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Job Satisfaction and Turnover Intention in Higher Education: A Study of Information Technology Professionals In the California State University System

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ABSTRACT

The purpose of this study was to survey perceived job satisfaction and turnover intention of information technology professionals in the California State University (CSU) system. Employee satisfaction facets (work, pay, opportunities for promotion, supervision, and co-workers), overall satisfaction, and turnover intention were measured. Further, the study identified whether there was a significant difference in perceived job satisfaction or turnover intention based on years of service in the CSU system, gender, or campus in the CSU system. The study also examined the uniqueness of information technology professionals at campuses in the CSU system.

This study utilized a mixed-methods methodology with two distinct phases. The quantitative phase of the study involved participants responding to an on-line survey. An invitation was sent to 622 information technology professionals at six campuses in the CSU system with a request to complete the survey. A total of 59 information technology employees responded, for a response rate of 9.49%. The quantitative results support earlier studies that report a negative correlation between overall job satisfaction and turnover intention. Of the five facets of job satisfaction, the mean satisfaction with opportunities for promotion was the lowest.

The qualitative phase followed the quantitative phase and involved interviewing information technology managers from the CSU system, using a semi-structured interview protocol, to gain additional clarity about the data gathered in the quantitative phase. The managers did not perceive a difference between the job satisfaction of information technology

professionals and other professionals. The majority of managers reported viewing turnover positively, but suggested that their view of turnover is highly situational depending on whether the turnover is of a high or low performer. The culture of information technology professional turnover intention was described as somewhat different for other professionals given the ease of skills transfer and demand for information technology professionals in the market.

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This educational pursuit is the culmination of a lifelong dream. It demonstrates that through hard work, all things are possible. With that in mind I dedicate this dissertation to my children, Anna, Ryan, Ian and Meghan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Early in the 20th century, Fredrick Taylor played an influential role in the development of organizations. The first sentence of his text, *The Principles of Scientific Management,* states "The principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee" (Taylor, 1914, p. 9). At the time of this writing, it was commonly believed that the interests of the employer and the interests of the employee were at odds. At the roots of Taylor's "scientific management" is the belief that managers and employees needed to cooperate and share the workload of the organization (Taylor, 1914).

More than a century later, organizations and employees continue to focus on maximizing their individual and collective interests. Jim Collins, in *Good to Great*, emphasized that great companies focus on first getting and hanging on to the right people, before considering a new direction, vision, or strategy (Collins, 2001). Further, in *Good to Great and the Social Sectors*, Collins stated that "the number-one resource for a great social sector organization is having enough of the right people willing to commit themselves to mission" (Collins, 2006, p. 16).

The *Higher Education IT Workforce Landscape Report, 2019* identified a gap between what information technology employees report keeps them in their jobs and what managers believe they are doing to retain employees (Galanek, Gierdowski, & Brooks, 2019). Those in

leadership positions ranked compensation as the most critical factor for retention, whereas employees rank other factors above salary, such as quality of life. Given the importance of employees to organizational success, higher education institutions must better understand the factors that influence turnover from the perspective of information technology professionals and managers.

Job satisfaction is worthy of study for both humanitarian and utilitarian reasons. From a humanitarian perspective, evidence indicates that job satisfaction is related to life satisfaction (Judge & Klinger, 2009). Given that employees spend much of their lives at work, understanding job satisfaction may enable organizations to improve employee well-being and psychological health (Gruneberg, 1979). Additionally, employees deserve fair and respectful treatment and job satisfaction can be a reflection of good treatment (Spector, 1997). From a utilitarian perspective, employees with higher levels of job satisfaction tend to exhibit behaviors that are good for the organization. They may have higher levels of performance and organizational citizenship behavior, as well as lower withdrawal behaviors (absenteeism, turnover) and levels of burnout (Spector, 1997). While research remains mixed regarding the impact that satisfaction has on productivity (Judge & Klinger, 2009), some type of balance is desired given that job satisfaction and productivity benefit both the worker and the employer (Bruce, 1992; Spector, 1997).

Theories of job satisfaction fall into two categories, content theories and process theories. Content theories are the earlier theories and focus on the factors of job satisfaction and dissatisfaction. Process theories evaluate the process by which variables such as expectations, needs and values interact with characteristics of the job to produce job satisfaction (Gruneberg, 1979). Two influential content theories are Maslow's (1954) Needs Hierarchy Theory and

Herzberg's (1968) Two-Factor Theory. Important process theories include Vroom's (1964) Expectancy Theory, Adam's (1963) Equity Theory, Hackman and Oldman's (1976) Job Characteristics Model, and Locke's (1969) Range of Affect Theory.

Beginning in the 1950s research began to draw connections between job satisfaction and turnover. It was in this timeframe that models of turnover began to take shape (Hom, Lee, Shaw, & Hausknecht, 2017). March and Simon's (1958) theory of organizational equilibrium asserts that turnover occurs when individuals view that their contribution to the organization exceeds the inducements they receive from the organization. Porter and Steers' (1973) theory of met expectations suggests that turnover occurs when an employer fails to meet the expectations of its employees. Mobley's (1977) linkage model suggests a set of linkages between job satisfaction and turnover.

Non-traditional models of turnover include Lee and Mitchell's (1994) unfolding model, the job embeddedness model (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001) and the collective turnover framework (Hausknecht & Trevor, 2011). Lee and Mitchell's unfolding model describes four distinct decision paths involving external events and psychological processes, which trigger patterns of thoughts and actions for leaving an organization (Lee & Mitchell, 1994). The job embeddedness model focuses on why employees stay in their jobs, rather than why they leave their jobs. Employees are embedded within the organization as a result of on-the-job and off-the-job (community) links, fit, and sacrifice. The more embedded an employee, the less likely he or she is to quit (Eberly, Holtom, Lee, & Mitchell, 2009). The collective turnover framework focuses on turnover at the group (teams, work groups, or departments), unit (standalone establishments such as stores, restaurants, factories, call centers,

hotels, or offices), and organization (entire companies, firms, or enterprises) levels (Hausknecht & Trevor, 2011).

While higher levels of job satisfaction have demonstrated decreases in turnover intention (Ghapanchi & Aurum, 2011; Hofaidhllaoui & Chhinzer, 2014; Ramlall, 2003), studies have identified numerous moderators, for instance, growth need, perceived organizational support, perception of external job opportunities, and age (Hofaidhllaoui & Chhinzer, 2014; Hwang & Kuo, 2006; Lee, 2000; Ramlall, 2003). For example, employees who perceive that other job opportunities are available to them may have greater levels of turnover intention than employees who do not perceive that job opportunities are available to them. This means job satisfaction may be a necessary, but not a sufficient, condition to alleviate turnover intention.

Statement of the Problem

Employee turnover has been studied extensively, as has the turnover of information technology employees specifically. Information technology professionals have demonstrated some unique attributes that may influence turnover (Abii, Ogula, & Rose, 2013; Chang, 2010; Lee, 2000; Lo, 2015). Information technology professionals have been shown to have a high need for learning, growth, and personal development compared to some other professional groups (Chang, 2010; Lee, 2000). This need for growth translates into a strong desire to be challenged, and is often related to information technology professionals' desire to keep their skills current given the rapidly changing technology environment in which they work. While Lee's (2000) study found that the job satisfaction and turnover intention relationship is moderated by employee growth need strength, it also found that job satisfaction is the primary driver of turnover intention for information technology professionals.

Markham (2009) conducted a job satisfaction study of information technology professionals in the community college system in Mississippi, Temple (2013) conducted a job satisfaction study of information technology professionals in the community college system in California, and Banks (2015, 2016) conducted job satisfaction studies of information technology professionals at California State University, Chico. All three researchers utilized the abridged Job Descriptive Index (aJDI) and abridged Job In General (aJIG) scales in their studies. All four studies found that the opportunities for promotion facet was the area of least job satisfaction. The 2016 Banks study also measured turnover intention and found a moderate to strong negative correlation between overall job satisfaction and turnover intention, $r(60) = -.550$, $p < .001$. This study is an extension of these studies in that a qualitative phase will be added to provide additional clarity and context around the job satisfaction and turnover intention data gathered in the quantitative phase.

Three meta-analyses of information technology employee turnover have been conducted in the past 12 years (Ghapanchi & Aurum, 2011; Joseph, Kok-Yee, Koh, & Soon, 2007; Lo, 2015). The three analyses identified between 40 and 70 distinguishable factors influencing turnover intention. All three studies made recommendations regarding future research. A common theme for future research included gaining a better understanding of the context of the information technology employee to identify whether the factors influencing information technology employee turnover are unique.

While evidence has existed for decades regarding the relationship of job satisfaction to turnover, there has been limited systematic study on job satisfaction and turnover intention of information technology professionals in large, public, higher education systems. Furthermore, there is a gap in evidence of the uniqueness of these individuals.

Theoretical Framework

Burke and Litwin (1992) developed their Causal Model of Organization and Change in the 1970's and 1980's as a result of their organizational change consulting with Citibank and British Airways. An open-systems model, the Burke-Litwin Causal Model of Organization and Change, illustrated in Figure 1, has the external environment as its input dimension and individual and organizational performance as its output dimension. The remaining boxes in the model represent the primary throughput dimensions, as well as the factors primary to organizational understanding and analysis. A feedback loop exists to connect the input with the output, although the arrows go in both directions meaning that organizational outcomes, for example, products and services, impact the external environment, and that forces in the external environment also impact organizational performance.

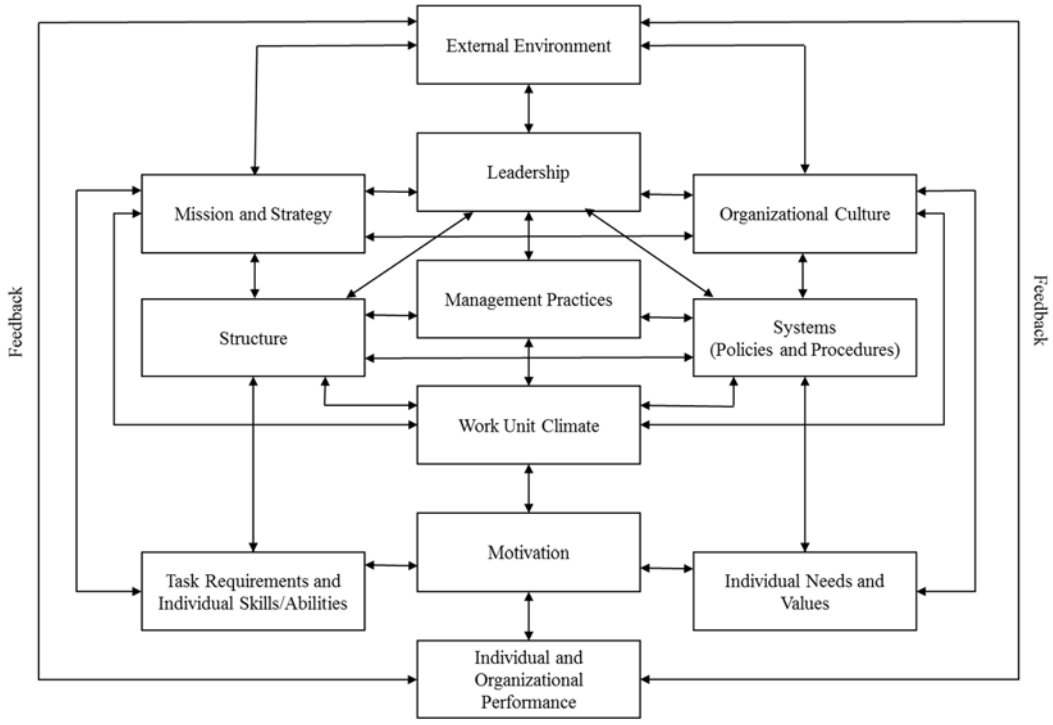

Figure 1. Burke-Litwin Causal Model of Organization and Change

As an open systems model, information is exchanged with the external environment and the arrows that link the boxes go in both directions. However, this is a causal model intended to communicate that organizational change, mission and strategy, leadership and organizational culture have more weight than structure, management practices, and systems in influencing the change (Burke, 2014; Burke & Litwin, 1992).

Burke and Litwin (1992) drew on the theoretical distinction between transformational and transactional leaders or between leaders and managers when comparing the top half of the model with the bottom half of the model. The top half of the model are the transformational or leadership factors, whereas the bottom half of the model are the transactional or management factors. Changes in the transformational factors (mission and strategy, leadership, and organizational culture) are more likely to be caused by direct interaction with the external environment and will require the greatest change for the organization. Changes in the transactional factors (management practices, structure, systems, work unit climate, motivation, task requirements and individual skills/abilities, individual needs and values, and individual and organizational performance) are concerned with the day-to-day operations or management of the organization. Changes to transactional factors would appear more like continuous improvement, or evolutionary change, rather than transformational change (Burke, 2014).

Burke and Litwin (1992) included culture and climate as factors in their model. Culture is defined as a collection of explicit and implicit rules, values, and principles that are enduring and guide organizational behavior. Understanding the history of an organization can aid in understanding culture. Climate is the collective current impressions, expectations and feelings that members of a local work unit have that influence their relations with management, one

another, and other work units. Therefore, organizational culture is related to the value systems of the organization overall, whereas organizational climate is focused on the individual work unit.

The factors most closely related to this study are the external environment, human resources systems, organizational culture, management practices, mission, individual needs and values, task requirements, and individual and organizational performance. There is ultimately a desire for congruence among these factors. The arrow linking culture to individual needs and values represents the connection, and potential for congruence, between the organization and the individual. If an employee's needs and values are met by the job, their motivation is impacted, which in turn influences individual and organizational performance. While job satisfaction is not represented specifically as a factor in the model, it is both related to motivation and an antecedent of performance (Spector, 1997). The ability to understand employee needs and values with respect to their work, motivation, and job satisfaction is an important determinant of organizational performance.

Statement of the Purpose

The purpose of this mixed methods study was to survey perceived job satisfaction and turnover intention of information technology professionals at six campuses in the California State University system from January to February 2019 to better understand the factors that influence retention. A secondary purpose of this study was to examine qualitatively the uniqueness of information technology professionals with respect to job satisfaction and turnover intention at the same six campuses in the California State University system. The perceptions of information technology managers were gathered in semi-structured interviews from February to March 2019 to clarify the context of the quantitative job satisfaction and turnover intention results.

Research Questions

The research questions for this study were intended to evaluate perceived job satisfaction and turnover intention, as well as examine the uniqueness of information technology professionals at campuses in the California State University system. The research questions are grouped by phase.

Phase 1 – Quantitative Phase

1. What are the perceived overall job satisfaction and turnover intention of information technology professionals working in the California State University system?
2. Is there a statistically significant difference in perceived overall job satisfaction of information technology professionals based on years of service in in the California State University system, gender, or campus in the California State University system?
3. Is there a statistically significant difference in the facets of perceived job satisfaction (work, pay, opportunities for promotion, supervision, co-workers) of information technology professionals based on years of service in the California State University system, gender, or campus in the California State University system?
4. Is there a statistically significant difference in turnover intention of information technology professionals based on years of service in the California State University system, gender, or campus in the California State University system?
5. Is there a relationship between perceived overall job satisfaction and turnover intention for information technology professionals in the California State University system?

Phase 2 – Qualitative Phase

6. What is the perspective of information technology managers relative to the job satisfaction and turnover intention of their employees?

7. What is the context (e.g., culture) of information technology in relation to job satisfaction and turnover intention in the California State University system?

Statement of the Need

As the number of information technology professionals needed in the workforce continues to grow, balancing turnover of information technology professionals will be a challenge. These workers take specialized knowledge and skills, as well as an understanding of specific business operations and information systems, with them when they leave. The turnover of an information technology employee who is one of a few experts on a system can put the ongoing operations of the system in jeopardy. Departure of those who play a critical role on a project can delay or prevent the implementation of new technologies or systems (Moore & Burke, 2002).

In higher education information technology organizations, retention of talent can be an even more significant challenge (Galanek et al., 2019). While organizations' ability to pay competitive salaries will certainly play a role in their retention efforts, the results of the Markham, Temple, and Banks studies, indicate that information technology professionals in higher education are less satisfied with their opportunities for promotion than with their pay. Dissatisfaction with opportunities for promotion can impact overall job satisfaction, which can lead to turnover intention and ultimately actual turnover (Joseph et al., 2007). Eliminating turnover altogether is not possible, or desired, but addressing areas of dissatisfaction, such as opportunities for promotion, may help higher education information technology organizations manage turnover at appropriate levels.

Statement of Methodology

This study utilized an explanatory, sequential mixed-methodology. The quantitative

phase of the study involved a non-experimental survey research design using a Web-based questionnaire. A stratified random sampling approach was used to collect data from a population of information technology professionals at six campuses in the California State University system. Two campuses each were selected from three pre-defined groups of campuses, based on levels of enrollment and research. In the qualitative phase of the study, a purposeful sampling approach was used to select interviewees from among information technology managers at the same six California State University campuses used in the quantitative phase. Open-ended questions were asked in semi-structured interviews to gain additional clarity and provide context around the job satisfaction and turnover intention data gathered in the quantitative phase.

Job satisfaction was measured using the 2009 revision of the abridged Job Description Index (aJDI) and abridged Job in General (aJIG) scales (JDI, 2014). The aJDI includes 30 items to measure five different facets of job satisfaction (work, pay, opportunities for promotion, supervision, co-workers). The aJIG includes eight items to measure overall job satisfaction.

Turnover intention was measured using three items from the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS). The three items were (a) "How likely is it that you will actively look for a new job in the next year?"; (b) "How likely is it that you could find a job with another employer with about the same pay and benefits you have now?"; and (c) "I often think about quitting."

Demographic data were also collected. Information regarding a respondent's years of service in the California State University system, gender, and campus in the California State University system was used to test research questions and determine if there are correlations between the demographic variables and the responses regarding perceived job satisfaction and turnover intention. None of the demographic questions were required. No other identifying

information was collected from respondents. A summary of the variables in the study are outlined in Table 1.

Table 1

Summary of Variables

Variable name	Source	Type
Turnover Intention	MOAQ-JSS	Dependent
Overall Job Satisfaction (JIG)	aBridged Job in General Scale (aJIG)	Independent
Work (W)	aBridged Job Descriptive Index (aJDI)	Independent
Pay (P)	aBridged Job Descriptive Index (aJDI)	Independent
Opportunities for Promotion (Pr)	aBridged Job Descriptive Index (aJDI)	Independent
Supervision (S)	aBridged Job Descriptive Index (aJDI)	Independent
Co-Workers (C)	aBridged Job Descriptive Index (aJDI)	Independent
Gender	Survey	Independent
Years of Service	Survey	Independent
Campus	Survey	Independent

Statement of Assumptions

The assumptions for this study include the following:

- Since this study relied on respondents to self-report, there is an assumption that they adequately represented their perceptions and that these perceptions are stable.
- This study utilized turnover intention as an indicator of potential actual turnover.

Statement of Delimitations

The delimitations for this study include the following:

- This study is focused on higher education institutions, specifically six institutions in the California State University system and does not seek to find any correlation with other institutions outside the ones used in this research.
- The population of this study consists of information technology professionals employed in the California State University system between December of 2018 and January 2019 who were still employed in January and February 2019 to receive e-mail invitations to participate in the study.

- Employees who had left the California State University system prior to the survey being administered in January and February 2019 were not included as part of the study design.

Statement of Limitations

The limitations for this study include the following:

- This study used a stratified random sample rather than a random sample. A random sample would have ensured that each information technology professional in the California State University system had an equal probability of being selected. While the stratified random sample ensured representation from each campus type (small, medium, and large), it did not ensure that the sample reflects the true proportion of individuals with other characteristics (Creswell, 2014). For this reason, the results can only be generalized to the population of which the sample is representative, meaning the six campuses selected for the stratified random sample.
- The quantitative phase of the study was conducted in January and February of 2019, therefore the quantitative results are limited to employee perceptions at that time.
- The qualitative phase of the study was conducted in February and March of 2019, therefore the qualitative results are limited to manager perceptions at that time.
- This study is limited to the possibility of crossover responses. In other words, the study's participants had the potential to discuss the questionnaire or interview questions with one another during the process, potentially influencing the responses.

Statement of Terminology

For the purposes of this study the following definitions will be established to add clarity and understanding to the research:

Campus. The California State University system has 23 campuses. Campus refers to the specific campus where the information technology professional is employed.

Information Technology (IT) Manager. An employee of the California State University system in the Management Personnel Program (MPP). The majority of these employees have information technology professionals reporting to them, they are not represented by a union, and serve at the pleasure of the university president.

Information Technology (IT) Professional. An employee of the California State University system classified in the Information Technology Series (i.e., Analyst/Programmer, Equipment Systems/Specialist, Information Technology Consultant, Network Analyst, Operating Systems Analyst, Operations Specialist). These employees are represented by a union and can be full or part-time; however, they are not faculty.

Job Satisfaction. The extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs (Spector, 1997, p. 2).

Turnover. The cessation of membership in an organization by an individual who received monetary compensation from the organization (Mobley, 1982, p. 10).

Turnover Intention. An employee's intention to look for a new job or leave his or her current job (Mobley, 1977).

CHAPTER 2

REVIEW OF THE LITERATURE

While evidence has existed for decades regarding the relationship of job satisfaction to turnover, on-going high levels of turnover, increased reliance on information technology professionals by organizations, and expanded workforce demands in the information technology sector necessitate gathering further research regarding the variables that influence information technology employee turnover.

Job satisfaction can be defined simply as "the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs" (Spector, 1997, p. 2). Job satisfaction can also be defined as "the positive emotional response to a job situation resulting from attaining what the employee wants and values from the job" (Hwang & Kuo, 2006, p. 254).

Employee turnover can be defined as "the cessation of membership in an organization by an individual who received monetary compensation from the organization" (Mobley, 1982, p. 10). Two types of employee turnover have been identified: voluntary and involuntary. Involuntary turnover occurs when the organization dismisses an employee, while voluntary turnover occurs when an employee resigns (Abbasi & Hollman, 2000).

This chapter provides an overview of theories related to job satisfaction and turnover and focuses on literature related to the research questions identified in chapter one. The purpose of this chapter is to investigate the literature on the factors that affect job satisfaction and turnover

intention of information technology professionals in the California State University system. This chapter concludes with a summary of the literature.

Job Satisfaction

One of the first researchers of job satisfaction, Hoppock (1935), stated that "there may be no such thing as job satisfaction independent of the other satisfactions in one's life" (p. 5). Hoppock's initial study was likely the first major work to use survey methods and attitude scales in examination of job satisfaction (Gruneberg, 1979). He concluded that employees dissatisfied with their jobs made up the minority of the participants in his studies. At the time of his study's publication in 1935 he identified 32 studies in the literature on the topic of job satisfaction. A current ProQuest search for the term "job satisfaction" resulted in over 100,000 items including dissertations, theses, and scholarly journal articles.

Theories of job satisfaction fall into two categories, content theories and process theories. Content theories are generally the earlier developed theories and focus on the factors of job satisfaction and dissatisfaction. Process theories evaluate the process by which variables, for example, expectations, needs, and values, interact with characteristics of the job to produce job satisfaction (Gruneberg, 1979). Common job satisfaction content and process theories are presented in Table 2.

Table 2
Theories of Job Satisfaction

Content Theories	Process Theories
Maslow's Needs Hierarchy Theory	Vroom's Expectancy Theory
Herzberg's Two-Factor Theory	Adam's Equity Theory
	Hackman and Oldham's Job Characteristics Model
	Locke's Range of Affect Theory

Maslow's Needs Hierarchy Theory

Job satisfaction has historically been viewed from the perspective of need fulfillment, referencing Maslow's (1954) hierarchy of needs. Maslow's needs hierarchy consists of the

lower order needs of physiological, safety and security, and belonging, as well as higher order needs of esteem and self-actualization. Subsequent to the initial publication of his needs hierarchy, Maslow was concerned that focus on lower level needs may actually stifle growth in higher-level need areas. He ultimately added the need of self-transcendence to his hierarchy (Dye, Mills, & Weatherbee, 2005; Koltko-Rivera, 2006). Maslow's hierarchy is presented in Table 3.

Table 3

Maslow's Needs Hierarchy

Higher Level Needs	Self-transcendence Self-actualization Esteem
Lower Level Needs	Belonging Safety and Security Physiological

To motivate an employee, according to Maslow, the organization should determine which employee needs are currently being met and appeal to the next higher level in the hierarchy (Bruce, 1992). Job satisfaction was considered a measure of how much a job satisfies an individual's physical and psychological needs.

Maslow's work continues to be widely recognized in the job satisfaction literature; however, some limitations are worth noting. Maslow did not develop his theory to account for job satisfaction, even though many theorists use it in that way. Maslow's methodology also included a qualitative method called biographical analysis. Unfortunately, not only is this method viewed as somewhat subjective, but because his work was primarily focused on evaluating a relatively small number of males, generalizing these findings to a larger population of both males and females is difficult (McLeod, 2007).

Maslow's theory went through very little testing and evaluation before it became widely accepted. In reality, very little empirical evidence has been found for Maslow's needs theory despite decades of research (Dye et al., 2005; Miner & Dachler, 1973).

Herzberg's Two-Factor Theory

Frederic Herzberg's two-factor (motivation-hygiene) theory made a distinction between the causes of job satisfaction and job dissatisfaction. Herzberg (1959) identified that job satisfaction is related to intrinsic factors involved with doing the job, where job dissatisfaction is related to extrinsic factors that surround doing the job. The factors related to job satisfaction are called motivation factors and include recognition, achievement, interesting work, responsibly, and advancement. The factors related to job dissatisfaction are called hygiene factors and include company policies, administration, supervision, and working conditions. Herzberg used the term hygiene because much like good hygiene keeps us from getting sick, attention to hygiene factors keep a worker from becoming dissatisfied. However, even with hygiene factors in place, workers need additional conditions to be satisfied (Bruce, 1992; Hackman, 1976; Sachau, 2007).

Herzberg argued that the most important difference between the motivators and the hygiene factors are that the motivator factors all involve psychological growth; the hygiene factors involve physical and psychological pain avoidance (Sachau, 2007; Smerek & Peterson, 2006).

Herzberg (1968) summed up his motivation-hygiene theory by stating, "The opposite of job satisfaction is not job dissatisfaction but, rather, no job satisfaction; and similarly, the opposite of job dissatisfaction is not job satisfaction, but no job dissatisfaction" (p. 56). This theory was a contrast to conventional theories that recognized that job satisfaction was a function

of many things, but did not consider the relative degree of existing satisfaction or dissatisfaction (Behling, Labovitz, & Kosmo, 1968; Karp & Nickson Jr, 1973; Sachau, 2007). Herzberg's factors of job satisfaction are presented in Table 4.

Table 4

Herzberg's Factors of Satisfaction

Intrinsic Motivation Factors	Extrinsic Hygiene/Maintenance Factors
Achievement	Company policy and administration
Recognition	Supervision
Advancement	Relationship with supervisor
Work Itself	Work conditions
Possibility for Growth	Salary
Responsibility	Relationship with peers
	Personal Life
	Relationship with subordinates
	Status
	Security

Herzberg's theory was also subject to controversy. Some critics feel that his sample of the working population was too narrow (Gruneberg, 1979). Others find fault in his critical-incident methods. While researchers were able to reproduce Herzberg's research techniques, the studies were not able to support all of his claims. Further, critics of the critical-incident method suggest that subjects tended to take credit for their own successes, but blame the environment for their failures (Sachau, 2007).

In recent years, Herzberg's motivation-hygiene theory has been deemphasized as most researchers currently consider cognitive processes rather than underlying needs in relation to job satisfaction. Job satisfaction is now viewed from the perspective of facets, rather than an overall feeling since it's possible for employees to feel positively about one facet of their job but negatively about another facet of their job (Spector, 1997).

Vroom's Expectancy Theory

Victor H. Vroom's (1964) Expectancy Theory assumes that individual behavior results from choices between numerous alternatives considering the variables of valance, instrumentality, and expectancy. Often referred to as the VIE model, expectancy theory asserts that the combination of valance, instrumentality, and expectancy impact individual motivation (Mitchell, 1974).

Valance is the value or importance an individual places on a particular outcome. An outcome has high valance if the individual prefers attaining it to not attaining it. Expectancy is an individual's belief that action or effort will lead to desired performance. Expectancy is an action outcome association. Instrumentality is the individual's belief that performance will result in a desired outcome. It is an outcome outcome association. (Van Eerde & Thierry, 1996).

Vroom's hypothesis regarding job satisfaction is that "The valance of a job to a person performing it is a monotonically increasing function of the algebraic sum of the products of the valances of all other outcomes and his concepts of the instrumentality of the job for the attainment of these other outcomes" (Vroom, 1964, p. 279). A more simple illustration of the expectancy model is presented in Figure 2.

$$M = E \times I \times V$$

Where:

M represents motivation
E represents expectancy
I represents instrumentality
V represents valance

Figure 2. Vroom's Expectancy Model

Adam's Equity Theory

Adam's (1963) Equity Theory is based on employee perception of the ratio or exchange between the effort spent (inputs) and the rewards received (outputs) at work and how this ratio

compares to others. Employees bring inputs to the job including education, experience, training, skill, seniority, age, sex, social status, and the effort expended on the job. On the other side of the exchange are the rewards or outcomes received by the employees for their work. These include pay, rewards intrinsic to the job, seniority benefits, and job status. When an employee feels their inputs and outputs are not in balance with others, feelings of inequity and dissatisfaction result.

Challenges arise because employees (a) place value on inputs and outputs which may or may not be valued the same as the organization (Adams, 1963); (b) have feelings of inequity when they receive less reward than others and when they receive more reward than others; and (c) choose with whom they compare themselves both in terms of inputs and outputs (Gruneberg, 1979). These challenges make it difficult to balance inputs and outputs to the satisfaction of individual employees.

Hackman and Oldham's Job Characteristics Model

Hackman and Oldham's (1980; 1976) Job Characteristics Model was developed to help identify strategies that are effective in redesigning work as well as understanding work motivation. The model states that there are five core job dimensions (skill variety, task identity, task significance, autonomy, and feedback), that impact three psychological states (experienced meaningfulness, experienced responsibility for outcomes, and knowledge of the actual results) which, in turn, lead to a number of beneficial work outcomes (high internal work motivation, high "growth" satisfaction, high general job satisfaction, and high work effectiveness).

Unlike some of the other theories of job satisfaction presented earlier, the Job Characteristics model considers the differences in the way that people react to work. These differences include knowledge and skills, growth need strength, and "context" satisfiers. These

differences moderate the links between the job dimensions and the psychological states, and between the psychological states and the outcomes. For example, individuals with a high need for personal growth, learning and development (growth need strength) will respond more positively to a job high in learning potential than people with low growth need strength. The Job Characteristics Model is illustrated in Figure 3.

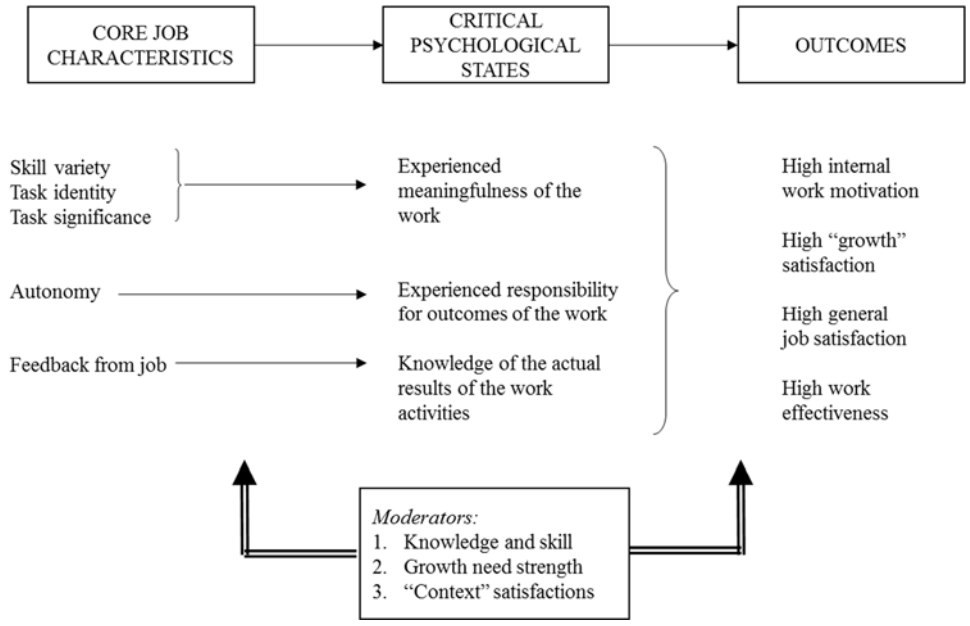

Figure 3. Hackman and Oldham's Job Characteristics Model

To measure the overall motivating potential of a job, Hackman and Oldham use a Motivating Potential Score (MPS). Motivating potential is greatest when the job is high on at least one of the three job dimensions that lead to job meaningfulness, high in job autonomy and high on feedback. MPS is computed by combining scores of jobs on the five dimensions as illustrated in Figure 4.

$$\text{Motivating potential score (MPS)} = \left(\frac{\text{Skill variety} + \text{Task Identity} + \text{Task Significance}}{3} \right) \times \text{Autonomy} \times \text{Job feedback}$$

Figure 4. Motivating Potential Score (MPS) Formula

Locke's Range of Affect Theory

Locke's (1969) Range of Affect Theory states that job satisfaction (or dissatisfaction) is an emotional response resulting from the appraisal of one's job and its ability to help facilitate the achievement of one's job values. In other words, job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from the job and what one is getting from the job. This appraisal process involves three variables: perception, a value standard, and a judgement of the relationship between perception and value.

The intensity of the emotional response is dependent on the importance of the values whose fulfillment is being either facilitated or frustrated by the work experience (Henne & Locke, 1985). Given that individuals value different things, one facet of the job may be very important for one employee's job satisfaction (e.g., pay, working conditions, job autonomy, etc.), but less important or not important for another employee's job satisfaction (Judge & Klinger, 2009). Locke argues that the causes of job satisfaction are not solely a result of the job, or solely the result of the individual, but instead a result of the relationship between them (Locke, 1969).

The theories of job satisfaction demonstrate an evolution in the way researchers view satisfaction, from motivation-based theories to theories that focus more on the characteristics of the employee or the job. A review of the literature on the other variable under investigation, turnover, is presented in the next section.

Turnover

Bills (1925) published the first empirical study on the relationship between parent occupation and voluntary turnover of clerical workers. While his study did not contain statistical tests of the relationship, it did introduce a predictive research design for assessing whether job application questions can predict turnover that became the standard research design in turnover

research for most of the 20th century. Early turnover research continued to focus on using application information or selection tests to predict turnover. Research beginning in the 1950s began to draw connections between job satisfaction and turnover and between effective recruitment and new hire on-boarding to improved retention. It was in this timeframe that models of turnover began to take shape (Hom et al., 2017).

Models of turnover can be viewed as either traditional or non-traditional. Traditional models describe turnover as a process originating with an employee's feelings, thoughts, and beliefs. Job dissatisfaction is theorized to initiate job search behaviors and a comparative evaluation of possible employment options, which ultimately sets the stage for turnover. These traditional models are the basis for newer non-traditional models; however non-traditional models also describe multiple quitting processes, include factors external to the person and organization, explain how relative job satisfaction can prompt an employee to turnover, and focus more on why people stay in their jobs (Eberly et al., 2009). Common turnover theories are presented in Table 5.

Table 5

Theories of Turnover

Classic Theories	Non-Traditional Models
March and Simon's Theory of Organizational Equilibrium	Lee and Mitchell's Unfolding Model
Porter and Steers' Theory of Met Expectations	Job Embeddedness Model
Mobley's Linkage Model	Collective Turnover Framework

March and Simon's Theory of Organizational Equilibrium

March and Simon's (1958) theory of organizational equilibrium states that turnover occurs when individuals view that their contribution to the organization exceeds the inducements they receive from the organization. The two factors in the organizational equilibrium theory that

play heavily on an employee's thoughts of quitting include the desirability of movement and the perceived ease of movement from the organization.

Desirability of movement is influenced by an employee's job satisfaction, which is influenced by the conformity of the job to the employee's self-image, predictability of job relationships, compatibility of the job, and perceived possibility of inter organizational transfer. Perceived ease of movement is influenced by the perceived number of extra organizational alternatives, which are influenced by the current level of business activity, the number of visible organizations, and the personal characteristics of employees (March & Simon, 1958; Mowday, 1982). Therefore, an employee with low satisfaction and high ease of movement is at risk of turnover.

Porter and Steers' Theory of Met Expectations

Porter and Steers (1973) suggested that turnover occurs when an employer fails to meet the expectations of its employees. Since employees do not all share the same expectations, a single variable (e.g., high pay, friendly co-workers, etc.) will not have a uniform impact on turnover intention. The factors that influence turnover, presented in Table 6, fall into four categories.

Table 6

Porter and Steers' Factors Which Influence Turnover

Category	*Example*
Organization as a whole	Pay Promotion policies
Immediate work environment	Work-unit size Supervisory style Co-worker relations
Job itself	Nature of job requirements
Individual	Age Tenure

In this case, when employees feel their pay or supervisor style, for example, do not meet their expectations; they are more likely to turnover.

Mobley's Linkage Model

Mobley's (1977) linkage model suggests a set of linkages between job satisfaction and turnover. Job dissatisfaction triggers thoughts of quitting and job search intentions that result in actual job search behaviors. When an alternative is identified and determined to be more attractive than the current job, an individual develops an intention to quit and may subsequently leave the organization. The linkages identified by Mobley are depicted in Figure 5.

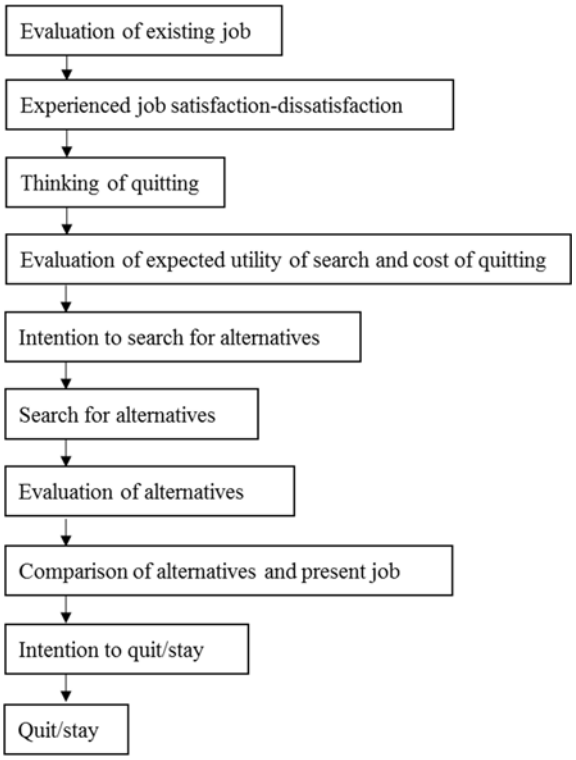

Figure 5. Mobley's Linkage Model

While the model appears as a lock-step sequence that all employees experience identically, some employees may skip some steps or experience the steps in a different order (Lee & Mitchell, 1994). While his original model was process based, Mobley later introduced a

content perspective to the model by including numerous distal causes (e.g., undesirable features of the current job and desirable features of job alternatives) to clarify why people quit. He introduced the concept of subjective expected utility in evaluating both the current job and job alternatives. Subjective expected utility, along with job satisfaction, serve as proximal antecedents to turnover and mediate the impact of distal causes (Hom et al., 2017).

Price and Mueller (1981) extended Mobley's theory and added a range of turnover determinants. Their theory captures not only workplace and labor market causes but also community and occupational causes. Similar to Mobley's later model, Price's theory focuses on content rather than process, however it also emphasizes key environmental drivers rather than attitudinal drivers (Hom et al., 2017).

In all three of the traditional models, job satisfaction serves as an antecedent to turnover. However, the success of an employee's job search is largely dependent on the job market. For this reason, these models also tend to include ease of movement as a predictor variable (Mitchell et al., 2001). Unlike traditional models that focus on job satisfaction or ease and desirability of movement, the nontraditional models of turnover look at decision paths that lead to turnover and why employees stay in their jobs, rather than leave.

Lee and Mitchell's Unfolding Model

Lee and Mitchell (1994) describe four distinct decision paths involving external events and psychological processes, which trigger patterns of thoughts and actions for leaving an organization. One of the patterns is similar to traditional models of turnover, where the other three patterns focus on the reasons people leave rather than attitudes such as job satisfaction. In general, a decision path begins with some sort of event that causes an employee to think about the meaning of the event in relation to their job. The path may or may not lead employees to

consider job alternatives. If leaving becomes an alternative, there may or may not be alternatives to consider.

Central to the unfolding model is the idea that the leaving process begins with a shock, an external-to-the-person event that causes the employee to consider leaving. The employee constructs a decision frame within which to interpret the event using the social and cognitive context surrounding the shock. The decision frame is used to evaluate shocks to determine if they can be easily dealt with, using some accessible response, based on experience. The unfolding model is based on the concept that the shock and decision frames prompt one of the decision paths. Shocks can be positive, negative, or neutral, expected or unexpected, organization related or personal (Lee & Mitchell, 1994). Shocks are impacted by employee perception, but nonetheless they are identifiable, describable, and understandable by both the employee and manager. Shocks are key antecedent signals of subsequent employee turnover (Eberly et al., 2009).

Decision path #1 involves a shock which causes the employee to search their memory for prior decisions, rules, learned responses, and circumstance - a decision frame - surrounding prior shocks. The memory probe also allows the employee to evaluate whether the previous behavior was judged as appropriate. If an evaluation is made that the current decision frame is virtually identical to prior decision frames, and that the prior response was deemed appropriate, a match occurs. Quitting under these circumstances takes little thought and deliberation. If a match does not occur, a different decision path is evoked. In short, decision path #1 involves (a) a shock; (b) a match with a rule or with previous decision situations; and (c) a script-driven decision (Lee & Mitchell, 1994).

Decision path #2 involves a shock; however, the employee cannot find a similar shock in memory and therefore no match occurs. In this case, the employee engages in mental deliberations and frames the decision as binary - to stay or leave the organization - with no job alternatives in mind. The employee will assess his or her attachment, or commitment, to the current organization considering personal values and goals. If the shock does not seem to be in alignment with personal values and goals, the employee must either modify one's values and goals or leave the company. Like decision path #1, decision path #2 involves a shock, but the employee does not have a ready response. Given that no job alternatives are available, this is a push decision (Lee & Mitchell, 1994).

Decision path #3 involves a shock with no match in memory. The employee engages in mental deliberations, however in this case, a job alternative exists. The employee will assess his or her attachment to the current organization and potential alignment of the new organization considering personal values and goals. In decision path #3, the employee may be satisfied with the current job but may like an alternative better. Given that a job alternative is available, this is a pull decision (Lee & Mitchell, 1994).

In decision path #4, no shock is experienced. In this path, the job and the current organization are relatively stable; however, over time employees reassess their commitment to the organization. This path is initiated because some elements of the job no longer align with employee values and goals, causing them to question how long they will remain satisfied. At this point, decision path #4 aligns with earlier turnover models in terms of dissatisfied employees developing lower organizational commitment, more job search alternatives, greater ease of movement, stronger intentions to quit, and higher probability of employee turnover (Lee &

Mitchell, 1994). A summary of all four decision paths in the unfolding model are presented in Table 7.

Table 7

Lee and Mitchell's Unfolding Model Summary

Mental Deliberations	*Shock*	
	Present	*Absent*
Minimal	Decision Path #1: Script driven	-
Moderate	Decision Path #2: A push decision	Decision Path #4A: Affect initiated
Extensive	Decision Path #3: A pull decision	Decision Path #4B: Affect initiated

Unlike traditional models of turnover, the unfolding model introduces shocks that provide a means to evaluate the impact of unsolicited job offers, random events, unexpected circumstances, and luck into the quitting process. Shocks can shake the employee out of his or her habitual patterns and routines so that he or she notices available opportunities. Lee and Mitchell also recognized that some employees leave the workforce for full-time school or stay at home parenting, rather than for another full-time job (Hom et al., 2017).

Job Embeddedness Model

The job embeddedness model focuses on why employees stay in their jobs, rather than why they leave their jobs. Job embeddedness researchers contend that the reasons for staying in the job are different from the reasons for leaving (Hom et al., 2017). Two research related ideas that help explain the job embeddedness model are Lewin's (1951) embedded figures, and field theory (Mitchell et al., 2001). Embedded figures, images used in a psychological test, are a part of an employee's background. They are inseparable from the employee, and therefore a part of their surroundings. In field theory, employees have perceptual life spaces representing and connecting all aspects of their lives. The connections can be few or many, close or far.

Considering these ideas, job embeddedness can be seen as a web in which employees can become stuck (Mitchell et al., 2001).

Employees are embedded within the organization in three ways: links, fit, and sacrifice. Links refer to employees' formal and informal connections to other individuals or institutions. Fit refers to the extent to which employees' jobs and communities are compatible with personal values and goals. Sacrifice captures the perceived losses that individuals may suffer when leaving a job. The job embeddedness model takes into account both on-the-job and off-the-job (community) links, fit, and sacrifice. The effects of these six different factors vary across individuals, jobs and circumstances such as a person's age or an organization's size. A combination of links, fit, and sacrifice represent employee job embeddedness. The more embedded an employee, the less likely he or she is to quit (Eberly et al., 2009). The job embeddedness model is depicted in Figure 6.

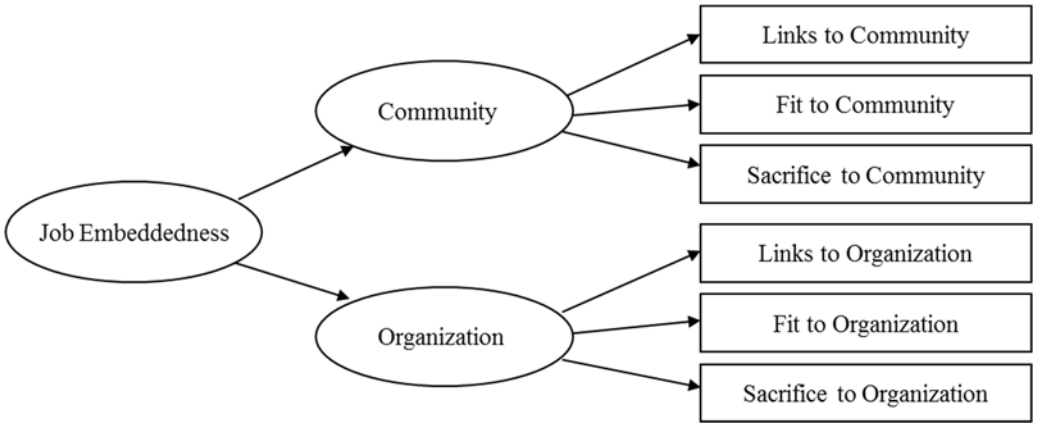

Figure 6. Job Embeddedness Model

Links are formal or informal connections between a person and other people or institutions. Embeddedness suggests that a number of strands connect an employee and their family in a social, psychological, and financial web that includes work and non-work friends, groups, community, and the physical environment in which they he or she live. The higher the

number of links between the person and the web, the more he or she is bound to the job and organization. Leaving a job can sever or require rearrangement of links (Mitchell et al., 2001).

Fit is an employee's perceived compatibility or comfort with an organization and their environment. An employee's personal values, career goals, and plans for the future must fit with the larger organizational culture and the demands of the job. An employee will also consider how well he or she fits within the community and surrounding environment including the weather, amenities, culture, outdoor activities, political and religious climates, entertainment options, and so on. These assessments of fit may or may not be tied to the job itself; nonetheless, the higher the fit the higher the likelihood that an employee will feel professionally and personally tied to an organization (Mitchell et al., 2001).

Sacrifice is the perceived cost of material and psychological benefits that may be lost when leaving a job. These could include giving up colleagues, projects or perks. Some sacrifices may be easily replaced, for example, salary, while other sacrifices may have costs of switching like health care and pensions plans. Sacrifices like stock options and defined benefit pensions may not be portable and can therefore truly be lost. Less visible sacrifices include loss of opportunities for advancement or sabbatical and job stability. Non-work sacrifices include surrendering an easy commute, flextime, and day care or vehicles provided by the organization. The more an employee would give up when leaving, the more difficult it will be to sever employment (Mitchell et al., 2001).

Collective Turnover Framework

Collective turnover is defined as "aggregate levels of employee departures that occur within groups, work units, or organizations" (Hausknecht & Trevor, 2011, p. 353). Collective turnover has garnered attention in the last couple of decades as research and theory on strategic

human resources management has focused on the idea that an organization's ability to retain its employees is a result of human resources practices and a key factor in organization performance (Hancock, Allen, & Soelberg, 2017). Antecedents of collective turnover typically include human resource management practices, collective attitudes and perceptions, and collective characteristics. Consequences of collective turnover include productivity, firm performance, and customer outcomes (Heavey, Holwerda, & Hausknecht, 2013). The antecedents and consequences of collective turnover are depicted in Figure 7.

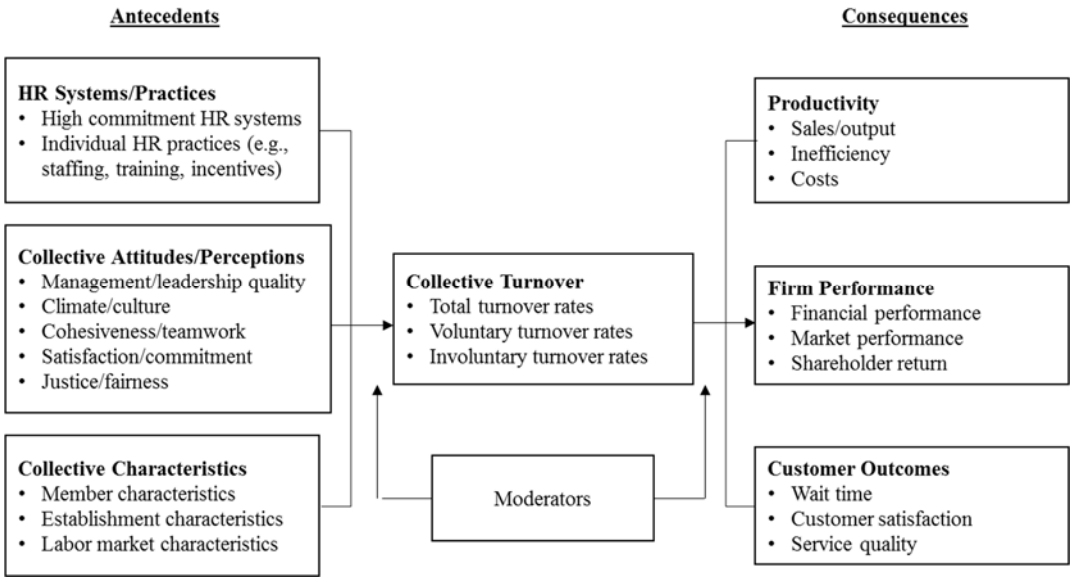

Figure 7. Collective Turnover Framework

Two major considerations in collective turnover research are related to (a) the relationship between turnover and performance (typically considered linear and negative, but may actually be curvilinear); and (b) methodological and conceptual differences, for instance, specifics of the job, may influence the degree to which antecedents influence collective turnover and in turn, the degree to which collective turnover impacts organizational performance (Hancock et al., 2017; Hausknecht & Trevor, 2011).

Impacts of Turnover

A common belief among scholars and managers is that turnover should be minimized. In reality, employee turnover has both negative and positive impacts on individuals and the organization and these consequences can be far reaching. Mobley (1982) presented some fundamental concepts regarding employee turnover which help to demonstrate the impacts (a) turnover is costly; (b) turnover can disrupt performance, communication, and morale; (c) turnover can create opportunities for promotions and infuse the organization with new ideas; and (d) lack of turnover can result in the stifling of employee career development and creativity if outdated culture and processes persist.

A review of 30 case studies on the costs of employee turnover between 1992 and 2012 estimate that it costs about one-fifth of an employee's annual salary to replace the employee. Jobs that are complex and require higher levels of education and specialized training have even higher costs of turnover. Direct costs of turnover include (a) separation costs, for example, exit interviews and severance pay, overtime or temporary staffing to cover the departing employee's duties; (b) replacement costs related to recruiting, interviewing and hiring; and (c) training costs such as orientation, certifications, and on-the-job training. Indirect costs of turnover include (a) lost productivity on the part of the departing employee in his or her last days; (b) difficulty completing projects; (c) disruptions in team-based work environments; (d) lost institutional knowledge; (e) reduced morale; and (d) lost productivity while the new employee gets up to speed in the new job (Boushey & Glynn, 2012).

Much has been written regarding the negative impacts of turnover since these impacts can ultimately impact an organization's ability to meet its objectives (Abbasi & Hollman, 2000). Turnover of key employees can influence project success, thereby reducing investor and

customer confidence and ultimately a firm's stock price. Turnover causes stress among remaining staff as they work to fill the void of the departed employee or as the level of support they can provide is reduced. Turnover can also negatively affect teamwork, as members of the team deal with the loss of a teammate (Oxley, 2008).

At times, employee turnover is much less of a problem or not a problem at all. For example, if the cost to rehire and integrate a new employee is low, turnover can temporarily lower labor costs. The exiting employee may also be a poor performer (Eberly et al., 2009) or may have been inappropriately protected by tenure or union systems (Collins, 2006). Employee turnover is therefore not necessarily bad or good, but needs to be managed to mitigate the negatives and leverage the positives.

Turnover intention is used in this study rather than actual turnover for a number of reasons. First, actual turnover is dependent on economic conditions. Employees may stay in their jobs despite wanting to leave simply because jobs are unavailable (Mobley, 1977). Second, turnover intention has been shown to be one of the highest individual predictors of actual turnover (Hom & Kinicki, 2001; Hom et al., 2017; Mobley, 1982; Thatcher, Stepina, & Boyle, 2002). Last, the population studied was all currently employed in the California State University system. Previously employed individuals were not included as part of the study design.

Job Satisfaction and Turnover

After the publication of his motivation-hygiene theory, Herzberg reinforced a set of management practices he called job enrichment. These job enrichment practices are intended to reduce turnover by improving employee satisfaction and productivity through the enrichment of motivators, for instance, responsibility, achievement, recognition, growth, and learning

(Herzberg, 1987; Karp & Nickson Jr, 1973). Since that time, many studies have linked job satisfaction with turnover (Mobley, 1977; Porter & Steers, 1973; Price & Mueller, 1981).

While job satisfaction has been demonstrated to have a negative impact on turnover intention (Ghapanchi & Aurum, 2011; Hofaidhllaoui & Chhinzer, 2014; Ramlall, 2003; Westlund & Hannon, 2008), there are numerous moderators such as growth need, perceived organizational support, perception of external job opportunities, and age (Hofaidhllaoui & Chhinzer, 2014; Hwang & Kuo, 2006; Lee, 2000; Ramlall, 2003; Swider, Boswell, & Zimmerman, 2011). For example, employees who perceive that other job opportunities are available to them may have greater levels of turnover intention than employees who do not perceive that job opportunities are available to them.

Information Technology Employee Turnover

Employee turnover has been studied extensively, as has the turnover of information technology employees specifically since these professionals have demonstrated some unique attributes that may influence turnover (Abii et al., 2013; Chang, 2010; Lee, 2000; Lo, 2015). Three meta-analyses of information technology turnover research were evaluated to identify common factors influencing information technology turnover and to understand recommended areas for future research.

In 2007, Joseph, Kok-Yee, Koh, and Soon conducted a narrative review of 33 studies and used meta-analytic techniques to evaluate 23 studies. The narrative review identified 43 antecedents to turnover intentions of information technology professionals and grouped these antecedents into six categories; job related factors, individual attributes, perceived organizational factors, desire to move, ease of moment, and job search. These antecedents were mapped to

March and Simon's theory of organizational equilibrium of information technology professionals using a distal-proximal turnover framework as seen in Figure 8 (Joseph et al., 2007).

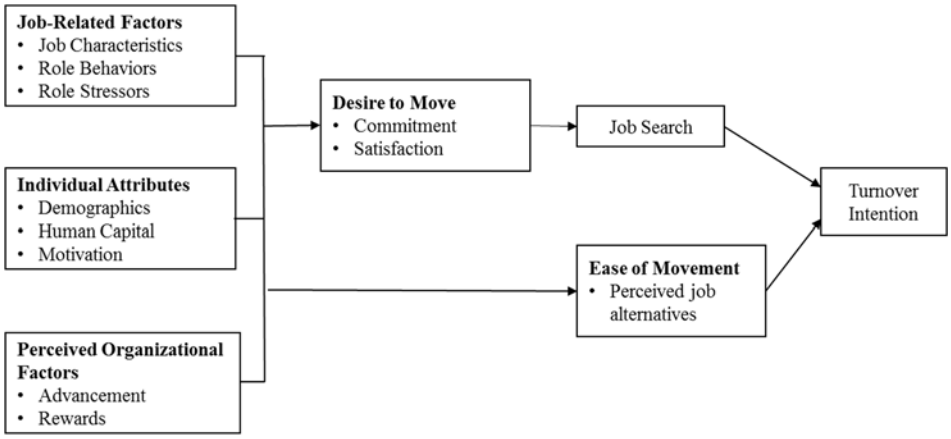

Figure 8. Joseph, et. al.'s Distal-Proximal Framework

The results of their meta-analytic review found that the distal antecedents had both direct and indirect relationships with turnover intention, and that the proximal antecedents (desire to move and ease of movement) had a meditating effect. Job satisfaction was negatively related to information technology turnover intent, while perceived job alternatives was positively related to information technology turnover intent. They recommended assessing three areas in future information technology turnover research (a) the relationship between turnover intention and turnover behavior; (b) more contemporary theories to explain information technology turnover; and (c) the influence of information technology context on turnover (Joseph et al., 2007).

In 2011, Ghapanchi and Aurum conducted a meta-analysis of 72 studies and identified 70 distinct drivers of turnover in information technology employees. These drivers were grouped into five main categories: individual, organizational, job-related, psychological, and environmental. Role ambiguity and role conflict were the most frequently cited determinants. These were followed by job autonomy, perceived workload, and incentives (e.g., salary and promotion, etc.). They identified six gaps in the literature (a) the influence of person-

organization fit; (b) organizational culture and individuals' values, beliefs, and norms; (c) impact of normative commitment on turnover intentions; (d) external labor market factors; (e) impact of technological change on turnover intention; and (f) research in countries outside the U.S. (Ghapanchi & Aurum, 2011).

In 2015, Lo conducted a literature review of 45 papers on information technology turnover to identify factors that influence information technology turnover. Figure 9 is a representation of the factors identified in the papers. Similar to Joseph, Kok-Yee, Koh, and Soon, this representation considered proximal and distal factors influencing turnover intention. Lo's representation also includes turnover behavior, or actual turnover, in the center.

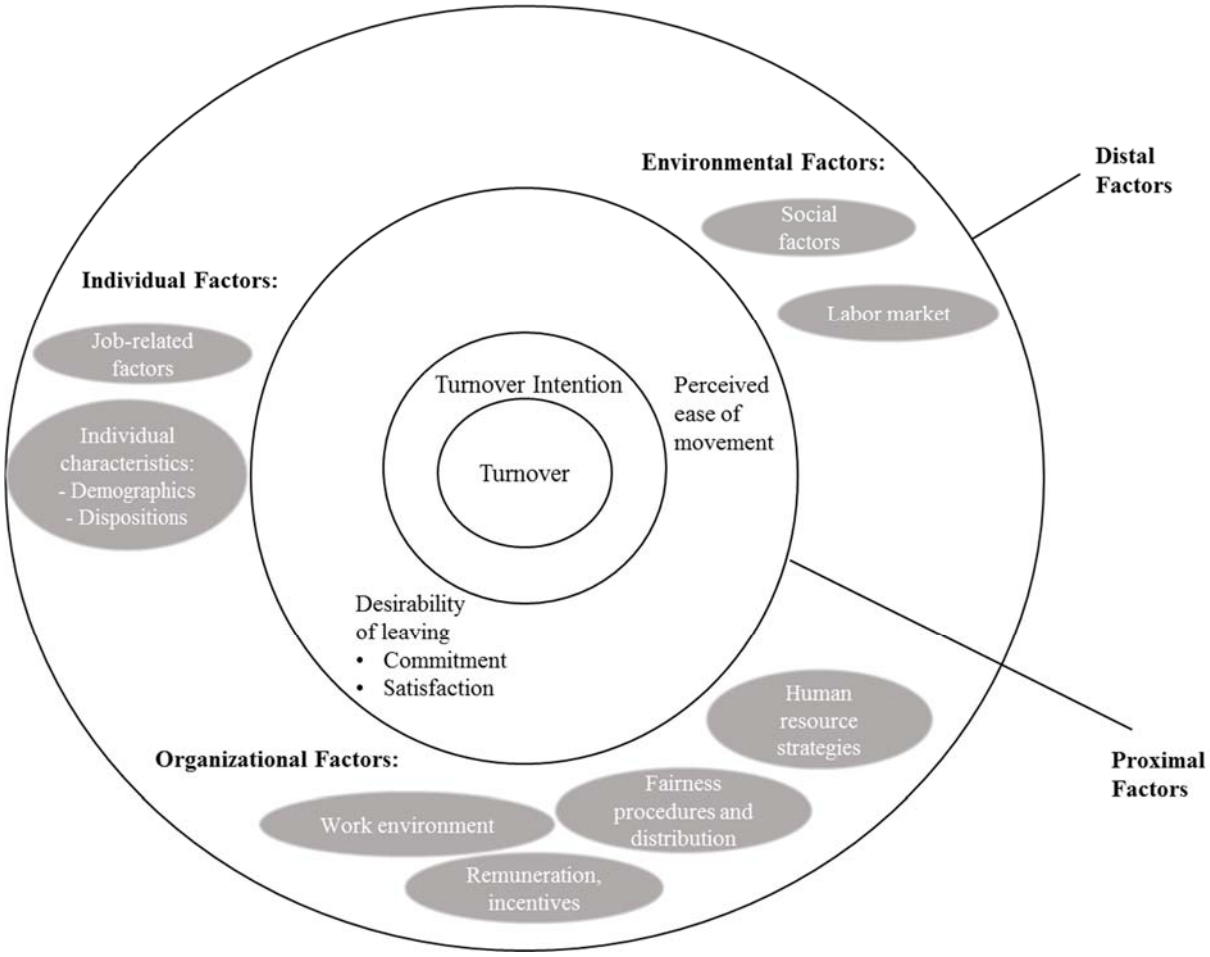

Figure 9. Lo's Distal-Proximal Framework

For each of the distal factors Lo summarizes the research on their direct or indirect impact on turnover intention, indicating whether the factor increases turnover, reduces turnover, or both increases and reduces turnover.

Lo's overall assessment and suggestions for future research focus on three areas. The first observation is that turnover is most often viewed as bad. Rather than view it as negative, Lo suggested that perhaps future research could focus on how organizations can better absorb turnover. The second suggestion is that future research focus on how contemporary information technology employees are unique from other employees. Her third observation is that information technology employee turnover has been a consistent challenge for decades, and that researchers have suggested that a culture of turnover exists within information technology. Again, rather than view this turnover as negative, Lo suggested that future research focus on the positive aspects of turnover and consider the impacts of turnover at the information technology profession level, rather than the organization level (Lo, 2015).

Turnover culture reflects the acceptance of turnover as part of work group norms (Moore & Burke, 2002). High turnover cultures tend to promote turnover behavior whereas low turnover cultures tend to discourage turnover behavior. Turnover culture evolves like organizational culture, and is therefore a product of stories, customs, information, and structures shared by organization members. Turnover tends to breed more turnover, in a process called turnover contagion. Like the contagion of an illness, the turnover contagion process involves the transmission of the tendency to leave one's job, from one individual to another (Felps et al., 2009).

Turnover culture operates at the organizational and workgroup level. Turnover culture also exists at the occupational group level, for instance, information technology employees

across organizations. Social and communication networks at conferences, trainings, graduate programs, and in on-line networks facilitate the sharing of attitudes and norms that can result in a high turnover culture. An information technology employee's job satisfaction, perception of job alternatives, and turnover intention are influenced by the same perceptions and attitudes expressed by information technology colleagues, both inside and outside the workgroup and organization (Moore & Burke, 2002).

The Nature of Information Technology Professionals

Information Technology professionals have some distinctive characteristics that differentiate them from other professionals. While the technologies they develop and implement help to support organizational strategic goals, the impact of information technology work is often not visible and therefore underappreciated. Information technology professionals tend to work on project teams, often with high-pressure deadlines and deliverables, attempting to meet unexpected or unrealistic end user demands (Thatcher et al., 2002).

Given that many information technology solutions, for example, network and website access, are used 24 hours a day, 7 days a week, it can be a challenge to find time to make needed changes or updates. In an effort to cause minimal impact to the organization, information technology work is often completed outside normal business hours, during organizational slow periods (e.g., holidays, etc.), or remotely from home. These demands leave many information technology professionals feeling overworked and exhausted (Moore & Burke, 2002; Oxley, 2008). These work environments drive turnover.

Information technology professionals tend to have available job alternatives, given the high marketability of their job skills. At any given time, select information technology skills become critically important. In the late 1990s, programming skills needed to address Y2K issues

were in high demand. Currently, skills in big data, mobile application development, and information security are in high demand (Lacey, Toossi, Dubina, & Gensler, 2017). In times of scarcity, employers may hire high paid consultants to fill skill gaps, calling even greater attention to the market value of information technology professional skills. Employers may also hire recent college graduates who are willing to work for lower pay to work on desirable projects, causing mid-career employees to look for outside opportunities (Moore & Burke, 2002)

Information technology employees also face the risk of skill obsolescence, which occurs when an employee previously possessed the needed skills and talents of the profession, but a change in the profession or their position results in a mismatch. Skill obsolescence occurs as technologies mature and new technologies appear on the market (Agarwal & Ferratt, 2002). In an effort to avoid obsolescence, information technology professionals acquire new knowledge and skills to increase their employability, career development, and, compensation. This fear of obsolescence contributes to information technology professional citing, in a 2000 Information World Compensation Survey, that formal training and advancement opportunities are the most important benefits contributing to job satisfaction (Kim, 2012). Employees worried about skill obsolescence are likely to be less committed to their job (Fu, 2010).

Retaining information technology professionals in the public sector can be especially challenging. There is on-going competition between public and private sector organizations for well-trained, experienced information technology professionals. Some US state governments have reported information technology employee turnover rates of over 11% despite increasing salaries and the introduction of benefits such as flex-time (Coombs, 2009). Further, the constraints of civil service systems, which emphasize rules and regulations over flexibility, often

hinder the effective recruitment and retention of information technology professionals (Kim, 2012).

The hiring and retaining of the information technology workforce has appeared in the Educause Top 10 IT Issues list every year between 2012 and 2018, appearing as the top issue in both 2012 and 2015 (Grajek, 2015). While the issue dropped out of the top 10 list in 2019, planning for adequate staffing and managing turnover will continue to be a concern given retirements, new sourcing models for staff, rising salaries, and demand for information technology initiatives (Grajek, 2019). The Higher Education IT Workforce Landscape, 2019 report found that nearly half of all information technology professionals indicated they might pursue employment outside their current institution over the following year, down two percentage points from 2016 (Galanek et al., 2019; Pomerantz & Brooks, 2016).

Higher education draws information technology talent from an increasingly competitive environment. In many public higher education institutions, information technology professional salaries have increased at rates significantly lower than rates of inflation (Grajek, 2013). This trend is expected to continue given that budgets in higher education are projected to shrink or remain flat (Pomerantz, 2016).

The U.S. Census Bureau reports that the number of individuals in information technology jobs rose from 450,000 in 1970 to 4.6 million in 2014. In 1970, when information technology jobs were first identified, these positions made up just 0.6 percent of the labor force. Between 1970 and 1990, the personal computer moved from a specialty device to a tool found in both homes and businesses. In response, companies developed hardware and software to take advantage of these devices. The 1990s saw a big boom in the technology industry causing a corresponding increase in the percentage of information technology positions in the labor force.

When the technology bubble burst in 2000, the percentage of positions in these fields leveled off somewhat, however, by 2014 the percentage of positions in these occupations was reported at 2.9 percent (Beckhusen, 2016).

Employees in computer and mathematical occupations have a median income of $82,830, the second largest of the 22 occupation groups (Lacey et al., 2017). Over half of all employed information technology professional are between the ages of 25 and 44, with 26 percent between ages 25 and 34, and 29 percent between ages 35 and 44. Since 1970, the majority of workers in information technology occupations have been men. While the proportion of women in all occupations has increased over time, the proportion of women in information technology positions has actually decreased from 31 percent in 1990 to 25 percent in 2014. The percentage of information technology positions with an advanced degree is 22 percent, compared with 12 percent of all workers. The percentage of information technology positions who work full-time is 82 percent, compared with 69 percent of all workers. Information technology workers are also twice as likely to work at home (Beckhusen, 2016).

Looking ahead, the Bureau of Labor Statistics (BLS) projects that employment in computer and mathematical occupations will increase by 13.5 percent between 2016 and 2026. Only 3 of the total 22 occupation groups, two in health care and one in personal care and service, were projected to grow faster. This occupational growth is largely driven by growth in information and related computer industries. Increased use of mobile devices and the addition of software in every day appliances and devices will increase demand for software developers whose occupation is projected to grow 30.5 percent over the decade. Greater numbers of internet connected mobile devices will cause information security threats to increase, resulting in a 28.4 percent growth in the need for information security analysts (Lacey et al., 2017).

The California State University System

The California State University (CSU) system, created in 1960 as part of the California Master Plan for Higher Education, is the largest four-year public university system in the United States. The CSU systems plays a critical role in providing students with the skills and knowledge they need to thrive in the workforce and support the California's growing economy. One in 10 employees in the state of California graduated from a CSU campus. The CSU system is comprised of 23 campuses, located throughout the state, educating almost half a million students per year. The smallest CSU campus is the Maritime Academy with 1,059 students, the largest campus is at Fullerton with over 40,000 students. Ninety five percent of all students in the California State University system come from within California (California State University, 2018)

The CSU system employs more than 52,000 faculty and staff. Just over 51% of these employees are faculty. The remaining 49% represent staff in the following roles; 28% are professional and technical, 9% are in office and administrative support positions, almost 5% are in service, 3% are management, and 3% are in construction, maintenance, and transportation. The average age of a CSU employee is 47.5 years, and the 50 to 59 age group is the largest. More than 45% of employees are minorities. While 71% of employees work full-time, 49% of faculty have full-time appointments and 95% of staff have full-time appointments. (California State University, 2016).

Most employees in the CSU system are part of a collective bargaining unit. There are approximately 7,100 employees in Unit 9 of the California State University Employees Union (CSUEU). Unit 9 includes information technology professionals in a variety of positions, yet also includes professionals in positions that would not be considered information technology

professionals, for example, interpreters, research assistants, public affairs/communications specialists, and livestock technicians (CSU Employees Union, 2018). The information technology positions, however, are part of an information technology job series, created in the 1990s. This job series includes positions in the following classifications: analyst/programmer, operating system analyst, information technology consultant, network analyst, equipment/systems specialist, and operations specialist.

The CSU's Information Technology Services (ITS) unit provides system-wide technology services that serve all 23 campuses. In support of the CSU system goal to increase graduation rates and reduce graduation rate gaps between minority and non-minority students, ITS's vision statement is "As a system of 23 unique universities, the CSU system faces both challenges and opportunities in delivery information technology. By leveraging the size and scale of the system, the CSU system can strengthen its ability to deliver technology services that are critical to student success. This can be accomplished through transformation and innovation, shared services and achieving economies of scale, and organizational communication and effectiveness" (California State University Information Technology Services, 2018).

The California State University system provides a multifaceted environment in which to conduct this study. The 23 campuses have unique campus cultures and are located in communities across a large state. Each campus and community contains its own cultural amenities, recreational and entertainment opportunities, climates, and employment opportunities. The system as a whole also represents a diverse set of employees of different ages, genders, ethnicities, and lengths of service in the California State University system.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

While evidence has existed for decades regarding the relationship of job satisfaction to turnover, there has been limited systematic study on job satisfaction and turnover intention of information technology employees in large, public, higher education systems. This study examines perceived job satisfaction, turnover intention, and uniqueness of information technology professionals at campuses in the California State University system.

Chapter 3 focuses on the research design, sample, instrumentation, data collection and data analysis used by the researcher in this study.

Design

This study utilized an explanatory, sequential mixed-methodology. This research design had two distinct phases, a quantitative phase followed by a qualitative phase. The quantitative phase of the study involved a non-experimental survey research design using a Web-based questionnaire to gather information from information technology professionals. The qualitative phase followed the quantitative phase and involved interviewing information technology managers using open-ended questions to gain additional clarity about the data gathered in the quantitative phase. This design is considered explanatory because the quantitative data results were further explained by the qualitative data (Creswell, 2014).

The rationale for this design was that the two research methods build upon each other and

allow for minimizing the limitations of both approaches. The quantitative research, gathered using a survey, allowed the researcher to quickly and cost effectively collect data from a smaller group of information technology professionals to aid in identifying attributes of a larger population (Fowler Jr, 2013). The qualitative research, gathered using interviews of information technology managers, enabled the researcher to better interpret and corroborate the quantitative results by incorporating the perspectives of managers (Creswell, 2014). The qualitative aspect of the research design also enabled the exploration of the context of the information technology employees and what makes them unique as it relates to job satisfaction and turnover intention. A visual model of the explanatory sequential mixed methods design is illustrated in Figure 10.

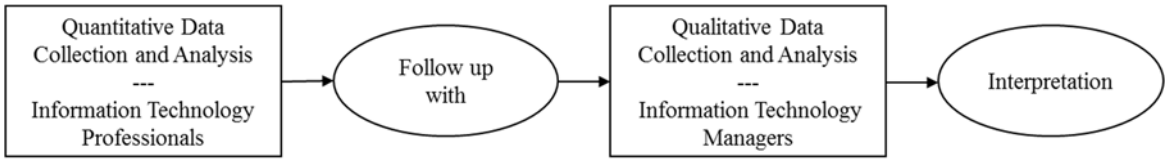

Figure 10. Explanatory Sequential Mixed Methods Design

Approval to conduct this study was obtained from Indiana State University's Institutional Review Board (IRB). The application process involved completing a new project request, uploading necessarily documents, and obtaining electronic signatures in IRBNet. The researcher was required to provide a description of how she would obtain informed consent, protect the confidentiality of respondents, and ensure safeguards were in place to minimize risk to the participants. The IRB approval from Indiana State University is included in Appendix A. The researcher also adhered to all the recommended guidelines for human-subject research as outlined by the National Institutes of Health (NIH) Office of Extramural Research for protecting the rights and welfare of the participants in the study.

Sample

In the explanatory, sequential mixed-methods design, the researcher used a different sample in the two different phases. In the quantitative phase of the study, a stratified random sampling approach was used to collect data from a population of 622 information technology professionals from six campuses in the California State University system. The target population consisted of non-management employees in information technology classifications including analyst/programmer, operating system analyst, information technology consultant, network analyst, equipment/systems specialist, and operations specialist. In the qualitative phase of the study, a purposeful sampling approach was used to collect data from a population of 41 information technology managers at campuses in the California State University system.

Campuses in the California State University system are grouped based on enrollment and volume of research, outlined in Table 8. The eight Group A campuses have high enrollment and mid-range research. The eight Group B campuses have mid-enrollment and mid-range research. The six Group C campuses have lower enrollment and lower range research. There is one campus in Group D that is defined as specialized with low enrollment and low research. The stratified random sample included two campuses from Group A, two from Group B, and two from Group C, selected randomly, for a total of six campuses represented in the sample.

Table 8

California State University Campuses

Campus Group	# of Campuses	Enrollment	Research	# Included in Sample	# Employees per Campus
Group A	8	High	Mid	Campus 1	190
				Campus 2	138
Group B	8	Mid	Mid	Campus 3	105
				Campus 4	109
Group C	6	Lower	Lower	Campus 5	42
				Campus 6	38
Group D (specialized)	1	Low	Low	None	None

Upon receiving IRB approval from Indiana State University's Institutional Review Board (IRB), the researcher had planned to contact the Chief Information Officer (CIO) at each of the six campuses via email to present the research proposal and request permission to conduct the study on their campus. Prior to contacting the CIO at each campus, the researcher contacted the California State University system-wide information technology office to inform them of the study and request their support. After consultation with the California State University system office, the researcher was instructed to obtain the email addresses through a public records act request process. The researcher was further instructed not to contact the CIO on the campuses in order to ensure there was a clear separation between the research study and management in the California State University system.

The researcher submitted the public records act request to the California State University system on December 20, 2018. The file containing the email addresses needed for the study was received on January 23, 2019.

In the qualitative phase of the study, a purposeful sampling approach was used to collect the names of information technology managers in the California State University system. The researcher utilized organization charts published on respective campus websites to obtain the names of managers at each of the campuses included in the quantitative phase of the study.

Instrumentation

In the first phase of the study, a survey was used to collect quantitative data. In the second phase, an interview protocol was used to collect qualitative data.

Survey

The primary instrument used to collect job satisfaction, turnover intention, and demographic data was an electronic survey. Job satisfaction is typically measured using a

questionnaire completed by the employees being studied. Multiple scales exist to measure job satisfaction including the Job Satisfaction Survey (JSS), the Job Descriptive Index (JDI), the Minnesota Satisfaction Questionnaire (MSQ), the Job Diagnostic Survey (JDS), the Job in General Scale (JIG), and the Michigan Organizational Assessment Questionnaire job satisfaction subscale (MOAQ-JSS) (Spector, 1997).

The benefits to the researcher of using an existing scale include (a) many of the scales cover the multiple facets of job satisfaction; (b) many of the scales have been used a sufficient number of times to provide norms for which to compare when interpreting results; (c) many of the scales have been shown to have acceptable levels of reliability; and (d) many of the scales have been shown to have acceptable internal construct validity. The most significant disadvantage of using an existing scale is that each scale is limited to the specific facets of job satisfaction that the developer chose to include (Spector, 1997).

The Job Description Index (JDI) is the most commonly used and carefully constructed instrument in job satisfaction research and is often used together with the Job in General (JIG) scale to measure job satisfaction. The JDI measures five facets of job satisfaction (work, pay, opportunities for promotion, supervision, and co-workers), and the JIG measures overall job satisfaction (Russell et al., 2004; Stanton et al., 2002; van Saane, 2003).

The JDI and JIG were developed to evaluate a variety of jobs in a variety of situations with high levels of reliability in terms of consistency from question to question and time to time, as well as validity in that the instrument should agree with other, supposedly equivalent measures and have a generally acceptable intuitive understanding of what is meant by satisfaction. The JDI and JIG do not ask the respondent directly how satisfied he or she is with

their work, but rather asks respondents to describe his or her work. Thus the responses are job-referent, rather than self-referent (Smith, 1969).

The lengths of the original JDI and JIG were reduced so that the surveys take less time to complete and decrease fatigue of the respondent (Russell et al., 2004; Stanton et al., 2002). These shortened versions of the JDI and JIG are called the abridged Job Description Index (aJDI) and abridged Job in General (aJIG) scales. The 2009 revisions of the aJDI and aJIG scales were used in this study to measure job satisfaction. The aJDI includes 30 total statements, six to measure each of the five different facets of job satisfaction (work, pay, opportunities for promotion, supervision, co-workers). The aJIG scale includes eight statements to measure overall job satisfaction.

On these scales, for each facet, there is a list of adjectives or short phrases. The respondent was instructed to indicate whether each word or phrase applied with respect to the particular facet (e.g., pay) of his or her job or his or her job in general. If the word or phrase applied, the respondent marked the response "Y" for yes. If the word or phrase did not apply, the respondent marked the response "N" for no. If the respondent could not decide between yes and no, he or she marked the "?" next to the word or phrase (Smith, 1969). Each scale was scored separately and numerical variables were assigned to employee responses; (Y = 3, N = 0, ? = 1 for positive items). Unfavorable items were reverse scored; (Y = 0, N = 3, ? = 1). Bowling Green State University offers a scoring syntax file that works with SPSS to automate the process of re-coding the data and generating scores for each respondent (JDI, 2014).

The Job Descriptive Index (JDI) and Job in General (JIG) scales have been evaluated for reliability and validity by Bowling Green State University. They report that the scales have a high level of internal consistency, as determined by Cronbach's coefficient alpha of .90

(work), .88 (pay), .91 (promotion), .92 (supervision), .92 (co-workers), and .92 (job in general) (Brodke, et.al, 2009). The abridged Job Descriptive Index (aJDI) and abridged Job in General (aJIG) scales have also been evaluated for reliability and validity and have be found to have good to acceptable levels of internal consistency as determined by Cronbach's coefficient alpha of .84 (work), .75 (pay), .82 (promotion), .83 (supervision), .76 (co-workers), and .87 (job in general) (Russell et al., 2004; Stanton et al., 2002). While the reliability and validity of the abridged versions of the scales are slightly lower than the full versions of the scales, these slight reductions in internal consistency are outweighed by the benefits of the reduced survey lengths.

Permission to use the aJDI and aJIG was obtained from the researcher at Bowling Green State University, the copyright holder. A copy of the approval to use the aJDI and aJIG for this study is included in Appendix B.

Turnover intention was measured using three items from the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS). The MOAQ was developed as a broad survey consisting of approximately 350 items to collect data regarding employee attitudes and perceptions about a broad range of organizational characteristics including job characteristics, satisfaction, work group functioning and characteristics; leadership style and supervising behavior; organizational structure, compensation and performance evaluation; intergroup relations; and employee beliefs, values, and characteristics (Cammann, Fichman, Jenkins, & Klesh, 1979). For this study, only three items from the MOAQ-JSS were used.

The three items in the MOAQ-JSS which measure turnover intention are: "How likely is it that you will actively look for a new job in the next year?" "How likely is it that you could find a job with another employer with about the same pay and benefits you have now? And "I often think about quitting." Respondents selected from a 7-point Likert-type scale to respond to these

items. The first two items had the following responses: very unlikely, somewhat unlikely, unlikely, not sure, somewhat likely, likely, and very likely. The third item had the following responses: strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, and strongly agree.

The MOAQ-JSS has been evaluated for reliability and construct validity. The MOAQ-JSS has been found to have acceptable levels of reliability with a mean sample-weighted test-retest reliability of .50 ($k = 4$, $N = 746$). In addition, extensive evidence has been found of the construct validity of the MOAQ-JSS with a mean sample-weighted internal consistency reliability of .84 ($k = 79$, $N = 30{,}623$) (Bowling & Hammond, 2008).

Demographic data were also collected. Information regarding the respondent's years of service in the California State University system, gender, and campus in the California State University system were used to test research questions and determine if there were correlations between these variables and their responses regarding perceived job satisfaction and turnover intention. None of the demographic questions were required. No other identifying information was collected from respondents. Details regarding the variables in the quantitative phase of the study are outlined in Table 9.

Table 9

Variable Details

Variable name	Data Type	Source	Priority or importance to the research	Easy or hard to control	Experimental control
Gender	Nominal	Survey	Med	Hard	IV
Years of Service	Nominal	Survey	Med	Hard	IV
Campus	Nominal	Survey	Med	Hard	IV
Overall Job Satisfaction (JIG)	Ratio	aBridged Job in General Scale (aJIG)	Hi	Hard	IV
Work (W)	Ratio	aBridged Job Descriptive Index (aJDI)	Hi	Hard	IV
Pay (P)	Ratio	aBridged Job Descriptive Index (aJDI)	Hi	Hard	IV
Opportunities for Promotion (Pr)	Ratio	aBridged Job Descriptive Index (aJDI)	Hi	Hard	IV
Supervision (S)	Ratio	aBridged Job Descriptive Index (aJDI)	Hi	Hard	IV
Co-Workers (C)	Ratio	aBridged Job Descriptive Index (aJDI)	Hi	Hard	IV
Turnover Intention	Nominal	MOAQ-JSS	Hi	Hard	DV

Interview Protocol

In the qualitative phase of the study, the researcher interviewed information technology managers to gather their perceptions regarding the job satisfaction and turnover intentions of their employees, as well as their perceptions about what makes the satisfaction and turnover intentions of information technology professionals different from other professionals. This protocol was intended to provide a more thorough contextual understanding of the job satisfaction and turnover intention results from the survey.

Opened ended questions were used for the interviews and respondents' answers were documented. Open-ended questions have numerous advantages in that the respondent can make distinctions that are not usually possible in pre-coded questions and express themselves in

language that is most comfortable. Open-ended questions can also produce quotes to make the research report richer and more interesting. While this richness can be valuable, it can also be a disadvantage when summarizing data. In order to treat the data statistically, it must be coded into categories that can be counted. Coding of free-response answers is time consuming and introduces some amount of coding error. Open-ended questions also take more time to answer than closed questions. Finally, open-ended questions require the respondents to think harder about the question in order to respond. Because the respondent does not have much time to consider an answer, whatever is reported first can be important for the researcher in understanding issues that are most important to the respondent (Sudman & Bradburn, 1983).

The advantages of open-ended questions far outweigh the disadvantages in this study, especially considering the small numbers of interviews conducted and the limited set of questions. A copy of the interview protocol for this study is included in Appendix D.

Data Collection

The data used in the quantitative phase of the study were collected by the researcher using Qualtrics, an on-line survey tool. This software suite is the standard survey development and management package employed at Indiana State University and has been found compliant with all applicable laws and policies by the Institutional Review Board. The program automatically compiles survey responses and assigns random alphanumeric response identifiers to the individual responses, and allows survey response data to be downloaded and displayed in a spreadsheet format or uploaded into a statistical analysis package. The researcher was solely responsible for composing the survey; operating the Qualtrics program; compiling, managing, and distributing data; and requesting and obtaining Institutional Review Board approval.

An initial email invitation was sent to the 622 subjects from the Qualtrics system on January 24, 2019 with a request to complete the survey. On January 28, 2019, after having received only 19 responses, the researcher sent an email from the Outlook email system introducing the study, without a link to the survey, in hopes that subsequent survey invitations would not appear as junk mail or SPAM. Reminder emails were sent via Qualtrics on January 29, 2019, February 5, 2019, and February 12, 2019. The researcher had planned to send at least one additional reminder, however, after the reminder on February 12, 2019 the researcher received two messages indicating that the sample population was viewing the reminders negatively. One of the messages stated "Please stop spamming us with this email. We are in receipt of it many times and all who would care to have responded."

Multiple reminder emails typically increase response rates (Fowler Jr, 2013); however, the lack of an identifiable sponsor and messages coming from an unknown source, as instructed by the California State University system, contributed to a low response rate. Survey data were collected from respondents between January 24, 2019 and February 25, 2019. A total of 71 information technology employees responded, however only 59 represented valid responses, for a response rate of 9.49%.

The data used in the qualitative phase of the study was collected by the researcher in 20-40 minute, semi-structured interviews. To recruit subjects for the interviews, an initial email invitation was sent to 41 information technology managers from the Qualtrics system on February 19, 2019 with a request to participate in the interview including a link to accept the informed consent, provide contact information, and suggest a convenient interview time for the interview. On February 30, 2019, after having received only two responses, the researcher sent an email from the Outlook email system introducing the study, without a link to the informed

consent, in hopes that subsequent messages would not appear as junk mail or SPAM. Only one additional subject responded to this email. Between March 6, 2019 and March 20, 2019 the researcher made phone calls to the remaining 38 managers at the six campuses in the study sample to request participation.

The interviews were conducted over the telephone. The researcher took notes during the interviews. Any identifiable information, such as the names of the interviewees and their campuses were removed. The interviews took place between February 19, 2019 and March 27, 2019. A total of 10 information technology managers were interviewed from five of the six campuses selected for the study, for a response rate of 24.39%.

Data Analysis

The statistical calculations of the quantitative data were completed using SPSS version 25. Data were imported into SPSS and 12 cases were filtered out either because no data were reported by the subject, or because very little data were reported by the subject. The remaining 59 cases (9.49%) were scored and coded according to the Job Descriptive Index and Job in General Quick Reference Guide (Brodke et al., 2009). Some subjects did not provide responses for all five facets of job satisfaction. These cases remain in the analysis, resulting in a discrepancy in the number of respondents for each facet. The data analysis plan for phase one of the study is outlined in Table 10.

Table 10

Data Analysis Plan – Phase 1

	Research Question	Information Required	Data Source	Statistical Analysis
1	Perceived job satisfaction and turnover intention?	• aJDI composite score • aJIG composite score • MOAQ-JSS composite score	Survey	• Mean • Standard Deviation

Data Analysis Plan – Phase 1 (Continued)

	Research Question	Information Required	Data Source	Statistical Analysis
2	Difference in overall job satisfaction based on years of service, gender, and campus?	• Demographic data • aJIG composite score	Survey	• One-Way ANOVA
3	Difference in facets of job satisfaction (work, pay, opportunities for promotion, supervision, co-workers) based on years of service, gender, and campus?	• Demographic data • aJDI composite score	Survey	• One-Way ANOVA
4	Difference in turnover intention based on years of service, gender, and campus?	• Demographic data • MOAQ-JSS composite score	Survey	• One-Way ANOVA
5	Correlation between overall job satisfaction and turnover intention?	• aJIG composite score • MOAQ-JSS composite score	Survey	• Pearson Product Moment Correlation

Data analysis of qualitative data involves organizing the information obtained so that the researcher can make sense of what was learned (Glesne, 1999). To analyze the interview data, the researcher performed a thematic content analysis. The thematic content analysis enabled the researcher to develop themes regarding manager perceptions of information technology professional job satisfaction and turnover intention to aid in understanding the context of the quantitative data. A second coder, a faculty member at California State University, Chico, also performed thematic content analysis of the data to validate the themes.

Following the coaxial coding, the researcher entered the interview notes into Excel to aid in clarifying and sorting themes. Themes were mentioned by at least three managers, with some themes mentioned more than five times. Some items mentioned less frequently are included

because they are particularly noteworthy, but do not represent a theme. The data analysis plan for phase two of the study is outlined in Table 11.

Table 11

Data Analysis Plan – Phase 2

	Research Question	Information Required	Data Source	Qualitative Analysis
6	Perspective of managers relative to the job satisfaction and turnover intention of their employees?	• Manager perception of employees in general • Manager perception of factors related to job satisfaction • Manager perception of factors related to turnover intention	Interviews	• Thematic content analysis • Open coding • Axial coding • Frequencies for common themes
7	Context of information technology job satisfaction and turnover intention in the CSU system?	• Manager perception of context of IT employee job satisfaction • Manager perception of context of IT employee turnover intention	Interviews	• Thematic content analysis • Open coding • Axial coding • Frequencies for common themes

CHAPTER 4

RESULTS

The purpose of this study was to survey perceived job satisfaction and turnover intention of information technology professionals at campuses in the California State University system. A secondary purpose of this study was to examine qualitatively the uniqueness of these professionals; the perceptions of managers were used to clarify the context of the quantitative job satisfaction and turnover intention results.

Chapter 4 provides an analysis of the data collected for the study. The quantitative phase of the study utilized descriptive and inferential statistics to analyze data obtained from a survey based on the requirements of each research question. The qualitative phase of the study involved thematic content analysis to answer each research question. This section presents the respondent demographics and analysis related to the research questions for the quantitative phase and qualitative phases. This section concludes with a summary of the results.

Quantitative Analysis

Respondent Demographics

Descriptive statistics were completed for each demographic variable. The demographic variables collected included gender, years of service in the California State University system, and campus in the California State University system. There were 13 females (22%) and 42 males (71.2%) in the sample. Three respondents (5.1%) selected that they prefer not to state

their gender. The largest percentage of employees have more than 20 years (25.4%) in the CSU system. The smallest percentage of employees did not provide an answer for number of years in the CSU system (1.7%). The largest percentage of respondents were from Campus 3 (25.4%). The smallest percentage of respondents were from Campus 6 (8.5%).

Table 12 includes the descriptive statistics for the demographic variables. These demographics variables were not required in the survey therefore some respondents did not provide a value for the characteristic. These respondents are identified as missing.

Table 12

Demographic Characteristics of the Quantitative Sample

Demographic Characteristics		Frequency	Percent
Years of Service	Less than 1 year	5	8.5%
	1-5 years	14	24.1%
	6-10 years	6	10.2%
	11-15 years	7	11.9%
	16-20 years	11	18.6%
	More than 20 years	15	25.4%
	Missing	1	1.7%
Gender	Male	42	71.2%
	Female	13	22.0%
	Prefer not to state	3	5.1%
	Missing	1	1.7%
Campus	Campus 1	12	20.3%
	Campus 2	10	16.9%
	Campus 3	15	25.4%
	Campus 4	7	11.9%
	Campus 5	9	15.3%
	Campus 6	5	8.5%
	Missing	1	1.7%

$n = 59$

Internal Consistency of the Scales

After composite scores were calculated for each of the scales used in the study (aJIG, aJDI, and MOAQ-JSS), Cronbach's coefficient alphas were computed to test for internal consistency and reliability. The aJIG and each of the five facets of job satisfaction (work, pay, opportunities for promotion, supervision, and co-workers) measured by the aJDI had high levels

of internal consistency. The MOAQ-JSS, however, had an inadequate level of internal consistency and reliability in this study. Table 13 below includes the Cronbach's co-efficient alpha (α) for each of the scales. Values of 0.7 or higher on the Cronbach's alpha are recommended for good internal consistency of a scale.

Table 13

Summary of Cronbach's Alpha (α) Analysis

Scale	*Cronbach's Alpha (a)*
Job in General (JIG)	.87
Work (W)	.87
Pay (P)	.86
Opportunities for Promotion (PR)	.82
Supervision (S)	.82
Co-workers (C)	.84
Turnover Intention	.53

Descriptive and inferential statistics were used to analyze data obtained from the survey based on the requirements of each research question.

Research Question 1

For research question one, the mean, standard deviation, minimum, and maximum were computed for overall job satisfaction as measured by the abridged Job in General (aJIG) scale and for each job satisfaction facet; work (W), pay (P), opportunities for promotion (PR), supervision (S), and co-workers (C) measured by the abridged Job Descriptive Index (aJDI). None of the questions on the aJDI or aJIG were required. Some subject chose not to answer questions regarding the pay or opportunities for promotion facet, resulted in a discrepancies in the number of responses per facet.

Table 14 includes the descriptive statistics for these job satisfaction variables. The mean overall job satisfaction (JIG) was 18.51 out of 24. Of the five job satisfaction facets measured by the aJDI, the mean satisfaction with supervision (S) was highest at 12.78 out of 18, followed by

satisfaction with co-workers (C) at 12.58 out of 18, satisfaction with work at 12.00 out of 18, and satisfaction with pay (P) at 10.12 out of 18. The mean satisfaction with opportunities for promotion (PR) was lowest at 5.33 out of 18.

Table 14

Descriptive Statistics for Job Satisfaction

	n	Minimum	Maximum	*M*	*SD*
JIG	59	0	24	18.51	5.77
W	59	0	18	12.00	5.79
P	58	0	18	10.12	4.98
PR	58	0	18	5.33	5.56
S	59	0	18	12.78	5.40
C	59	0	18	12.58	5.77

A Likert-type scale was used for each of the three items related to turnover intention (a) How likely is it that you will actively look for a job outside of this organization during the next year?; (b) How likely is it that you could find a job with another employer with about the same pay and benefits you have now?; and (c) I often think about quitting. The answers ranged from 1 to 7, with 1 indicating low levels of turnover intention and 7 indicating high levels of turnover intention. A respondent scale score between 1 and 2 was interpreted as low turnover intention. A respondent scale score between 3 and 5 was interpreted as neutral turnover intention. A respondent scale score between 6 and 7 was interpreted as high turnover intention. Table 15 includes the descriptive statistics for this variable. The mean turnover intention scale score of 3.73 indicates that on average, the respondents were neutral about quitting their jobs.

Table 15

Descriptive Statistics for Turnover Intention

	n	Minimum	Maximum	*M*	*SD*
Turnover Intention	58	1.33	7.00	3.73	1.49

Research Question 2

For research question two, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in overall job satisfaction (JIG) based on years of service in the California State University system, gender, or campus in the California State University system. One-way ANOVA was selected in part because it is robust to violations of normality and homogeneity.

Table 16 includes the mean and standard deviation for overall job satisfaction for each of the demographic variables. Table 17 includes the ANOVA results for each of the demographic variables.

Table 16

Overall Job Satisfaction Based on Demographic Variables

Demographic Characteristics		*n*	*M*	*SD*
Years of Service	Less than 1 year	5	19.00	4.52
	1-5 years	13	18.77	1.47
	6-10 years	6	19.50	2.03
	11-15 years	7	19.57	1.74
	16-20 years	11	17.27	2.11
	More than 20 years	14	18.14	1.37
	Total	56	18.52	0.78
	Missing	3		
Gender	Male	40	19.58	4.74
	Female	13	17.38	6.24
	Prefer not to state	3	9.33	10.07
	Total	56	18.52	5.82
	Missing	3		
Campus	Campus 1	12	17.92	5.30
	Campus 2	10	19.60	5.23
	Campus 3	14	16.00	6.80
	Campus 4	7	21.00	3.46
	Campus 5	8	18.88	7.32
	Campus 6	5	20.80	4.55
	Total	56	18.52	5.82
	Missing	3		

Table 17

Overall Job Satisfaction ANOVA Results

Demographic Characteristics		*df*	*SS*	*MS*	*F*	*p*
Years of Service	Between Groups	5	34.56	6.91	0.19	.97
	Within Groups	50	1827.42	36.55		
	Total	55	1861.98			
Gender	Between Groups	2	314.46	157.23	5.39	.007
	Within Groups	53	1547.52	29.20		
	Total	55	1861.98			
Campus	Between Groups	5	174.99	34.50	1.04	.41
	Within Groups	50	1686.99	33.74		
	Total	55	1861.98			

There are five assumptions associated with a one-way ANOVA. The data in this study meet all of the first three assumptions (a) the dependent variable is continuous; (b) the independent variables are all categorical with two or more groups in each independent variable; (c) the observations are independent. The data, however, do not meet all the other assumptions of a one-way ANOVA.

The fourth assumption is that the dependent variable and independent variables are approximately normally distributed, continuous, and interval or ratio data, with no outliers. A Shapiro-Wilk test was completed for each of the independent variables in relationship to overall job satisfaction, the dependent variable. Table 18 includes the results of this test. Overall job satisfaction was not normally distributed for numerous independent variables. The distributions for employees with less than 1 year worked ($p = .001$), employees with 1-5 years worked ($p = .005$), employees with 16-20 years worked ($p = .01$), employees with more than 20 years worked ($p = .04$), males ($p = .000$), females ($p = .003$), Campus 2 ($p = .04$), Campus 3 ($p = .005$) and Campus 5 ($p = .000$) were not normally distributed.

Table 18

Overall Satisfaction Test of Normality Results

		Shapiro Wilk		
Demographic Characteristics		Statistic	*df*	*p*
Years of Service	Less than 1 year	0.61	5	.001
	1-5 years	0.79	13	.005
	6-10 years	0.88	6	.26
	11-15 years	0.82	7	.06
	16-20 years	0.81	11	.01
	More than 20 years	0.87	14	.04
Gender	Male	0.84	40	.000
	Female	0.78	13	.003
	Prefer not to state	0.99	3	.78
Campus	Campus 1	0.88	12	.08
	Campus 2	0.84	10	.04
	Campus 3	0.80	14	.005
	Campus 4	0.85	7	.13
	Campus 5	0.57	8	.000
	Campus 6	0.78	5	.06

Outliers in the data were evaluated via box plot. While outliers existed for years of service (Less than 1 year, 1-5 years, 11-15 years, 16-20 years, and more than 20 years), gender (males and females) and campus (campus 3, campus 5, and campus 6), these outliers were determined to represent valid employee responses for overall job satisfaction and will not be removed.

The fifth assumption is that there is homogeneity of variances. There was homogeneity of variances for overall job satisfaction based on years of service ($p = .46$), gender ($p = .25$) and campus ($p = .79$), as assessed by Levene's test for equality of variances. Table 19 includes the Levene's test results.

Table 19

Overall Satisfaction Test of Homogeneity of Variances

Demographic Characteristics	*Levine Statistic*	df1	*df2*	*p*
Years of Service	0.94	5	50	.46
Gender	1.43	2	53	.25
Campus	0.48	5	50	.79

Years of Service

A one-way ANOVA was conducted to determine if overall job satisfaction was different based on years of service in the California State University system. Employees were classified into six groups: less than 1 year (n = 5), 1-5 years (n = 13), 6-10 years (n = 6), 11-15 years (n = 7), 16-20 years (n = 11) and more than 20 years (n = 14). Overall satisfaction was highest with employees who have worked in the California State University system 11-15 years (n = 7, M = 19.57, SD = 4.61). Employees who have worked in the California State University system 16-20 years have the lowest overall job satisfaction (n = 11, M = 17.27, SD = 7.00). There was not a statistically significant difference in overall job satisfaction based on years of service in the California State University system, $F(5,50) = .94$, $p = .46$.

Gender

A one-way ANOVA was conducted to determine if overall job satisfaction was different based on gender. Employees were classified into three groups: males (n = 40), females (n = 13), and employees who preferred not to state their gender (n = 3). Overall satisfaction was highest for males (n = 42, M = 19.58, SD = 4.74), followed by females (n = 13, M = 17.38, SD = 6.24), and employees who preferred not to state (n = 3, M = 9.33, SD = 10.07). Overall job satisfaction was statistically significantly different based on gender, $F(2,53) = 5.38$, $p = .007$. Tukey post hoc analysis revealed that the mean increase in overall job satisfaction between males and employees who prefer not to state their gender (10.24, 95% CI [2.44, 18.04]) was statistically significant ($p = .007$), but no other group differences were statistically significant. Table 20 includes the Tukey post hoc results for overall job satisfaction based on gender.

Table 20

Tukey Post Hoc Test Results by Gender

Gender		Mean Difference	Std. Error	*p*	95% Confidence Interval	
					Lower Bound	Upper Bound
Male	Female	2.19	1.73	0.42	-1.97	6.35
	Prefer not to state	10.24	3.23	0.007	2.44	18.04
Female	Male	-2.19	1.73	0.42	-6.35	1.97
	Prefer not to state	8.05	3.46	0.06	-0.29	16.40
Prefer not to state	Male	-10.24	3.23	0.007	-18.04	-2.44
	Female	-8.05	3.46	0.06	-16.40	0.29

Campus

A one-way ANOVA was conducted to determine if overall job satisfaction was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 10), Campus 3 (n = 14), Campus 4 (n = 7), Campus 5 (n = 8) and Campus 6 (n = 5). Overall job satisfaction was highest for employees at Campus 4 (n = 7, M = 21.00, SD = 3.46) and lowest for employees at Campus 3 (n = 14, M = 16.00, SD = 6.80). There was not a statistically significant difference in overall job satisfaction based on campus in the California State University system, $F(5,50) = 1.04$, $p = .41$.

Research Question 3

For research question three, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in job satisfaction facets (work, pay, opportunities for promotion, supervision, co-workers) based on years of service in the California State University system, gender, or campus in the California State University system. One-way ANOVA was selected in part because it is robust to violations of normality and homogeneity.

Table 21 includes the mean and standard deviation for satisfaction with each of the job satisfaction facets by the demographic variables. Table 22 includes the ANOVA results for each of the demographic variables by job satisfaction facet.

Table 21

Job Satisfaction Facet Based on Demographic Variables

Facet	Demographic Characteristics		*N*	*M*	*SD*
Work	Years of Service	Less than 1 year	5	14.40	2.70
		1-5 years	14	11.07	6.17
		6-10 years	6	14.33	4.50
		11-15 years	7	13.43	6.73
		16-20 years	11	12.18	5.79
		More than 20 years	15	10.47	6.19
		Total	58	12.03	5.76
	Gender	Male	42	12.00	6.15
		Female	13	12.46	4.52
		Prefer not to state	3	10.67	6.66
		Total	58	12.03	5.76
	Campus	Campus 1	12	11.67	4.87
		Campus 2	10	14.10	5.22
		Campus 3	15	9.07	7.15
		Campus 4	7	14.00	3.87
		Campus 5	9	13.33	5.59
		Campus 6	5	12.60	5.27
		Total	58	12.03	5.76
Pay	Years of Service	Less than 1 year	5	6.40	4.22
		1-5 years	14	10.21	6.30
		6-10 years	6	5.83	5.38
		11-15 years	7	9.00	4.73
		16-20 years	10	12.60	5.08
		More than 20 years	15	11.53	6.01
		Total	57	10.04	5.80
	Gender	Male	41	10.76	5.78
		Female	13	8.54	5.80
		Prefer not to state	3	6.67	5.51
		Total	57	10.04	5.80
	Campus	Campus 1	12	9.42	5.60
		Campus 2	10	8.60	7.28
		Campus 3	15	9.60	5.70
		Campus 4	6	13.67	3.27
		Campus 5	9	11.67	5.24
		Campus 6	5	8.40	6.88
		Total	57	10.04	5.80

Job Satisfaction Facet Based on Demographic Variables (Continued)

Facet	Demographic Characteristics		*N*	*M*	*SD*
Opportunities for Promotion	Years of Service	Less than 1 year	5	11.80	5.26
		1-5 years	14	7.93	6.35
		6-10 years	6	4.33	3.44
		11-15 years	7	4.14	2.27
		16-20 years	10	2.00	2.00
		More than 20 years	15	4.07	3.69
		Total	57	5.37	5.01
	Gender	Male	41	6.05	5.07
		Female	13	3.77	4.97
		Prefer not to state	3	3.00	2.65
		Total	57	5.37	5.01
	Campus	Campus 1	12	4.33	3.20
		Campus 2	10	6.50	6.00
		Campus 3	15	4.07	4.86
		Campus 4	6	7.33	6.09
		Campus 5	9	5.78	5.65
		Campus 6	5	6.40	5.41
		Total	57	5.37	5.01
Supervision	Years of Service	Less than 1 year	5	14.20	7.43
		1-5 years	14	14.21	5.91
		6-10 years	6	13.17	4.62
		11-15 years	7	13.86	4.06
		16-20 years	11	11.45	6.73
		More than 20 years	15	11.13	4.97
		Total	58	12.74	5.60
	Gender	Male	42	13.40	4.99
		Female	13	12.08	6.79
		Prefer not to state	3	6.33	5.69
		Total	58	12.74	5.60
	Campus	Campus 1	12	11.08	7.14
		Campus 2	10	15.30	3.83
		Campus 3	15	12.00	5.15
		Campus 4	7	13.43	5.50
		Campus 5	9	10.44	5.83
		Campus 6	5	17.00	2.24
		Total	58	12.74	5.60
Co-Workers	Years of Service	Less than 1 year	5	17.20	1.10
		1-5 years	14	13.86	5.19
		6-10 years	6	14.00	5.90
		11-15 years	7	9.43	5.71
		16-20 years	11	9.82	5.40
		More than 20 years	15	13.00	5.13
		Total	58	12.64	5.43
	Gender	Male	42	12.64	5.67
		Female	13	13.00	4.83
		Prefer not to state	3	11.00	6.08
		Total	58	12.64	5.43

Job Satisfaction Facet Based on Demographic Variables (Continued)

Facet	Demographic Characteristics		*N*	*M*	*SD*
	Campus	Campus 1	12	10.58	6.67
		Campus 2	10	13.20	4.66
		Campus 3	15	13.33	4.17
		Campus 4	7	11.57	6.48
		Campus 5	9	12.44	6.52
		Campus 6	5	16.20	2.68
		Total	58	12.64	5.43

Table 22

Job Satisfaction Facet ANOVA Results

Facet	Demographic Characteristics		*df*	*SS*	*MS*	*F*	*p*
Work	Years of Service	Between Groups	5	123.39	24.68	0.73	0.61
		Within Groups	24	1768.55	34.01		
		Total	57	1891.93			
	Gender	Between Groups	2	8.03	4.02	.12	0.89
		Within Groups	55	1883.90	34.25		
		Total	57	1891.93			
	Campus	Between Groups	5	220.23	44.05	1.37	0.25
		Within Groups	52	1671.70	32.15		
		Total	57	1891.93			
Pay	Years of Service	Between Groups	5	279.41	55.88	1.78	0.13
		Within Groups	51	1604.52	31.46		
		Total	56	1883.93			
	Gender	Between Groups	2	84.471	42.236	1.267	0.29
		Within Groups	54	1799.458	33.323		
		Total	56	1883.930			
	Campus	Between Groups	5	144.48	28.90	0.85	0.52
		Within Groups	51	1739.45	34.11		
		Total	56	1883.93			
Opportunities for Promotion	Years of Service	Between Groups	5	454.41	90.88	4.86	0.00
		Within Groups	51	952.85	18.68		
		Total	56	1407.26			
	Gender	Between Groups	2	69.05	34.527	1.393	0.26
		Within Groups	54	1338.21	24.782		
		Total	56	1407.26			
	Campus	Between Groups	5	81.07	16.21	0.62	0.68
		Within Groups	51	1326.19	26.00		
		Total	56	1407.26			

Job Satisfaction Facet ANOVA Results (Continued)

Facet	Demographic Characteristics		*df*	*SS*	*MS*	*F*	*p*
Supervision	Years of Service	Between Groups	5	107.81	21.56	0.67	0.65
		Within Groups	52	1679.31	32.29		
		Total	57	1787.12			
	Gender	Between Groups	2	147.41	73.71	2.47	0.09
		Within Groups	55	1639.71	29.81		
		Total	57	1787.12			
	Campus	Between Groups	5	248.17	49.63	1.68	0.16
		Within Groups	52	1538.95	29.60		
		Total	57	1787.12			
Co-Workers	Years of Service	Between Groups	5	297.53	59.51	2.24	0.06
		Within Groups	52	1383.86	26.61		
		Total	57	1681.40			
	Gender	Between Groups	5	9.75	4.88	0.16	0.85
		Within Groups	52	1671.64	30.39		
		Total	57	1681.40			
	Campus	Between Groups	5	132.81	26.56	0.89	0.49
		Within Groups	52	1548.59	29.78		
		Total	57	1681.40			

There are five assumptions associated with a one-way ANOVA. The data in this study meet all of the first three assumptions (a) the dependent variable is continuous; (b) the independent variables are all categorical with two or more groups in each independent variable; (c) the observations are independent. The data, however, do not meet all the other assumptions of a one-way ANOVA.

The fourth assumption is that the dependent variable and independent variables are approximately normally distributed, continuous, and interval or ratio data, with no outliers. A Shapiro-Wilk test was completed for each of the independent variables in relationship to the dependent variable. Table 23 includes the results of this test. Job satisfaction with the facets (work, pay, opportunities for promotion, supervision, co-workers) was not normally distributed for all independent variables.

Table 23

Job Satisfaction Facet Test of Normality Results

			Shapiro-Wilk		
Facet	Demographic Characteristics		Statistic	*df*	*p*
Work	Years of Service	Less than 1 year	.99	5	.98
		1-5 years	.90	14	.12
		6-10 years	.84	6	.12
		11-15 years	.76	7	.02
		16-20 years	.91	10	.25
		More than 20 years	.90	15	.08
	Gender	Male	.85	41	.00
		Female	.89	13	.10
		Prefer not to state	.95	3	.58
	Campus	Campus 1	.91	12	.24
		Campus 2	.77	10	.01
		Campus 3	.87	15	.04
		Campus 4	.90	6	.37
		Campus 5	.82	9	.03
		Campus 6	.90	5	.44
Pay	Years of Service	Less than 1 year	.96	5	.82
		1-5 years	.91	14	.17
		6-10 years	.86	6	.20
		11-15 years	.92	7	.43
		16-20 years	.87	10	.10
		More than 20 years	.86	15	.02
	Gender	Male	.91	41	.00
		Female	.91	13	.18
		Prefer not to state	.82	3	.17
	Campus	Campus 1	.95	12	.58
		Campus 2	.85	10	.05
		Campus 3	.83	15	.01
		Campus 4	.97	6	.86
		Campus 5	.93	9	.51
		Campus 6	.96	5	.80
Opportunities for Promotion	Years of Service	Less than 1 year	.96	5	.83
		1-5 years	.88	14	.06
		6-10 years	.79	6	.04
		11-15 years	.83	7	.09
		16-20 years	.90	10	.21
		More than 20 years	.81	15	.01
	Gender	Male	.88	41	.00
		Female	.75	13	.00
		Prefer not to state	.89	3	.36

Job Satisfaction Facet Test of Normality Results (Continued)

Facet	Demographic Characteristics		Shapiro-Wilk Statistic	*df*	*p*
	Campus	Campus 1	.94	12	.54
		Campus 2	.78	10	.01
		Campus 3	.77	15	.00
		Campus 4	.80	6	.06
		Campus 5	.85	9	.08
		Campus 6	.99	5	.97
Supervision	Years of Service	Less than 1 year	.63	5	.00
		1-5 years	.67	14	.00
		6-10 years	.88	6	.26
		11-15 years	.82	7	.07
		16-20 years	.86	10	.07
		More than 20 years	.93	15	.28
	Gender	Male	.83	41	.00
		Female	.81	13	.01
		Prefer not to state	.94	3	.51
	Campus	Campus 1	.81	12	.01
		Campus 2	.74	10	.00
		Campus 3	.91	15	.15
		Campus 4	.84	6	.13
		Campus 5	.93	9	.50
		Campus 6	.55	5	.00
Co-Workers	Years of Service	Less than 1 year	.68	5	.01
		1-5 years	.82	14	.01
		6-10 years	.77	6	.03
		11-15 years	.94	7	.59
		16-20 years	.95	10	.69
		More than 20 years	.86	15	.03
	Gender	Male	84	41	.00
		Female	.89	13	.10
		Prefer not to state	.82	3	.16
	Campus	Campus 1	.87	12	.07
		Campus 2	.88	10	.12
		Campus 3	.88	15	.05
		Campus 4	.85	6	.16
		Campus 5	.79	9	.02
		Campus 6	.77	5	.05

Outliers in the data were evaluated via box plot. For the work facet, outliers existed for years of service (11-15 years) and campus (Campus 6). For the pay facet, outliers existed for years of service (16-20 years). For the opportunities for promotion facet, outliers existed for years of service (more than 20 years), gender (males and females), and campus (Campus 3 and

Campus 5). For the supervision facet, outliers existed for years of service (less than 1 year, 1-5 years, and more than 20 years) and campus (Campus 6). For the co-workers facet, outliers existed for gender (females). All outliers were determined to represent valid employee responses for the facets of job satisfaction and will not be removed.

The fifth assumption is that there is homogeneity of variances. Table 24 includes the Levene's test results. There was not homogeneity of variances for satisfaction with opportunities for promotion based on years of service ($p = .00$) or for satisfaction with co-workers based on campus ($p = .01$) as assessed by Levene's test for equality of variances.

Table 24

Job Satisfaction Facet Test of Homogeneity of Variances

Facet	Demographic Characteristics	*Levene Statistic*	*df1*	*df2*	*p*
Work	Years of Service	1.19	5	52	.33
	Gender	1.05	2	55	.36
	Campus	1.56	5	52	.19
Pay	Years of Service	0.86	5	51	.52
	Gender	0.10	2	54	.90
	Campus	1.93	5	51	.11
Opportunities for Promotion	Years of Service	6.03	5	51	.00
	Gender	0.54	2	54	.47
	Campus	1.05	5	51	.40
Supervision	Years of Service	0.90	5	51	.49
	Gender	1.54	2	55	.22
	Campus	3.32	5	52	.47
Co-Workers	Years of Service	1.58	5	52	.18
	Gender	0.94	2	55	.40
	Campus	3.68	5	52	.01

Work

A one-way ANOVA was conducted to determine if satisfaction with work was different based on years of service in the California State University system. Employees were classified into six groups: less than 1 year ($n = 5$), 1-5 years ($n = 14$), 6-10 years ($n = 6$), 11-15 years ($n =$

7), 16-20 years (n = 11) and more than 20 years (n = 15). Satisfaction with work was highest with employees who have worked in the California State University system less than 1 year (n = 5, M = 14.40, SD = 2.70). Employees who have worked in the California State University system more than 20 years have the lowest satisfaction with work (n = 15, M = 10.47, SD = 6.19). There was not a statistically significant difference in satisfaction with work based on years of service in the California State University system, $F(5,52) = .73$, $p = .61$.

A one-way ANOVA was conducted to determine if satisfaction with work was different based on gender. Employees were classified into three groups: males (n = 42), females (n = 13), and employees who preferred not to state their gender (n = 3). Satisfaction with work was highest for females (n = 13, M = 12.46, SD = 4.52), followed by males (n = 42, M = 12.00, SD = 6.15), and employees who preferred not to state (n = 3, M = 10.67, SD = 5.76). There was not a statistically significant difference in satisfaction with work based on gender, $F(2,55) = .12$, $p = .89$.

A one-way ANOVA was conducted to determine if satisfaction with work was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 10), Campus 3 (n = 15), Campus 4 (n = 7), Campus 5 (n = 9) and Campus 6 (n = 5). Overall satisfaction with work was highest for employees at Campus 2 (n = 10, M = 14.10, SD = 5.22) and lowest for employees at Campus 3 (n = 15, M = 9.07, SD = 7.15). There was not a statistically significant difference in satisfaction with work based on campus in the California State University system, $F(5,52) = 1.37$, $p = .25$.

Pay

A one-way ANOVA was conducted to determine if satisfaction with pay was different based on years of service in the California State University system. Employees were classified

into six groups: less than 1 year (n = 5), 1-5 years (n = 14), 6-10 years (n = 6), 11-15 years (n = 7), 16-20 years (n = 10) and more than 20 years (n = 15). Satisfaction with pay was highest with employees who have worked in the California State University system 16-20 years (n = 10, M = 12.60, SD = 5.08). Employees who have worked in the California State University system less than 1 year have the lowest satisfaction with pay (n = 5, M = 6.40, SD = 4.22). There was not a statistically significant difference in satisfaction with pay based on years of service in the California State University system, $F(5,51) = 1.78$, $p = .13$.

A one-way ANOVA was conducted to determine if satisfaction with pay was different based on gender. Employees were classified into three groups: males (n = 41), females (n = 13), and employees who preferred not to state their gender (n = 3). Satisfaction with pay was highest for males (n = 41, M = 10.76, SD = 5.78), followed by females (n = 13, M = 8.54, SD = 1.61), and employees who prefer not to state their gender (n = 3, M = 6.67, SD = 5.51). There was not a statistically significant difference in pay based on gender, $F(2,54) = 1.27$, $p = .29$.

A one-way ANOVA was conducted to determine if satisfaction with pay was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 10), Campus 3 (n = 15), Campus 4 (n = 6), Campus 5 (n = 9) and Campus 6 (n = 5). Overall satisfaction with pay was highest for employees at Campus 4 (n = 6, M = 13.67, SD = 3.27) and lowest for employees at Campus 6 (n = 5, M = 8.40, SD = 6.88). There was not a statistically significant difference in pay based on campus in the California State University system, $F(5,51) = .85$, $p = .52$.

Opportunities for Promotion

A one-way ANOVA was conducted to determine if satisfaction with opportunities for promotion was different based on years of service in the California State University system.

Employees were classified into six groups: less than 1 year (n = 5), 1-5 years (n = 14), 6-10 years (n = 6), 11-15 years (n = 7), 16-20 years (n = 10) and more than 20 years (n = 15). Satisfaction with opportunities for promotion was highest with employees who have worked in the California State University system less than 1 year (n = 5, M = 11.80, SD = 5.26). Employees who have worked in the California State University system 16-20 years have the lowest satisfaction with opportunities for promotion (n = 10, M = 2.00, SD = 2.00). There was a statistically significant difference in satisfaction with opportunities for promotion based on years of service in the California State University system, $F(5,51) = 4.86$, $p = .001$. Tukey post hoc analysis revealed that the mean decrease in satisfaction with opportunities for promotion from employees with less than 1 year of service to employees with 16-20 years of service (-9.80, 95% CI [-16.81, -2.79]) was statistically significant ($p = .00$). The mean decreases in satisfaction with opportunities for promotion from employees with less than 1 year of service to employees with more than 20 years of service (-7.73, 95% CI [-14.34, -1.12]) was statistically significant (p = .01) and from employees with less than 1 year of service to employees with 11-15 years (-7.66, 95% CI [-15.15, -.16]) was also statistically significant ($p = .04$). Finally, the mean decrease in satisfaction with opportunities for promotion from employees with 1-5 years of service to employees with 16-20 years of service (-5.93, 95% CI [-11.23, -0.63]) was statistically significant ($p = .02$). No other group differences were statistically significant. Table 25 includes the Tukey post hoc results for overall job satisfaction based on campus.

Table 25

Opportunities for Promotion Facet Tukey Post Hoc Test Results by Years of Service

		M			95% Confidence Interval	
Years of Service		Difference	*SE*	p	Lower Bound	Upper Bound
Less than 1 year	1-5 years	3.87	2.25	0.53	-2.80	10.54
	6-10 years	7.47	2.62	0.07	-0.28	15.22
	11-15 years	7.66	2.53	0.04	0.16	15.15
	16-20 years	9.80	2.37	0.00	2.79	16.81
	More than 20 years	7.73	2.23	0.01	1.12	14.34
1-5 years	Less than 1 year	-3.87	2.25	0.53	-10.54	2.80
	6-10 years	3.60	2.11	0.54	-2.65	9.84
	11-15 years	3.79	2.00	0.42	-2.14	9.71
	16-20 years	5.93	1.79	0.02	0.63	11.23
	More than 20 years	3.86	1.61	0.17	-0.89	8.62
6-10 years	Less than 1 year	-7.47	2.62	0.07	-15.22	0.28
	1-5 years	-3.60	2.11	0.54	-9.84	2.65
	11-15 years	0.19	2.40	1.00	-6.93	7.31
	16-20 years	2.33	2.23	0.90	-4.28	8.94
	More than 20 years	0.27	2.09	1.00	-5.92	6.45
11-15 years	Less than 1 year	-7.66	2.53	0.04	-15.15	-0.16
	1-5 years	-3.79	2.00	0.42	-9.71	2.14
	6-10 years	-0.19	2.40	1.00	-7.31	6.93
	16-20 years	2.14	2.13	0.91	-4.16	8.45
	More than 20 years	0.08	1.98	1.00	-5.78	5.93
16-20 years	Less than 1 year	-9.80	2.37	0.00	-16.81	-2.79
	1-5 years	-5.93	1.79	0.02	-11.23	-0.63
	6-10 years	-2.33	2.23	0.90	-8.94	4.28
	11-15 years	-2.14	2.13	0.91	-8.45	4.16
	More than 20 years	-2.07	1.76	0.85	-7.29	3.16
More than 20	Less than 1 year	-7.73	2.23	0.01	-14.34	-1.12
years	1-5 years	-3.86	1.61	0.17	-8.62	0.89
	6-10 years	-0.27	2.09	1.00	-6.45	5.92
	11-15 years	-0.08	1.98	1.00	-5.93	5.78
	16-20 years	2.07	1.76	0.85	-3.16	7.29

A one-way ANOVA was conducted to determine if satisfaction with opportunities for promotion was different based on gender. Employees were classified into three groups: males

(n = 41), females (n = 13), and employees who preferred not to state their gender (n = 3). Satisfaction with opportunities for promotion was males (n = 41, M = 6.05, SD = 5.07), followed by females (n = 13, M = 3.77, SD = 4.97), and employees who prefer not to state their gender (n = 3, M = 3.00, SD = 2.65). There was not a statistically significant difference in overall job satisfaction based on gender, $F(2,54) = 1.39$, $p = .26$.

A one-way ANOVA was conducted to determine if satisfaction with opportunities for promotion was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 10), Campus 3 (n = 15), Campus 4 (n = 6), Campus 5 (n = 9) and Campus 6 (n = 5). Overall satisfaction with opportunities for promotion was highest for employees at Campus 6 (n = 6, M = 7.33, SD = 6.09) and lowest for employees at Campus 3 (n = 15, M = 4.07, SD = 4.86). Satisfaction with opportunities for promotion was not statistically significantly different based on campus in the California State University system, $F(5,51) = .62$, $p = .68$.

Supervision

A one-way ANOVA was conducted to determine if satisfaction with supervision was different based on years of service in the California State University system. Employees were classified into six groups: less than 1 year (n = 5), 1-5 years (n = 14), 6-10 years (n = 6), 11-15 years (n = 7), 16-20 years (n = 11) and more than 20 years (n = 15). Satisfaction with supervision was highest with employees who have worked in the California State University system 1-5 years (n = 14, M = 14.21, SD = 5.91). Employees who have worked in the California State University system more than 20 years have the lowest satisfaction with supervision (n = 15, M = 11.13, SD = 4.97). There was not a statistically significant difference in satisfaction with

supervision based on years of service in the California State University system, $F(5,52) = .67$, $p = .65$.

A one-way ANOVA was conducted to determine if satisfaction with supervision was different based on gender. Employees were classified into three groups: males ($n = 42$), females ($n = 13$), and employees who preferred not to state their gender ($n = 3$). Satisfaction with supervision was highest for males ($n = 42$, $M = 13.40$, $SD = 4.99$), followed by females ($n = 13$, $M = 12.08$, $SD = 6.79$), and employees who prefer not to state ($n = 3$, $M = 6.33$, $SD = 5.69$). There was not a statistically significant difference in satisfaction with supervision based on gender, $F(2,55) = 2.47$, $p = .09$.

A one-way ANOVA was conducted to determine if satisfaction with supervision was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 ($n = 12$), Campus 2 ($n = 10$), Campus 3 ($n = 15$), Campus 4 ($n = 7$), Campus 5 ($n = 9$) and Campus 6 ($n = 5$). Overall satisfaction with supervision was highest for employees at Campus 6 ($n = 5$, $M = 17.00$, $SD = 2.24$) and lowest for employees at Campus 5 ($n = 9$, $M = 10.44$, $SD = 5.83$). Satisfaction with supervision was not statistically significantly different based on campus in the California State University system, $F(5,52) = 1.68$, $p = .16$.

Co-Workers

A one-way ANOVA was conducted to determine if satisfaction with co-workers was different based on years of service in the California State University system. Employees were classified into six groups: less than 1 year ($n = 5$), 1-5 years ($n = 14$), 6-10 years ($n = 6$), 11-15 years ($n = 7$), 16-20 years ($n = 11$) and more than 20 years ($n = 15$). Satisfaction with co-workers was highest with employees who have worked in the California State University system less than 1 year ($n = 5$, $M = 17.20$, $SD = 1.10$). Employees who have worked in the California

State University system 11-15 years had\ the lowest satisfaction with co-workers (n = 7, M = 9.43, SD = 5.71). There was not a statistically significant difference in satisfaction with co-workers based on years of service in the California State University system, $F(5,52) = 2.24$, $p <$ .06.

A one-way ANOVA was conducted to determine if satisfaction with co-workers was different based on gender. Employees were classified into three groups: males (n = 42), females (n = 13), and employees who preferred not to state their gender (n = 3). Satisfaction with co-workers was highest for females (n = 13, M = 13.00, SD = 4.83), followed by males (n = 42, M = 12.64, SD = 5.67), and employees who prefer not to state their gender (n = 3, M = 11.00, SD = 6.08). There was not a statistically significant difference in satisfaction with co-workers based on gender, $F(2,55) = .16$, $p = .85$.

A one-way ANOVA was conducted to determine if satisfaction with co-workers was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 10), Campus 3 (n = 15), Campus 4 (n = 7), Campus 5 (n = 9) and Campus 6 (n = 5). Overall satisfaction with co-workers was highest for employees at Campus 6 (n = 5, M = 16.20, SD = 2.68) and lowest for employees at Campus 1 (n = 12, M = 10.58, SD = 6.67). Satisfaction with co-workers was not statistically significantly different based on campus in the California State University system, $F(5,52) = .89$, $p = .49$.

Research Question 4

For research question four, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in turnover intention based on years of service in the California State University system, gender, or campus in the California State University system.

One-way ANOVA was selected in part because it is robust to violations of normality and homogeneity.

Table 26 includes the mean and standard deviation for turnover intention for each of the demographic variables. Table 27 includes the ANOVA results for each of the demographic variables.

Table 26

Turnover Intention Based on Demographic Variables

Demographic Characteristics		*N*	*M*	*SD*
Years of Service	Less than 1 year	5	3.93	1.72
	1-5 years	14	3.79	1.43
	6-10 years	6	3.56	1.24
	11-15 years	7	4.05	1.42
	16-20 years	11	3.55	1.54
	More than 20 years	15	3.67	1.76
	Total	58	3.73	1.49
Gender	Male	42	3.53	1.38
	Female	13	3.90	1.65
	Prefer not to state	3	5.78	0.84
	Total	58	3.73	1.49
Campus	Campus 1	12	3.33	1.36
	Campus 2	10	3.03	1.29
	Campus 3	15	4.58	1.51
	Campus 4	7	3.24	0.96
	Campus 5	9	4.15	1.56
	Campus 6	5	3.47	1.83
	Total	58	3.73	1.49

Table 27

Turnover Intention ANOVA Results

Demographic Characteristics		*df*	*SS*	*MS*	*F*	*p*
Years of Service	Between Groups	5	1.57	.32	0.13	.99
	Within Groups	54	125.42	2.41		
	Total	57	126.99			
Gender	Between Groups	2	14.60	7.30	3.57	.04
	Within Groups	52	112.40	2.04		
	Total	57	126.99			
Campus	Between Groups	5	21.14	4.23	2.08	.08
	Within Groups	52	105.85	2.04		
	Total	57	126.99			

There are five assumptions associated with a one-way ANOVA. The data in this study meet all of the first three assumptions (a) the dependent variable is continuous; (b) the independent variables are all categorical with two or more groups in each independent variable; (c) the observations are independent. The data, however, do not meet all the other assumptions of a one-way ANOVA.

The fourth assumption is that the dependent variable and independent variables are approximately normally distributed, continuous, and interval or ratio data, with no outliers. A Shapiro-Wilk test was completed for each of the independent variables in relationship to turnover intention, the dependent variable. Table 28 includes the results of this test. Turnover intention was not normally distributed for all independent variables. The distributions for employees with less than 1 years of service ($p < .00$), males ($p = .03$), at Campus 1 ($p = .03$) and Campus 6 ($p = .03$) were not normally distributed.

Table 28

Turnover Intention Test of Normality Results

		Shapiro-Wilk		
Demographic Characteristics		Statistic	*df*	*p*
Years of Service	Less than 1 year	0.63	5	.00
	1-5 years	0.93	14	.31
	6-10 years	0.95	6	.71
	11-15 years	0.92	7	.46
	16-20 years	0.93	11	.37
	More than 20 years	0.92	15	.18
Gender	Male	0.94	42	.03
	Female	0.95	13	.57
	Prefer not to state	0.99	3	.78
Campus	Campus 1	0.84	12	.03
	Campus 2	0.91	10	.31
	Campus 3	0.96	15	.70
	Campus 4	0.86	7	.15
	Campus 5	0.94	9	.58
	Campus 6	0.75	5	.03

Outliers in the data were evaluated via box plot. While outliers existed for employees with less than 1 year of service, and at Campus 2, Campus 4, and Campus 6, these outliers were determined to represent valid employee responses for turnover intention and will not be removed.

The fifth assumption is that there is homogeneity of variances. There was homogeneity of variances for turnover intention based on years of service (p = .95), gender (p = .11) and campus (p = .96), as assessed by Levene's test for equality of variances. Table 29 includes the Levene's test results.

Table 29

Turnover Intention Test of Homogeneity of Variances

Demographic Characteristics	*Levene Statistic*	*df1*	*df2*	*p*
Years of Service	0.65	5	52	.67
Gender	1.19	2	55	.31
Campus	0.72	5	52	.61

Years of Service

A one-way ANOVA was conducted to determine if turnover intention was different based on years of service in the California State University system. Employees were classified into six groups: less than 1 year (n = 5), 1-5 years (n = 14), 6-10 years (n = 6), 11-15 years (n = 7), 16-20 years (n = 11) and more than 20 years (n = 15). Turnover intention was highest with employees who have worked in the California State University system 11-15 years (n = 7, M = 4.05, SD = 1.42). Employees who have worked in the California State University system 16-20 years had the lowest turnover intention (n = 11, M = 3.55, SD = 1.54). There was not a statistically significant difference in turnover intention based on years of service in the California State University system, $F(5,52) = .13$, $p = .99$.

Gender

A one-way ANOVA was conducted to determine if turnover intention was different based on gender. Employees were classified into three groups: males (n = 42), females (n = 13), and employees who preferred not to state their gender (n = 3). Turnover intention was highest for employees who preferred not to state their gender (n = 3, M = 5.78, SD = .84), followed by females (n = 13, M = 3.89, SD = 1.65), and males (n = 42, M = 3.53, SD = 1.38). There was a statistically significant difference in turnover intention based on gender, $F(2,55) = 3.57$, $p = .04$.

Tukey post hoc analysis revealed that the mean increase in turnover intention from males to employees who prefer not to state their gender (2.25, 95% CI [.19, 4.30]) was statistically significant (p = .03). No other group differences were statistically significant. Table 30 includes the Tukey post hoc results for turnover intention based on gender.

Table 30

Turnover Intention Tukey Post Hoc Test Results by Gender

		M			95% Confidence Interval	
Years of Service		*Difference*	*SE*	*p*	Lower Bound	Upper Bound
Male	Female	-0.37	0.45	0.70	-1.46	0.73
	Prefer not to state	-2.25	0.85	0.03	-4.30	-0.19
Female	Male	0.37	0.45	0.70	-0.73	1.46
	Prefer not to state	-1.88	0.92	0.11	-4.09	0.33
Prefer not to state	Male	2.25	0.85	0.03	0.19	4.30
	Female	1.88	0.92	0.11	-0.33	4.09

Campus

A one-way ANOVA was conducted to determine if turnover intention was different based on campus in the California State University system. Employees were classified into six groups: Campus 1 (n = 12), Campus 2 (n = 14), Campus 3 (n = 15), Campus 4 (n = 7), Campus 5 (n = 9) and Campus 6 (n = 5). Turnover intention was highest for employees at Campus 3 (n =

15, $M = 4.58$, $SD = 1.51$) and lowest for employees at Campus 2 ($n = 10$, $M = 3.03$, $SD = 1.29$). Turnover intention was not statistically significantly different based on campus in the California State University system, $F(5,52) = 2.08$, $p = .08$.

Research Question 5

For research question five, a Pearson product-moment correlation was performed to evaluate whether there is a relationship between overall job satisfaction and turnover intention. There are five assumptions associated with a Pearson's correlation. The data in this study met the first two assumptions that the variables are continuous and represent paired observations.

The third assumption is that there should be a linear relationship between the two variables. Evaluation of a scatter plot suggests a linear relationship between overall job satisfaction and turnover intention. The fourth assumption is that there are no significant outliers. A couple of outliers exist for the overall job satisfaction variable, however these outliers have been determined to represent valid employee responses for overall job satisfaction and will not be removed.

The fourth assumption is that the data are approximately normally distributed. A Shapiro-Wilk test was completed for each of the variables. Table 31 includes the results of this test. Overall job satisfaction ($p = .00$) and turnover intention ($p = .03$) were not normally distributed. While the data do not meet the assumption of normality, a Pearson's product moment correlation test is somewhat robust to deviations in normality.

Table 31

Overall Test of Normality Results

	Shapiro-Wilk		
Variable	Statistic	*df*	*p*
Overall Job Satisfaction	.82	56	.00
Turnover Intention	.95	56	.03

A Pearson's product-moment correlation was run to assess the relationship between overall job satisfaction and turnover intention. There was a statistically significant, strong negative correlation between overall job satisfaction and turnover intention, $r(56) = .71$, $p < .00$, with overall job satisfaction explaining 84% of the variation in turnover intention.

Summary

The mean overall job satisfaction for the sample population of information technology professionals in the California State University system was 18.51 out of 24. Of the five job satisfaction facets measured (pay, opportunities for promotion, work, supervision and co-workers), the mean satisfaction with supervision was highest at 12.78 out of 18 and mean satisfaction with opportunities for promotion was lowest at 5.33 out of 18. A statistically significant difference in overall job satisfaction was identified between males and employees who prefer not to state their gender. The only statistically significant differences in the job satisfaction facets were based on years of service in the California State University system and satisfaction with opportunities for promotion. The information technology professionals who participated in the study were neutral about quitting their jobs. A statistically significant difference in turnover intention was identified based on gender, with employees who preferred not to state their gender having greater levels of turnover intention than males. A strong negative correlation between overall job satisfaction and turnover intention was demonstrated.

Qualitative Analysis

Respondent Demographics

There were three females (30%) and seven males (70%) in the sample. This closely mirrored the demographics of the quantitative analysis in which 22% of the respondents were female and 71.2% were male. The largest percentage of interviews were from Campus 6 (40%).

While there were four information technology managers from Campus 5 in the sample, none of these managers responded to email or phone communication, therefore no interviews were conducted with subjects from Campus 5. Table 32 includes the demographics of the interview respondents.

Table 32

Demographic Characteristics of the Qualitative Sample

Demographic Characteristics		Frequency	Percent
Gender	Male	7	70%
	Female	3	30%
Campus	Campus 1	1	10%
	Campus 2	1	10%
	Campus 3	2	20%
	Campus 4	2	20%
	Campus 5	0	0%
	Campus 6	4	40%

$n = 10$

Research Questions

To respond to the two qualitative research questions, data were collected from the semi-structured interviews to examine the uniqueness of information technology professionals in relation to job satisfaction and turnover intention at campuses in the California State University system. The perceptions of managers were also used to clarify the context of the quantitative job satisfaction and turnover intention results.

During the interviews, the researcher asked the managers seven questions. The first two questions inquired about the manager's perceptions regarding causes of satisfaction and dissatisfaction among their employees. The third question asked whether the managers feel that information technology professionals are different from other professionals with respect to job satisfaction, and if so, why. The fourth and fifth questions asked the managers whether they view turnover positively or negatively and their perceptions regarding causes of turnover among their employees, respectively. The sixth question asked the managers whether they perceive that information technology professionals are different from other professionals when it comes to turnover, and if so, why. The last question provided the managers an opportunity to add any additional comments. Thematic content analysis was performed to evaluate the responses to each of the interview questions.

Interview Question Themes

The first interview question was "What are some things you think might cause dissatisfaction with your employees?" The most common themes were related to pay/salary, priorities/direction setting, voice/connection to decision-making, and resources.

Low pay, and low pay compared to the market, were mentioned most frequently as a cause of dissatisfaction. A manager at one of the campuses indicated that at that location information technology professionals can easily look in the job market and see major differences in pay for similar roles. Often company A or company B employs information technology professionals performing the same functions as California State University information technology professionals, but offers two to three times the salary.

Low salary is also a critical issue with respect to cost of living in some of the campus communities. A manager indicated that the campus has lost existing information technology professionals, who were otherwise satisfied with their positions, because they are unable to purchase a home in the area. In addition, this manager stated that recruitments often fail because of the lack of affordable housing, given pay. Multiple managers pointed out that they work hard to sell the benefits - including the benefits package - of being a California State University employee, but even with above average benefits, candidates are unable to make up the full gap in salary.

Challenges with priorities and decision making were the second most commonly cited causes of dissatisfaction with employees. There were many dimensions to this theme including insufficient clarity in direction, contradictory direction, insufficient prioritization, and changing priorities and levels of urgency. Insufficient clarity in direction or contradictory direction causes information technology professionals to "make it up" or feel fear that they are going to make a

mistake. Insufficient prioritization sends the message that everything is a number one priority, which results in information technology professionals feeling discouraged that they can never get everything done. Further, changing priorities or levels of urgency is demoralizing if information technology professionals work on a project that is subsequently cancelled.

Lack of voice is also a cause of dissatisfaction. When information technology professionals feel they are not heard and that their opinion does not weigh into decision making it is very common for information technology professionals to feel that decisions are made before they are even discussed at the implementation level. This lack of opportunity to participate in the conversation causes information technology professionals to feel their input is ignored. Another manager indicated that information technology professionals do not necessarily need to agree with every decision, but the ability to be a part of the conversation would make them feel their perspectives are valued.

Challenges with resources, including funding, people, and equipment, were also mentioned as causes of dissatisfaction. Information technology professionals are pushed to do a lot with a little, and can feel that there is no way to do what is being asked with existing resources. One manager indicated that this lack of resources, at an emotional level, can feel like a lack of support or respect for information technology professionals. Further, information technology professionals may feel they are operating on an island if they are being asked to do something that seems unreasonable.

The lack of resources was connected by one manager to a lack of priorities. The manager described this as a tension for resources that may cause information technology professionals to cut back on the quality of the work they are producing. Information technology professionals

would appreciate more time to complete projects and stabilize solutions, instead of feeling like they have to drop everything because there are too many competing priorities.

Other causes of dissatisfaction, mentioned less frequently, include lack of communication and transparency and lack of recognition for information technology professionals' contributions to the organization. Managers referred to the non-customer facing or closed-door nature of some information technology roles, as well as the disconnect with campus leadership, who often do not understand what information technology actually is, as contributing to these causes.

The second interview question was "What are some things you think help make employees feel more satisfied?" The most common themes identified were related to recognition/appreciation, voice/connection to decision making, career development, and connection to mission.

Feelings of recognition, appreciation, and respect were cited as the most significant contributors to information technology professionals' satisfaction. One manager indicated that it was important to simply thank people for the work they do because information technology professionals want to know that managers recognize their accomplishments. Another manager indicated that information technology professionals are more satisfied when they feel respected, generally, and respected for their knowledge and skills by their supervisor and peers. Distinctions were made regarding how information technology professionals receive appreciation with some information technology professionals preferring public acts, others small notes, and still others just wanting to know that managers understand how hard they are working.

While voice/connection to decision making was identified in question one as a theme that contributes to dissatisfaction, it was also identified as a factor that influences satisfaction. One manager indicated that helping information technology professionals feel that their opinions

matter and are considered in decision making is making a difference on the campus. This campus is currently changing how decisions are made, including gathering employee feedback, so that employees know how their ideas are incorporated into decision-making.

Another manager indicated that information technology professionals have increased satisfaction if they are more involved at the beginning of the project. Often, information technology professionals are not involved in a project until many of the decisions have already been made. These employees may not even want to have input into decision making, but they at least want to understand the decision making processes and rational.

Career development opportunities were also cited as a theme that influences employee satisfaction. One manager indicated that education is provided, especially in the area of leadership, to their team of information technology professionals to help them be more successful. This manager also provides tools so the employees are better able to communicate, present their ideas, and garner additional support. While these skills and tools help information technology professionals be more effective at their jobs, the opportunity to learn new skills also makes them feel valued.

Helping employees connect their work to the mission of the organization was a common theme influencing information technology employee satisfaction. One manager strives to set projects within the bigger picture so the team understands how their work contributes to the institution's success and priorities, as well as how it helps students and faculty. Another manager believes that many information technology professionals gravitate to higher education because they want to feel they are a part of something and are making a difference. Another manager reiterated that information technology professionals do not get into higher education for the money, but to feel satisfied with the work they are doing and appreciated for their work and

products. Another manager continued on this theme by stating that many information technology professionals choose to work in the university system because it provides an opportunity to change people's lives.

The final most commonly identified theme was related to a strong work environment and team. One manager indicated that satisfaction is influenced by a work environment that is supportive and friendly, where co-workers support you emotionally and care about you as a person. This manager described the campus as one having a culture of helpfulness, where she almost always get the help she needs from both co-workers and the broader campus community. Team spirit, a sense of belonging, and relationships within the team were also cited as key contributors to job satisfaction.

Other themes, mentioned less frequently, include a desire for communication and transparency, appropriate pay and resources, and an effective technology leader. Proactive, honest, respectful management, that communicates well, was felt to be important to employee satisfaction.

The third interview question was "Do you feel that information technology professionals are different from other professionals when it comes to satisfaction with their jobs? If you do think they are different, in what ways?" For the first part of the question, three managers responded that no, information technology professionals are not different from other professionals. Three managers responded yes, that information technology professionals are different from other professionals. Three managers responded both yes and no indicating that in some ways they are different and in other ways they are not different, and one manager was unsure. The responses were grouped into characteristics of information technology work and characteristics of information technology professionals. Information technology work themes

included responsibility and creativity. Themes associated with information technology professionals were related to social skills/introversion, problem solving, and professional development.

While not all of the managers believe that information technology professionals are different from other professionals, a few of the managers spoke specifically about how the work performed by information technology professionals is a differentiator. For example, the level of responsibility associated with information technology jobs is often greater than non-information technology jobs. One of the managers interviewed supervises employees in information technology security position; he cited the significant responsibility these professionals shoulder to evaluate risk and make recommendations to campus leadership. Another manager indicated that information technology professionals make decisions every day that could cost the organization a substantial amount of money if systems are not operating or go down unexpectedly.

Stress resulting from this level of responsibility was also mentioned. One of the managers acknowledged that many jobs have stress and pressure, but that information technology professionals have a unique type of stress and pressure given the impact of their work and decisions on the organization.

Information technology work was also described as creative, with multiple managers using the analogy of a painter when describing the work. One manager stated that writing code and developing code is like an art form. Information technology professionals are required to think about the problem from beginning to end and develop a design in their head, and like a painting, the solution does not come together until the end. Another manager discussed the need to structure the work environment appropriately so that information technology professionals are

able to be creative. They suggested that information technology professionals be given appropriate respect and freedom to complete their work.

Multiple themes were associated with characteristics of the information technology professional, rather than the work they perform. Information technology professionals were described by numerous managers as introverted, especially when compared to non-information technology professionals. One manager suggested that while some professionals thrive on social activities and interactions with their stakeholders, information technology professionals are often happier in their own environment. Information technology professional introversion can create a challenge when employees are unable to see clearly how their work contributes to the core mission of the university.

Another manager felt that the solutions that employees come up with are simply incredible. This manager works to ensure employees know that she thinks they are as awesome as they think they are. Recognizing the introverted nature of information technology professionals, as well as their other unique attributes, may help them feel more satisfied.

Another differentiator identified was the desire by information technology professionals to solve problems in their work. One manager indicated that information technology professionals are satisfied when they have the opportunity to solve a problem or puzzle. They appreciate a project or task that requires them to figure out a technical solution, often requiring them to use new tools and figure out new things using technology.

Another common theme was the desire of information technology professionals to continually grow and develop their skills. The need to remain current in their positions, including maintaining certifications in some cases, which requires information technology professionals to be self-motivated, self-driven, and focused on professional development.

The forth interview question was "Turnover can be viewed both positively and negatively. Tell me how you view turnover of employees in your organization?" Five of the managers reported viewing turnover positively, two managers reported viewing turnover negatively, and three managers reported viewing turnover both positively and negatively. The most common themes were related to the distinction between high and low performers and opportunities for promotion. Table 33 includes manager statements regarding positive and negative perceptions of turnover.

Table 33

Manager Perceptions of Turnover

Positives	Negatives
Career and personal growth, more experiences.	Loss of institutional knowledge, breaking of relationships.
A good thing when people are leaving because they have grown and advanced their skills.	People not leaving for the right reasons. They should not be leaving because they are dissatisfied with the organization.
If we have prepared them to go, it is good.	
Opens up opportunities for individuals.	If everyone is leaving in droves, that is not good.
Exciting. New employees have a new lens on the same things that we have been looking at for a long time. They are excited for their work. They bring energy to the team.	Because of the manager, is terrible.
	If they are a valued member and huge contributor, then it is a huge loss.
You can then strategically decide how you want to fill the positions. A different position – redistribute the work.	Stress associated with bringing in a new employee and the extra work it takes to train them.

Half of the managers interviewed made a distinction between losing a high performer and losing a low performer. One manager stated that if you have a very productive, talented individual you will go out of your way to retain the person who you cannot afford to lose. On the other hand, there are employees who are doing very little, which pulls the entire workgroup down. This manager believes that low performers influence morale even more than low salary.

Another manager feels it is a huge loss if high contributors leave, and yet another said it is hard to retain great talent.

Turnover as a means for employees to move up in the organization and experience career growth was viewed positively. One manager talks with their employees about career growth and encourages them to keep looking and thinking about their future. He believes that, as managers, we should care about our employees as much as we care for the organization. Another manager feels it is important for employees to know they can move on without secrecy or retaliation. Helping people develop, so they can take it to the next level or leave to go somewhere else, makes managers victims of their own success. While these moves can be difficult for the team, managers are happy for the employee.

One of the managers discussed the challenges associated with promotional opportunities given California State University human resources policies. Employees may feel there is no clear career path or way to move from one level to another (foundation, career, expert). Even when staying within the levels, it can be difficult to increase wages. While additional responsibilities can be added to an information technology professional's position, the percentage increase in pay is often perceived as very small.

In general, the managers interviewed provided a well-nuanced view in proposing that information technology professional turnover is highly situational. Losing strong performers versus poor performers, as well as losing employees for the right versus wrong reasons, influenced perception of turnover.

The fifth interview question was "What are some things you think might be causing turnover in your organization?" The two most common themes were pay and opportunities for promotion. Less common themes were changing expectations and poor leadership.

Pay was often the first cause of turnover cited by the managers interviewed. One manager stated that higher education information technology professionals will always be paid less than they can make in industry [outside higher education]; however, earning a lower salary can be viewed as a trade-off when considering the stability and bargaining unit environment offered within the California State University system. Another manager indicated that the California State University system does pay competitively given the benefits package; however if an employee does not need the benefits or does not care about the benefits, he or she can make much more money somewhere else.

Better career opportunities was also a common theme viewed as causing turnover. One manager could easily recall three examples when positive career change simply happened outside the organization. Another manager feels that information technology professionals need the opportunity to grow and take risks or they will more likely want to leave. While opportunities to grow can sometimes be found within the organization, sometimes they cannot. Training programs, mentorships, and cross-training were suggested as programs that facilitate 'good' turnover through additional opportunities and professional development.

The sixth interview question was "Do you feel that information technology professionals are different from other professionals when it comes to turnover? If you do think they are different, in what ways?" For the first part of the question, six managers responded that yes, information technology professionals are different from other professionals. Three managers responded no, that information technology professionals are not different from other professionals. One manager felt an adequate answer to the question could not be provided. The responses were grouped into characteristics of information technology work and impacts of information technology professional turnover. Information technology work themes included

skills transfer and demand. The primary theme associated with the impact of information technology professional turnover was related to institutional knowledge of complex systems.

The ease of skills transfer was the most commonly cited theme that distinguishes information technology professional's work from other professional's work. One manager indicated that given that information technology is a growing industry, as long as employees keep up with their skills, he or she remains employable. Information technology professionals also have skills that translate to other industries better than other higher education professionals who work on specific programs or with specific populations, for instance, in student affairs.

Demand for information technology professionals is also considerable compared to other professionals. One manager indicated that demand for information technology professionals is high, especially in the area where the campus is located. If information technology professionals are good and have credentials, they can go wherever they want because it is easy for them to find other positions. Higher education information technology professionals know they can make more money, and possibly work remotely, if they go somewhere else. Information technology professionals needed in less technical roles, such as project management and change management, are also in demand.

Lost institutional knowledge of complex systems was cited as the most significant difference in the impact of turnover of information technology professionals versus other professionals. One manager stated that turnover causes issues that are more significant in information technology than virtually any other portion of the organization. Even when the organization has invested in cross training and documentation, complexity of interconnected systems, processes, and workflows are difficult to reconstruct when individuals leave. Another manager provided a similar perspective stating that programmers and network staff, if they were

malicious, have the ability to take down the entire campus with a push of a button. Non-information technology professionals do not typically have this ability to cripple the institution. Further, while an employee can document 'until his or her nose bleeds', there is so much contained within an employee's head that when he or she leaves, a great deal of institutional knowledge walks out the door.

While higher education is a narrow industry, information technology professionals are valuable in any industry and therefore have more options than other higher education professionals. One manager described this as an opportunity difference, not a motive difference. The impact of this opportunity is significant given the complexity of the work performed by information technology professionals and the complexity of the systems involved.

The seventh interview question was "Before we end the interview, is there anything else you would like to add?" Many of the themes identified in the answers to these questions were covered in earlier questions, for example, the demand for information technology professionals, the need for career growth and professional development, as well as introversion of information technology professionals. The managers interviewed also added some perspective about the importance of strong management, sexism in information technology, and a call to service in higher education.

One manager discussed the importance of managing information technology professionals effectively since they are the engines that keep the organization going and therefore more important than the technology itself. These employees need to be treated like a valuable asset where they are provided the opportunity to perform at their best and grow professionally in the organization. Capable and competent managers, challenging opportunities,

the ability to explore new areas, and be involved in more projects, influences both satisfaction and turnover.

One of the managers interviewed feels that it is still very difficult to be a female in the information technology profession. When women need to step into the role of boss and make a decision, male employees can become uncomfortable and 'snarly'. These issues are even more challenging on teams with few to no females on the team. There is a perception by some female information technology professionals that when they make suggestions in meetings these suggestions are often overlooked; however, if the same suggestion is raised by a man it will be given more attention. This manager feels that female informational technology professionals need to be ready for this reaction and not take these behaviors and actions personally.

The mission of higher education was mentioned in the responses to other questions as a factor influencing both satisfaction and turnover. In this final question, one of the managers came back to the benefits of working in this industry by stating that one of the most rewarding aspects of higher education is the chance to impact the student learning experience and influence a life. The risks of working in higher education are also lower than other industries. This call to service in higher education is perceived to balance lower monetary rewards.

Research Question 6 Summary

For research question six, thematic content analysis was performed to evaluate the perspective of information technology managers relative to the job satisfaction and turnover intention of their employees.

Managers reported that low pay/salary, lack of priorities/direction setting, little voice/connection to decision-making, and limited resources are common causes of job dissatisfaction. On the other hand, managers indicated that employees may feel more satisfied

when they receive recognition/appreciation, feel they have a voice/connection to decision-making, have opportunities for career development, and feel connected to the mission.

There was not consensus by the managers interviewed on the question of whether information technology professionals are different from other professionals when it comes to job satisfaction. Information technology work was described as involving high levels of responsibility and requiring creativity compared to non-information technology work. Information technology professionals were seen as commonly introverted, with a strong desire for problem solving in their work and on-going professional development. One manager stated that all employees want to feel appreciated and heard, and contribute to the mission of the organization. Another manager described short and long-term satisfiers that apply to all employees.

With regard to turnover intention, the majority of managers reported viewing turnover positively, but suggested that the view of turnover is highly situational. Managers made distinctions between turnover of high performers versus low performers, with turnover of high performers being most impactful to the organization, but also viewed positively if the high performer is moving to a better opportunity. Turnover of low performers was viewed positively as well, but much less impactful to the organization. Low performers were reported to have a strong negative impact on the workgroup, which if not dealt with, leads to low morale.

The majority of managers reported feeling that information technology professionals are different from other professionals when it comes to turnover. Information technology professionals are more easily able to transfer their skills to other organizations and demand for information technology professionals was viewed as high. Managers are concerned about the impact of information technology turnover given the loss of institutional knowledge of complex

systems. The two most common factors managers feel are contributing to turnover in their organizations were pay and opportunities for promotion, which will likely continue to be issues in the California State University system given human resources policies and practices and the nature of the collective bargaining environment.

Research Question 7 Summary

For research question seven, thematic content analysis was performed to evaluate the perspective of information technology managers relative to the context (e.g., culture) of information technology job satisfaction and turnover intention in the California State University system.

The culture of information technology job satisfaction was not described by managers as significantly different than that of other professions. While information technology work was described as involving high levels of responsibility and requiring creativity compared to non-information technology work, these characteristics are more closely tied to individual skills, abilities, needs, and values, rather than organizational culture. Further, the perspective of managers that information technology professionals were commonly introverted, with a strong desire for problem solving and on-going professional development is also not related to organizational culture.

The culture of information technology turnover intention was described by managers as somewhat different from other professionals. Ease of skills transfer, demand, pay and opportunities for promotion were cited as common factors impacting turnover intention. These factors are influenced directly by the external environment and human resources systems (policies and procedures), creating an organizational culture that is different from other California State University professionals.

Salaries offered in the external job market, and cost of living in some of the campus communities, was reported by managers as influencing turnover intention. The culture of information technology professionals is impacted when employees can see major differences in pay between what they are currently earning working for the California State University system and what they could earn if they left higher education. The California State University system focuses on selling an above average benefits package and ability to influence the mission of higher education in their recruitment and retention efforts. For many professionals, including information technology professionals, these are strong selling points. Unfortunately, information technology professionals see much higher demand and pay in the job market for their easily transferable skills, than other professionals in the California State University system. As one manager described, this is not a motive difference, but an opportunity difference.

CHAPTER 5

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

This study utilized an explanatory, sequential mixed-methods methodology to survey perceived job satisfaction and turnover intention of information technology professionals at campuses in the California State University system in an effort to better understand the factors that influence retention. This study also addressed a gap in the body of knowledge by qualitatively examining the uniqueness of information technology professionals in the California State University system as it relates to job satisfaction and turnover intention.

Chapter 5 presents a discussion of the findings from the study and includes responses to the research questions, comparison to similar studies, limitations of the study, theoretical implications, human resources development practice implications, recommendations for future study and general conclusions.

Summary of Findings

The quantitative findings support earlier studies that report a negative correlation between overall job satisfaction and turnover intention (Mobley, 1977; Porter & Steers, 1973; Price & Mueller, 1981). The findings also support the findings of earlier studies involving similar populations of higher education information technology professions in that of the five job satisfaction facets measured, the mean satisfaction with opportunities for promotion was lowest (Banks, 2015, 2016; Markham, 2009; Temple, 2013).

In the qualitative phase of the study, managers reported that low pay/salary, lack of priorities/direction setting, little voice/connection to decision-making, and limited resources are common causes of job dissatisfaction. Appropriate recognition/appreciation, voice/connection to decision making, opportunities for career develop and connection to the mission were reported as common causes of job satisfaction Generally, managers do not view information technology professionals differently from other professionals when it comes to job satisfaction.

Managers reported viewing turnover positively; however, their view of turnover is highly situational. Turnover of high performers is viewed positively, but has the greatest impact on the organization. Turnover of low performers, who have a strong negative influence on the workgroup, is viewed positively and much less impactful. Managers view information technology professionals differently from other professionals when it comes to turnover because they are easily able to transfer their skills to other organizations and demand for their skills is high. Loss of institutional knowledge of complex systems is a concern when information technology professionals turnover. Greater pay and opportunities for promotion have a positive influence on turnover intention, but the ability to control these items is limited given California State University system human resources policies and practices.

Responding to Research Questions

For research question one, the mean, standard deviation, minimum, and maximum were computed for overall job satisfaction as measured by the abridged Job in General (aJIG) scale and for each job satisfaction facet; work (W), pay (P), opportunities for promotion (PR), supervision (S), and co-workers (C) measured by the abridged Job Descriptive Index (aJDI). The mean overall job satisfaction (JIG) was 18.51 out of 24. Of the five job satisfaction facets measured by the aJDI, the mean satisfaction with supervision (S) was highest at 12.78 out of 18,

followed by satisfaction with co-workers (C) at 12.58 out of 18, satisfaction with work at 12.00 out of 18, and satisfaction with pay (P) at 10.12 out of 18. The mean satisfaction with opportunities for promotion (PR) was lowest at 5.33 out of 18.

A Likert-type scale was used for each of the three items related to turnover intention. The answers ranged from 1 to 7, with 1 indicating low levels of turnover intention and 7 indicating high levels of turnover intention. The mean turnover intention scale score of 3.73 indicates that on average, the respondents were neutral about quitting their jobs.

For research question two, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in overall job satisfaction (JIG) based on years of service in the California State University system, gender, or campus in the California State University system. There was not a statistically significant difference in overall job satisfaction based on years of service in the California State University system or campus in the California State University system. Overall job satisfaction was statistically significantly different based on gender, $F(2,53) = 5.38$, $p = .007$. The mean increase in overall job satisfaction between males and employees who prefer not to state their gender (10.24, 95% CI [2.44, 18.04]) was statistically significant ($p = .007$). There were 40 males and 3 employees who prefer not to state their gender in the sample. Given the limited size of the sample, additional research is needed to better understand the factors influencing overall job satisfaction of information technology professionals who prefer not to state their gender in the California State University system.

For research question three, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in job satisfaction facets (work, pay, opportunities for promotion, supervision, co-workers) based on years of service in the California State University system, gender, or campus in the California State University system. There was not a

statistically significant difference in satisfaction with any of the job satisfaction facets based on gender or campus in the California State University system. There was also not a statistically significant difference in satisfaction with the job satisfaction facets of work, pay, supervision, and co-workers based on years of service in the California State University system. There was, however, a statistically significant difference in satisfaction with opportunities for promotion based on years of service in the California State University system, $F(5,51) = 4.86$, $p = .001$. The mean decrease in satisfaction with opportunities for promotion for employees with less than 1 year of service to employees with 16-20 years of service (-9.80, 95% CI [-16.81, -2.79]) was statistically significant ($p = .00$). The mean decreases in satisfaction with opportunities for promotion from employees with less than 1 year of service to employees with more than 20 years of service (-7.73, 95% CI [-14.34, -1.12]) was statistically significant ($p = .01$) and from employees with less than 1 year of service to employees with 11-15 years (-7.66, 95% CI [-15.15, -.16]) was also statistically significant ($p = .04$). Finally, the mean decrease in satisfaction with opportunities for promotion from employees with 1-5 years of service to employees with 16-20 years of service (-5.93, 95% CI [-11.23, -0.63]) was statistically significant ($p = .02$).

These results indicate that employees with less than 1 year of service were significantly more satisfied with opportunities for promotion than employees with more than 11 years of service in the California State University system. These new employees are likely less aware of the opportunities for promotion that may or may not be available to them over their career in the California State University system. Employees with 1-5 years of service were also significantly more satisfied with opportunities for promotion than employees with 16-20 years of service. Employees may perceive that there are more opportunities for early career advancement than mid-career advancement. Further, mid-career employees who have been in the California State

University system between 16 and 20 years may feel stuck given that they are not ready to retire, but have already vested in their retirement plan.

For research question four, multiple one-way ANOVAs were performed to test the null hypothesis that there is no difference in turnover intention based on years of service in the California State University system, gender, or campus in the California State University system. There was not a statistically significant difference in turnover intention based years of service in the California State University system or campus in the California State University system. There was, however, a statistically significantly difference in turnover intention based on gender, $F(2,55) = 3.57$, $p = .04$. The mean increase in turnover intention from males to employees who prefer not to state their gender (2.25, 95% CI [.19, 4.30]) was statistically significant ($p = .03$). This finding aligns with the finding that employees who prefer not to state their gender have lower levels of overall job satisfaction than males.

For research question five, a Pearson product-moment correlation was performed to evaluate whether there is a relationship between overall job satisfaction and turnover intention. There was a statistically significant, strong negative correlation between overall job satisfaction and turnover intention, $r(56) = .71$, $p < .00$, with overall job satisfaction explaining 84% of the variation in turnover intention.

For research question six, thematic content analysis was performed to evaluate the perspective of information technology managers relative to the job satisfaction and turnover intention of their employees. There was not consensus by the managers interviewed on the question of whether information technology professionals are different from other professionals when it comes to job satisfaction. Information technology work was described as involving high levels of responsibility and requiring creativity compared to other professionals. Information

technology professionals were also seen as commonly introverted with a strong desire for problem solving in their work and on-going professional development. All employees were viewed as wanting to feel appreciated and heard, and contribute to the mission of the organization.

The majority of managers reported viewing turnover positively, but suggested that their view of turnover is highly situational depending on whether the turnover is of a high or low performer. The majority of managers also reported that information technology professionals are different from other professionals when it comes to turnover given the demand for their easily transferable skills. Managers are concerned about the impact of information technology turnover given the loss of institutional knowledge of complex systems.

For research question seven, thematic content analysis was performed to evaluate the perspective of information technology managers relative to the context (e.g., culture) of information technology job satisfaction and turnover intention in the California State University system. The culture of information technology job satisfaction was not described by managers as significantly different that other professionals, however the culture of information technology turnover intention was described as somewhat different. Ease of skills transfer, demand, pay and opportunities for promotion were viewed as factors affecting turnover intention of information technology professionals differently from other professionals. These factors, directly impacted by the external environment and human resources systems (policies and procedures), are creating an organizational culture among information technology professionals that is different from other California State University professionals.

Figure 11 below illustrates the quantitative and qualitative results of the study. On the left of the figure, job satisfaction is impacted positively and negatively by numerous variables,

and is negatively correlated to turnover intention. Turnover intention is also positively impacted by numerous variables. The variables in bold (pay and opportunities for promotion) were identified in the quantitative results. On the upper right, information technology employees are unique based on the work they perform and their personal characteristics. On the lower right, information technology employee turnover is impacted by demand and ease of skills transfer and results in lost institutional knowledge of complex systems. The items in italics are dimensions from the Burke-Litwin Causal Model of Organization and Change.

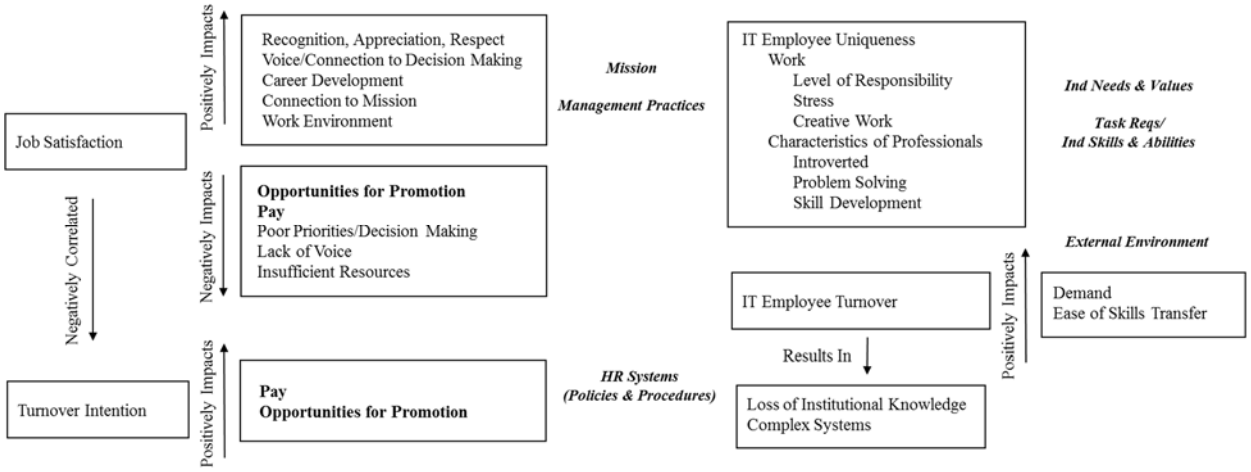

Figure 11. Summary of Quantitative and Qualitative Findings

Comparison to Other Studies

The results of this study were compared to the results of studies by Markham (2009), Temple (2013), Banks (2015), and Banks (2016). All five studies examined job satisfaction of IT professionals in a higher education environment using the aJDI and the aJIG. There are a few distinctions between the studies which should be considered when comparing the results.

1. Although the populations were all IT professionals in higher education, Markham's (2009) study focused on all 15 Mississippi community and junior colleges and Temple's (2013) study focused on 14 of the 72 community colleges in California. The Banks

(2015, 2016) studies focused on a sample from one IT organization at a single university in the California State University system. The current study focused on information technology professionals from six campuses in the California State University system.

2. The survey instrument in all studies was the aJDI and aJIG, however, the aJDI was revised in 2009 shortly after Markam's study. The 2009 revised aJDI was used by Temple, Banks (2015, 2016) and for this study.
3. Markham's study resulted in a 30% response rate (n = 30) and Temple's study resulted in a 55% response rate (n = 198). The Banks study from 2015 resulted in a response rate of 69.22% (n = 62) and the Banks study from 2017 resulted in a response rate of 64% (n = 63). This study had a much poorer response rate of 9.49% (n = 59).
4. This study includes a qualitative phase to examine the uniqueness of information technology professionals with respect to job satisfaction and turnover intention. The perceptions of information technology managers were also gathered to clarify the context of the quantitative job satisfaction and turnover intention results.

Table 34 shows the aJDI and aJIG mean scores for each study. All five studies found the mean score of the opportunities for promotion facet to be the lowest of the facets and all five studies also found the mean score of the pay facet to the second lowest of the facets. The mean scores for overall satisfaction and two of the five job satisfaction facets (work and co-workers) was lower in the current study than any of the prior studies. While this replication study validated earlier findings regarding opportunities for promotion and pay, the low response rate for the current study minimizes the meaning of the lower overall satisfaction and job satisfaction facet scores.

Table 34

Difference in the Mean Scores Between Markham, Temple, and Banks Studies

	Markham		Temple		Banks 2015		Banks 2016		Banks 2019	
Facet	*M*	Rank	*M*	Rank	*M*	Rank	*M*	Rank	*M*	Rank
JIG	21.7	NA	19.56	NA	19.98	NA	19.94	NA	18.51	NA
W	13.9	1	13.45	2	13.15	3	13.29	3	12.00	3
P	8.6	4	12.83	4	8.95	4	9.92	4	10.12	4
PR	8.3	5	3.85	5	4.97	5	4.79	5	5.33	5
S	12.23	3	13.17	3	15.34	2	16.21	1	12.78	1
C	12.67	2	14.02	1	15.35	1	15.56	2	12.58	2

Limitations of the Study

This study provides empirical evidence of the impact of job satisfaction on turnover intentions of information technology professionals in the California State University system. The research, however, did have inherent limitations to the study design and limitations that emerged during the data collection and analysis.

The limitations related to the study design include the use of a stratified random sample rather than a random sample. For this reason, the results can only be generalized to the population of which the sample is representative. The results are also limited to information technology professional and manager perceptions at the time the study was conducted between January and March of 2019. Finally, the study is limited by the possibility of crossover responses given that the study's participants had the potential to discuss the questionnaire or interview questions with one another during the study, potentially influencing the responses.

The most significant limitation that emerged during the data collection is related to the response rate for the quantitative phase of the study. Despite multiple e-mail requests over a four-week period, of the 622 number of information technology professionals invited to participate, only 9.49% or 59 responded. The low response rate may bias the results of this

study. The qualitative findings would also have been stronger with a larger sample size, including at least one manager from Campus 5.

The scale used to measure turnover intention, the MOAQ-JSS, did not have adequate levels of internal consistency reliability in this study. The Cronbach's co-efficient alpha (α) of .53 indicates that the items on the scale may not have been measuring the same underlying dimension. The use of only three items in the scale may have influenced the reliability of the turnover intention scale given that the number of items in a scale impacts alpha (Tavakol & Dennick, 2011).

Theoretical Implications

The results of this study indicate that job satisfaction and turnover intention of information technology professionals in the California State University system is influenced by both transformational and transactional factors in the Burke-Litwin Causal Model of Organization and Change. Thematic content analysis of the qualitative data indicated that the external environment, organizational culture, human resource systems, management practices, mission, individual needs and values, and task requirements/individual skills and abilities influence job satisfaction and turnover intention.

The difference between information technology professionals and other professionals was described by managers primarily in terms of their task requirements and individual skills and abilities, as well as their individual needs and values. Information technology professionals were described as having high levels of responsibility and stress related to their charge to manage critical complex systems. The skills required to manage these systems must be kept current and typically involve creativity and problem solving. Information technology professionals have a desire to understand their connection to the mission of the organization; however, because they

are often introverted or operating in a more closed-door capacity, helping them to see their contribution is challenging.

Management practices were reported to have a strong impact on job satisfaction, with information technology professionals desiring recognition, appreciation, respect, voice and connection to decision making. Information technology professionals want to know that management recognizes and respects their work, accomplishments, knowledge and skills. They also appreciate the opportunity to participate in discussions regarding the direction of their work and decision-making. These management practices, which are easier to implement than changes to human resources systems, present an opportunity to influence job satisfaction, turnover intention, and ultimately organizational performance.

The organizational culture of information technology professionals was viewed by managers as different from that of other professions related to turnover intention, but not job satisfaction. The external environment is strongly influencing turnover intention given high demand for information technology professionals and information technology skills that are easily transferable. Internal challenges with human resources systems, specifically pay and opportunities for promotion, are contributing to information technology organizational culture, but not as strongly as the external environment. These findings support the causal nature of the model with the external environment having a greater impact on organizational performance and change than any other factor (Burke, 2014).

Human Resources Development Practice Implications

There were numerous findings from this study that can be utilized by human resource development professionals to better influence job satisfaction and turnover intention of information technology professionals. Factors identified in the quantitative and qualitative

findings, such as opportunities for promotion and pay, are challenging human resources systems to address in a public, higher education system where the employment environment is governed by a collective bargaining agreement. Less commonly cited factors influencing job satisfaction and turnover intention, including voice, role in decision-making, and the call to service in higher education represent potential strategies for management to positively influence employees and the organization.

Information technology professionals in higher education want to feel they have voice. Providing employees the opportunity to share their opinions and perspectives is valuable to organizational functioning (Moore, Hester, & Yager, 2016). Employee voice ensures that managers are made aware of issues and challenges. Voice also introduces diverse perspectives into problem solving and decision-making (Hirschman, 1970). The results of this study indicate that information technology professionals do not feel a need to make decisions, but do want to understand the decision making process and feel their perspectives are heard. While employees may have a desire for voice, managers must also demonstrate a willingness to hear employee perspectives by creating a welcoming environment, listening actively, providing a rationale when action cannot be taken, and taking action where appropriate. Voice is one of the factors related to turnover for which managers have the most control.

The desire to be involved earlier in the lifecycle of a project was also mentioned. Project management processes could easily be modified to ensure that information technology professionals are able to be involved early. A RACI matrix can be used to define individuals responsible, accountable, consulted and informed on a project at each phase and for each task. While use of a RACI matrix is often seen as a planning technique, it's intended to properly

distribute participation, ensure communications, and clarify expectations on a project (Costello, 2012).

Information technology professionals benefit from understanding how their work improves teaching and learning (Coombs, 2009). Despite financial and staffing issues in higher education, 52% of respondents to the Educause workforce report indicated that it was important to them to work in higher education rather than in another industry or area (Galanek et al., 2019). Helping employees see their contribution to the mission and addressing their call to service of higher education could also be strategies to increase job satisfaction and reduce turnover.

Recommendations for Further Study

Although this study quantitatively and qualitatively examined the job satisfaction and turnover intention of information technology professionals in the California State University system, the results of this study suggest that future research is necessary to explore the uniqueness and context of information technology turnover intention at higher education institutions.

One potential area for study could be focused on better understanding information technology professional dissatisfaction with their opportunities for promotion. Information technology professionals in this study, as well as the prior four similar studies, all report satisfaction with the opportunities for promotion facet that is much lower than the other job satisfaction facets. This dissatisfaction could be related to a misconception about what the term promotion means in higher education. In the California State University system, for example, the collective bargaining agreement dictates that information technology professionals seeking a higher position must either apply through the regular hiring process and compete with internal and external candidates for the position, or complete a process to be reclassified into the new

position. It is possible that information technology professionals are unfamiliar with these processes or unaware of the promotional opportunities available to them. Information technology professionals may actually be dissatisfied with something closely related to opportunities for promotion, like opportunities for growth or opportunities to learn new skills.

Another potential area for study could be focused on ways to lessen the external environment's influence on information technology professional turnover intention culture. Given that demand for information technology professional skills is high and information technology skills are easily transferrable, changes to human resources systems such as pay or opportunities for promotion could be studied to see if they could influence turnover intention enough to counteract the influences of the external environment.

Finally, the distinction made by managers between turnover of high versus low performers represents an area for future study. Turnover of low performers was viewed primarily as positive, whereas turnover of high performers was viewed as negative and detrimental to the success of the organization. Understanding how to reduce turnover intention of high performers and manage turnover intention of low performers presents an opportunity to improve organizational performance.

Summary

This study sought to better understand the job satisfaction and turnover intention of information technology employees in a large, public, higher education system. The study further sought to clarify the differences between information technology professionals and other professionals as it relates to job satisfaction and turnover intention. Two phases of data analysis, both quantitative and qualitative, revealed that information technology professionals are least satisfied with their opportunities for promotion, but neutral about quitting their jobs. The

external environment, specifically high demand for information technology skills, is having the greatest impact on information technology professional turnover.

Leaders in higher education information technology can utilize the information obtained in this study to better understand factors influencing job satisfaction and turnover intention of information technology professionals. This information is useful when considering work assignments, potential leadership opportunities, and during performance evaluations. The fact that overall job satisfaction and turnover intention were not found to be different based on campus in the California State University system indicates that information technology professionals in a variety of locations across a large and diverse geographic area can have their satisfaction influenced for the better.

The results of this study are a reminder that turnover is both positive and negative. Managers of information technology professionals in the California State University system view turnover as highly situational. While turnover of information technology professionals can have negative effects, especially with specialized institutional knowledge is lost, it can also improve morale, if the employee leaving is a low performer, and bring new energy to the team.

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APPENDIX A: IRB APPROVAL

Indiana State University
More. From day one.

Institutional Review Board

Terre Haute, Indiana 47809
812-237-3088
Fax 812-237-3092

DATE:	December 11, 2018
TO:	Brooke Banks
FROM:	Indiana State University Institutional Review Board
STUDY TITLE:	[1341795-2] Job Satisfaction and Turnover Intention in Higher Education: A Study of Information Technology Professionals in the California State University System
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	December 11, 2018
EXPIRATION DATE:	December 10, 2019
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category #7

Thank you for your submission of Amendment/Modification materials for this research study. The Indiana State University Institutional Review Board has APPROVED your submission. The approval for this study expires on **December 10, 2019**.

Prior to the approval expiration date, if you plan to continue this study you will need to submit a continuation request (Form E) for review and approval by the IRB. Additionally, once you complete your study, you will need to submit the Completion of Activities report (Form G).

This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Informed Consent: Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. **NOTE: You must use the electronically stamped informed consent document that has been uploaded into IRBNet.**

Reporting of Problems: All SERIOUS and UNEXPECTED adverse events must be reported. Any problems involving risk to subjects or others, injury or other adverse effects experienced by subjects, and incidents of noncompliance must be reported to the IRB Chairperson or Vice Chairperson via phone or e-mail immediately. Additionally, you must submit Form F electronically to the IRB through IRBNet within 5 working days after first awareness of the problem.

Please note that any revision to previously approved materials must be approved by the IRB prior to initiation. Please use the appropriate revision forms for this procedure.

Modifications: Any modifications to this proposed study or to the informed consent form will need to be submitted using Form D for review and approval by the IRB prior to implementation.

Please note that all research records must be retained for a minimum of three years. If those research records involve health information, those records must be retained for a minimum of six years.

If you have any questions, please contact Dr. Ryan Donlan within IRBNet by clicking on the study title on the "My Projects" screen and the "Send Project Mail" button on the left side of the "New Project Message" screen. I wish you well in completing your study.

APPENDIX B: PERMISSION TO USE THE AJDI AND AJIG

Bowling Green State University

Job Descriptive Index (JDI) Office
214 Psychology Building
Department of Psychology
Bowling Green State University
Bowling Green, OH 43403

December 12, 2018

The Job Descriptive Index (JDI) and family of measures – including the Job In General scale (JiG), abridged Job Descriptive Index (aJDI), abridged Job In General scale (aJiG), Trust in Management scale (TiM), Intent to Quit (ITQ), Stress in General (SiG) scale, Scale of Life Satisfaction (SOLS), and Survey of Work Values, Revised, Form U. (SWV*)* are owned by Bowling Green State University, copyright 1975-2012.

Permission is hereby granted to Brooke Banks to use these measures in his/her research.

The aforementioned scales may be administered to as many participants as deemed necessary.

Claire Smith

Claire Smith, M.A.
JDI Research Assistant
Tel: 419.372.4400
Fax: 419.372.6013
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APPENDIX C: QUESTIONNAIRE

Job Satisfaction and Turnover Intention of Information Technology Professionals in the California State University System

CONSENT TO PARTICIPATE IN RESEARCH

You are being asked to participate in a research study conducted by Brooke Banks, a doctoral student from the Department of Technology Management at Indiana State University and an employee at California State University, Chico. Brooke Banks is interested in understanding the job satisfaction and turnover intentions of information technology employees and the results of this survey will be included in her dissertation. You were selected as a possible participant in this study because you represent the population being examined in the study based on your information technology classification and employment in the California State University system.

PURPOSE OF THIS STUDY

The purpose of this study is to survey perceived job satisfaction and turnover intention of information technology professionals in the California State University system. Employee satisfaction facets (work, pay, opportunities for promotion, supervision, and co-workers), overall satisfaction, and turnover intention will be measured. Further, the study will identify whether there is a significant difference in perceived job satisfaction or turnover intention based on gender, years of service in the California State University system, or campus in the California State University system. The study also examines the uniqueness of information technology professionals at campuses in the California State University system.

PROCEDURES

Participation will take about 15 minutes. If you decide to participate in this study, you will be asked to do the following things:

1. Agree to participate in the study.
2. Click on the link to begin the survey.
3. Respond to six questions on different aspects of job satisfaction and your job in general. Each question will contain between six and eight descriptive words or statements. You will be asked to indicate if the descriptive words or statements accurately describe your present job by answering “yes”, “no”, or “undecided”.
4. Respond to three questions related to turnover intention.

5. Respond to three demographic questions in order to ascertain your gender, years of service in the California State University system, and campus in the California State University system.

POTENTIAL RISKS AND DISCOMFORTS

Although there are no foreseeable risks associated with participation in this study, you will be asked to use a computer or other Internet accessible device to complete the survey. It may require sitting in front of the screen for up to 15 minutes.

POTENTIAL BENFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are no direct benefits to you or society as a result of this study. However, findings from this study will help information technology leaders understand factors influencing employee job satisfaction and turnover intention. In addition, findings from this study will be used to inform future research and ultimately to increase the body of knowledge regarding job satisfaction and turnover intention of information technology employees working in colleges and universities in the United States. Further knowledge of job satisfaction and turnover intention may lead to improved working conditions and increased employee retention rates.

CONFIDENTIALITY

Participant e-mail addresses will be stored on the researcher's computer in an encrypted file. Names and other identifying information will not be gathered with survey questionnaires. Informed consent will be collected online and will not contain identifiable information.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study.

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact:

Brooke Banks (researcher) – bbanks5@sycamores.indstate.edu
California State University, Chico
400 West 1st Street
Chico, CA 95929-0150
(530) 898-5558

Dr. Tad Foster (faculty sponsor) - Tad.Foster@indstate.edu
Indiana State University
Department of Human Resource Development and Performance Technologies
Terre Haute, IN 47809
(812) 237-4508

RIGHTS OF RESEARCH PARTICIPANTS

If you have any questions about your rights as a research subject, you may contact the Indiana State University Institutional Review Board (IRB) by mail at Indiana State University, Office of Sponsored Programs, Terre Haute, IN 47809, by phone at (812) 237-3088, or e-mail the IRB at irb@indstate.edu. You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with ISU. The IRB has reviewed and approved this study.

AGREEMENT TO PARTICIPATE

By beginning the survey (by clicking at the bottom of the page), I am affirming that I am 18 years of age or older, and I understand the procedures and any risks and benefits involved in this research. I understand I am free to refuse to participate or to withdraw my consent to participate in this research at any time without penalty or prejudice; my participation is entirely voluntary. My privacy will be protected because my responses are anonymous.

I understand the procedures described above. My questions have been answered to my satisfaction and I agree to participate in this study. I can print a copy of this form for my records.

- o Yes – I agree
- o No – I decline

Job Satisfaction

For the six questions below, you are asked about an aspect of your current job (work, pay, promotion, supervision, people, and job in general). For each word or phrase following the question, please indicate how well it describes that aspect of your present job.

Choose:

"Yes" if it describes that aspect of your current job

"No" if it does not describe that aspect of your current job

"Undecided" if you cannot decide

1. Work on Present Job

Think of the work you do at present. How well does each of the following words or phrases describe your work? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Fascinating	o	o	o
Satisfying	o	o	o
Good	o	o	o
Exciting	o	o	o
Rewarding	o	o	o
Uninteresting	o	o	o

2. Pay

Think of the pay you get now. How well does each of the following words or phrases describe your present pay? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Barely live on income	o	o	o
Bad	o	o	o
Well paid	o	o	o
Underpaid	o	o	o
Comfortable	o	o	o
Enough to live on	o	o	o

3. Opportunities for Promotion

Think of the opportunities for promotion that you have now. How well does each of the following words or phrases describe these? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Good opportunities for promotion	o	o	o
Opportunities somewhat limited	o	o	o
Dead-end job	o	o	o
Good chance for promotion	o	o	o

Fairly good chance for promotion	o	o	o
Regular promotions	o	o	o

4. Supervision

Think of the kind of supervision that you get on your job. How well does each of the following words or phrases describe this? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Praises good work	o	o	o
Tactful	o	o	o
Influential	o	o	o
Up to date	o	o	o
Annoying	o	o	o
Knows job well	o	o	o

5. People on Your Present Job

Think of the majority of people with whom you work or meet in connection with your work. How well does each of the following words or phrases describe these people? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Boring	o	o	o
Slow	o	o	o
Responsive	o	o	o
Smart	o	o	o
Lazy	o	o	o
Frustrating	o	o	o

6. Job in General

Think of your job in general. All in all, what is it like most of the time? Select "Yes", "No" or "Undecided" for EACH word or phrase.

	Yes	No	Undecided
Good	o	o	o
Undesirable	o	o	o

Better than most	o	o	o
Disagreeable	o	o	o
Makes me content	o	o	o
Excellent	o	o	o
Enjoyable	o	o	o
Poor	o	o	o

Turnover Intention

The next questions are about you and your job. When answering, keep in mind the work you do and the experiences you have working in Information Resources. Please answer the questions below.

	Very Unlikely	Somewhat Unlikely	Unlikely	Not Sure	Somewhat Likely	Likely	Very Likely
How likely is it that you will actively look for a job outside of this organization during the next year?	o	o	o	o	o	o	o
How likely is it that you could find a job with another employer with about the same pay and benefits you have now?	o	o	o	o	o	o	o

The next question is a statement about you and your job. How much do you agree or disagree with this statement?

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
I often think about quitting.	o	o	o	o	o	o	o

How many years have you worked in the California State University system?

- o Less than 1 year
- o 1-5 years
- o 6-10 years
- o 11-15 years
- o 16-20 years
- o More than 20 years

What is your gender?

- o Male
- o Female
- o Prefer not to state

Which campus do you currently work at?

- o Campus 5
- o Campus 1
- o Campus 3
- o Campus 4
- o Campus 6
- o Campus 2

Comments:

Please feel free to add comments:

Thank you for your time. You either reached this page by answering the survey questions or because you decided not to participate in the study.

Please click “Done” to submit your survey.

APPENDIX D: INTERVIEW PROTOCOL

Good morning/afternoon. Thank you for taking the time to speak with me, your perspectives are incredibly valuable to my research. Before we start I want to verify that you are comfortable with my recording this interview. The interview recording and transcription will be kept confidential and your name and campus will not be used in my dissertation or any future publications.

I am interested in talking with you about your perceptions regarding the satisfaction and turnover of IT professionals in your organization.

I plan to break this interview into two sections. The first will be related to the satisfaction of IT employees. The second will be related to the turnover of IT employees. For clarification, when I use the word turnover, I mean employees leaving their jobs voluntarily, for reasons other than retirement.

Satisfaction

1. What are some things you think might cause dissatisfaction with your employees?

2. What are some things you think help make employees more satisfied?

3. Do you feel that IT professionals are different from other professionals when it comes to satisfaction with their jobs? If you do think they are different, in what ways?

Turnover

4. Turnover can be viewed both positively and negatively. Tell me how you view turnover of employees in your organization?

5. What are some things you think might be causing turnover in your organization?

6. Do you feel that IT professionals are different from other professionals when it comes to turnover? If you do think they are different, in what ways?

7. Before we end the interview, is there anything else you would like to add?

Thank you again. Your feedback today has been very helpful.