
26. (R) I often feel that I do not know what is going on with the organization. 1 2 3 4 5 6
27. I feel a sense of pride in doing my job. 1 2 3 4 5 6
28. I feel satisfied with my chances for salary increases. 1 2 3 4 5 6
29. (R) There are benefits we do not have which we should have. 1 2 3 4 5 6
30. I like my supervisor. 1 2 3 4 5 6
31. (R) I have too much paperwork. 1 2 3 4 5 6
32. (R) I don't feel my efforts are rewarded the way they should be. 1 2 3 4 5 6
33. I am satisfied with my chances for promotion. 1 2 3 4 5 6
34. (R) There is too much bickering and fighting at work. 1 2 3 4 5 6
35. My job is enjoyable. 1 2 3 4 5 6
36. (R) Work assignments are not fully explained. 1 2 3 4 5 6

APPENDIX F  
WORK SURVEY - II

Please select (e.g., check mark, circle, shade) the one number for each question that comes closest to reflecting your opinion about it.

1 = Disagree very much  
 2 = Disagree moderately  
 3 = Disagree slightly

4 = Agree slightly  
 5 = Agree moderately  
 6 = Agree very much

1. I feel I am being paid a fair amount for the work I do.	1	2	3	4	5	6
2. There is really too little chance for promotion on my job.	1	2	3	4	5	6
3. My supervisor is quite competent in doing his/her job.	1	2	3	4	5	6
4. I am not satisfied with the benefits I receive.	1	2	3	4	5	6
5. When I do a good job, I receive the recognition for it that I should receive.	1	2	3	4	5	6
6. Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5	6
7. I like the people I work with.	1	2	3	4	5	6
8. I sometimes feel my job is meaningless.	1	2	3	4	5	6
9. Communications seem good within this organization.	1	2	3	4	5	6
10. Raises are too few and far between.	1	2	3	4	5	6
11. Those who do well on the job stand a fair chance of being promoted.	1	2	3	4	5	6
12. My supervisor is unfair to me.	1	2	3	4	5	6

GO ON TO THE NEXT PAGE

1 = Disagree very much  
2 = Disagree moderately  
3 = Disagree slightly

4 = Agree slightly  
5 = Agree moderately  
6 = Agree very much

13. The benefits we receive are as good as most other organizations offer.	1	2	3	4	5	6
14. I do not feel that the work I do is appreciated.	1	2	3	4	5	6
15. My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6
16. I find I have to work harder at my job because of the incompetence of people I work with.	1	2	3	4	5	6
17. I like doing the things I do at work.	1	2	3	4	5	6
18. The goals of this organization are not clear to me.	1	2	3	4	5	6
19. I feel unappreciated by the organization when I think about what they pay me.	1	2	3	4	5	6
20. People get ahead as fast here as they do in other places.	1	2	3	4	5	6
21. My supervisor shows too little interest in the feelings of subordinates.	1	2	3	4	5	6
22. The benefit package we have is equitable.	1	2	3	4	5	6
23. There are few rewards for those who work here.	1	2	3	4	5	6
24. I have too much to do at work.	1	2	3	4	5	6
25. I enjoy my coworkers.	1	2	3	4	5	6
26. I often feel that I do not know what is going on with the organization.	1	2	3	4	5	6
27. I feel a sense of pride in doing my job.	1	2	3	4	5	6

GO ON TO THE NEXT PAGE

1 = Disagree very much  
2 = Disagree moderately  
3 = Disagree slightly

4 = Agree slightly  
5 = Agree moderately  
6 = Agree very much

28. I feel satisfied with my chances for salary increases.	1	2	3	4	5	6
29. There are benefits we do not have which we should have.	1	2	3	4	5	6
30. I like my supervisor.	1	2	3	4	5	6
31. I have too much paperwork.	1	2	3	4	5	6
32. I don't feel my efforts are rewarded the way they should be.	1	2	3	4	5	6
33. I am satisfied with my chances for promotion.	1	2	3	4	5	6
34. There is too much bickering and fighting at work.	1	2	3	4	5	6
35. My job is enjoyable.	1	2	3	4	5	6
36. Work assignments are not fully explained.	1	2	3	4	5	6
37. I enjoy the challenge of working with psychiatric patients.	1	2	3	4	5	6
38. The environment of an inpatient psychiatric unit is exciting and satisfying to me.	1	2	3	4	5	6
39. The atmosphere of a psychiatric hospital is discouraging to me and makes me want to seek another job.	1	2	3	4	5	6
40. Watching patients improve psychologically each day gives me a sense of accomplishment.	1	2	3	4	5	6
41. I enjoy work which involves helping people in need.	1	2	3	4	5	6
42. Psychiatric hospitals are violent (or dangerous) places to work.	1	2	3	4	5	6

STOP



APPENDIX G

ADDITIONAL EXPERIMENTAL RESEARCH STATEMENTS

NOTE: The next section of statements is experimental and were developed specifically for this research study only.

1. I enjoy the challenge of working with psychiatric patients. 1 2 3 4 5 6
2. The environment of an inpatient psychiatric unit is exciting and satisfying to me. 1 2 3 4 5 6
3. (R) The atmosphere of a psychiatric hospital is discouraging to me and makes me want to seek another job. 1 2 3 4 5 6
4. Watching patients improve psychologically each day gives me a sense of accomplishment. 1 2 3 4 5 6
5. I enjoy work which involves helping people in need. 1 2 3 4 5 6
6. (R) Psychiatric hospitals are violent (or dangerous) places to work. 1 2 3 4 5 6

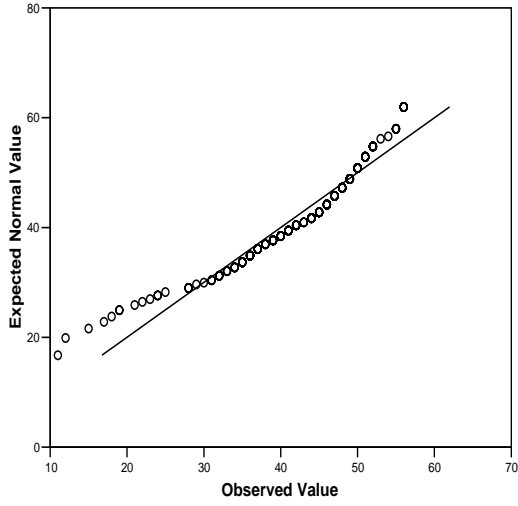
APPENDIX H  
MISSING DATA MEAN REPLACEMENT

Survey Instrument	Participant	Item Number	Substituted Mean Value	Survey Instrument	Participant	Item Number	Substituted Mean Value
IMI	17	30	7	IMI	149	17	1
IMI	21	32	6	IMI	164	30	5.2
IMI	35	25	7	JSS	4	15	4
IMI	36	42_rev	4.67	JSS	5	16_rev	4.33
IMI	54	40_rev	4.67	JSS	47	22	4
IMI	72	14_rev	5.75	JSS	54	12_rev	5.5
IMI	72	15	4.8	JSS	54	15	5
IMI	75	6	5	JSS	54	20	4
IMI	75	30	7	JSS	54	21_rev	5.5
IMI	75	35_rev	5	JSS	54	34_rev	4.33
IMI	75	42_rev	5	JSS	57	32_rev	6
IMI	75	44_rev	5	JSS	71	8_rev	5.33
IMI	83	30	5.6	JSS	84	3	1
IMI	88	6	2.67	JSS	84	28	3.33
IMI	88	17_rev	6.67	JSS	84	30	1
IMI	96	27_rev	7	JSS	87	31_rev	2
IMI	103	18	5.67	JSS	105	15	4.67
IMI	111	6	6	JSS	107	16_rev	3.67
IMI	116	31_rev	7	JSS	123	7	4.33
IMI	121	35_rev	4.5	JSS	124	7	6
IMI	130	19	6.83	JSS	125	22	4.67
IMI	142	22	6.67	JSS	130	10_rev	5.33
IMI	143	4	5.67				

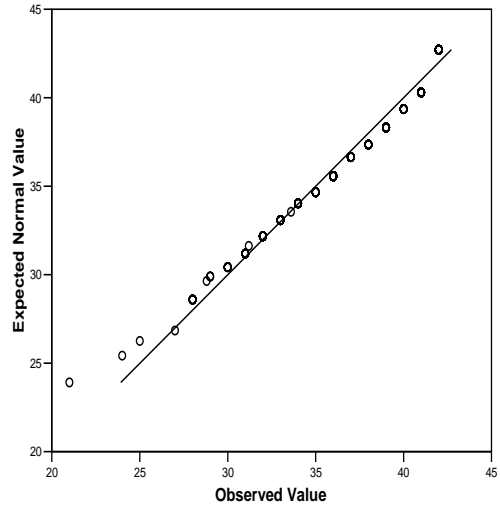
NOTE: “rev” for an item number indicates that this item is reverse scored. Table is ordered by survey type, then by participant.

APPENDIX I  
NORMALITY GRAPHS AND LINEAR CHARTS FOR THE PREDICTOR  
VARIABLES

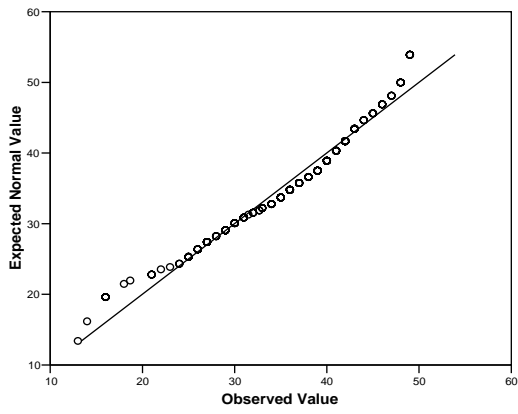
Normal Q-Q Plot for Predictor Variable "Relatedness"



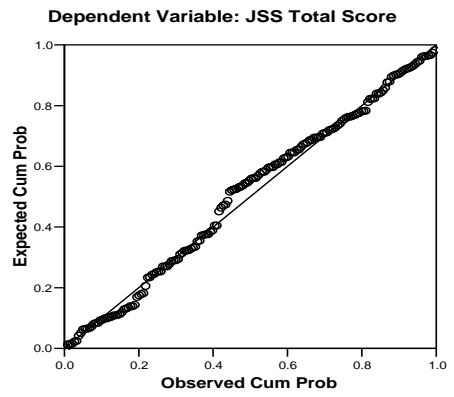
Normal Q-Q Plot for Predictor Variable "Competence"

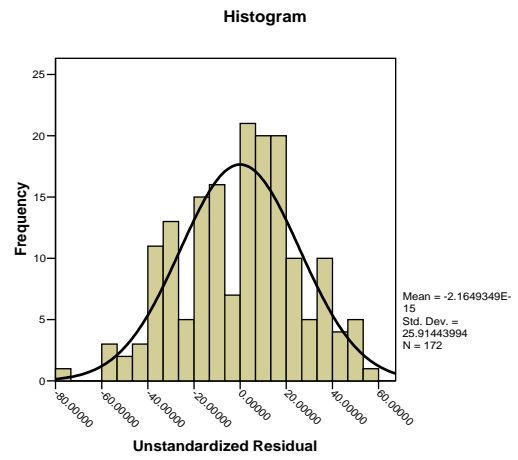
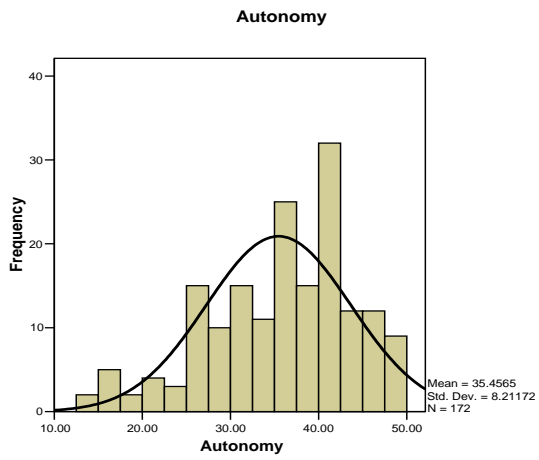
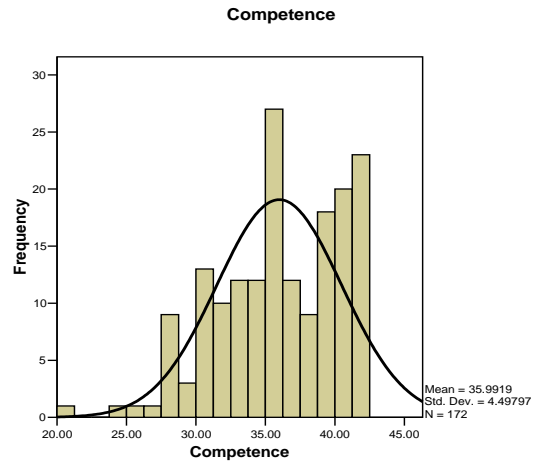
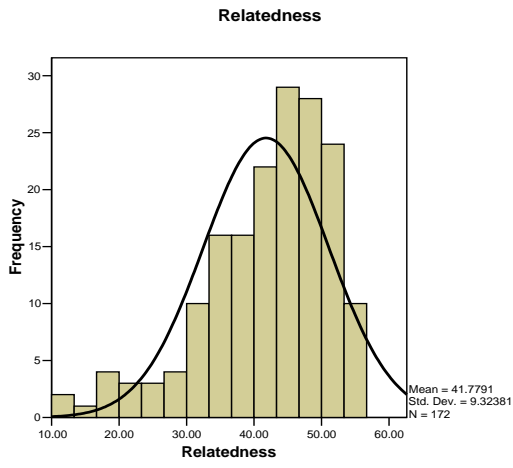


Normal Q-Q Plot for Predictor Variable "Autonomy"



Normal P-P Plot of Regression Standardized Residual





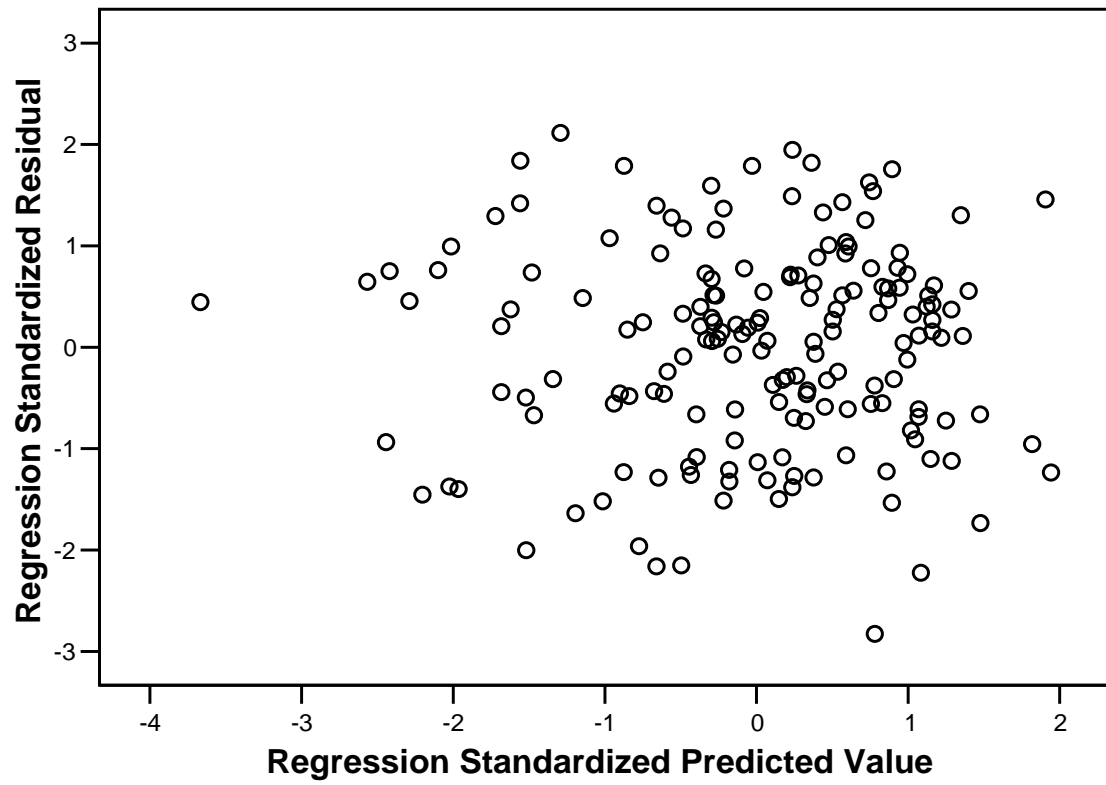
APPENDIX J

SCATTERPLOT DISPLAY FOR HOMOSCEDASTICITY ASSUMPTION



## Scatterplot

Dependent Variable: JSS Total Score



APPENDIX K  
PEARSON CORRELATIONS BETWEEN DEMOGRAPHIC VARIABLES AND JSS  
SCORES

	JSS Total Score	Employer	Gender	Age	Current Experience	Total Experience	Caucasian	African American	Hispanic	Asian	Nurse Practitioner	Registered Nurse	Mental Health Tech.	Psychologist	Social Worker	Rec. Therapist
JSS Total Score	1.0															
Employer	-.12	1.0														
Gender	.16	-.10	1.0													
Age	.07	-.04	.28*	1.0												
Current Experience	-.21*	.06	.06	.29*	1.0											
Total Experience	-.04	-.06	.33*	.63*	.21*	1.0										
Caucasian	-.04	-.19	.13	.36*	.05	.29*	1.0									
African American	-.02	.20*	-.11	-.38*	-.15	-.30*	-.93*	1.0								
Hispanic	.15	-.08	.06	-.00	.10	-.03	-.14	-.05	1.0							
Asian	.05	.13	-.04	-.00	.19	.00	-.19	-.07	-.01	1.0						
Nurse Practitioner	.11	-.05	.15	.13	.08	.24*	.05	-.11	-.02	.27*	1.0					
Registered Nurse	.03	.07	.38*	.36*	-.07	.43*	.27*	-.27*	.11	-.08	-.15	1.0				
Mental Health Tech.	.00	.02	-.44*	-.48*	-.08	-.55*	-.36*	.37*	-.08	.01	-.19	-.68*	1.0			
Psychologist	-.09	-.10	-.07	.14	.04	.07	.14	-.13	-.02	-.03	-.05	-.17	-.23*	1.0		
Social Worker	-.11	.02	.03	.12	.13	.04	.04	-.02	-.02	-.03	-.05	-.19	-.25*	-.06	1.0	
Rec. Therapist	.07	-.07	.12	-.10	.10	-.02	.01	.00	-.01	-.02	-.03	-.12	-.16	-.04	-.04	1.0

Note: \* $p < .05$  ( $n = 150$ )