

**PREDICTIVE CORRELATIONAL STUDY ON THE EFFECTS OF EMOTIONAL  
INTELLIGENCE ON INFORMATION TECHNOLOGY SUPPORT STAFF  
IN A HIGHER EDUCATION ENVIRONMENT**

Doctoral Dissertation Research

Submitted to the Graduate Faculty of  
Saint Leo University

In Partial Fulfillment  
of The Requirements for the Degree of  
Doctor of Business Administration

By

Mark Allen Kjellander

July 2020

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Dissertation Committee Approval:

***Robert Pratt***

[Robert Pratt \(Jan 6, 2021 12:50 EST\)](#)

Robert Pratt, PhD, Chair

***George Reeley, Ph.D.***

[George Reeley, Ph.D. \(Jan 6, 2021 11:56 EST\)](#)

George Reeley, PhD, Member

***Dale Mancini***

[Dale Mancini \(Jan 6, 2021 14:44 EST\)](#)

Dale Mancini, PhD, DBA Program Director

**01/06/2021**

Date

## ABSTRACT

This predictive correlational study examined to what extent a relationship exists between the emotional intelligence of the staff in the information technology department's productivity and end-user satisfaction, as well as the quality of work done by those departments. Three universities were sampled for emotional intelligence, work productivity, end-user satisfaction, and quality of work performed. These data were examined and statistically analyzed to determine the effect of emotional intelligence on these factors. The data revealed that there is a significant relationship between emotional intelligence and work productivity. The data also revealed a possible relationship between emotional intelligence and work quality. However, there were not enough data to support a conclusion. This study shows the need for emotional intelligence training to increase the productivity of workers. Furthermore, the research illustrates that the use of emotional intelligence by human resources departments to screen employees could be very beneficial. Further research is needed in this area with larger sample sizes.

Keywords: emotional intelligence, productivity, end-user satisfaction, work quality.

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## CHAPTER ONE: INTRODUCTION

The information technology department in a university or college setting is a high-stress area that handles multiple systems ranging from delivery of content to online students via various platforms, learning management systems, and customer support systems to the actual voice communications used on the campus. The mentioned systems are in use today in almost all the colleges and universities. Information technology is an essential part of any business, college, or university. According to the U.S. Department of Education, an average of 4.2% of the operating budget of a college or university is for information technology and related services (National Center for Education Statistics, 2018). With the numerous distractions and demands on the information technology departments, they must be as effective as possible to be able to prevent interruptions for students. Emotional intelligence allows an individual to manage stressors and focus energy upon problems at hand (Nelson & Low, 2011, p. 136). This predictive correlative study examined the influence and predictive ability that emotional intelligence has on productivity, quality of work, and the end-user satisfaction of the information technology support staff in a higher education environment.

### Emotional Intelligence

In a broad technical definition, emotional intelligence is one's ability to be aware of one's own emotions and how they affect others as well as the ability to manage those emotions in a positive manner (Goleman, 1996; Mayer & Salovey, 1997). Emotional intelligence is commonly known as the soft skills that a person may possess (Lazarus, 2013). In the workplace, understanding the duties and demands placed on fellow information technology staff members creates cohesive functioning between these parties (Cherniss & Goleman, 2001). Understanding others' points of view helps make one a better team player and enables one to help others, thus

making one more socially responsible (Cherniss & Goleman, 2001). Cherniss and Goleman claimed that by being socially responsible, one is contributing to the recognized departmental and company goals (Cherniss & Goleman, 2001). The nature of the work that the information technology departments perform creates a close-knit unit in which emotional intelligence is beneficial to smooth operations.

### **Information Technology**

Information technology in a higher education environment has gone through a metamorphosis of sorts in recent years. No longer is the information technology department responsible for only the computers on campus. Now, the information technology department is responsible for the machines used by faculty and employees and for the support of the websites and applications, telephones, servers, and even the students' computers (Castaneda & Selwyn, 2018). This vast array of technology that must be supported created a diverse group of people who use and depend on the services of the information technology department. The diversity of the people in this group creates a wide range of issues due to the variety of knowledge levels and emotions with which the support people must contend. The information technology support person is the individual who faces this diversity and interacts with the end users to solve the problems they may have.

### **Information Technology Support Staff**

The information technology support staff are vested with the task of maintaining and supporting websites and applications, telephones, servers owned by the university, and even the students' computers. Those who compose the information technology support staff are technically inclined people who are above average in the art of problem-solving in a technical environment (Thompson, 2017). This fluid environment requires the information technology

support staff to be versed in many technologies that are constantly fluctuating (Balbe, 2014). These skills are only part of the equation that makes the information technology support professional more productive in his or her assigned tasks. Most important is how the information technology support staff members interact with the people they support and the people with which they work. The support person with a high emotional intelligence is able to empathize and think outside the norm and come up with solutions that are beneficial to the user as well as the institution. They are not afraid to ask for assistance when it is needed or give help when asked. Thinking outside of the norm and finding new solutions makes the information technology support staff a more productive unit.

### **Productivity**

The productivity of employees is not a new problem; in fact, it is a problem that has plagued businesses and other entities for many years. In 1911, Frederick Taylor published *The Principles of Scientific Management* in which he outlined the need for standardization to increase productivity (Taneja, Pryor, & Toombs, 2011). In 1924, Mary Parker Follet posited that people are not machines and need to be able to express themselves in a workplace environment to improve productivity (Phipps, 2011). Emotional intelligence allows a person to be more creative and be open to new and different ideas. In 1957, Douglas McGregor stated that people are very social, and to nurture this facet would enhance productivity by allowing people more creativity in the jobs they perform (McGregor, 1957). Emotional intelligence is a component in the actual productivity of the employee in these tasks (Cherniss & Adler, 2000; Goleman, 1998; Huy, 1999; Mayer, Salovey, & Caruso, 2000; Morin, 2018).

Hogan argued in the 1990s that personality traits were a significant factor in the productivity of an employee (Hogan & Holland, 2003). These emotional intelligence

components are an essential indicator and predictor of how well a person will perform the position in which they are employed (Extremera, Lopez, Alvarez, & Orts, 2018). Emotionally intelligent individuals are those capable of functioning in a high number of the abilities proposed to reflect emotional reasoning and doing so quickly (Dixit & Singh, 2019; Extremera et al., 2018; Mayer, Salovey, & Caruso, 2004). The emotional intelligence of a person is seen by many as how a person interacts with others in multiple settings and how the said person uses those interactions to be productive. The information technology support person who can resolve conflicts and solve the issue is often perceived to have a higher quality of work (Balbe, 2014). For the most part, the end user does not remember the actual work done, what they do remember is the person who fixed the issue, his or her personality, and how they were treated while the issues were being addressed.

### **End Users and End-User Satisfaction**

The end users are the actual consumers of the information technology department. These people come from differing educational backgrounds, ranging from the general public with a standard education to those with several advanced degrees who are experts in their fields (Selwyn, 2008). The end users rely on the information technology support staff to help them through a very rough time or issue. Quite often, the end user is under extreme pressure due to an information-technology-related issue. With the customer relationship in place between the end user and the information technology support person, satisfaction with the service is a critical component of the performance of the technician who is caring for the client. A person with a high emotional intelligence level is capable of understanding the emotions of the client and is better equipped to enlist their help in resolving a problem (Goleman, 1996; Mayer & Salovey, 1990; Nelson & Low, 2011). Emotional intelligence can be a predictor of success or failure in a

job (Brackett & Mayer, 2006). End users need certainty concerning their systems and their data. The end user who does not feel certain that the problem will be corrected in a timely and satisfactory manner will not feel satisfied and will look elsewhere for a solution.

### **Quality of Work Done**

How an end-user perceives the quality of the work done is often due to how the information technology support professional presents him or herself to the user and to the task itself (Balbe, 2014). The information technology support person who can resolve conflicts and solve the issue is often perceived to have a higher quality of work (Balbe, 2014). Many times, resolving the emotional aspect of the problem is crucial to gaining the help needed from the user to resolve the issues at hand. According to Zeidner and Kloda (2013), “emotional intelligence has been claimed to help individuals to maintain positive emotional interactions, communicate and handle conflicts more effectively, and regulate their emotions better thus facilitating solutions during conflicts” (p. 279; Espinoza, Smith, & Chu, 2019). Conflict resolutions in the information technology environment are critical to the smooth operations of a department or team (Balbe, 2014; Dixit & Singh, 2019).

### **Implications of the Study**

The significant implications of this study regarding human resources, mentoring, and changes in procedures are tremendous. With the use of emotional intelligence as a predictor, human resources departments have the means to hire the most productive person. The ability to hire the right person for a position the first time saves a considerable amount of time and capital. The fine-tuning of training and mentoring programs reduces turnover and training expenditures. The creation of emotional awareness programs where they are needed could be beneficial to the end-user satisfaction experience.



This researcher posited that an information technology person with higher emotional intelligence has a much higher productivity level and higher customer satisfaction rating than an information technology person with a lower emotional intelligence level. The information technology support person with higher emotional intelligence performs and interacts with end users at a higher level; this interaction improves productivity and enhances the end-user experience. This study explored the correlation and predictive ability that emotional intelligence has related to the productivity of information technology support person in an educational institution. This study additionally examined whether the need for emotional intelligence training can be predicted. The research similarly examined how the emotional intelligence of the information technology support person affects customer relations (satisfaction) ratings.

### **Background**

The information technology department in a university or college setting is a high-stress area that handles many tasks ranging from support of computer systems and delivery of content to online students through a learning management system to the actual voice communications systems used on the campus. If these systems fail, numerous faculty members, employees, and students will be without the vital services they need to teach and learn. The mentioned systems are in use today in almost all of the colleges and universities. An example of this is that in 2014 at Texas A&M University, over 90% of the business done daily was conducted via electronic means (email, web-based forms, databases, and voice over internet protocol with no manual redundancy (Texas A&M University [TAMU], 2014).

When these systems fail, the people who support these systems are in contact with the end users by email, face to face, or by voice. The emotional intelligence of the information technology support person is a crucial asset for maintaining the systems in use, as it enables

critical thinking skills to solve complex problems (George & Jones, 2012). Emotional intelligence allows the person to relate to the emotions of the end user in a manner that promotes understanding and cooperation (George & Jones, 2012; Rothstein & Goffin, 2006). In a crisis is when the support person's emotional intelligence is critical, as the support person must not only be able to fix the problem but also diffuse a stressful situation. The ability to diffuse a stressful situation is critical to problem resolution. In addition, emotional intelligence allows a person to positively manipulate a stressful situation into a positive outcome (Dixit & Singh, 2019; Grieve & Mahar, 2010). Additional research has shown that emotional intelligence allows a person to emotionally remove him or herself from the situation, analyze the issues critically, and determine a viable solution to the problem (Mayer et al., 2004; Moeller & Kwantes, 2015; Shalid, Stirling, & Adams, 2018).

How a person interacts with other people is a critical skill that every person needs to have. People are a very social species and need human interaction (Weisbord, 2011). The emotions of a person always precede how smart he or she is (Makhluf, 2017). For most people, emotional responses come to the surface before they have a chance to think about the situation and can be a predictor of how a situation will be resolved (Makhluf, 2017). Dr. Pawliw-Fry stated that emotional intelligence is far more important than intellectual intelligence (IQ) as emotions come first (Makhluf, 2017). Emotional intelligence is the ability to monitor your own emotions as well as the feelings of others, to distinguish between and label different emotions correctly, and to use emotional information to guide one's thinking and behavior and influence that of others ("Emotional intelligence," 2019; Goleman, 1996; Mayer et al., 2000). In other words, a person with a higher emotional intelligence is more likely to be in control of his or her emotions and not make decisions based on emotions but rather on the facts available at the time.

Goleman detailed that work is all about people and interactions (Goleman & Nevarez, 2018). Productivity and relationships are impacted by emotions; it is difficult to do a good job or get along with others when one is angry. Emotions impact one's focus and ability to work and make good decisions and judgments (Goleman & Nevarez, 2018). According to Morin (2018), "Emotions are contagious and influence how an employee performs his or her task" (p. 3).

### **Statement of Problem**

The information technology departments in higher education environments should endeavor to produce solutions as efficiently as possible so that end users are satisfied with the results. However, the problem is that low productivity, poor quality of work, and lack of end-user satisfaction with the information technology departments are pervasive throughout many institutions of higher learning in the United States. Consequently, the cost of ameliorating these problems result in lost productivity, lost capital, and a tarnished reputation of the department. Based on internal tracking data from Texas A&M University, the average is eight service call reworks at a typical rate of two hours. Repetition and errors lead to a loss of productivity, resulting in a loss of 16 work hours per week per employee (TAMU, 2014). In an information technology department with 20 support persons, this results in a forfeiture of 16,640 work hours per year. Emotional intelligence has been shown in many industries to be a key predictor of successful employees and increased productivity (Balbe, 2014; Cherniss & Adler, 2000; Goleman, 1998; Morin, 2018). A review of the literature available failed to show any research studies examining the relationship between the emotional intelligence of information technology support staff in a higher education environment and productivity, quality of work, or end-user satisfaction.

### **Purpose of the Study**

The purpose of this study was to examine the influence of emotional intelligence on productivity and work quality of information technology employees in a higher education environment. Specifically, this research sought to determine if a correlation existed between emotional intelligence and the productivity of information technology employees in the higher education environment and the use of emotional intelligence as a possible predictor of enhanced productivity. Likewise, the research examined whether emotional intelligence affects the quality of work of the information technology support employee and the use of emotional intelligence as a predictor of improved quality. Finally, this study examined whether the emotional intelligence of the information technology employee affects the satisfaction of the end user and the use of emotional intelligence as a predictor of heightened end-user satisfaction.

This study provides data to hiring professionals that will enable them to employ quality information technology professionals. The study illustrated to management the importance of emotional intelligence concerning productivity and end-user satisfaction. This research enables managers to redesign procedures and create training programs to enhance an employee's emotional intelligence that could enhance productivity.

Other outlying variables that existed (i.e., the time spent in the position, amount of experience in the field, and age of the employee) play a significant role in the study. Dreyfus and Dreyfus (1980) contended that there are five stages of learning of a skill: novice, competent, proficient, expert, and master. In this seminal work, Dreyfus and Dreyfus (1980) posited that emotional intelligence is a learned skill that is continuously shaping through experiences and events in one's life. While formal training is essential in the development of many skills, the experience of the incident is what teaches a person (Dreyfus & Dreyfus, 1980).

The goal of this research was to gain an understanding of the effect that emotional intelligence has upon the productivity of the information technology support staff and to give the management of information technology departments in educational settings a means to demonstrate why emotional intelligence is critical to the proper operation of the department. An exploration of the current literature concerning information technology support employees and customer satisfaction revealed that no research exists that addresses the emotional intelligence of a person in the information technology department of an educational institution and the productivity of that person.

### **Importance of the Study**

Based on a review of the literature available at present, no study has examined the effect of emotional intelligence on the information technology employee. There have been studies conducted on the impact of emotional intelligence on employees in other fields. This study exposed training opportunities for organizations to raise the productivity of the employees, improve quality of work, and increase end-user satisfaction.

This predictive correlation study examined the correlation and relationship between the emotional intelligence level of a person and the productivity in the position or job function performed. This study tested the information technology support employees in the college or university environment. The research examined whether there was a correlation between the variables of emotional intelligence and productivity, the relationship between those variables, and the productivity based on the number of jobs or tickets that are satisfactorily closed during the monitoring period. Encompassed in this study was the variable of customer satisfaction in relation to the emotional intelligence of the information technology support person. The dependent variables in the study were the measure of productivity and the end-user satisfaction

rate. The independent variable was the actual emotional intelligence score of the person. A blind test with only an identification number was used to protect the identities of the subjects. The work completion records did not have the employee identification numbers or names used; the only identification used was the identification number assigned by the testing medium. The same method was used for the survey of customer satisfaction.

One of the goals of this research was to give the management of information technology departments in educational settings a means to determine why emotional intelligence is critical to the proper operation of the department. This research illustrated the effect of emotional intelligence on customer satisfaction with the department and the reputation of the department that is perceived by the end user. The information gained from this study may allow management to design training geared toward improvements in productivity, end-user satisfaction, and hiring of new employees. The research additionally illustrated the possible need for changes in organizational assets that are currently in place in the information technology department. This study added to the body of knowledge by providing data relevant to the effects of emotional intelligence on information technology support persons in an institution of higher learning.

### **Research Questions**

This study examined how emotional intelligence levels relate to the productivity of a support employee and the end-user satisfaction in the information technology departments of colleges and universities. The following research questions were used to drive this study.

Research question one: How does one's emotional intelligence influence the productivity of the work of the employee?

Previous research by Mayer and Salovey (1997) and Bar-On (1997) indicated that the

productivity of employees is affected by the level of emotional intelligence of the supervisor or the employee. However, there was no direct determination of the correlation or the relationship between the variables of emotional intelligence and productivity.

Research question two: How does one's emotional intelligence influence the quality of the work of the employee?

Research conducted by Bar-On showed that there was a possible relationship between the level of emotional intelligence and the quality of work done (Bar-On, 1997). This study examined the relationship between the emotional intelligence level and the actual failure rate from previously performed work.

Research question three: How does one's emotional intelligence influence the customer or end-user satisfaction with the work of the employee?

Bar-On (1997) and Mayer et al. (2004) concluded that empathy is a critical component of emotional intelligence. Compassion for the end user is a crucial factor in the perception of customer or end user satisfaction.

Multiple studies have stated that the ability to forgo immediate satisfaction or delay satisfaction is a component of emotional intelligence (Bar-On, 1997; Mayer & Salovey, 1997; Salovey, Mayer, Goldman, Turvey, & Palfia, 1995; Seligman, 2003). The relationship between the level of emotional intelligence and satisfaction in the position were parts of the study.

### **Assumptions and Limitations**

The following are some of the limitations and assumptions used in the study. This list of assumptions and limitations is not an exhaustive or comprehensive compilation. Further limitations have been included during the study.

## **Assumptions**

It is assumed that the information technology support persons participating in the study have a standard body of knowledge for the systems they are supporting. It is likewise understood that the institutions of higher learning will not be using any outsourcing services related to information technology. The assumption was made that the end users of the supported systems were a highly diverse pool of educated people.

## **Limitations**

A limitation of the study was that the emotional intelligence test is a self-assessment and it may not have created a total picture of the emotional intelligence of the information technology support person. There is a possibility of deception by the information technology support person since it is a self-reporting survey. In compliance with Saint Leo's ethical standards, the study treated the instruments returned as correct, and the testing was blind to respect the integrity of the people involved. Additionally, it is limited to only information technology professionals in a college or university environment so that the results will be limited to that setting. There was a time window of two weeks for the survey instrument to be delivered and returned. Moreover, the participation rate in the survey may have limited the study. The goal of a 60% response rate was determined to be acceptable on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) as determined by the National Institutes of Health (National Institutes of Health, n.d.). The pilot survey and subsequent end-user satisfaction survey had a goal of 80% response rate, as this eliminated low response rate bias. Another limitation of the study was the worldwide COVID-19 pandemic that resulted in the closure of many campuses.



## **Delimitations**

A delimitation of the study was that length of service in the department was not examined, as it would unmask participants in the study. However, the level of technical experience was examined as a factor in the study. Any previous training in soft skills was excluded from the study, as it would have unmasked the participants in the study.

## **Summary**

To summarize, this section of the paper specified the problems: the need for increased productivity in the information technology staff in the higher education environment and the need for research in this area, as little research is available addressing emotional intelligence, productivity, quality, and satisfaction in a higher education environment. The research questions and importance of the study focused on the effects of the emotional intelligence of the information technology staff in the university setting. The next section, Chapter Two, presents a review of the current research and literature to explore the impact of emotional intelligence and the effects on productivity. Chapter Three discusses the methodology used in the study, including the instruments used in more detail. Chapter Four details the findings of this study. The final chapter presents the conclusions of the research and possibilities for further investigations.

## CHAPTER TWO: LITERATURE REVIEW

Chapter One provided an introduction to the study inclusive of background into the subject, problem statements, research questions, hypotheses, and contributions to the body of knowledge. From the point of view of published scholars and peers, this chapter discusses and reviews existing studies on emotional intelligence and its effect on productivity, as well as emotional intelligence in general as a basis for review. Theoretical and conceptual frameworks of the study are presented to show the relationships between the variables. The research tools, measurements, and instruments used are shown in relation to the variables.

This predictive correlative study examined the possible effect of emotional intelligence on the productivity of information technology support employees in a higher education environment and is supported by the literature. The variable of customer or end-user satisfaction is a determinant of quality of service related to emotional intelligence. The terms used to search for literature on the subject were *emotional intelligence, productivity, employee, information technology worker, college employees, quality of service, satisfaction, and end-user satisfaction*. The design of this study was based on emotional intelligence and its influence on work productivity, quality of work, and the end-user satisfaction of the information technology support staff in a higher education environment. Furthermore, the study examined to what extent of the relationship of the moderating variable of emotional training on the dependent variables.

### Emotional Intelligence Theory

#### History of Emotional Intelligence

Emotional intelligence concepts are considered to have originated in the fields of social psychology and sociology (Foo, Elfenbein, Tan, & Aik, 2004). Foo et al. stated in a 2004 article that emotions may have evolved from the need for interactions and relationships with others (Foo

et al., 2004). In a study from 2011, Yaffe stated that nonverbal communication or emotional expressions account for 93% of all communication conducted. Emotions are how people communicate and get their point of view across to others, as well as how people portray feeling about situations and surroundings (Yaffe, 2011).

An American psychologist from Columbia University by the name of Edward Thorndike began the research into social intelligence. Thorndike stated (1920), “social intelligence shows itself abundantly in the nursery, on the playground, in barracks and factories and salesrooms, but it eludes the formal standardized conditions of the testing laboratory” (p. 228). Thorndike noted that such interpersonal effectiveness was of vital importance for success in many fields, particularly leadership. Thorndike stated (1920), “The best mechanic in a factory may fail as a foreman for lack of social intelligence” (p. 234)

In 1990, Peter Salovey and John D. Mayer created the term *emotional intelligence*. They described it as “a form of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and action” (Bar-On, 1997; Golis, 2010, p. 4; Salovey & Mayer, 1990). Before 1990, what was referred to as emotional intelligence was looked upon as interpersonal skills or soft skills (Goleman, 1998). Peripheral research into what had been referred to as soft skills had been conducted previously in other studies, but this is the first time that the investigation was under the name of emotional intelligence (Golis, 2010). The significance of noncognitive (soft) skills, as predictive of long-term employment, is related to behavior and motivation (Adkins, 2010; Jones, Greenberg, & Crowley, 2015; Megías et al., 2018). Research has shown that people with high emotional intelligence have far more developed coping skills and can deal with high-stress situations more effortlessly than those with a lower emotional intelligence level (Shahid,

Stirling, & Adams, 2018). This researcher suggests that the soft skills that are encompassed in emotional intelligence theory are critical to the survival of an employee in the corporate jungle.

### **Emotional Intelligence Theory**

As defined by Mayer and Salovey, emotional intelligence is the ability to deal effectively with others, to be able to understand the emotions of others and themselves (Mayer & Salovey, 1997). Jennifer George and Gareth Jones defined emotional intelligence as a person's ability to understand and manage one's feelings and emotions and the feelings and emotions of other people (Evans, Hughes, & Warren, 2019; George & Jones, 2012, p. 56). The ability to understand and relate to emotions is a crucial component of operating in a group environment and when dealing with people (Adkins, 2009; Dixit & Singh, 2019; Megías et al., 2018). Dealing with frustrating situations, coupled with handling conflicts with coworkers and considering the inferiority complexes of others, is a critical skill in working in a company with a social component (Ahlawat, Kaul, & Ahlawat, 2013; Arora & Marwah, 2014, p. 1321; Bar-On, 1997; Dixit & Singh, 2019).

Researchers have identified critical indicators that may recognize a person who has high emotional intelligence. The first is that the person can accept criticism without attempting to deflect or blame others (Ashworth & Humphrey, 1995; Extremera et al., 2018; Mayer & Salovey, 1997). The second indicator is that the person is open-minded and receptive to other people's opinions (Ashworth & Humphrey, 1995; Evans et al., 2019; Hogan & Holland, 2003; Mayer & Salovey, 1997). The third indicator is that the highly emotionally intelligent person listens to other ideas and opinions and evaluates them objectively (Dixit & Singh, 2019). The fourth indicator is that truth and honesty are evident in a person of high emotional intelligence, as they are generally brutally honest (Fox, Specter, & Miles, 2001). An individual with high

emotional intelligence is more likely to have higher self-esteem (Arora & Marwah, 2014; Mayer et al., 2004). Higher self-esteem can tend to give an employee a much more positive outlook (Arora & Marwah, 2014; Mayer et al., 2004). A person with a higher emotional intelligence is inclined to be more thoughtful in their dealings with others, often taking the other person's emotional state into account before reacting to a situation (Arora & Marwah, 2014; Ashworth & Humphrey, 1995; Evans et al., 2019).

In 1997, Bar-On defined emotional intelligence as an array of noncognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 1997, p. 14). This definition was a departure from the traditional measurement methods, as workplace situations were now being examined. Bar-On's definition began to show the impact of emotional intelligence on productivity.

Past research has shown that skills present in the expression of emotional intelligence have been found to predict long-term outcomes more efficiently than intelligence test scores (Heckman & Rubinstein, 2001; Jones et al., 2015; Lindquist & Vestman, 2011). Once people learn from their life experiences, their emotional intelligence grows with the advent of time (Lindebaum & Cartwright, 2010). In a research study for the U.S. Air Force, Dreyfus and Dreyfus (1980) stated, "a subject's performance dramatically improves if the task relates closely to experience" (p. 4). Research in the field of psychology and economics has suggested skills present in the expression of emotional intelligence, such as communication, teamwork, and motivation, played a vital role in identifying workplace success (Kyllonen, 2013). In 2006, Druskat Sala, and Mount stated that a person being aware of his or her own emotions and the emotions of other people within a team, while also managing these emotions, can positively impact the performance of the employees as individuals and as members of specific teams and

groups.

In 1990, Salovey and Meyer intended to develop a valid measure of emotional intelligence and endeavored to determine its significance, how it related to life situations, and how people react to certain conditions (Golis, 2010). Daniel Goleman went further with the research and conducted additional studies. In 1995, he concluded that people with high emotional intelligence had five distinct attributes of self-awareness, dealing with emotions, managing emotions, empathy for others, and dealing with others' emotions (Dixit & Singh, 2019; Goleman, 1998; Mayer & Salovey, 1997). These five pillars have become the benchmark of emotional intelligence research (Evans et al., 2019)

The first of the attributes or pillars of emotional intelligence theory is that one is self-aware of one's own emotions (Evans et al., 2019; Goleman, 1996; Salovey & Mayer, 1990; Salovey et al., 1995). Are people aware of the emotions that they are portraying to others and the effect those emotions have upon people they interact with? The emotions portrayed to others via facial expressions and other gestures can significantly influence how others perceive a person (Mayer, Caruso, & Salovey, 2016). The individual with a higher emotional intelligence can identify deceptive or dishonest emotional expressions (Mayer et al., 2016, p. 7). Individuals with a higher emotional intelligence understand how and why emotions are displayed based on context, culture, and environment (Mayer et al., 2016, p. 7).

The next attribute or pillar of emotional intelligence theory that Salovey and Meyer examined was whether the person was able to effectively manage his or her emotions (Extremera et al., 2018; Goleman, 1996; Salovey & Mayer, 1990; Salovey et al., 1995). Is the person able to control the emotions in a manner that is beneficial to the person and others? Emotional intelligence allows the individual to prioritize thinking by leveraging emotions to create different

perspectives (Mayer et al., 2016, p. 7). These people are also able to generate emotions to relate to the experiences of another person (Mayer et al., 2016, p. 7). Prioritization of problems is based on how the ongoing emotional state may facilitate cognition (Mayer et al., 2016, p. 7).

The ability to understand and analyze emotions constitutes the third attribute or pillar of the theory. Regulating emotions to facilitate emotional and cognitive growth reflects the most sophisticated level of emotional intelligence (Mayer & Salovey, 1997). In this attribute, the ability to be empathetic to the emotional drivers of others is examined (Goleman, 1996; Salovey & Mayer, 1990; Salovey et al., 1995). The ability to be able to empathize with other people's emotions and the reasons for those emotions is key to a person's ability to deal effectively with others. According to Caligiuri (2006), "Perceiving, attending to, and acting upon differences in others are crucial for solving problems of survival and reproduction" (p. 74). Recognition of cultural differences in the expression of emotions is a component of being able to understand emotions (Mayer et al., 2016).

The last and final attribute or pillar of emotional intelligence theory examines how effective the person is in handling the emotions of other people (Goleman, 1996; Salovey & Mayer, 1990; Salovey et al., 1995). Being able to manage the emotions of one's self effectively and another to achieve the desired outcome is a sign of high emotional intelligence (Mayer et al., 2016, p. 7). The ability to cope with or handle the emotions of others is key to an operative and productive working environment.

Mayer and Salovey posited that emotional intelligence is the measure of one's ability to empathize with someone else, the ability of a person to recognize the emotions of others and themselves and to understand them correctly (Goleman, 1998; Mayer & Salovey, 1997).

Moreover, it is the ability to utilize this information to guide how people react to others and how

they think about the situations they are involved in (Dixit & Singh, 2019). The ability of people to be able to adapt and manage the environments and conditions they find themselves in is critical to survival in crises (Moeller & Kwantes, 2015).

Jennifer George and Gareth Jones defined emotional intelligence as a person's ability to understand and manage one's feelings and emotions and the feelings and emotions of other people. Dealing with frustrating situations, coupled with handling conflicts with coworkers and considering the inferiority complexes of others, is a critical skill when working in a company with a social component (Arora & Marwah, 2014, p. 1321; Bar-On, 1997; Dixit & Singh, 2019). A person with a higher emotional intelligence is inclined to be more thoughtful in dealing with others, often taking the other person's emotional state into account before reacting to a situation (Arora & Marwah, 2014; Ashworth & Humphrey, 1995; Evans et al., 2019). This ability is evident in the reality that the individual with higher emotional intelligence will often forgo gratification from his or her work (Arora & Marwah, 2014; Mayer & Salovey, 1997). In a previous study, researchers showed that the emotions of the employees have a more significant relationship with the long-term performance than the intellectual ability (Dixit & Singh, 2019; Tsaousis & Nikolaou, 2002).

### **Measuring Emotional Intelligence**

In the 1990s, the MSCEIT was developed by Mayer, Salovey, and Caruso to evaluate emotional intelligence through a series of impersonal and objective questions (Mayer & Brackett, 2003). The exam assesses the respondent's ability to perceive, use, understand, and regulate emotions (Mayer, Salovey, Caruso, & Sitarenios, 2003). The MSCEIT questions are created using the scenarios typical of everyday life. The MSCEIT measures how well people perform tasks and solve emotional problems, rather than having them provide their subjective



assessment of their emotional skills (Mayer et al., 2003). Matthews, Zeidner, and Roberts (2007) concluded that the MSCEIT is a valid measure of emotional intelligence when compared to other conceptual standards of the core competencies (Zeidner, Roberts, & Matthews, 2009).

According to Mayer and Salovey, measures of emotional intelligence must assess actual abilities as opposed to self-reports of constructs, such as optimism and motivation (Mayer & Salovey, 1997). Mayer and Salovey made changes to the original MSCEIT and created the Trait Meta-Mood Scale (Salovey et al., 1995). The trait mood scale can assess individual differences in the attention given to moods and emotions, the discernment among differing emotions and attitudes, and the regulations of emotions and reactions (Bar-On, 1997; Salovey et al., 1995). The trait mood scale indexes the degree to which the attention that individuals devote to their feelings, the clarity of their experiences of those feelings, and their beliefs about terminating negative mood states or prolonging positive mood states (Salovey et al., 1995). The trait mood scale is incorporated into the MSCEIT 2.0 instrument. The literature reviewed fails to show any data regarding the emotional intelligence of the information technology support professionals in the higher education institution.

By using the MSCEIT 2.0 survey instrument and scale, this researcher establishes the emotional intelligence level of the information technology department in a higher education environment. This quantitative data allowed the correlation with related data regarding service productivity, end-user satisfaction, and quality of work. This correlation allowed examination into the relationship between emotional intelligence and work productivity, work quality, and end-user satisfaction.

### **Information Technology and Information Technology Staff**

Information technology touches every facet of a person's life every day. Technology is

the one tool that every person uses every day to conduct business or do many tasks. In higher education, the use of technology has become so important that work would come to a stop without access to the tools that technology provides (Altbach, Gumport, & Berdahl, 2011). The dependence upon technology is especially evident in a university or college setting. Universities use technology to help administer the various departments and divisions of the school. These systems provide for personnel, student resources, and financial and general administration (Maki, 2008). Information technology offers administrators and educators new facilities and possibilities for more effective education (Zainally, 2008). With the strong dependence on information technology, the information technology support team has become more critical than ever before. The support team must be competent, knowledgeable, and cost-efficient (Gibson, 2015; Rockart, Earl, & Ross, 1996). The support team provides a critical role in the university's ability to deliver a quality product to those who desire to learn. The information technology professional in the higher education arena must manage many different technologies ranging from network hardware and software to social media and mobile applications. The information technology team must be enabled with the tools to adequately and accurately deliver the support that the institution's stakeholders need (Venable, 2010). The people in these teams are driven to provide the best service possible. Information technology professionals have been described by Katz and Gail (2004) as very highly educated individuals who are inspired by the intellect that is inherent in the university environment. These professionals are often more eager to take on the multitude of tasks that involve new and emerging technologies.

Multiple forces have influenced the advancement and subsequent dependence on information technology in higher education. Picciano stated that support for technology in the business world was a contributing factor to the increased use of information technology in higher

education (Picciano, 2012). These forces have changed the college or university environment of today into a fast-paced, demanding, and stressful situation (Molnar, 1997). Technology has changed the face of higher education, as around the globe colleges and universities are forced to compete with each other for students, research grants, and top-notch faculty (Altbach, Reisberg, & Rumbley, 2010; Weber & Duderstadt, 2008). This research was further explored and validated. As Slaughter and Rhoades (2009) stated, universities in the United States are now forced to compete with universities in other countries, putting a strain on the information technology support structure and the budgets that these departments are forced to work with.

The people in these departments are often tasked with doing whatever is possible with the limited resources available. The staff members of the information technology departments must not only be smart enough to solve a problem quickly and efficiently but also be able to understand other people's emotions to enable them to solve problems at the same time that they are managing their own emotions. According to Dixit and Singh (2019), "It is all about awareness of one's feelings and the ability to handle them in problem-solving and creative ways" (p. 27). These positions require not only a high cognitive ability but also emotional intelligence skills, such as job motivation, self-discipline, and interpersonal skills (Jones et al., 2015). A person with higher emotional intelligence exhibits positive behaviors and possesses the above-listed qualities (Megías et al., 2018). In a 2008 study, Zeidner et al. (2009) examined how emotional intelligence aided people in coping with stressful situations and toxic work environments. They concluded there was indeed a connection between emotional intelligence and the capacity to cope with stressful situations and environments (Zeidner et al., 2009). A person with higher emotional intelligence is more able to empathize with another and relate to the issues at hand. This trait gives the appearance of caring, thus improves a person's impression

on others.

### **End-User Satisfaction**

Provided that the end user is the customer of the information technology support department and the final recipient of the services provided, it is vital that they are satisfied with the product they are given. End users must not only be confident with the technical service that they receive, but also with the manner in which the service is delivered (Nelson & Low, 2011). End-user satisfaction is key to the success of information technology in business today (Kim, Meng, Kalinowski, & Shin, 2014). Kim stated that if end users are not comfortable with the support that they receive, the end user will no longer use the technology and move on to something else (Kim et al., 2014). The information technology support staff person must not only have the technical skills needed for the task at hand, but more importantly, he or she needs to be empathetic to the person and situation. A person with a high emotional intelligence level is capable of understanding the emotions of the client and is better equipped to enlist the client's help in resolving a problem (Goleman, 1996; Mayer & Salovey, 1990; Nelson & Low, 2011).

The information technology support person who can work with very emotional people and solve the issue is often perceived to have a higher quality of work by the end user (Balbe, 2014). Many times, resolving the emotional aspect of the problem is crucial to gaining the help needed from the user to resolve the issues at hand. According to Zeidner and Kloda (2013), "Emotional intelligence has been claimed to help individuals to maintain positive emotional interactions, communicate and handle conflicts more effectively, and regulate their emotions better thus facilitating solutions during conflicts" (p. 279; Espinoza et al., 2019).

End users need certainty concerning their systems and their data. If the end user does not feel certain that the problem will be corrected in a timely and satisfactory manner, he or she will

not feel satisfied and will look elsewhere for a solution (Nelson & Low, 2011). The emotional intelligence of the information technology support person allows the end user to feel comfortable with the support given (Nelson & Low, 2011). The end user must not only be satisfied and comfortable with the work performed but also be able to accept the solutions or the explanations of the solution possibilities.

### **Productivity**

The lack of productivity in employees is not a new problem; in fact, it is a problem that has plagued businesses and other entities for many years. In 1911, Frederick Taylor published *The Principles of Scientific Management* in which he outlined the need for standardization to increase productivity (Taneja et al., 2011). In 1924, Mary Parker Follet posited that people are not machines and need to be able to express themselves in a workplace environment to improve productivity (Phipps, 2011). In 1957, Douglas McGregor stated that people are very social, and to nurture this facet would enhance productivity by allowing people more creativity in the jobs they perform (McGregor, 1957). Researchers have stated that emotional intelligence is a component or factor in the actual productivity of the employee in the tasks they are charged with (Cherniss & Adler, 2000; Goleman, 1998; Huy, 1999; Mayer et al., 2000; Morin, 2018).

Personality traits of a person have been recognized as a predictor of emotional intelligence. In a 2016 study, Alghamadi found that three of the big five personality traits were predictive of emotional intelligence (Alghamdi, Aslam, & Khan, 2017, p. 5). These emotional intelligence components are an essential indicator of how well a person will perform the position in which he or she is employed (Extremera et al., 2018). Emotionally intelligent individuals are those capable of functioning in a high number of the abilities proposed to reflect emotional reasoning and doing so quickly (Dixit & Singh, 2019; Extremera et al., 2018; Mayer et al.,

2004). People who have higher emotional intelligence are more optimistic regarding the outcomes of the work that is in production, and therefore, are generally more productive in the work they do (Morin, 2018; Seligman, 2003).

The empathy of a person is a critical component of emotional intelligence that can be essential to accomplish a task. Criticism, when delivered non-constructively, can be detrimental to productivity (Baron, 1990; Becker, 2019). Becker stated high emotional intelligence translates into actions (Becker, 2019). Baron (1990) stated, “improper criticism would induce more negative emotional reactions, stronger tendencies to handle conflict in negatively nonadaptive ways (e.g., through avoidance rather than collaboration), and lower task ability” (p. 243).

Lam showed that there was a correlation between a person’s emotional intelligence and the amount of work completed by employees (Lam, 1998). In 2013, Shooshtarian conducted a study in Iran on the effects of labor’s emotional intelligence on job performance (Shooshtarian, Ameil, & Aminimalari, 2013). In Shooshtarian et al.’s (2013) research, it was found that the employee’s emotional intelligence was positively related to job satisfaction. However, Dreyfus and Dreyfus (1980) contended that experience was the most significant influencing factor in improving productivity and retention of knowledge. While experience may be a substantial factor in the determination of productivity, it will not be examined in this study, as emotional intelligence is the focus.

Companies are now looking for that good personality fit when it comes to employees because they want an employee who is driven to excel and exceed expectations (Crowne Plaza Hotel Group [IHG], 2018; Sullivan, 1995). By looking at emotional intelligence, a company can find the employee who has the qualifications without the “emotional baggage” or issues that

people can bring to the table (Ashworth & Humphrey, 1995, p. 104; IHG, 2018). In emotional transmission, a person's competencies and behaviors can positively influence the effects on others (Dixit & Singh, 2019; Zeidner & Kloda, 2013).

With the budgetary restraints and high-stress environments that are part of the domain of the information technology departments in colleges and universities, the staff members in the information technology department must be as productive as possible. They must be able to cope with the stressful environment, all while providing quality service and support. Colleges and universities are not capable of adequately forecasting or planning enrollments, much less, forecasting budgets for information technology (Musselin, 2018; Norbury, 2013). The inability to predict the future hampers the information technology department and the people that depend on the services they provide (Norbury, 2013). The lack of budgetary support necessitates that the information technology departments must do more with fewer resources, making the productivity of employees crucial to survival.

In a workplace, more so in a college environment, the lack of emotional intelligence can complicate the effectiveness of a team effort or collaboration (Gillard, 2009). The lack of EQ is especially real in the information technology department, as there are so many different job functions (e.g., network engineering, end-user relations, internet services, print services, email, telephony) within the environment (Gillard, 2009). Not only do the people in the information technology department need to deal with people in the local university setting, they now have to interface with people in other countries. Dealing with a variety of people and personalities makes emotional intelligence vital to an information technology person in a university. Emotional intelligence enables the team member to be able to deal with cultural and language barriers in addition to the typical issues in the department. Gillard (2009) stated that the need for

emotional intelligence is vital to be effective. In a 2004 study, Lynch (2004) noted that emotional intelligence is essential to all people to enable one to deal with the evolving new work environments of today's world that are becoming more collaborative.

In a 2012 study, Nakamura, Okino, Ogasawara, Shibamoto, and Nakayama found that, in the effort to deliver products faster and more efficiently, information technology professionals were working more extended hours than those in non-information-technology-related positions. The increased workload caused personal issues and depression (Nakamura et al., 2012). In the information technology community, depression is called *techno-stress* (Nakamura et al., 2012, p. 186). Similarly, it was found that persons with better coping skills (emotional intelligence) were more able to deal with stress (Nakamura et al., 2012). Stress management, a component of emotional intelligence, is the ability to choose and exercise healthy control over anger and anxiety (Nelson & Low, 2011). The information technology professional must be able to handle and cope with internal and external stressors and emotions.

The importance of emotional intelligence may well become more recognizable during the 21st century and will prompt new educational and training programs focused on the promotion of these skills (Kyllonen, 2013). In 2013, Gill concentrated on the importance of returning to providing emotional intelligence training courses, conducting seminars with employees demonstrating emotional intelligence, and obtaining referrals from management and supervisors as an effort to increase productivity (Gill, 2013). He suggested that emotional intelligence training was vital for developing the skills needed for long-term relationships (Gill, 2013). A few years later, Gale indicated that emotional intelligence training was essential for business leaders to adapt to the rapidly changing global marketplace (Gale, 2017). Druskat stated that once leaders become aware of their emotions and the emotions of the employees they work with,



they are more capable of managing the group or team more effectively and efficiently, which directly implies a positive relationship between emotional intelligence and leadership as well as communication skills (Druskat et al., 2006).

### **Quality of Work**

The emotional intelligence of a person is seen by many as how an individual interacts with others in multiple settings. The information technology support person who can resolve conflicts and solve the issue is often perceived to have a higher quality of work (Balbe, 2014). According to Becker (2019), “People with high emotional intelligence do not just act like they care; they do something about it” (p. 3). The people with higher emotional intelligence place more effort into the quality of work that is being performed (Becker, 2019). According to Zeidner and Kloda (2013), “Emotional intelligence has been claimed to help individuals to maintain positive emotional interactions, communicate and handle conflicts more effectively, and regulate their emotions better thus facilitating solutions during conflicts” (p. 279; Espinoza et al., 2019). Conflict resolutions in the information technology environment are critical to the smooth operations of a department or team (Balbe, 2014; Dixit & Singh, 2019). Having a smooth-running department or team tends to foster more optimism in the project or task completion (Balbe, 2014). According to the literature that has been reviewed, a person with high emotional intelligence produces a higher quality of work and is able to resolve conflicts easier than a person with lower emotional intelligence.

Throughout the literature that has been reviewed, emotional intelligence is seen to play a significant role in productivity and job satisfaction in other disciplines. However, the literature fails to show any data referencing the emotional intelligence of the information technology employee in a higher education environment. This gap in the literature provided the conceptual

framework in which emotional intelligence was examined regarding the three variables.

## Technical Experience

Technical experience in this study relates to the experiences that the information technology support person has in the field. These experiences often mold how a person reacts to certain situations (Dreyfus & Dreyfus, 1980). A person who is just starting in the information technology field will often rely on publications and/or a mentor to accomplish the work assigned. However, after a person has experience in the task, the need for study aids diminishes. Dreyfus and Dreyfus (1980) stated that the subject's performance dramatically improves when the task closely aligns with experience (p. 4). Personal experiences are relevant to problem-solving performance (Dreyfus & Dreyfus, 1980, p. 5). A person begins his or her career as a novice, and, as they gain more experience, they progress through the five-stage model of skill acquisition to some level of competence (Dreyfus & Dreyfus, 1980).

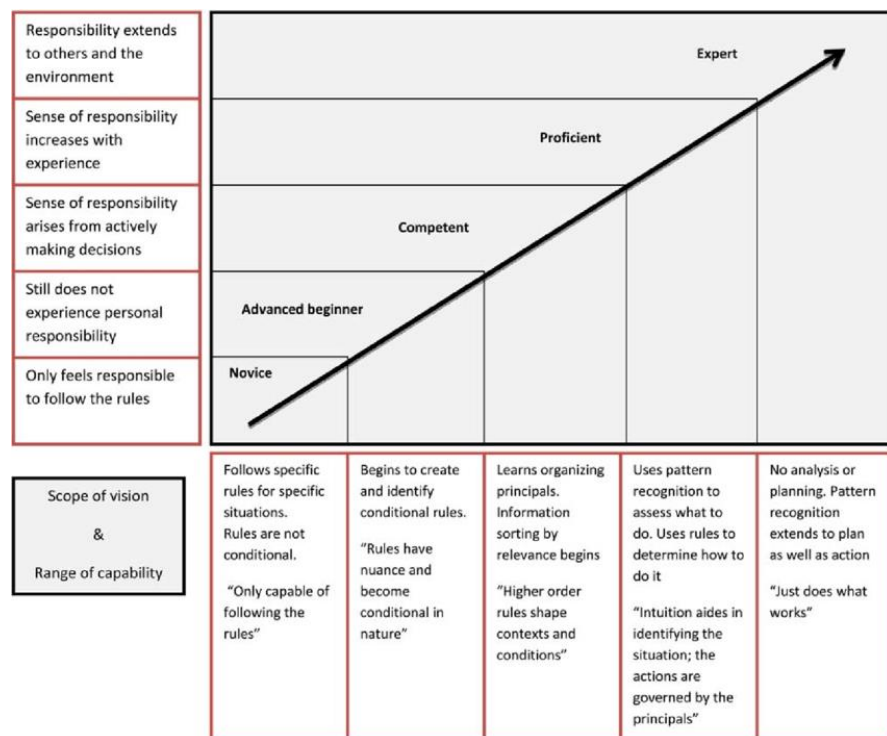


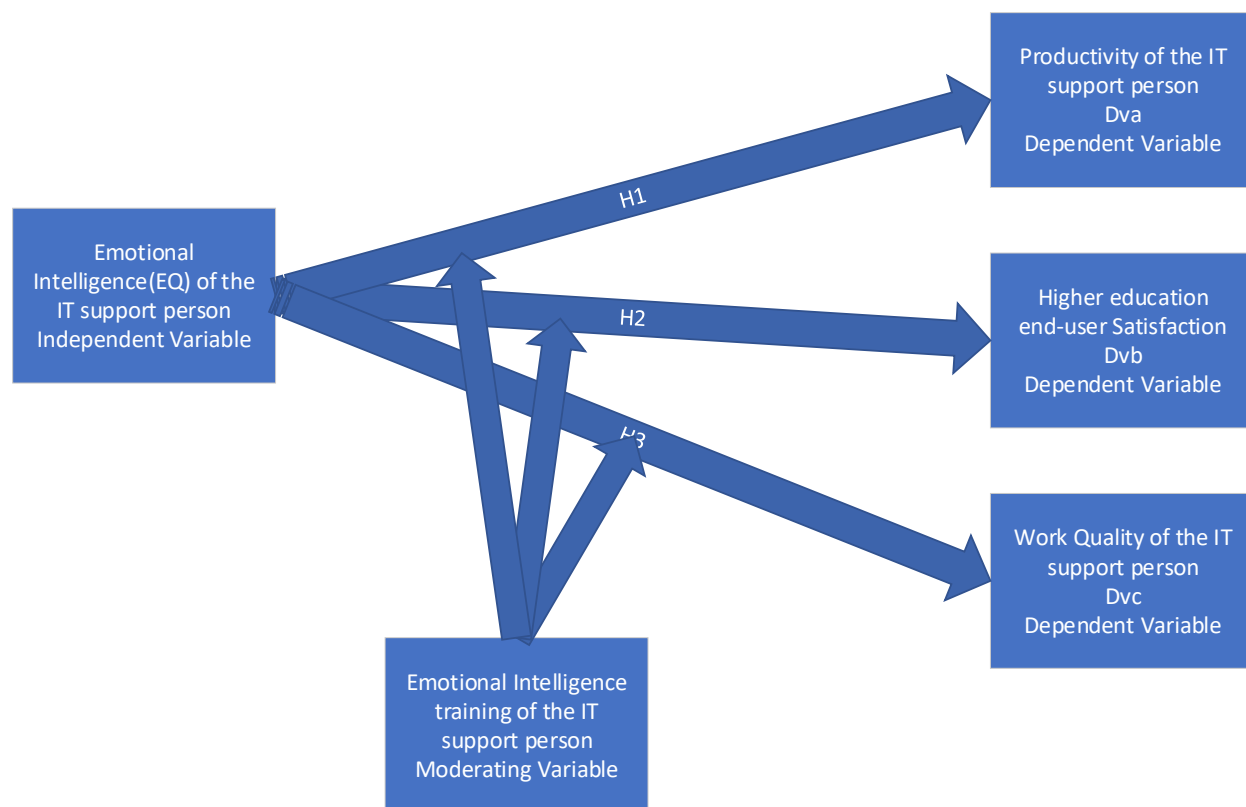
Figure 1. Five-stage skill acquisition model. (Dreyfus & Dreyfus, 1980)

Technical experience is an essential factor in providing quality support to the end users. This experience level is often overlooked by end users, as it is assumed that they are competent at their position. However, it is a significant factor in how the service is provided to the end user. In the conceptual framework of this study, all the variables that have been detailed are laid out graphically to show how they interact with each other.

### **Conceptual Framework**

The theory of emotional intelligence that was reviewed in the literature led to the creation of the three models used in this study. The theory of emotional intelligence affecting productivity, quality of work, and satisfaction were examined. Each of the variables was reviewed in the literature and provided the basis for the models.

The three models used in this study were comprised of two constructs each. The models are described in Figures 2-5, with Figure 2 acting as an overview of the research and being used to describe the theoretical framework of the study. In Figure 2, the model shows the interrelationship between the independent variable, emotional intelligence, and the dependent variables of productivity, end-user satisfaction, and quality of work. Figure 3 shows emotional intelligence as the independent variable and work productivity as the dependent variable. Figure 4 illustrates emotional intelligence as the independent variable with end-user satisfaction as the dependent variable. Figure 5 describes emotional intelligence as the independent variable and quality of work as the dependent variable.



*Figure 2.* Emotional intelligence impact on work productivity, end-user satisfaction, and quality of work.

The first model describes the relationship between the emotional intelligence of the information technology support staff person serving as the independent variable and the work quality, end-user satisfaction, and productivity serving as the dependent variables. The first model correlates to an overview of all of the variables encompassed in the study.

The second model describes the relationship between the emotional intelligence of the information technology support staff person serving as the independent variable and the productivity of the information technology support staff person serving as the dependent variable. This model corresponds to hypothesis one.

The third model describes the relationship between the emotional intelligence of the information technology support staff person serving as the independent variable and the end-user

satisfaction with the information technology support staff person serving as the dependent variable. This model corresponds to hypothesis two.

The fourth model describes the relationship between the emotional intelligence of the information technology support staff person serving as the independent variable and the work quality of the information technology support staff person serving as the dependent variable.

This model corresponds to hypothesis three.



*Figure 3.* Emotional intelligence impact on work productivity.



*Figure 4.* Emotional intelligence impact on end-user satisfaction.

Three primary hypotheses were allocated to the three models and are identified as H1, H2, and H3. All of the hypotheses were derived from the overview model. H1 was derived directly from the second model (Figure 3), addressing the impact of emotional intelligence on work productivity. H2 was derived directly from the third model (Figure 4), discussing the impact of emotional intelligence on end-user satisfaction. H3 was derived directly from the fourth model (Figure 5), speaking to the effect of emotional intelligence on quality of work. The overall purpose of the models was to explain the relationship between the independent variable and the degree to which they potentially impact and predict the dependent variable. The models that have been presented represent a visual conceptualization of the actual research study. These models are based on the seminal research reviewed in the previous sections. Each model

corresponds to a set of the null and alternative hypotheses, designed to explore the relationship and impact of EQ on work productivity, quality of work, and end-user satisfaction. Hypotheses and hypothesis development are described in further detail in Chapter Three.



*Figure 5.* Emotional intelligence impact on quality of work.

### Summary

The need for increased productivity in the information technology departments of higher education institutions was discussed in Chapter One. The need for research into the effects of emotional intelligence on information technology support staff was similarly discussed. The current chapter began by reviewing the history and theory behind emotional intelligence. Past studies and research were presented to illustrate the theory behind emotional intelligence. Each of the areas studied was presented with the current literature and studies that are available. Based on the theory presented in the literature and studies that were reviewed, a conceptual framework was created based on the underlying theory. A description of each of the four constructs in the framework, emotional intelligence, work productivity, quality of work, and end-user satisfaction, was presented. The next chapter describes the design and methodology of the study. The research design, hypothesis development, sample selection, measurement instruments, the reliability and validity of the scales, data collection methods and means of collection, and data analysis are described in detail in Chapter Three.

### CHAPTER THREE: RESEARCH METHODOLOGY

The purpose of this predictive correlational research study was to determine if a relationship existed between the emotional intelligence of an information technology support employee in a higher education environment and the employee's performance, end-user satisfaction, and quality of work referencing any corrections to previous work, and to determine if emotional intelligence is a predictor of future success. In this chapter, a description of the processes and methods used in conducting this study is provided. This researcher posited that, through an appropriately applied methodology, the data can give a better understanding of the problem statement and the research questions discussed in the first chapter. By referencing the theory and previous research in emotional intelligence, productivity, quality, and end-user satisfaction, their intertwined relationships in information technology in higher education are highlighted. In this quantitative study, the variables of emotional intelligence, work productivity, quality of work, and end-user satisfaction were examined.

The basis for using a quantitative method versus a qualitative study is the data that were obtained from the research were numerical, thus enabled the use of statistical methods to examine the relationships between the variables in the study and testing of the hypotheses. The correlational research design was chosen due to the use of more than two quantitative variables in the prediction of a relationship. The Spearman Rho is better suited to multiple dependent variables. A qualitative study was not appropriate, as this study investigated the relationships and measures of variables. Of the many types of quantitative research designs available, a correlation design was the most appropriate for examining the relationships between variables (Cronk, 2017).

This study examined the relationship between emotional intelligence and the productivity

of a support person in a higher educational institution. This study examined the relationship between end-user satisfaction and quality of work in relation to emotional intelligence. As stated earlier, there has been research conducted regarding emotional intelligence and productivity in other fields; however, there has not been any research undertaken in the field of information technology in a higher education institution.

Included in this chapter is the research design based upon the previously discussed theories and research, research population, sampling procedures and methods, instrumentation, data collection procedures, and data analysis.

### **Removal of Potential Bias**

As this researcher has been part of the information technology area and the higher education field, it was imperative that all potential bias was removed from the study. To remove the bias from the study, the participants for the end-user survey were chosen at random from the service tracking database of the university; names, demographic information, and job functions were not available to this researcher at any time. The end-user satisfaction survey was piloted at an institution that was not part of the study to examine for potential bias. The information technology departments were sampled as a whole rather than by individual employees. No demographic information was collected regarding the information technology support staff. The productivity-related data were taken directly from the service call tracking database with names removed. At no time during the study were the participants aware of the identity of the researcher. This minimized potential bias from the study.

### **Research Design**

This quantitative study was conducted in phases to acquire the needed data efficiently. In the first phase, a pilot study was conducted to determine the validity of the end-user satisfaction



survey used in a portion of the study. The purpose of conducting a pilot study on end-user satisfaction was to gain an understanding of the factors that influenced an end-user's perception of satisfaction with the service provided. By use of the data, the pilot study allowed testing of the data collection instrument to ensure it was accurately designed, fit the needs of the study, and correctly represented the end users. The people who were involved in this pilot study and the subsequent study were taken at random from the school's call tracking database. These people were identified from the database to have received services from the information technology department. This was a Likert scale-based survey.

In the second phase of the study, the MSCEIT 2.0 examination was administered to the employees of the information technology departments of Texas A&M University-Commerce and Texas A&M University-Texarkana. The MSCEIT 2.0 was used to determine the emotional intelligence quotient of the persons taking the exam, which is in regular use in the universities involved in the study as part of the human resources process. The test pool for this phase consisted of persons identified in the service databases as information technology support persons who have provided services to employees, educators, and students at the respective universities. The universities being evaluated were Texas A&M University-College Station Campus, Texas A&M University-Commerce Campus, and Texas A&M University-Texarkana Campus. These universities were selected due to the size considerations and the similarities to other schools in the same size range. The test pool was randomly chosen from the information technology support staff to eliminate any possible bias from the selection process. While useful, demographic information was not included in the study, as it could identify participants in the study due to the small size of the departments being examined.

The invitations for the end-user satisfaction survey were sent out to 120 people at both

the Texas A&M Commerce campus and Texarkana campus. The response ratio for the end-user satisfaction survey was 102 for the Commerce campus and 50 for the Texarkana campus. This resulted in an 85% response rate for Commerce and a 41% response rate for Texarkana. The response rate for the MSCEIT at the Commerce campus was 35 exams taken of 70 invitations for a response rate of 50%. At the Texarkana campus, of 60 invitations sent out, 32 were completed for a response rate of 53%. Texarkana had fewer invitations send out because it is a smaller school with fewer information technology support staff employed. This compares to the estimated response rate of 60% for the end-user satisfaction survey and 40% for the MSCEIT at both campuses. The College Station campus was eliminated from the test pool, as potential bias could have been introduced by the researchers' attachment to the campus. This reduced the available test pool of potential participants.

In the third phase of the study, the data regarding service, productivity, and the mitigating variable of emotional intelligence training were mined from the appropriate service call tracking database or human resources database. The process of mining involved a deep search in the database retrieving data related to the three variables listed. The moderating variable of emotional intelligence training is maintained in the database as a numerical value denoting the number of trainings for each employee. The moderating variable was included, as it was a significant factor. According to Dreyfus and Dreyfus (1980), "Life experience and training can change how things are done as new skills have been acquired" (p. 6).

The primary research variables examined were emotional intelligence, productivity, end-user satisfaction, emotional intelligence training level, and quality of work. The demographic variables that were included in the study, but were not measured, were race, age, and gender. The moderating variable of emotional intelligence training was based on the amount of

continuing education credits determined by the university being studied.

### **Research Questions and Hypotheses**

The research questions and hypotheses for this study were based on theory and are used to determine the impact of emotional intelligence on quality of work, work productivity, and end-user satisfaction with a moderating variable of emotional training concerning information technology support persons in a higher education environment. More specifically, this study examined how emotional intelligence influences work productivity and end-user satisfaction moderated by emotional training. An additional question was asked: Does emotional intelligence affect the quality of work? Previous research by Bar-On stated that emotional intelligence affects productivity. However, nothing was stated regarding the quality of work. Does more productivity equate to higher quality? Are they related in some manner?

#### **Research Questions**

The goal of this study was to examine how emotional intelligence levels relate to the productivity of an employee and the end-user satisfaction concerning the information technology departments of colleges and universities. The following research questions were developed to drive this study.

Research question one: How does one's emotional intelligence influence the productivity of the work being done by the employee?

Previous research by Mayer and Salovey (1997) and Bar-On (1997) indicated that the productivity of employees is affected by the level of emotional intelligence of the supervisor or the employee. However, there was no direct determination of the correlation or the relationship between the variables of emotional intelligence and productivity.

Research question one A: Does emotional intelligence training moderate the effects on

the productivity of an IT support person in a higher education environment?

Competence comes only after considerable experience in actual technical situations (Dreyfus & Dreyfus, 1980). The increased practical experience exposes the technician to a wider variety of possible solutions (Dreyfus & Dreyfus, 1980). An expert in a particular task has evolved to the point where solutions can be outside the normal parameters of standard procedures (Dreyfus & Dreyfus, 1980).

Research question two: How does one's emotional intelligence influence the customer or end-user satisfaction with the work being performed by the information technology support person in a higher education environment?

Bar-On (1997) and Mayer et al. (2004) concluded that empathy is a critical component of emotional intelligence. Compassion for the end user is a crucial factor in the perception of customer or end-user satisfaction. Empathy for a person portrays a level of understanding of the problems that one is experiencing (Bar-On, 1997; Mayer et al., 2004; Mayer & Caruso, 2002).

Research question two A: How does emotional intelligence training moderate the effects of end-user satisfaction with work performed by the information technology support person in a higher education environment?

Based on the development level of the information technology support person providing services, the solutions may become more rapid and situation-based (Dreyfus & Dreyfus, 1980). The information technology support person may have heightened awareness of the situation as well as the emotions of the others involved (Dreyfus & Dreyfus, 1980; Mayer & Caruso, 2002).

Research question three: How does one's emotional intelligence influence the quality of the work being done by the information technology support person in a higher education environment?

Research conducted by Bar-On (1997) showed there was a possible relationship between the level of emotional intelligence and the quality of work done. Farahbaksh (2012) and McQueen (2004) found that emotional intelligence had an impact on the quality of care or work. The present study examined if the relationship between the emotional intelligence level and the actual quality of work done exists in the information technology departments in higher education and to what extent it exists.

Research question three A: Does emotional intelligence training moderate the effects of the quality of work performed by the information technology support person in a higher education environment?

Bar-On stated that emotional intelligence had an effect on work quality, but that effect is moderated by technical experience. Dreyfus and Dreyfus (1980) noted that the higher the person was in the five-stage model, the more proficient the person was. Does this equate to higher quality or just more productivity?

### **Hypotheses**

The dependent variables used in this study were: dependent variable A, the productivity of the employee; dependent variable B, the satisfaction of the end user; and dependent variable C, the quality of work concerning the rate of rework for the same issue. The moderating variable of emotional intelligence training was MVA. The independent variable of the study was the emotional intelligence score of the person under examination.

H1: Emotional intelligence is significantly related to the productivity of the employee in the information technology field. How significant is the relationship between emotional intelligence and the productivity of the employee?

H1o: Emotional intelligence is not significantly related to the productivity of the

employee in the information technology field.

H2: Emotional intelligence is significantly related to the satisfaction of the end user with work performed by the information technology department employee. How significant is the relationship between the satisfaction of the end user or customer and the emotional intelligence of the employee?

H2o: Emotional intelligence is not significantly related to the satisfaction of the end user in work performed by the information technology department employee.

H3: Emotional intelligence is significantly related to the quality of work produced by the information technology department employee. How significant is the relationship between the quality of work of the information technology support employee and the emotional intelligence of the employee?

H3o: Emotional intelligence is not significantly related to the quality of work produced by the information technology department employee.

### **Population and Sample**

The study involved the employees of the information technology departments of Texas A&M University College Station Campus, Texas A&M University-Commerce Campus, and Texas A&M University-Texarkana Campus, and the professional end users they supported (e.g., faculty, staff, employees of the university). The participants were randomly selected from the service call database as those who have provided service or received service from the information technology support staff. These people were sent an invitation to the questionnaire via the campus email from the respective school containing a link to the SurveyMonkey survey.

The selection of the universities was based on the size factor, regional area, and diversity of employees. Texas A&M University College Station is located 100 miles northwest of

Houston, Texas, and has a student enrollment of 69,000 (Texas A&M University, n.d.). Texas A&M University-Commerce is located 60 miles northeast of Dallas, Texas, and has a student enrollment of 12,000 (Texas A&M University, n.d.). Texas A&M Texarkana is located in Texarkana, Texas on the state line with Arkansas and has an enrollment of 4,000 students (Texas A&M University, n.d.).

The information technology departments of the schools are sized to meet the demands of the enrollment of the campuses they serve. Essentially, the larger the school, the larger the staffing in the information technology department. The staffing of these departments is composed of people who possess a standard body of knowledge in information technology and are technically inclined. On average, the populations of these departments are 84% male and 16% female (Texas A&M University, n.d.). The test pool was selected at random from the employees in the respective departments to eliminate any possible bias. The blind method is following the Saint Leo University core values of respect and integrity (“Saint Leo honor code,” 2018).

### **Instrumentation**

The instrument used in a quantitative study is considered valid if it measures what it is intended to measure and if it is deemed to be stable for repeated use so that the study can be replicated at a later date (Leedy & Ormrod, 2016). The instruments used in this study are listed in the appropriate phase of the study. These phases are as follows.

#### **Instrumentation Phase One**

In the first phase of the study, the customer or end-user satisfaction survey was administered. This survey was 10 questions and had been piloted previously and found to be appropriate for the needs of the study. The survey was scored on a Likert scale ranging from 1

strongly agree to 5 strongly disagree. The use of the Likert scale allowed the data to be mathematically analyzed. Cronbach's alpha was conducted on the dataset to ensure the consistency of the data.

### **Instrumentation Phase Two**

During the second phase of the study, the MSCEIT 2.0 was administered to the staff of the information technology departments that provide services to the end users. The MSCEIT 2.0 was selected, as it is considered the benchmark and basis for all the existing recognized exams. The MSCEIT 2.0 exam is an all-encompassing exam that examines all the recognized branches of emotional intelligence. The MSCEIT 2.0 has eight sections used to measure the four branches of the ability model (perceiving emotions, using emotions, understanding emotions, and managing emotions) with two subtests per branch. The questions are scored on a Likert scale ranging from 1 being strongly disagree to 7 strongly agree. The test was scored and scaled by the design of the test itself (Mayer & Brackett, 2003). Examples of the questions used in the MSCEIT 2.0 are located in Appendix A. The scoring and breakdown of the MSCEIT concerning the attributes are located in Appendix C.

### **Instrumentation Phase Three**

In the third phase of the study, the data regarding the emotional intelligence training of the information technology employee were extracted from the human resources databases in use by the respective universities. These data are ranked in the system based on the continuing education credits earned. This dataset had Cronbach's alpha conducted on the data to ensure consistency.

### **Data Collection**

The data collected were obtained after approval by the institutional review board (IRB) of



Saint Leo University and participating universities. Following approval from the IRB, consent letters were obtained from the universities studied. These letters detailed the scope of the study and permission from the university being considered. These letters are part of the final study in the table of forms.

### **Data Collection Phase One**

In phase one of the data collection, the data from the end-user satisfaction survey were collected. These data were collected via an electronic survey administered on a secure internet platform known as SurveyMonkey. SurveyMonkey is an online survey mechanism that is secure and complies with all federal statutes regarding privacy. Additionally, SurveyMonkey is ISO 27001 compliant.

The questionnaire was entered into the SurveyMonkey platform, and an email was sent to the campus email of the people who have been randomly selected from the test pool. Upon entering the survey, the participant had an implied consent form displayed that required action by the participant to proceed. No personally identifiable data were collected during this survey. The survey required between three and seven minutes to complete. The survey was announced to prospective participants before becoming available for two weeks. The respondents were emailed a secure link to the survey to enable participation.

### **Data Collection Phase Two**

In phase two of the data collection, the MSCEIT 2.0 test was administered online using SurveyMonkey. As described previously, SurveyMonkey is an online testing medium used to eliminate bias that could be introduced by the use of a test administrator. SurveyMonkey calculated and tabulated the information in a manner that was ready for processing by SPSS. The exam was preloaded into SurveyMonkey, as it is an industry-standard exam. The persons

selected at random from the service database denoted as those who provide services were sent an email. Upon entering the survey, the participant had an implied consent form displayed that required action by the participant to proceed. No personally identifiable data were collected during this survey. The survey was available for two weeks. The respondents were emailed a secure link to the survey to enable participation.

### **Data Collection Phase Three**

In phase three of the data collection, the data regarding the emotional intelligence training of the information technology employee was extracted from the human resources databases in use by the respective universities. These data are ranked in the system based on the Dreyfus five-stage model of skill acquisition, ranking the skill level from 1 (novice) to 5 (master) based on education and certification levels. This dataset had Cronbach's alpha conducted on the data to ensure consistency.

### **Data Collection Phase Four**

In phase four of the data collection, the service call data were extracted from the call tracking databases used by the respective universities. These data included call statuses, methods of closure, and duration of service disruption. These data were mined from the database without reference to the end user or the staff member of the information technology department providing the services. Cronbach's alpha was conducted on the dataset to ensure consistency of the data.

### **Data Analysis**

The data that were collected by SurveyMonkey were imported into IBM SPSS version 17. The SPSS software package was used to run Cronbach's alpha on the data set to ensure consistency of the data. Based on the review of the literature, a one-way analysis of the variables

(ANOVA) was conducted on the data following the verification of the consistency of the datasets. The one-way ANOVA was used to determine whether there were any statistically significant differences between the means of three or more independent variables that were not related (Laerd Statistics, n.d.; McClave, Benson, & Sincich, 2014, p. 486). This procedure was conducted to test the null hypotheses to determine if the hypotheses should be rejected. The ANOVA determined whether the results were significant enough to continue. The Tukey honest significant difference test was conducted with ANOVA results from each university to determine whether the data were significantly different between the different universities.

In this study, a Spearman Rho test was conducted on each of the dependent variables in relation to the independent variable to test the strength of the relationship between the variables. Mean scores of the branches in the MSCEIT were used. The branch scores were automatically broken out in the scoring of the exam. Branches two and four were used for the productivity and work quality aspects of the study and branches one and three were used for end-user satisfaction. Linear regression was conducted to determine if the independent variable was a predictor of the dependent variables.

Multiple linear regression was conducted to determine if the moderating variable of emotional training affected the dependent variables (work productivity, quality of work, end-user satisfaction) used in the study concerning the independent variable of emotional intelligence.

The statistical tests described were used to determine if there was a relationship between emotional intelligence and the dependent variables of productivity (work productivity), quality of work, end-user satisfaction, and the moderating variable of emotional training. The data were contrasted between the schools to determine if the size of the school was a factor.

The data collected are maintained at the universities that participated in the study in a

protected environment for the period mandated by the Saint Leo University IRB. At the end of five years, the data will be destroyed by safe data destruction methods in use at the time.

### **Summary**

This chapter provided a roadmap for the study that was created for this researcher to follow to guarantee that the elements of the research were identified correctly and appropriately verified. The data that were gathered were considered confidential and personal to the participants. By the use of blind surveys and anonymous testing, the responses were converted into numerical data. Scientific methods were used to interpret the data. This method allows future researchers to review and analyze the data.

The development of this chapter highlighted the significance of finding every possible interpretation of the questions and resulting data. By addressing every conceivable aspect of the study in advance, there should be no issues in concluding the study.

In the next chapter, the findings of the research are presented. Included in Chapter Four are details on how the data were cleaned for use in the study as well as the assumptions that have been included in this study previously.

## CHAPTER FOUR: RESEARCH FINDINGS

The purpose of this quantitative study was to determine if emotional intelligence affected productivity, work quality, or end-user satisfaction in a higher education environment. It was proposed that emotional intelligence training could enhance the productivity of information technology support staff in a higher education environment. Chapter Three introduced the research methods employed for this study and the relationships between emotional intelligence, work productivity, and end-user satisfaction. The design of the study, instruments used, data collection methods, and data analysis methods were discussed.

This chapter presents the findings from the data collection and analysis of the collected data. The research was conducted at Texas A&M University-Texarkana Campus, and Texas A&M University-Commerce Campus from May 1 to May 14, 2020. This was during the COVID-19 pandemic and the physical campuses were closed to all but essential staff. Texas A&M University College Station was removed from the study to eliminate potential bias, as the researcher is an alumnus of the university.

### Data Collection

The target population of the end-user satisfaction survey was those persons who have utilized the services of the information technology support staff of the university, which includes the university's faculty, staff, and students. The MSCEIT was given to the members of the information technology departments at Texas A&M University Commerce and Texarkana campuses; these are the departments that provided services to the university population used in the study.

The preliminary end-user satisfaction survey was piloted to 40 end users at Brookhaven College of the Dallas County Community College District between March 1, 2020, and March

15, 2020, to test the viability of the survey. This group was used only for piloting purposes of the study to not influence the actual testing body. The testing was conducted via random invitations to a survey that was located on the SurveyMonkey platform. The pilot survey was found to be viable and was made available to the actual target pool of test subjects. Before entering the survey, all participants were provided an implied consent form and were not allowed to enter if they did not agree. The implied consent form is listed in Appendix E.

The end-user satisfaction survey was then solicited via emails that were sent by the university (TAMUC and TAMUT) to all registered end users (those with valid logins). The emails invited them to partake in a 10-question survey examining their experience with the information technology support they have received. This survey was conducted via the internet using SurveyMonkey. The MSCEIT was administered online as well via Multi-Health Systems (MHS), the owner of the exam. The same implied consent forms were displayed to the participants in these surveys as well.

The end-user satisfaction data were downloaded from SurveyMonkey and converted for use with SPSS version 26. The data were cleaned and ordered before use in the SPSS software. This cleaning process involved removing surveys that were not completed or were determined to be incomplete. No surveys from the 50 at TAMUT were removed, and only one survey from the 103 at TAMUC was removed due to being incomplete. The final result was  $n = 50$  for TAMUT and  $n = 102$  for TAMUC.

The MSCEIT data downloaded from the MHS site showed that TAMUC had 35 completed tests and TAMUT had 32 completed tests. Incomplete and invalid tests were discarded before the data download, so those numbers were not available.

Low sample sizes may compromise the external validity of the research. External

validity refers to how the results of the study can be generalized to other areas (McClave et al., 2014). Studies have shown that the larger the population sample used in a study, the more likely inferences can be made from the study and therefore generalized (“External validity,” 2020). If a study’s population is found to be too small, other statistical methods can be used to achieve statistical power, such as bootstrapping (Singh & Xie, 2006). Bootstrapping is a method used to redraw samples randomly from the original sample with replacements (Singh & Xie, 2006). The larger the sample set one has, the more accurate the results will be (Borman, 2018, p. 164).

Bootstrapping is based on the law of large numbers, which states that if one samples over and over again, the data should approximate the true population data. Bootstrapping techniques utilize repeated resampling of original data with the replacement of the initial sample being used as the basis of estimation (Levine & Stephan, 2015, p. 126). In other words, the larger the number of repetitions, the better the approximation tends to be. Bootstrapping is accomplished by first drawing a random sample from the population. Following the initial drawing, “instead of drawing succeeding samples repeatedly from the population or computing parameters of the sampling distribution based on existing analytic formulas, samples are drawn randomly with replacement from the initial sample” (Zhu, 1997, p. 46). For this study, 95% confidence intervals were constructed using 1000 bootstrap samples from the original sample. These calculations were conducted using SPSS.

The analysis of the data that were collected from this study included descriptive statistics, correlations, and hypothesis testing. SPSS was used to calculate the measures of central tendency and dispersion, resulting in the mean, mode, and standard deviation of the variables used in the study.

## **Findings**

In this section, the findings of the relationships between emotional intelligence, end-user satisfaction, work quality, and productivity are examined. The measures of the study variables are followed by a conversation on the descriptive statistics, along with the results of the statistical correlation testing are discussed. The measures for each response for the end-user survey are taken at the value assigned by the respondent. No changes were made to the response values, as they were already scaled. The measures for the MSCEIT were taken directly from the data that were provided from the test itself. The MSCEIT results were divided by branches that correspond to productivity, quality, and end-user satisfaction. In the analysis that follows, the end-user satisfaction survey was identified or labeled as end-user satisfaction, the MSCEIT was identified or labeled as emotional intelligence, work productivity was identified or labeled as work productivity, and work quality was identified or labeled as quality of work. Tables were employed to detail statistical relationships. Figures in the form of graphs and charts were used to show a graphical representation of the data when possible.

### **Measurements, Validity, and Reliability**

Reliability signifies the use of a study's instruments to provide consistent and repeatable results. Internal consistency is a form of reliability in which there is a consistency of responses across items on a multiple-item scale (Price, Jhangiani, & Chiang, 2013). The items within the survey should reflect the same underlying construct (McClave et al., 2014). Scores on the items in the instrument should correlate with each other (Price et al., 2013). A reliable instrument is internally consistent and stable (Cronk, 2017). Validity is an indication of the accuracy of a scale being used in the study (Cronk, 2017). To be considered valid, a measurement must first be determined to be reliable (McClave et al., 2014).



Cronbach's alpha was used to check for the reliability of the data. A value of 1.00 indicates that the data have good reliability (McClave et al., 2014). Conversely, a value close to 0.00 indicates a poor consistency or very weak reliability (McClave et al., 2014). In this study, the Cronbach's alpha for the end-user survey at TAMUC was .830 and the Cronbach's alpha for the end-user survey at TAMUC was .800, as shown in Tables 1-2 with the SPSS output.

Table 1

*Cronbach's Alpha TAMUC End-user Survey*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.830	.829	10

Table 2

*Cronbach's Alpha TAMUT End-user Survey*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.800	.799	10

In this study, the data for the work productivity before emotional intelligence training for TAMUC had a Cronbach's alpha of .984 and TAMUT had a Cronbach's alpha of .980. After emotional intelligence training, the work productivity data for TAMUC had a Cronbach's alpha of .993 and TAMUT had a Cronbach's alpha of .994. All these datasets show strong reliability based on Cronbach's alpha values.

Table 3

*Cronbach's Alpha TAMUC Productivity Before Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.984	1.000	2

Table 4

*Cronbach's Alpha TAMUT Productivity Before Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.980	.998	2

Table 5

*Cronbach's Alpha TAMUC Productivity After Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.993	1.000	2

Table 6

*Cronbach's Alpha TAMUC productivity After Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.994	1.000	2

Table 7

*Cronbach's Alpha TAMUC MSCEIT Before Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.797	.798	2

Table 8

*Cronbach's Alpha TAMUT MSCEIT Before Emotional Intelligence Training*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of items
.797	.798	2

The MSCEIT branches that relate to productivity in this study are self-management and self-awareness. Only these branches are used in the calculations for productivity. These branches related directly to the first research question: "How does one's emotional intelligence

influence the productivity of the work of the employee?" These same two branches also directly related to the second research question: "How does one's emotional intelligence influence the quality of work of the employee?" In this study, the MSCEIT data before training had a Cronbach's alpha of .797. After emotional intelligence training, the MSCEIT data had a Cronbach's alpha of .797. All these datasets show a good to strong reliability based on Cronbach's alpha values.

### Descriptive Statistics

Data for work productivity were mined from a call tracking database at each of the universities that participated in the study. The data were taken for the same two-week period in the previous year and during the same period in the following year. At TAMUC, 862 jobs or tickets were surveyed. Of the 862 tickets, 671 were properly closed meaning no further work was needed. This represents 78% of the workload for the 2-week survey period before any emotional intelligence training. The tickets were broken down as follows.

Table 9

#### *TAMUC Closure Rates Before Emotional Intelligence Training*

Type	Number	Percentage	Detail
Properly closed	671	78%	No further action
Escalation	32	4%	Referred to upper lvl
Revisit	61	7%	Return to the same issue
Unresolved	98	11%	Uncorrected issue
Total	862	100%	

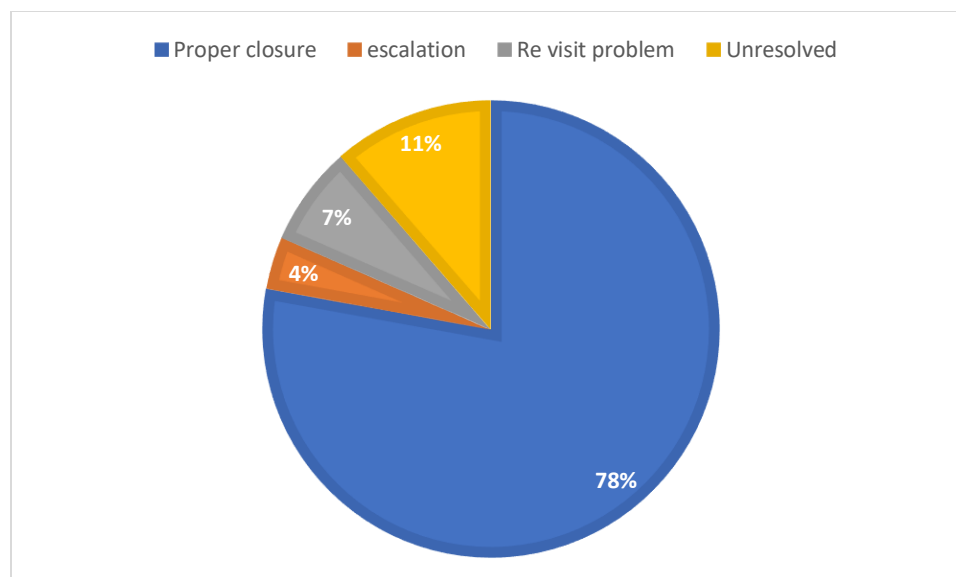


Figure 6. TAMUC closure graph before emotional intelligence training.

At TAMUT, 527 jobs or tickets were surveyed. Of the 527 tickets, 401 were properly closed meaning no further work was needed. This represents 78% of the workload for the 2-week survey period before any emotional intelligence training. The tickets were broken down as follows.

Table 10

*TAMUT Closure Rates Before Emotional Intelligence Training*

Type	Number	Percentage	Detail
Properly closed	401	76	No further action
Escalation	32	6	Referred to upper lvl
Revisit	47	9	Return to the same issue
Unresolved	47	9	Uncorrected issue
Total	527	100	

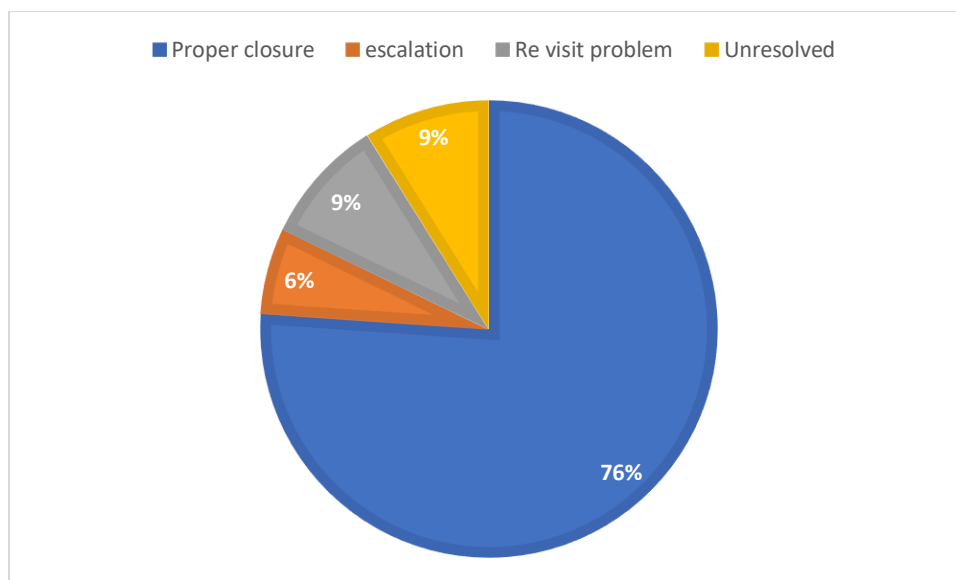


Figure 7. TAMUT closure graph before emotional intelligence training.

After emotional intelligence training at TAMUC, 793 jobs or tickets were surveyed. Of the 793 tickets, 671 were properly closed meaning no further work was needed. This represents 84% of the workload for the 2-week survey period before any emotional intelligence training.

The tickets were broken down as follows.

Table 11

*TAMUC Closures After Emotional Intelligence Training*

Type	Number	Percentage	Detail
Properly closed	671	84	No further action
Escalation	32	4	Referred to upper lvl
Revisit	37	5	Return to the same issue
Unresolved	53	7	Uncorrected issue
Total	793	100	

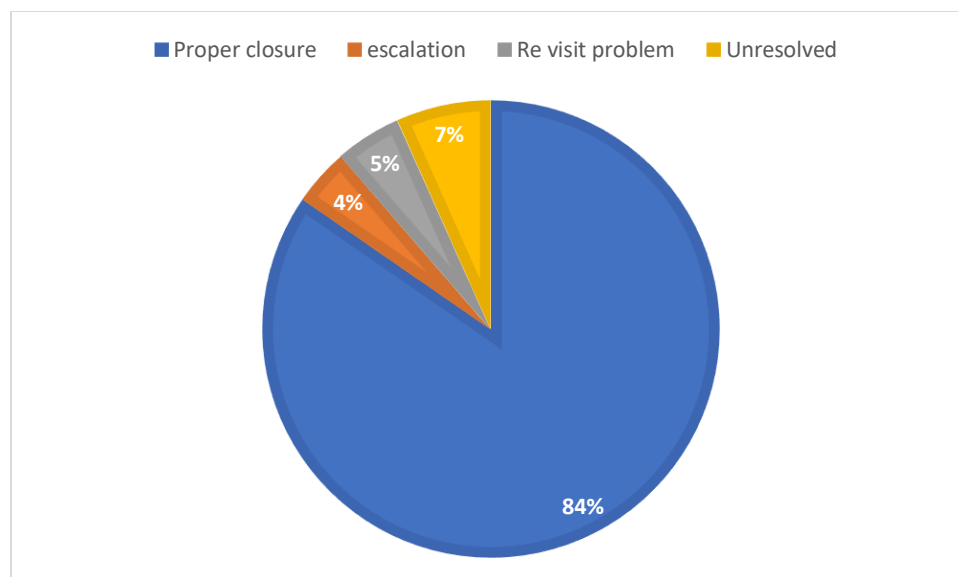


Figure 8. TAMUC closures graph.

After emotional intelligence training at TAMUT, 793 jobs or tickets were surveyed. Of the 793 tickets, 423 were properly closed meaning no further work was needed. This represents 86% of the workload for the 2-week survey period before any emotional intelligence training.

The tickets were broken down as follows.

Table 12

*TAMUT Closures After Emotional Intelligence Training*

Type	Number	Percentage	Detail
Properly closed	423	86	No further action
Escalation	12	2	Referred to upper lvl
Revisit	29	6	Return to the same issue
Unresolved	27	6	Uncorrected issue
Total	793	100	

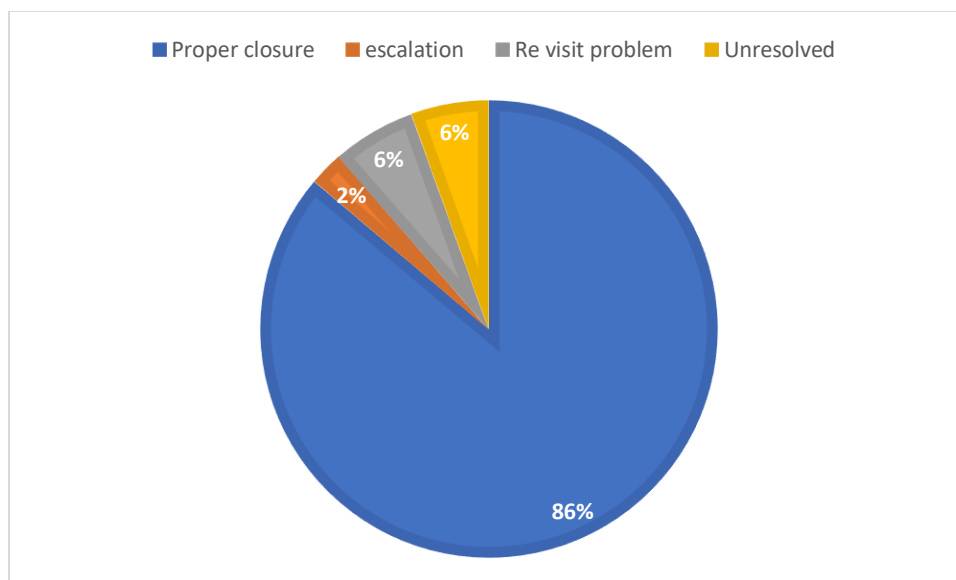


Figure 9. TAMUT closures graph.

The end-user satisfaction survey consisted of two groups, one from each university. The group from TAMUC consisted of 103 participants and the group from TAMUT consisted of 50 participants. The participants were comprised of those persons who have utilized the services of the support staff of the information technology department of the universities: the university's students, faculty, and staff. No personally identifiable data were obtained by design to protect the identities of the participants. Email invitations were sent out by the participating universities to mask any possible identification via distribution lists. SurveyMonkey was configured to an anonymous state to mask the internet protocol address of the respondents.

In the figure of the 103 participants from TAMUC, the majority of the respondents were neutral about the timeliness of the response from the support staff. The people who were neutral in the survey accounted for 38.8% of the responses.

Of the same 103 respondents, 30.4% stated that the overall experience with the information technology support staff was satisfactory and 20.6% stated that the experience that they had with the staff was excellent. These two questions were answered during the study

period after the information technology support staff had been given the emotional intelligence training.

At TAMUT, 49 persons used the same survey during the same time frame; 38.8% of the respondent stated that they were neutral with the timeliness of the information technology support staff.

Of the same 49 respondents at TAMUT, 42.9% stated that the overall experience with the information technology support staff was satisfactory and 14.3% stated that the experience that they had with the staff was excellent. These two questions were answered during the study period after the information technology support staff had been given the emotional intelligence training.

Table 13

*TAMUT End-user Survey Results*

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Very unsatisfied	5	10.2	10.2	10.2
Unsatisfied	7	14.3	14.3	24.5
Neutral	19	38.8	38.8	63.3
Satisfied	12	24.5	24.5	87.8
Very satisfied	6	12.2	12.2	100.0
Total	49	100.0	100.0	



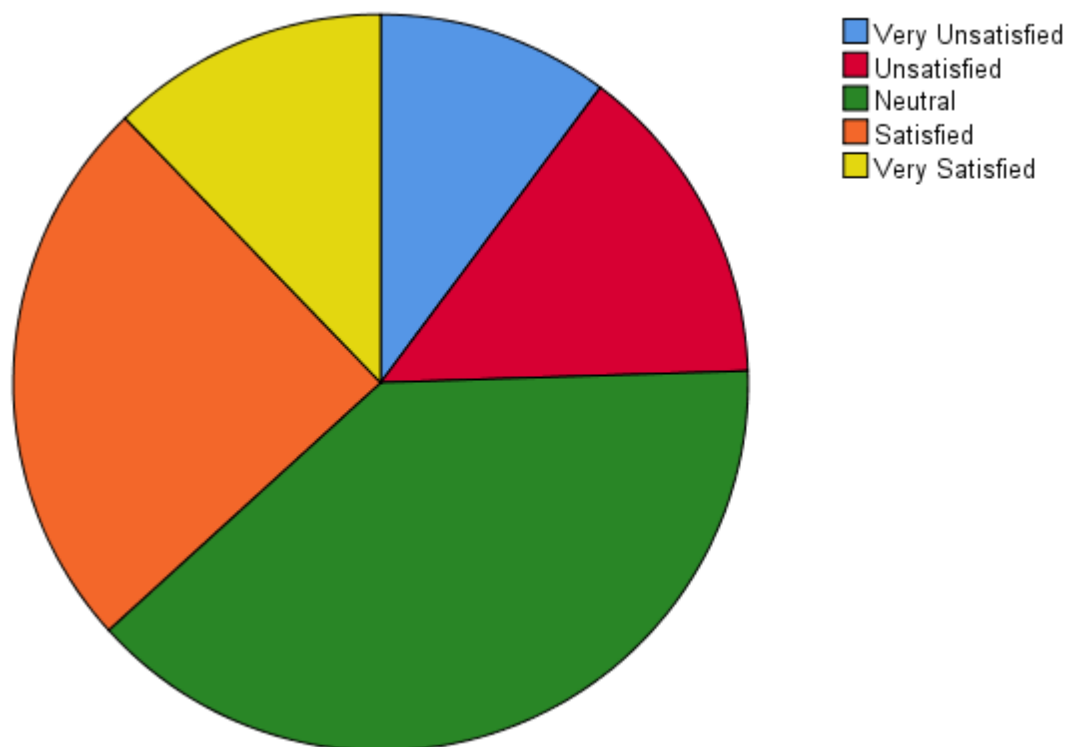


Figure 10. TAMUT end-user graph.

Table 14

TAMUC End-user Survey Results

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Poor	12	11.8	11.8	11.8
Unsatisfactory	5	4.9	4.9	16.7
Neutral	33	32.4	32.4	49.0
Satisfactory	31	30.4	30.4	79.4
Excellent	21	20.6	20.6	100.0
Total	102	100.0	100.0	

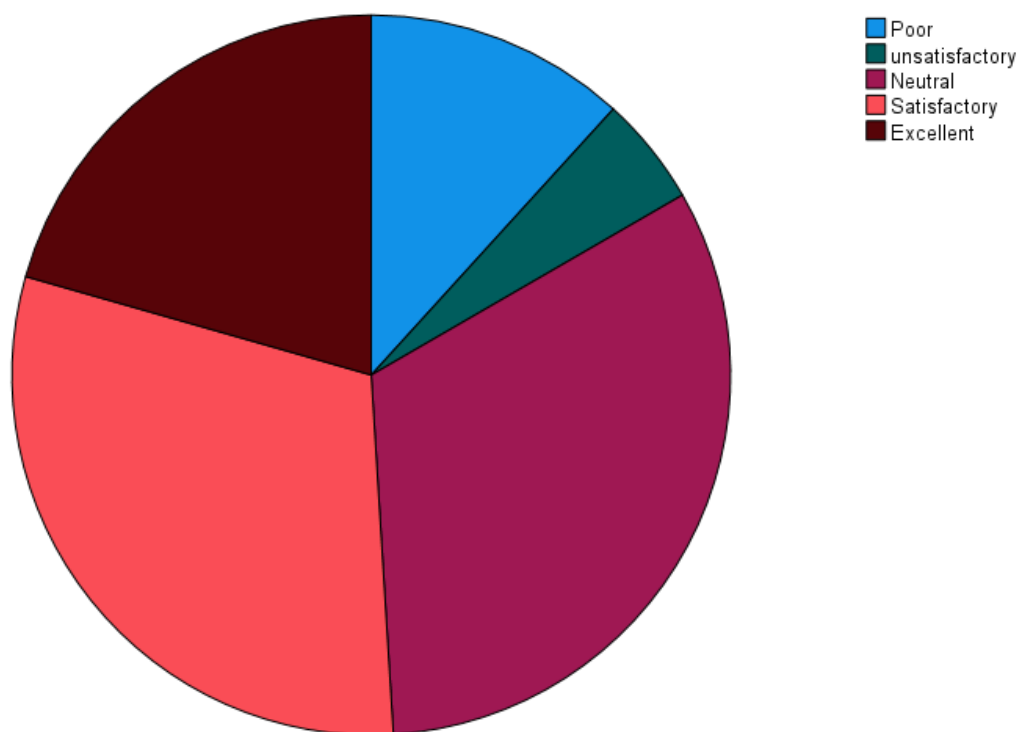


Figure 11. TAMUC end-user graph.

Table 15

*TAMUT End-user Survey Results After Emotional Intelligence Training*

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Very unsatisfied	5	10.2	10.2	10.2
Unsatisfied	7	14.3	14.3	24.5
Neutral	19	38.8	38.8	63.3
Satisfied	12	24.5	24.5	87.8
Very satisfied	6	12.2	12.2	100.0
Total	49	100.0	100.0	

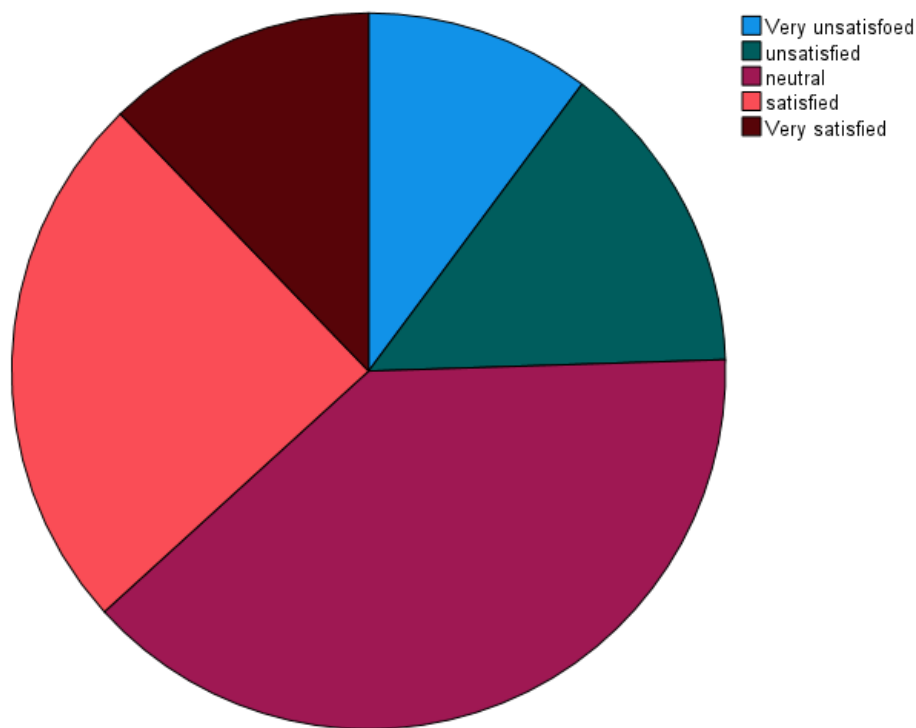


Figure 12. TAMUT end-user graph.

Table 16

*TAMUT End-user Overall Impression After Emotional Intelligence Training*

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Poor	2	4.1	4.1	4.1
Unsatisfactory	3	6.1	6.1	10.2
Neutral	16	32.7	32.7	42.9
Satisfactory	21	42.9	42.9	85.7
Excellent	7	14.3	14.3	100.0
Total	49	100.0	100.0	

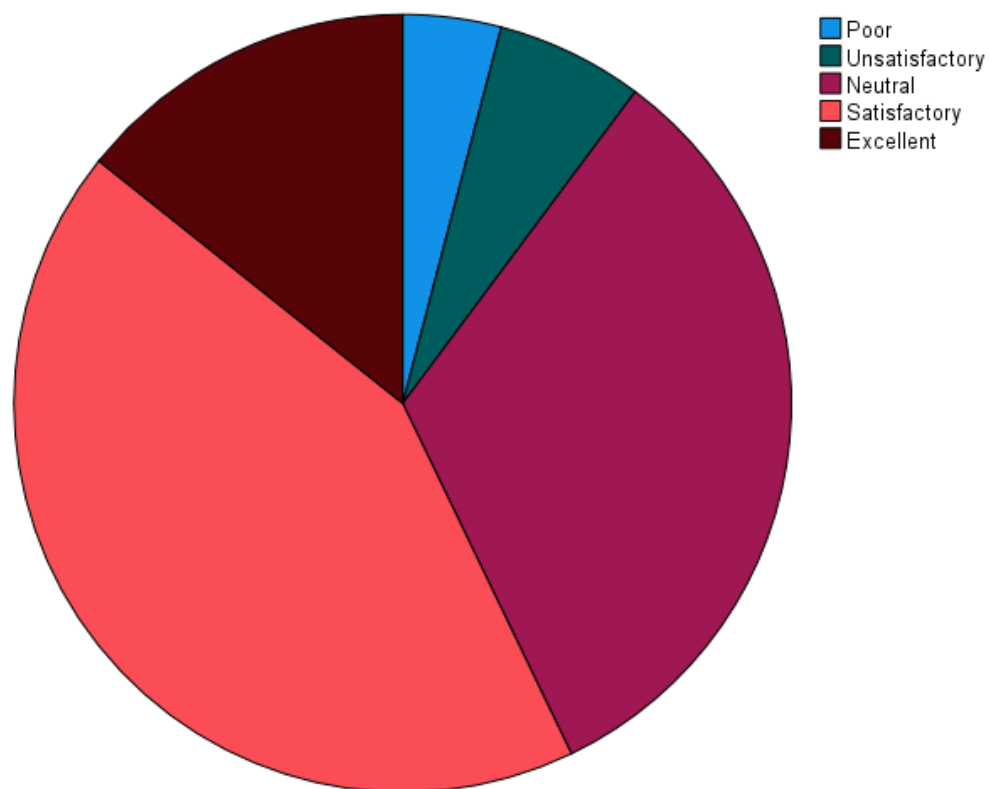


Figure 13. TAMUT end-user overall impression after emotional intelligence training graph.

The MSCEIT portion of the study consisted of persons in the information technology department that provided services to the end users. The pool of persons consisted of 32 persons from TAMUT and 32 persons from TAMUC.

Table 17

*MSCEIT Case Information TAMUT*

Cases	<i>N</i>	%
Valid	140	100.0
Excluded	0	0
Total	140	100.0

Note. Listwise deletion based on all variables in the procedure.

Table 18

*Cronbach's Alpha MSCEIT TAMUT*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.797	.798	2

Table 19

*MSCEIT Case Information TAMUC*

Cases	N	%
Valid	139	100.0
Excluded	0	0
Total	139	100.0

*Note.* Listwise deletion based on all variables in the procedure.

Table 20

*Cronbach's Alpha MSCEIT TAMUC*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.792	.792	2

Both datasets for before and after emotional intelligence training were shown to be reliable.

### Statistical Analysis

Multiple linear regression was conducted on the dependent variables of productivity and end-user satisfaction. However, due to the limitations of data that were available, the end-user satisfaction was not able to be conducted pre-emotional intelligence training, as there were no survey data available from that time frame.

For TAMUC the results of linear regression for productivity before emotional intelligence training are displayed in Table 21.

Table 21

*Linear Regression Data for TAMUC Before Emotional Intelligence Training*

Model	<i>R</i>	$R^2$	Adjusted $R^2$	Std. Error of the Estimate	$R^2$ Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
1	.591*	.350	.250	.0786292207	.350	3.496	2	13	.061

Notes. Predictors: (constant), TAMUT, TAMUC. Dependent variable: percent to close.

The model summary shows an  $R^2$  value of .350, which means, as a group, 35% of the variance in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate would mean that the estimate was more accurate. In the model, the standard error estimate was .078, indicating an accurate prediction.

For TAMUT, the results of linear regression for productivity before emotional intelligence training are displayed in Table 22.

Table 22

*Linear Regression Data for TAMUT Before Emotional Intelligence Training*

Model	<i>R</i>	$R^2$	Adjusted $R^2$	Std. Error of the Estimate	$R^2$ Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
1	.201*	.041	-.033	.1846644821	.041	.549	1	13	.472

Notes. Predictors: (constant), TAMUT. Dependent variable: closure percent.

The model summary shows an  $R^2$  value of .041 which means, as a group, 4.1% of the variance in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. The lower the  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate would mean that

the estimate was more accurate. In the model, the standard error estimate was .184, indicating a somewhat accurate prediction.

Following the emotional intelligence training, or what would be referred to in the business world as sensitivity training (Nistane, 2017). The model summary for TAMUC following emotional intelligence training is shown in Table 23.

Table 23

*Linear Regression Data for TAMUC After Emotional Intelligence Training*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	Std. Error of the Estimate	<i>R</i> <sup>2</sup> Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
1	.570*	.325	.273	.0992473	.325	6.251	1	13	.027

Note. Predictors: (constant). TAMUC.

The model summary shows an *R*<sup>2</sup> value of .325 which means, as a group, 32.5% of the variance in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher *R*<sup>2</sup> number is indicative of a good model fit. A lower *R*<sup>2</sup> number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate would mean that the estimate is more accurate. In the model, the standard error estimate was .099, indicating a very accurate prediction.

The model summary for TAMUT following emotional intelligence training is shown in Table 24.

Table 24

*Linear Regression Data for TAMUT After Emotional Intelligence Training*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	Std. Error of the Estimate	<i>R</i> <sup>2</sup> Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change
1	.019*	.000	-.077	.0928112	.000	.004	1	13	.948

The model summary shows an  $R^2$  value of .000, which means, as a group, none of the variances in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate would mean that the estimate is more accurate. In the model, the standard error estimate was .093, indicating a very accurate prediction.

The ANOVA summary shown in Table 25 displays the significance of the linear regression for TAMUC. The results show a significance of .027. A value less than .05 indicates a significant relationship. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUC and work productivity. A significant difference was found in the jobs completed (productivity)  $F(1,13) = 6.251, p < .05$ . Emotional intelligence was found to be a significant predictor of the productivity of the information technology staff in a higher education environment at TAMUC.

Table 25

*ANOVA Data for TAMUC for Emotional Intelligence and Productivity*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.062	1	.062	6.251	1.27 <sup>b</sup>
Residual	.128	13	.010		
Total	.190	14			

*Notes.* Dependent variable: proper close. Predictors: (constant), TAMUC.

The ANOVA summary shown in Table 26 displays the significance of the linear regression for TAMUT. The results show a significance of .948. A value greater than .05 indicates a relationship that is not significant. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUT and work productivity. No significant difference was



found in the jobs completed (productivity)  $F(1,13) = .004, p > .05$ . Emotional intelligence was found not to be a significant predictor of productivity of the information technology staff in a higher education environment at TAMUT.

Table 26

*ANOVA Data for TAMUT for Emotional Intelligence and Productivity*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	.004	.948 <sup>b</sup>
Residual	.115	13	.009		
Total	.115	14			

*Notes.* Dependent variable: proper close. Predictors: (constant), TAMUT.

For TAMUC, the results of linear regression for work quality before emotional intelligence training are displayed in Table 27.

Table 27

*Linear Regression for Work Quality at TAMUC Before Emotional Intelligence Training*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.062	1	.062	6.251	1.27 <sup>b</sup>
Residual	.128	13	.010		
Total	.190	14			

*Notes.* Predictors: (constant), TAMUC. Dependent variable: unresolved.

The model summary shows an  $R^2$  value of .064 which means, as a group, 6.4% of the variance in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate means the estimate is more accurate. In the model, the standard error estimate was .063, indicating a very accurate prediction.

The ANOVA summary shown in Table 28 displays the significance of the linear

regression for TAMUC. The results show a significance of .363. A value less than .05 indicates a significant relationship. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUC and work quality. No significant difference was found  $F(1,13) = .891, p < .05$ . Emotional intelligence was found not to be a significant predictor of the quality of work of the information technology staff in a higher education environment at TAMUC.

Table 28

*ANOVA for TAMUC Work Quality and Emotional Intelligence Before Emotional Intelligence Training*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.004	1	.004	.891	.363 <sup>b</sup>
Residual	.052	13	.004		
Total	.056	14			

*Notes.* Predictors: (constant), TAMUC. Dependent variable: unresolved.

For TAMUC, the results of linear regression for work quality after emotional intelligence training are displayed in Table 29.

Table 29

*Linear Regression for Work Quality at TAMUC After Emotional Intelligence Training*

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SD Error of the Estimate	R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change
1	.330	.109	.041	.0491671649	.109	1.591	1	13	.229

*Note.* Predictors: (constant). TAMUC.

The model summary shows an  $R^2$  value of .041, which means, as a group, 4.1% of the variances in the dependent variable of closure were explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate means that the estimate is more accurate. In the model, the standard error estimate was .049, indicating a

very accurate prediction.

The ANOVA summary shown in Table 30 displays the significance of the linear regression for TAMUC. The results show a significance of .229. A value less than .05 indicates a significant relationship. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUC and work quality. No significant difference was found  $F(1,13) = 1.591, p < .05$ . Emotional intelligence was found not to be a significant predictor of the quality of work of the information technology staff in a higher education environment at TAMUC.

Table 30

*ANOVA for TAMUC Work Quality and Emotional Intelligence After Emotional Intelligence Training*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.004	1	.004	1.591	.229 <sup>b</sup>
Residual	.031	13	.002		
Total	.035	14			

Notes. Dependent variable: unresolved. Predictors: (constant). TAMUC.

For TAMUT, the results of linear regression for work quality before emotional intelligence training are displayed in Table 31.

Table 31

*Linear Regression for Work Quality at TAMUT Before Emotional Intelligence Training*

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change
1	.033	.001	-.076	.0778600535	.001	.014	1	13	.907

Notes. Predictors: (constant), TAMUT. Dependent variable: unresolved.

The model summary shows an  $R^2$  value of .001 which means, as a group, 0.1% of the variances in the dependent variable of closure were explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error

of the estimate approximates how precise the prediction is. A lower error estimate means that the estimate is more accurate. In the model, the standard error estimate was .077, indicating a very accurate prediction.

The ANOVA summary shown in Table 32 displays the significance of the linear regression for TAMUT. The results show a significance of .907. A value less than .05 indicates a significant relationship. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUT and work quality. A significant difference was found  $F(1,13) = .014, p < .05$ . Emotional intelligence was found to be a significant predictor of the quality of work of the information technology staff in a higher education environment at TAMUT.

Table 32

*ANOVA for TAMUT Work Quality and Emotional Intelligence Before Emotional Intelligence*

*Training*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	.014	.907 <sup>b</sup>
Residual	.079	13	.006		
Total	.079	14			

*Notes.* Dependent variable: unresolved. Predictors: (constant) TAMUT.

For TAMUT, the results of linear regression for work quality after emotional intelligence training are displayed in Table 33.

Table 33

*Linear Regression for Work Quality at TAMUT After Emotional Intelligence Training*

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	SD Error of the Estimate	R <sup>2</sup> Change	F Change	df1	df2	Sig. F Change
1	.442	.196	.134	.0887689465	.196	3.162	1	13	.099

*Note.* Predictors: (constant), TAMUT.

The model summary shows an R<sup>2</sup> value of .196, which means, as a group, 19.6% of the

variance in the dependent variable of closure was explained by the difference in the independent variable's emotional intelligence score. A higher  $R^2$  number is indicative of a good model fit. A lower  $R^2$  number equates to a lower chance of a good model fit. The standard error of the estimate approximates how precise the prediction is. A lower error estimate means the estimate is more accurate. In the model, the standard error estimate was .088, indicating a very accurate prediction.

The ANOVA summary shown in Table 34 displays the significance of the linear regression for TAMUT. The results show a significance of .099. A value less than .05 indicates a significant relationship. A one-way ANOVA was computed comparing the emotional intelligence scores of TAMUT and work quality. No significant difference was found  $F(1,13) 3.162, p < .05$ . Emotional intelligence was found not to be a significant predictor of the quality of work of the information technology staff in a higher education environment at TAMUT.

Table 34

*ANOVA for TAMUT Work Quality and Emotional Intelligence After Emotional Intelligence Training*

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.025	1	.025	3.162	.099 <sup>b</sup>
Residual	.102	13	.008		
Total	.127	14			

*Notes.* Dependent variable: unresolved. Predictors: (constant) TAMUT.

The effects of emotional intelligence on the productivity in the two universities are contrasted in Figures 14 and 15. The estimated marginal means show an increase in both productivity and emotional intelligence following training in emotional intelligence. The observation was that training had a positive influence on work productivity. However, the scatter in the data was too large to make that claim with statistical evidence. It appears that

TAMUT had better work productivity scores both before and after training, but there was not enough data to support that claim.

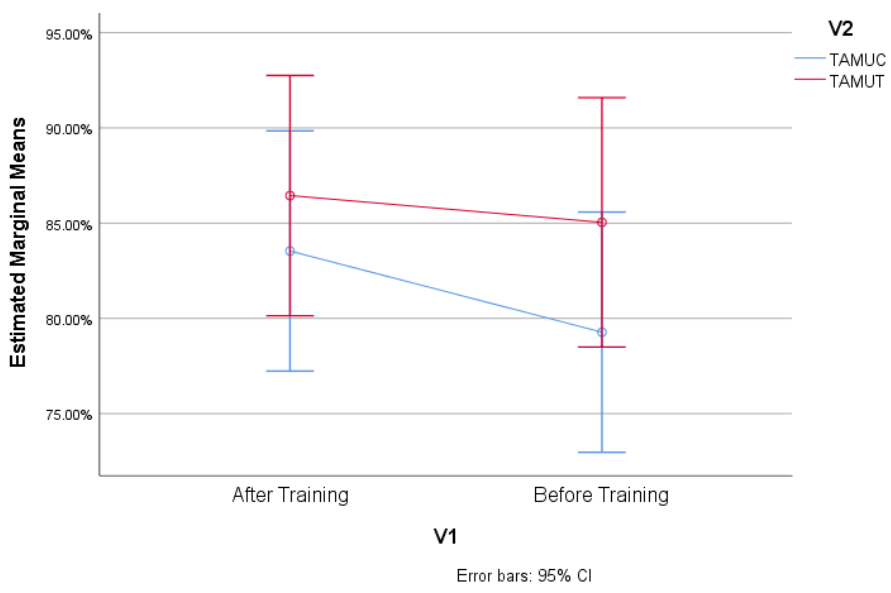


Figure 14. Estimated marginal means of TAMUC and TAMUT.

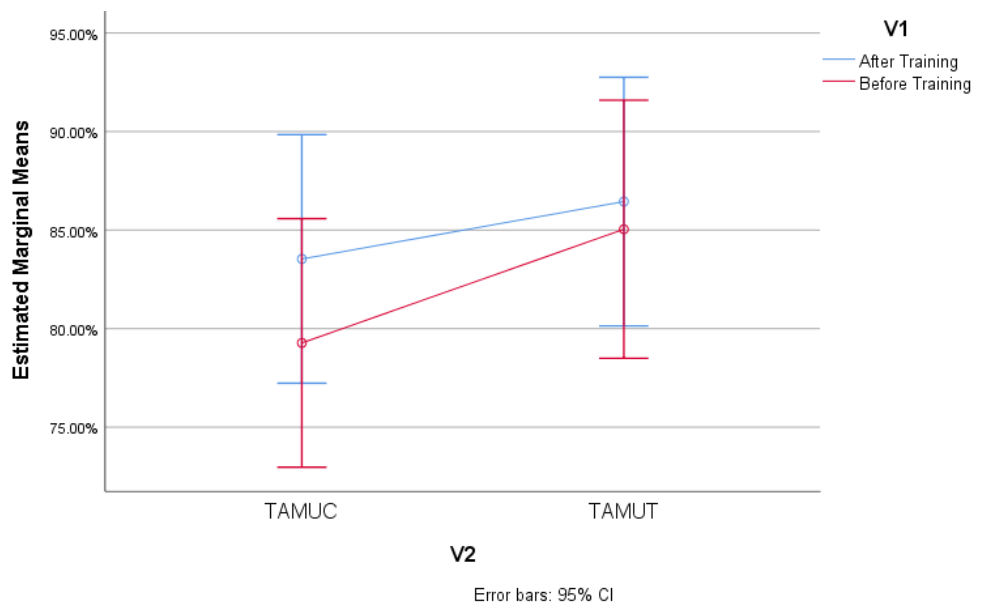


Figure 15. Estimated marginal means of TAMUC and TAMUT.

## Hypothesis Testing

RQ1: How does one's emotional intelligence influence the productivity of the work of the employee?

A Pearson correlation analysis was used to answer this question. To answer this question, an evaluation of the relationship between emotional intelligence and the ticket closure rate was conducted by the hypothesis below:

H1: Emotional intelligence is significantly related to the productivity of the employee in the information technology field. How significant is the relationship between emotional intelligence and the productivity of the employee?

H1o: Emotional intelligence is not significantly related to the productivity of the employee in the information technology field.

A Pearson correlation was calculated for the relationship between emotional intelligence and productivity of the information technology staff member in a higher education environment. A moderately negative correlation was found at  $r(13) = -.038, p = .447$ , indicating a moderately inverse linear relationship between emotional intelligence and productivity. The null hypothesis was not rejected.

RQ2: How does one's emotional intelligence influence the quality of the work of the employee?

H2: Emotional intelligence is significantly related to the satisfaction of the end user with work performed by the information technology department employee. How significant is the relationship between the satisfaction of the end user or customer and the emotional intelligence of the employee?

H2o: Emotional intelligence is not significantly related to the satisfaction of the end user

in work performed by the information technology department employee.

This statistical calculation was not able to be performed due to the lack of data before the initiation of the study. There were no previous end-user satisfaction surveys available for use in this study.

RQ3: How does one's emotional intelligence influence the quality of work produced by the information technology department employee?

H3: Emotional intelligence is significantly related to the quality of work produced by the information technology department employee. How significant is the relationship between the quality of work of the information technology support employee and the emotional intelligence of the employee?

H3o: Emotional intelligence is not significantly related to the quality of work produced by the information technology department employee.

A Pearson correlation was calculated for the relationship between emotional intelligence and work quality of the information technology staff member in a higher education environment. A moderately negative correlation was found at  $r(13) = .330, p = .447$ , indicating a moderately positive linear relationship between emotional intelligence and productivity. The null hypothesis was not rejected.

### **Summary of Findings**

The goal of this chapter was to relate the analysis portion of the research study by presenting the findings from the collection of the data, screening of the data, and analysis of the data. The beginning of the chapter started with a review of the collection and cleaning of the data, as well as the resulting population that was limited due to COVID-19. The second section discussed the findings of the various datasets that were used in the study. The final section



discussed the hypothesis testing associated with the study. The research questions were reintroduced, and the results were explained. Table 35 shows a summary of the results.

Table 35

*Hypotheses Results*

Null Hypotheses	Significance	Result
H1o: Emotional intelligence is not significantly related to the productivity of the employee in the information technology field.	$P = .027$	Reject the null hypothesis.
H2o: Emotional intelligence is not significantly related to the satisfaction of the end user with work performed by the information technology department employee.	Not relevant as data was not present for study.	Unable to obtain a result due to a lack of data. Due to no previous surveys were performed.
H3o: Emotional intelligence is not significantly related to the quality of work produced by the information technology department employee.	$P = .99$	Failed to reject the null hypothesis.

As shown in Table 35, one of the tests was unable to be performed due to the lack of available data for the study. Another test indicated that emotional intelligence contributed to the productivity of the information technology staff employee in this higher education environment with a  $p$ -value of .027. The null hypothesis was rejected. The results of the final test indicated that with a  $p$ -value of .99, which is greater than .05, emotional intelligence did not significantly influence the quality of work performed. The following chapter, Chapter Five, addresses the conclusions from this research, the limitations imposed on this study due to unforeseen circumstances, possible implications of the research, and recommendations for further research.

## **CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND FUTURE RESEARCH POSSIBILITIES**

This study's primary purpose was to determine whether emotional intelligence influenced productivity, quality of work, and end-user satisfaction of the information technology staff of a higher educational institution. Moreover, this study examined if emotional intelligence could be a predictor to improve the quality of end-user satisfaction, productivity, and quality of work performed in a university or college setting. Since this is the case, the primary research question was set out to answer if emotional intelligence can be a predictor of productivity, end-user satisfaction, and quality of work. This question provided the primary motivation for this study.

Chapter One introduced the study. The background of the research problem, the research problem statements, the purpose of the study, research questions, assumptions, and limitations to the research, which changed during the study due to the COVID-19 pandemic, and the operational definitions of the constructs used in the study were detailed and discussed throughout the dissertation. Chapter Two discussed the theories behind emotional intelligence and previous research that has been conducted in the field. These theories and previous research formed the basis for this study of how emotional intelligence affected the productivity, quality, and end-user satisfaction of the information technology support staff in a higher education environment. Chapter Three detailed the study's research methodology, identified the target pool of subjects, how the data were collected, and how the data were analyzed after collection. In the upcoming chapter, a discussion of the results from the study, conclusions that have been drawn from the data analysis, implications of the results of the study, and future research recommendations are made.

## Discussion

In the modern college or university, budgetary constraints are a continual problem for the information technology support staff: how to get the most service with the least resources available and keep the end users satisfied. If the information technology support department is unable to fulfill the needs of the end user or to keep the systems running properly, an institution runs the risk of being unable to provide a quality service to the employees and students. At Texas A&M University, over 90% of all business is conducted using some form of technology (TAMU, 2014). If the technology is non-functional, then the college or university cannot provide its primary service, which is to educate people. To enable an institution to provide the highest quality with the lowest cost, the entity must rely on its internal staff. To accomplish this, colleges and universities are forced to think creatively and look for ways to get more out of less. This is where emotional intelligence comes into the picture.

Emotional intelligence allows a person to relate to others' emotions and promote understanding and cooperation within a team environment (George & Jones, 2012; Rothstein & Goffin, 2006). Emotional intelligence has the effect of making a person more aware of how he or she is doing a specific task. Doing the best possible work with the tools that are available to them at the time is how colleges and universities can make the budgets go further while at the same time improving on the relations and reputation with the end users that they serve.

While there is research on emotional intelligence in other fields, there was little research available on the information technology support staff in a higher education environment. There was no research on how the constructs of emotional intelligence, work productivity, work quality, and end-user satisfaction relate to each other and to what degree. There were the following limitations in the literature reviewed:

- There is a lack of information or research into the effects of emotional intelligence on the quality of work performed or completed by an information technology professional in a higher education environment.
- There is a lack of research into the effects of the emotional intelligence of an information technology professional in a higher education environment.
- There is a lack of research into whether a person's emotional intelligence level can be predictive of the productivity level of the person or team.

This study provided information that narrowed the gap concerning the effects of emotional intelligence and the productivity of the information technology support staff in a higher education environment. The effects of emotional intelligence and quality of work were similarly examined. This was accomplished by testing the effects of emotional intelligence on the productivity of the information technology staff in the respective universities (i.e., TAMUC and TAMUT) and the quality of work that was performed and then examining the testing results.

The study's objectives were to gain a better understanding of emotional intelligence and the effects it has on the productivity and quality of work performed. Could emotional intelligence be used to predict how productive a staff member or department could be, and could the quality of work be improved? To satisfy the goals of the study, the following research questions were answered:

RQ1: How does one's emotional intelligence influence the productivity of the employee's work?

RQ2: How does one's emotional intelligence influence the quality of the employee's work?

RQ3: How does one's emotional intelligence influence the customer or end-user

satisfaction with the employee's work?

Pearson correlation was used to answer research questions one and two. Research question three could not be answered due to the lack of available data at the time, as there was no end-user survey available from a previous period. The analysis of research question one indicated that emotional intelligence had a positive, strong significant relationship with productivity. The higher the emotional intelligence of the information technology support staff, the more productive they were. The results of the analysis of research question two indicated no significant relationship between emotional intelligence and the quality of work. As a result, the null hypothesis was not rejected.

### **Summary of Results**

The correlation analysis results show that emotional intelligence had a strong positive relationship with the productivity of the information technology support staff in this higher education environment. This indicates that emotional intelligence was an indicator of the information technology support staff member's productivity in the higher education environment. In other words, the emotional intelligence of the information technology support staff had a significant impact on the productivity of the department. The results show there may be a relationship between emotional intelligence and the quality of work. However, there was not enough statistical data to prove the relationship. Unfortunately, data for the end-user satisfaction portion were not available, as no previous survey was conducted in this area.

### **Practical Implications**

Mayer et al. (2004) posited that emotional intelligence affects every aspect of human interaction. Once people learn from their life experiences, their emotional intelligence grows with the advent of time (Lindebaum & Cartwright, 2010). Dreyfus stated that a subject's

performance dramatically improves if the task relates closely to experience (Dreyfus & Dreyfus, 1980, p. 4). In the field of information technology support in a higher education environment, a person's emotional intelligence level has a practical implication for how well a support person performs in a job function. A person with higher emotional intelligence performs better or at a higher level than a person with a lower emotional intelligence level.

All the changes occurring within higher education now require the information technology support staff to function at a higher level to meet the ever-changing needs of the environment. Emotional intelligence training for the information technology support department employees could improve productivity based on the results of this study.

### **Recommendations for Further Research**

Based on the review of available relevant literature surrounding the emotional intelligence of information technology support persons and how emotional intelligence can lead to higher productivity, work quality, and end-user satisfaction, there are still gaps in the literature that could lead to future research on the topic. This study identified a need for further research in key areas associated with information technology support in the higher education environment. One key area of future study is how the information technology support person's emotional intelligence level influences the level of qualification in the field. Moreover, would the gender of the person influence the emotional intelligence level, and therefore, the productivity level?

This study had a small sample size ( $n = 50$  and  $n = 102$ ). Future research should endeavor to use a larger sample size of information technology support staff. Researchers that take this approach will have a much better chance of having a substantial test pool of subjects to work with.

This study set out to determine if and to what degree emotional intelligence had on

productivity, work quality, and end-user satisfaction of the information technology support staff in a higher education environment as well as if emotional intelligence could be used as a predictor of productivity, work quality, and end-user satisfaction.

### **Summary**

The study was discussed and described in five chapters. Chapter One introduced the study and provided the background details of the problem being researched, the problem statement, the purpose of the study, research questions, and the assumptions, limitations, and delimitations of the study.

The first chapter revealed that colleges and universities lose significant amounts of money due to lost productivity by the information technology support staff. Based on internal tracking data from Texas A&M University, the average is eight service call reworks at an average of two hours. Repetition and errors lead to a loss of productivity, resulting in a loss of 16 work hours per week per employee (TAMU, 2014). In an information technology department with 20 support persons, this results in a forfeiture of 16,640 work hours per year. The goal of this research was to gain an understanding of the effect that emotional intelligence has upon the productivity of the information technology support staff and to give the management of information technology departments in educational settings a means to demonstrate why emotional intelligence is critical to the proper operation of the department.

The second chapter provides a review of the available literature on the subject, detailing the history of emotional intelligence and its components. It reviewed studies conducted in other fields unrelated to information technology support in the higher education area. The various testing methods were examined and detailed concerning effectiveness and reliability.

The third chapter provided a conceptual model for the study and the theoretical

framework that formed the basis of the study. The research stages were detailed, and the instruments used in the study were introduced.

The fourth chapter described the data derived from the study and the findings based on that data. For this study, the statistical analysis results showed that emotional intelligence had a significant relationship with the productivity of the information technology support staff. This study showed a relationship between emotional intelligence and the quality of work performed by the information technology support staff.

As discussed in this chapter, random sampling was used in this study. However, due to the effects of COVID-19 closing campuses, the responses were not as high as anticipated. However, bootstrapping techniques were used to achieve statistical power. confidence intervals of 95% were constructed using 1,000 bootstrap samples from the original sample. The bootstrapped results were consistent with the original statistical analysis.

Chapter Five concluded that emotional intelligence affects the productivity of the information technology support staff in a higher education environment. The higher the emotional intelligence of the staff, the more productive the staff were. There was some evidence that emotional intelligence influenced the quality of work of the information technology staff. However, there was not enough data to support the claim that emotional intelligence influenced work quality. Additional research into the effects of emotional intelligence training in the area of work quality would benefit the body of knowledge as well as colleges and universities.



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**APPENDICES**

## APPENDIX A

### MSCEIT 2.0 Example Questions

The complete MSCEIT 2.0 exam cannot be reproduced due to copyright restrictions that are imposed by the owner of the exam. Only 20% of the items are allowed to be reproduced (MHS Assessments, n.d.). The following are 20% of the questions that are allowed to be reproduced. The participants in the study were given the full MSCEIT 2.0 exam.

1. My feelings are clear to me at any given moment.
2. Emotions play an important part in my life.
3. My moods impact the people around me.
4. I find it easy to put words to my feelings.
5. My moods are easily affected by external events.
6. I can easily sense when I'm going to be angry.
7. I readily tell others my true feelings.
8. I find it easy to describe my feelings.
9. Even when I'm upset, I'm aware of what's happening to me.
10. I can stand apart from my thoughts and feelings and examine them.
11. I accept responsibility for my reactions.
12. I find it easy to make goals and stick with them.
13. I am an emotionally balanced person.
14. I am a very patient person.
15. I can accept critical comments from others without becoming angry.
16. I maintain my composure, even during stressful times.



17. If an issue does not affect me directly, I don't let it bother me.
18. I can restrain myself when I feel anger toward someone.
19. I control urges to overindulge in things that could damage my well-being.
20. I direct my energy into creative work or hobbies.
21. I consider the impact of my decisions on other people.
22. I can tell easily tell if the people around me are becoming annoyed.
23. I sense it when a person's mood changes.
24. I can be supportive when giving bad news to others.
25. I am generally able to understand the way other people feel.
26. My friends can tell me intimate things about themselves.
27. It genuinely bothers me to see other people suffer.
28. I usually know when to speak and when to be silent.
29. I care what happens to other people.
30. I understand when people's plans change.

## APPENDIX B

### End-User Satisfaction Pilot Questions

On a scale of 1-5, 1 = very unsatisfied, 2 = unsatisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied

1. I am satisfied with the timeliness of the response either in person or via phone/email.
2. I am satisfied with the presentation of the technician either in person or via phone/email.
3. I was given enough notice in advance of the contact from the technician either in person or via phone/email.
4. I am satisfied with the performance of the technician.
5. I was shown the cause of the issue in a manner that was understandable.
6. I am satisfied with the ability of the technician to understand my concerns.
7. I am satisfied with the technician's demeanor (attitude).
8. I am satisfied with the responsiveness of the technician to my needs.
9. I am satisfied with the service provided.
10. On a scale of 1-5, with 1 = poor and 5 = excellent, how would you rate your overall experience with the technician?

## APPENDIX C

### MSCEIT Scoring and Breakdown

#### MSCEIT LEGEND

##### ITEM RESPONSES

I1-I141 = Actual Item Responses

If an individual item response is not provided the field is left blank.

A1 - H9 = Scored Item Responses

#### TASK SCORES

<Perceiving Emotions>

A = Faces Task

E = Pictures task

<Using Emotions>

B = Facilitation task

F = Sensations task

<Understanding Emotions>

C = Changes task

G = Blends task

<Managing Emotions>

D = Emotion Management task

H = Social Management task

#### BRANCH SCORES

\_B1 = Perceiving Emotions

\_B2 = Using Emotions

\_B3 = Understanding Emotions

\_B4 = Managing Emotions

#### AREA SCORES

EXP = Emotional Experiencing area

REA = Emotional Reasoning area

#### OVERALL EMOTIONAL INTELLIGENCE

TOT = Overall Emotional Intelligence

RawScore\_X = Raw Score with no adjustments.

If the raw score cannot be computed a blank field is displayed.

AdjScore\_X = Raw scores adjusted for Age Gender and/or Ethnicity (Depends on ScoreID chosen).

If no adjustments are selected a blank field is displayed.

Perc\_X = Empirical Percentiles

SS\_X = Standard Scores.

If the standard score cannot be computed a blank field is displayed.

SS\_PosNeg = Positive-Negative Bias Score

SS\_Scat = Scatter Score

NORM OPTIONS (ScoreID)

General Type with No Correction = 1

General Type with Age = 2

General Type with Gender = 3

General Type with Ethnicity = 4

General Type with Age and Gender = 5

General Type with Age and Ethnicity = 6

General Type with Gender and Ethnicity = 7

General Type with Age Gender and Ethnicity = 8

Expert Type with No Correction = 9

Expert Type with Age = 10

Expert Type with Gender = 11

Expert Type with Ethnicity = 12

Expert Type with Age and Gender = 13

Expert Type with Age and Ethnicity = 14

Expert Type with Gender and Ethnicity = 15

Expert Type with Age Gender and Ethnicity = 16

If demographic information (e.g. Gender/Age/Ethnicity) is not provided then a blank field is displayed.

## APPENDIX D

### Instrument Approvals



**SurveyMonkey Inc.**

www.surveymonkey.com

#### **Re: Permission to Conduct Research Using SurveyMonkey**

To Whom It May Concern:

**For questions, visit our Help Center**

help.surveymonkey.com

This letter is being produced in response to a request by a student at your institution who wishes to conduct a survey using SurveyMonkey in order to support their research. The student has indicated that they require a letter from SurveyMonkey granting them permission to do this. Please accept this letter as evidence of such permission. Students are permitted to conduct research via the SurveyMonkey platform provided that they abide by our [Terms of Use](https://www.surveymonkey.com/mp/legal/terms-of-use/) at <https://www.surveymonkey.com/mp/legal/terms-of-use/>.

SurveyMonkey is a self-serve survey platform on which our users can, by themselves, create, deploy and analyze surveys through an online interface. We have users in many different industries who use surveys for many

different purposes. One of our most common use cases is students and other types of researchers using our online tools to conduct academic research.

If you have any questions about this letter, please contact us through our Help Center at

help.surveymonkey.com. Sincerely,

**SurveyMonkey Inc.**



February 27, 2020

Re: MSCEIT use for Mark Kjellander

To Whom it May Concern,

This letter is to confirm that Multi-Health Systems Inc. ("MHS") represents and warrants that it is the copyright holder and sole manufacturer of the **Mayer-Salovey-Caruso Emotional Intelligence Test™ - MSCEIT™**,

MHS will grant permission to Mark Kjellander to purchase and use the MSCEIT for his dissertation at Saint Leo University.

Mark has also met our Qualifications, which are in accordance with the ethical and professional standards of the American Psychological Association and the Standards for Education and Psychological Testing, to use the MSCEIT.

Please contact me at any time if you require additional information – [permissions@mhs.com](mailto:permissions@mhs.com)

Thank you,  
Betty Mangos

Permissions & Licensing Specialist  
Multi Health Systems, Inc.

**USA**  
P.O. Box 950  
North Tonawanda, NY  
14120-0950  
T 1.800.456.3003  
F 1.888.540.4484

**CANADA**  
3770 Victoria Park Ave.  
Toronto, Ontario  
M2H 3M6  
T 1.800.268.6011  
F 1.888.540.4484

**INTL**  
T +1.416.492.2627  
F +1.416.492.3343

[www.mhs.com](http://www.mhs.com)

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## APPENDIX E

### Implied Consent

#### IMPLIED CONSENT TO PARTICIPATE IN RESEARCH

Investigator: Mark Kjellander, Doctoral Candidate, mark.kjellander@email.saintleo.edu, 214-893-8958, 1913 Ridgecrest Drive Royse City, Texas 75189

- Title of Study: A Predictive Correlational Study on the Effects of Emotional Intelligence on Information technology Support Staff in a Higher Education Environment

Purpose of Study: You are being asked to participate in a research study designed to study the effects of emotional intelligence on the productivity and end-user satisfaction of IT support staff in a higher education environment.

Procedures: You will be asked to complete and return a survey. The survey should take no longer than 5 to 10 minutes to complete. You will be asked to indicate your level of satisfaction with aspects of the IT support staff.

Benefits: Possible improvements in training that is offered

Risks: None greater than those in daily life

Costs/incentives: None

Confidentiality: No information that can identify you personally will be collected as part of this research. The research is completely anonymous. All data collected will be stored in a secured database that is encrypted.

Use of information: The project data will be used for the researcher's dissertation and possible further research projects conducted by the primary researcher or the supervising faculty member. No personal identifying data will be included in any of these documents.

Voluntary: The participants may withdraw from the study at any time, or decline to

Participation: Participation, without any penalty.



By filling out the questionnaire, you are indicating the following:

- You have read the above consent statement and have had an opportunity to ask questions to your satisfaction.

- You understand that additional questions should be directed to Dr. Robert Pratt at [Robert.pratt@saintleo.edu](mailto:Robert.pratt@saintleo.edu) or Margaret Snead at [Margaret.snead@saintleo.edu](mailto:Margaret.snead@saintleo.edu)

- You also confirm that you are at least 18 years of age.

- You agree to participate in the study, under the terms outlined in this consent statement

## IMPLIED CONSENT TO PARTICIPATE IN RESEARCH

Investigator:	Mark Kjellander, Doctoral Candidate, mark.kjellander@email.saintleo.edu, 214-893-8958, 1913 Ridgecrest Drive Royse City, Texas 75189
Title of Study:	A Predictive Correlational Study on the Effects of Emotional Intelligence on Information technology Support Staff in a Higher Education Environment
Purpose of Study:	You are being asked to participate in a research study designed to study the effects of emotional intelligence on the productivity and end-user satisfaction of IT support staff in a higher education environment.
Procedures:	You will be asked to take the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). The test should take no longer than 30 to 45 minutes to complete. You will be asked to respond to questions regarding your feelings toward situations.
Benefits:	Possible improvements to the training that is provided
Risks:	None greater than those in daily life
Costs/incentives:	none
Confidentiality:	No information that can identify you personally will be collected as part of this research. The research is completely anonymous. All data collected will be stored in a secured database that is encrypted. No personal identifying data will be collected.
Use of information:	The project data will be used for the researcher's dissertation and possible further research projects conducted by the primary researcher or the supervising faculty member. No personal identifying data will be included in any of these documents.
Voluntary	The participants may withdraw from the study at any time, or decline to participate, without any penalty
Participation:	

By filling out the questionnaire, you are indicating the following:

- You have read the above consent statement and have had an opportunity to ask questions to your satisfaction.
- You understand that additional questions should be directed to Dr. Robert Pratt Ph.D. Robert.pratt@saintleo.edu or Margaret Snead at Margaret.snead@saintleo.edu
- You confirm that you are at least 18 years of age.
- You agree to participate in the study, under the terms outlined in this consent statement

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