

CIOS' TRANSFORMATIONAL LEADERSHIP BEHAVIORS IN COMMUNITY COLLEGES IN RELATION TO INFORMATION TECHNOLOGY WORKERS

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Abstract:

The purpose of this quantitative, descriptive research study was to determine, through statistical analysis, any correlation between the perceived transformational leadership traits of CIOs at two-year community colleges in Kansas and measures of the job satisfaction among IT workers at those community colleges. The objectives of this research project were to help fill the gap in the body of knowledge about the growing number of employees of technology in higher education, and arm community college leaders with the information needed to better serve staff, and more positively affect employee experiences, leading to improved campus-based outcomes.

Key Word: Quantitative. Transformational Leadership. Job Satisfaction. CIOs. Information Technology Workers. Community colleges.

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Introduction

As the complexity and subtle functions of technology have recently increased in higher education, so has the demand for professionals who can manage and strategize the role that information technology plays in two-year community colleges. Across a variety of industries, Chief Information Officers (CIOs) are now responsible for leading information technology functions of their organizations. Brown (2006) posited that CIOs in higher education play a pivotal role in solidifying the relationship and “bridging any communication and action gap between the organization and Information Technology” (p. 49). Expected to accomplish more with less, CIOs in two-year community colleges face many challenges, one of which is how to improve and sustain job satisfaction among Information Technology workers.

Leadership is considered an essential component of community college environments. CIOs can influence Information Technology workers through their leadership behaviors and traits. Consequently, CIOs must exhibit certain leadership behaviors and traits that foster an environment that boosts Information Technology workers’ job satisfaction. Through an effective worker-leader relationship between CIOs and Information Technology workers, two-year community colleges can better serve students and achieve strategic goals.

Background of the study

A community college is “any institution regionally accredited to award the associate in arts or the associate in science as its highest degree” (Cohen & Brawer, 2009, p. 5). Community colleges may be private, non-profit, or for-profit. Community colleges may also be government-funded. Cohen and Brawer (2009) posited that community colleges were founded on the pressing need for higher education beyond secondary education in the early 1900s. As costs for traditional four-year universities continue to skyrocket, transfer among academic institutions offers a financial advantage for students when they start at a lower-cost community college and later transfer academic credits to universities as junior-level students (Shannon & Smith, 2006).

The last decade brought even more growth and diversity to community college campuses. According to the American Association of Community Colleges (2011), the number of students enrolled in community colleges in the United States grew to 6.5 million in 2005 and almost doubled to 12.4 million students in 2011. As attendance is growing, the costs of attending are similarly escalating. Community colleges are complex, with increasingly diverse enrollments,

decreasing funds which lead to increasing costs, and increasing outcome expectations. Technology paves the way and assists community colleges in meeting the challenge of serving a diverse student body effectively. “The new way of doing things makes the information technologies more valuable, and the new and better technologies make the new ways of doing things more possible” (Friedman, 2007, p. 178). Information technology not only helps to automate processes, but helps to shape organizations and facilitate the creation and maintenance of relationships among employees, leadership, stakeholders, and the students that the colleges serve (Ball, Weaver, & Kiel, 2004).

Recent studies have identified factors that influence IT worker job satisfaction, which also relates to employee turnover. Ghapanchi and Aurum (2010) classified these determinants as individual, organizational, job-related, psychological, and environmental. McKnight, Philips, and Hardgrave (2009) studied job security, reward fairness, team information sharing, and trust in senior leadership. Role ambiguity, role conflict, work exhaustion, and work-family conflict have also been studied in relation to aspects of IT personnel job satisfaction (Allen, Armstrong, Reid, & Riemenschneider, 2008; Calisir, Gumussoy, & Iskin, 2009).

This research study examined the relationship between those transformational leadership behaviors of community college CIOs that are perceived by IT workers and the IT workers’ expressed job satisfaction. The study focused on the potential of transformational leadership qualities to maximize community college Information Technology workers’ job satisfaction, thereby adding information from the outcomes of the rigorous data analysis to the published literature on the background of the topic.

Problem and Purpose of the study

A growing percentage of the workforce in the United States is employed in an IT environment, and the IT workforces of community colleges are expanding in similar proportion. However, there does not appear to be a sufficient amount of literature available that documents how leaders manage IT employees, especially in a community college environment (Scharff, 2005). There is a lack of knowledge regarding the relationship between leadership behaviors and the job satisfaction of IT workers in community college IT departments. Chief Information Officers and technology leaders, in general, must demonstrate management skills capable of successfully leading IT employees through complicated, costly, and complex institutional initiatives.

However, some researchers have noted the possibility of a growing ambivalence among IT workers that could stem from the relationship between IT workers and IT leaders. The problem is that there is a lack of knowledge regarding the leadership behaviors of community college CIOs as perceived by IT workers. The relationship of those leadership behaviors and traits to IT workers' job satisfaction is unknown (Brown, 2006; Green, 2007).

The purpose of this quantitative, descriptive research study was to determine, through statistical analysis, any correlation between the perceived transformational leadership traits of CIOs at two-year community colleges in Kansas, and measures of the job satisfaction among IT workers at those community colleges. The research on the relationship of higher education IT workers' perceptions of the CIOs' transformational leadership behavior on their job satisfaction helped to fill the gap of knowledge and better informed stakeholders of ways that the leadership-worker relationship can be improved.

Rationale

Understanding what causes job satisfaction or dissatisfaction among community college staff can be important to ensuring continued success of two-year colleges (Klein & Takeda-Tinker, 2009). The objective of this research project was to provide an examination of the perceived leadership behavior factors that may influence the level of job satisfaction among information technology workers. This study fills the gap in the body of knowledge about the growing number of employees of technology in higher education. It arms community college leaders with the information needed to better serve staff and more positively affect employee experiences, leading to improved campus-based outcomes.

Theoretical Support

The theoretical framework of this research built on the previous research that explored the influence of transformational leadership behaviors on workers' job satisfaction (Bakker & Schaufeli, 2008; Bhardwaj & Monin, 2006; Chen, 2004; Griffith, 2004; Lim, 2008; Lok & Crawford, 2004; Piccolo & Colquitt, 2006; Viator, 2001; Walumbwa et al., 2004; Walumbwa et al., 2005).

These theories encompass views about what is considered good relationship behavior and task behavior. The leader-member exchange theory focuses on the relationship between the leader

and the followers. The contingency model contends that the effectiveness of a group is dependent on the leader's style. Transformational leaders motivate followers. The trait theory contends that personal qualities and attributes should be found in individuals in order for them to be called leaders.

Numerous scholars and theorists have explored the factors that positively or negatively affect job satisfaction among personnel. Several popular theories that establish the mechanisms required to provide workers with job satisfaction include Motivation-Hygiene Theory by Herzberg, Range of Affect by Edwin Locke, Job Characteristic Model by Hackman and Oldham, and the Hierarchy of Needs by Maslow. The following paragraphs briefly summarize the concepts, ideals, and viewpoints of each theory (Herzberg, 1968; Locke, 1976; Hackman & Oldham, 1980; Maslow, 1987).

Maslow's Hierarchy of Needs is a psychological theory represented by a pyramid with the more primitive needs at the bottom. The highest level is self-actualization, which is influenced by experience and surroundings (Maslow, 1987).

Herzberg (1968) posits that satisfaction and dissatisfaction are driven by different factors: motivating factors and hygiene factors. Motivating factors are those that attract people to work and provide satisfaction. These motivation factors include achievement, recognition, promotion, growth, responsibility, and the nature of work.

Edwin Locke's Range of Affect Theory states that satisfaction with any job facet is determined by two factors: the have-want discrepancy for the facet and the importance of the facet. How much a person values a given facet of work is said to determine their level of satisfaction for a job facet. Satisfaction with any high-importance job facet is highest when the amount of satisfaction received is equal to the amount needed by an individual (Locke, 1976).

Discussion

Role of Information Technology in Community Colleges

Technology assists community colleges in meeting their challenges more effectively. Information technology has evolved to play a significant role in daily life. "The new way of doing things makes the information technologies more valuable, and the new and better technologies make the new ways of doing things more possible" (Friedman, 2007, p. 178).

Several earlier studies investigated the role of IT in various fields and found that IT products and services are available through various venues to help people achieve their work, communication, and education needs (Knowles, 2006; Larivee, 2008; McManus, 2007). Although the strategic importance of IT has periodically been debated, organizations in various industries acknowledge IT's role in boosting productivity and improving efficiency. The League for Innovation in the Community College is working with a group of researchers on a research project designed to increase understanding of issues relevant to the ability of "technology to improve student engagement and increase student retention" (2011, para. 1).

The results of the annual EDUCAUSE Core Data Service (CDS) survey showed that similar technologies exist at different academic institutions; however, they are at different stages of implementation and utilize the technology in different ways (Hawkins & Rudy, 2008). Survey results reflected that students were not required to own a personal computer in more than 81% of community colleges, but that computer technology was required at several levels for student work and for collegiate communication functions. Community colleges scored highest among academic institutions, when compared to four-year and graduate institutions, in adopting advanced communication technologies.

Community College IT Workers

IT personnel have become a vital element in ensuring the efficient and effective use of technology (U.S. Department of Labor, 2009). Employers attempt to ensure proper employees are in place to maintain necessary business processes and services. With the exponentially increased use of technology, particularly in education, academic institutions rely on their IT personnel to maintain and implement appropriate technology to provide proper resources to staff, faculty, and students. IT personnel at these institutions are now utilized more than before to provide around-the-clock support for the various systems that serve their constituents' computing needs. Due to the rapid and constant change in technology paradigms for academic institutions, IT personnel in academic institutions are always attempting to stay current on new technologies. IT professionals working in academic institution positions such as system administrators, programmers, system analysts, and support technicians, are responsible for similar computer environments (hardware, software, training, and user support) as their counterparts in private industry (Carnevale, 2007).

In addition to their typical responsibilities, which include the Enterprise Resource Planning System (ERP) and technology infrastructure on campus, IT personnel are implementing and maintaining additional data requests and systems to serve the progress of academic programs and initiatives at their respective colleges (Stout, 2007). IT professionals are also tasked with learning new technologies and with finding new ways to provide effective and efficient technical support for other departments and students. Although some two-year community colleges are competitive with four-year universities in terms of budget, campus facilities, and enrollment numbers, the majority of two-year community colleges are running smaller operations. This is true especially in the state of Kansas.

Employee turnover, in particular, can be a problem for the IT workforce (Luftman, 2008). Employee turnover can have negative implications, and this is why employers, especially in higher education, are interested in retaining productive and knowledgeable IT personnel. Regardless of the industry, hiring new employees can be costly, both in terms of the learning curve, which may impair customer service in some cases, and in terms of expenditures for recruiting efforts. The use of new employees often results in incurring employment expenses; additionally, the transition phase could lead to larger expenses and delays in productivity, compared to utilizing current employees (Mitchell et al., 2001). Such concerns are also true regarding IT personnel in academic institutions and government organizations (National Association of State Chief Information Officers, 2008).

According to the Society for Information Management, in a 2007 survey cited by Luftman (2008), attracting, developing, and retaining staff is the most important task of IT managers and executives. This task is also a top priority for IT management and executives in institutions of higher education (Guess, 2008). CIOs have noted IT employees' attraction and retention as a top concern in surveys conducted with two- and four-year institutions. Employers, particularly in higher education, are challenged to find the optimum balance between hiring new employees and retaining current employees. According to Klein and Takeda-Tinker (2009), community colleges are experiencing high levels of annual turnover and retirement among staff, and "job satisfaction among employees in these institutions is therefore of vital importance to leadership that must increasingly work to understand and address factors of job satisfaction and turnover" (p. 1).

Transformational Leadership

Burns (1978) was among the first researchers to distinguish between transactional and transformational leadership. He characterized transformational leadership as a model in which leaders and followers operate in greater levels of morality and motivation (Burns, 1978). Bass (1990) expanded on Burns' transformational leadership theory and provided a definition for the transformational leadership model that is widely used by researchers. Transformational leaders are those who help their followers understand the significance of their work results, are concerned with the well-being of the organization and team before their own, and attempt to achieve their higher order needs. To be effective, transformational leaders must show charisma and inspire their followers. They stimulate the intellectual abilities and satisfy the emotional requisites of their followers (Northouse, 2010).

The Chief Information Officer (CIO)

The senior technology professional of an organization is commonly called the Chief Information Officer (CIO) (Brown, 2006). The position of CIO is a fairly recent addition to the higher education administrative team (Hawkins, 2004). As technologies and education evolved over the years, the role of the CIO also evolved from a technical authority to an institutional leader responsible for creating an institution's information technology strategy and associated governance (Brown, 2006; Hawkins, 2004). Due to the vital role they play in academic institutions, 92% of CIOs in higher education report directly to the president, vice president, or provost (Moberg, Bucher, Horgan, Paterson, & Todd, 2000). The success of CIOs and technology leaders, in general, is contingent upon understanding not only the techniques and methodologies known as Computer Aided Software Engineering (CASE) tools, but also the ongoing group dynamics within teams (Hsu, 2006).

The roles and responsibilities of CIOs have evolved throughout the years. The Chief Information Officer is known to wear many hats in higher education institutions. The position of CIO in higher education may be defined similarly to the way it was defined in 1981: a senior executive of an organization with business and technical expertise usually responsible for information technology policies, management, and standards in the organization (Beatty, Arnett, & Liu, 2005). Recently, due to the evolution of the role technology plays in institutions of

higher education, the scope of the CIO role has expanded to include strategic responsibilities. The position has become an executive level position that goes beyond the management of daily information technology operations to one that is vital in the strategic planning within the organization (Beatty et al., 2005). According to Bucher, Horgan, Moberg, Paterson, and Todd (2001), the CIO needs three primary skills: to communicate effectively, to think strategically, and to collaborate with business partners. Obviously, CIOs need many skill sets to be effective in the higher education setting.

Job Satisfaction

“Job satisfaction has been traditionally utilized as a surrogate for a desirable organizational outcome,” (Mancheno-Smoak, 2008, p. 1). Personnel who are satisfied with their job tend to reveal positive feelings towards the job they perform (Robbins & Judge, 2008). According to Robbins and Judge (2008), personnel with high job satisfaction are more likely to be more responsive and act in a friendlier manner. “Job satisfaction is an attitude that depicts employee contentment and indicates the extent to which the employee puts heart and soul into the job” (Nayab, 2011, para. 1).

Not all personnel are equally satisfied or dissatisfied with their jobs. When job satisfaction is considered from different angles, levels of job satisfaction may differ substantially depending on whether personnel are satisfied with the nature of the work, the pay, potential for growth, and leadership (Spector, 1997). Robbins and Judge (2008) also affirmed that routine or mundane work do not help raise the level of job satisfaction among personnel. When the work has a challenging and exciting nature, people may be more likely to find it enjoyable and satisfying.

Theories of Job Satisfaction

Most people join the workforce because of some necessity, but they are not obliged to work in a particular occupation or workplace. Numerous scholars and theorists have explored the conceptual factors that positively or negatively affect job satisfaction among personnel. Research has been conducted to understand those factors that lead to job satisfaction among various professions such as IT workers in health care, counselor educators, business employees, lawyers, and municipal employees (Allen et al., 2008; Bakker & Schaufeli, 2008; Bhardwaj & Monin, 2006; Calisir et al., 2009; Ghapanchi & Aurum, 2010; Lim, 2008; Kleinman, 2004; McKnight et al., 2009; Saint-Onage, 1996). Several popular theories that establish the mechanisms required to provide workers with job satisfaction include Motivation-Hygiene

Theory by Herzberg, Range of Affect by Edwin Locke, Job Characteristic Model by Hackman and Oldham, and the Hierarchy of Needs by Maslow.

Job Satisfaction in Community Colleges

Job satisfaction among employees in community colleges is vitally important to leadership who must work to understand and address factors of job satisfaction and employee turnover (Klein & Takeda-Tinker, 2009). Hagedorn (2000) argued that campus-wide positive outcomes can only be achieved within an environment that considers and values the satisfaction of all the employees in the college. However, studies spanning the last decade on job satisfaction of employees on college campuses have largely focused on faculty experiences (Corbin, 2001; Klein & Takeda-Tinker, 2009; Satterlee, 2008). The results of those studies consistently reflect strong positive correlations between overall job satisfaction and the ratings of faculty on superiors' leadership practices.

Job Satisfaction of IT Workers

Recent studies have identified factors that influence job satisfaction. Job satisfaction may relate to an employee's intention to leave (Ball et al., 2004; Thatcher, Liu, Stepina, Goodman, & Treadway, 2006). In a systematic literature review of 72 studies published between 1980 and 2008 to determine the root causes of turnover of information IT personnel, Ghapanchi and Aurum (2010) identified 70 "distinguishable determinants of the intentions of IT personnel to quit their workplaces" (p. 241). These determinants were classified in five categories, each containing up to four subcategories: individual, organizational, job-related, psychological, and environmental. The classification in the study could be explained in terms of external reasons. IT personnel sometimes resolve to leave the workplace for external reasons such as "negative organizational culture, image violation, politics and infighting in workplace or having a bad boss" (Ghapanchi & Aurum, 2010, p. 245).

The study showed the need for future research to investigate the impact of technological change on IT personnel's intentions to leave a workplace and the relationship of the perceived organizational culture and leadership behaviors to employee job satisfaction. McKnight et al. (2009) studied the effects of workplace characteristics and job characteristics on turnover rates among IT personnel in a large publicly traded U.S. food products organization. They found that although job and workplace characteristics had a significant effect on turnover among IT

personnel, workplace characteristics had the greatest impact. The workplace factors examined in the study were: job security, reward fairness, team information sharing, and trust in senior leadership. McKnight et al. (2009) believed that workplace characteristics were stronger indicators of turnover intention and suggested that IT management needs to influence all four workplace factors to reduce turnover among their personnel.

The study was conducted in a single IT department, limiting the generalizability of its results. Another study by Allen et al. (2008) attempted to determine factors that influence perceived organizational support in one state government. The environment in which the study took place was an organization undergoing transformational change that is known to stress employees (Allen et al., 2008). The results of the study showed that “the importance of providing challenging work was less important than helping employees adjust to the stress they were facing due to role ambiguity, role conflict, work exhaustion” (Allen et al., 2008, p. 561).

The study, however, did not explore the role that leadership played in the research environment and how it impacted the antecedents of job satisfaction. Allen et al. (2008) and Ghapanchi and Aurum (2010) concluded that role ambiguity, role conflict, job autonomy, and perceived workload are other important factors that are useful in predicting turnover and job dissatisfaction among IT personnel. Similarly, Calisir et al. (2009) noted that role ambiguities, role conflict, work overload, and work-family conflict contribute to the high levels of job stress that could potentially lead to turnover among IT personnel. Saint-Onage (1996) explained that people make decisions and develop behaviors based on their beliefs and their individual mind-sets — “the intuition, perspectives, beliefs, and values that people form as a result of their experiences” (p. 11). Examining and studying employees’ perspectives, beliefs, and values as they relate to their experiences, including the behaviors of technology leaders, can reveal important facets of job satisfaction. CIOs in higher education can be a source of human inspiration (Bhardwaj&Monin, 2006), competitive advantage (Bakker &Schaufeli, 2008), individual well-being, and organizational effectiveness (Lim, 2008).

Transformational Leadership and Job Satisfaction

Several studies have been conducted using leadership and job satisfaction as variables. Many of the rigorous research projects involved evaluating the relationship across diverse industries and cultures. Studies have been conducted in business, banking, and finance settings. Other studies have been conducted in public K-12 schools. Still others have been focused on healthcare settings. Emery and Barker (2007) note that “components of employee attitude are organizational commitment and job satisfaction ... A major determinant of an employee’s attitude is his/her perception of their immediate supervisor ... some styles of leadership may be more effective than others” (para. 5).

A consensus confirms that a significant correlation exists between job satisfaction and transformational leadership behaviors. Riaz and Hader (2010) studied a cross-section of organizations in Pakistan, surveying over 200 employees using a validated leadership questionnaire including items of career satisfaction, concluding that effective leadership “plays an important role in the growth and better performance of the organization... transformational leadership and job success are found highly related with career satisfaction” (p. 29). Gill, Flaschner, Shah, and Bhutani (2010) surveyed 218 restaurant industry employees in India to test if transformational leadership affects job satisfaction.

The researchers reported positive relationships between employees’ perceived transformational leadership behaviors of management and employee perceived job satisfaction. Lok and Crawford (2004) examined the differences between east and west cultures, using Hong Kong and Australia, verifying that leadership style seems to be a universal antecedent of job satisfaction. Walumbwa et al. (2004) studied more than 400 employees in Asian banking and finance settings, concluding that there was a positive association of job satisfaction with transformational leadership behaviors. Walumbwa et al. (2005) later completed factor analyses on leadership, organizational commitment, and job satisfaction, comparing workers of Kenya and the United States, showing that transformational leadership has a positive effect on organizational commitment and job satisfaction across cultures.

The authors suggest further research about employee-perceived managerial transformational leadership, and employees’ perceived job satisfaction. Griffith (2004) conducted research in elementary school settings, including over 3,000 employees, linking transformational leadership style to job satisfaction and school performance. Chen (2004) conducted quantitative studies on

job satisfaction, organizational commitment, and transformational leadership, concluding that transformational leadership training may have the potential to enhance followers' job satisfaction. Viator (2001) conducted quantitative analyses on data collected from more than 400 business employees, revealing that transformational leadership was directly and positively associated with job satisfaction, suggesting future studies in less traditional business arenas. Sharma and Bajpai (2011) published results that support these findings, after surveying 250 private and public sector employees in both managerial and non-managerial positions, including a transformational component, concluding that "effective leadership not only increases job satisfaction but also improves productivity, organizational commitment and climate of the organizations" (p. 81). Piccolo and Colquitt (2006) framed transformational leadership in terms of Hackman and Oldham's core job characteristics.

They studied 283 individuals from administration/support, web design. Computer networking/technology, and education/training positions. Analyses of their data revealed that transformational leadership relationships were significantly stronger for followers who perceived high-quality exchanges between leaders and members. Additional research was suggested that could "shed more light on when transformational leaders can and cannot be expected to have the most significant effects" on followers (Piccolo & Colquitt, 2006, p. 338).

Gaps in Literature

A review of the literature published about Community College settings, IT Workers, Job Satisfaction, and Leadership reveals that there has been attention to the relationship of transformational leadership traits and job satisfaction. The literature contains articles describing research studies about the job satisfaction of faculty in college settings (Castillo & Cano, 2004; Klein & Takeda-Tinker, 2009). Peer-reviewed articles have been published about IT worker job satisfaction in various industries (Allen et al., 2008; Bakker & Schaufeli, 2008; Ball et al., 2004; Bhardwaj & Monin, 2006; Calisir et al., 2009; Ghapanchi & Aurum, 2010; Lim, 2008; McGee, 2006; McKnight et al., 2009; Saint-Onage, 1996). Studies have documented the relationship between transformational leadership traits and employee satisfaction across diverse culture settings (Al-Hussami, 2008; Brooke, 2011; Gill et al., 2010; Kleinman, 2004; Lok & Crawford, 2004; Madlock, 2008; Walumbwa et al., 2004; Walumbwa et al., 2005).

However, there is a lack of documented research on the relationship of transformational leadership to job satisfaction of IT workers in community college settings. It is currently

unknown as to what extent IT workers perceive their CIO as a transformational leader. The overall sense of job satisfaction of IT workers in community college settings is unknown. The relationship between the perceived level of job satisfaction and the transformational leadership factor is unknown.

Methodology

The Multifactor Leadership Questionnaire was used to capture the IT workers' perceptions of their CIO's transformational leadership behavior, and the abridged JDI/JIG was used to gather data related to the workers' job satisfaction. Through comparisons of job satisfaction and the transformational leadership behaviors of CIOs (as perceived by the IT workers), a correlation between these two variables (transformational leadership behavior and job satisfaction) was identified. After data collection, data were analyzed using the statistical methodologies presented in the chapter.

SurveyMonkey© was the online tool used to survey research participants, chosen for its simplicity and practicality. SurveyMonkey© meets the criteria that most university Institutional Review Boards require when using an online survey tool to collect data. SurveyMonkey© facilitates survey distribution via emailing a survey link and/or embedding the survey into websites, including social networks. All of these distribution methods allow the participants to complete responses without being personally identified. The hyperlinks to SurveyMonkey© were sent to a specific participant in each participating institution, who was asked not to forward the link to other individuals in their institutions in order to ensure data integrity. Participants in the study were given five weeks to complete the surveys. The timeframe could have been extended in the event that a higher response rate was needed. SurveyMonkey© allowed the data to be exported and analyzed using the Statistical Package for the Social Sciences (SPSS), version 19.

Due to the geographical distances and conflicting schedules, respondents used the electronic format of the survey rather than other survey alternatives. Introductory emails were sent to 167 IT workers, whose contact information was publicly available on websites for two-year community colleges in Kansas, to request their participation in the current research study via SurveyMonkey©. From this initial email, 12 individuals opted out and chose not to participate in the study, leaving 155 potential participants.

The results of the outreach to potential participants yielded 44 IT workers from 18 two-year community colleges in Kansas, resulting in a response rate of 28%. Although the response rate was slightly lower than the expected response rate aligned with other internet-based survey response rates of 35-45%, the response rate of 28% has been deemed acceptable (Rosenthal, Hursh, Lui, Isom, & Sasson, 2007). Response rates in the 17%- 28% range have been described as reasonable or “consistent with those obtained in similar studies” (Sivo et al., 2006, p. 359).

Analysis and Results

Two-tailed *t* tests were used to examine statistical significance between means, to accept or reject null hypotheses. The Pearson Product Moment Correlation (Pearson's *r*) and ANOVA with linear regression were applied to determine any relationship between IT workers' job satisfaction and the perceived transformational behavior of their CIOs.

Specifically, descriptive statement scores were summarized into frequency observations for leadership attributes of the MLQ. To determine the implication of the mean scores, the MLQ subscale means were compared to the normative database. The two-tailed *t* test, $p=0.05$ analysis determined whether the perceptions of the participants differed significantly from the national norms database.

The abridged JDI/JIG raw score for each participant was compared with a neutral or ambivalent point to help determine satisfaction. A graph of the mean and range of the respondents' raw scores was generated. T-test application revealed a difference between means and an indication of relative job satisfaction, which could be compared to national norms. The relationship between perceived transformational leadership traits and IT workers' job satisfaction were analyzed using correlation and regression statistics utilizing the Pearson product moment correlation with linear regression using ANOVA.

Transformation leadership was measured by the MLQ using five specific areas: Idealized Influence (Attributes), Idealized Influence (Behaviors), Inspirational Motivation, Intellectual Stimulation, and Individual Consideration. Mean scores for the national norms, standard deviations, and number of respondents was provided by the MLQ Manual (Avolio et al., 2004). These data were used along with the mean scores from the sample respondents to perform a *t*-test to determine how the sample compared to the national norms. A two-tailed *t*-test was used to test the significance of a non-directional hypothesis (i.e., there is a difference between two averages without saying which one of the two is larger). The results in Table 2 reveal that all

five areas which comprise the measure of Transformational Leadership were found to be statistically significant, with the sample means lower than the national norm means.

The findings of the study showed that Statistical analysis of the data suggested a strong correlation between the perceived transformational leadership behaviors of CIOs and IT workers' job satisfaction. Transformational leadership would produce an increase in job satisfaction, as the analysis showed that transformational leadership behaviors accounted for 35% of job satisfaction and an increase of one in transformational leadership would produce an increase of 3.756 in satisfaction. Consequently, as CIOs in Kansas-based community colleges enhance and exhibit more transformational leadership behaviors, more IT workers may be expected to express more job satisfaction.

Conclusion and Recommendation

The findings of the study showed that IT workers employed by community colleges in Kansas do not perceive the leadership behaviors exhibited by their CIOs or top level IT executives as more transformational than the norm. The results further suggest that CIOs in community colleges of Kansas could improve their approach in the specific areas that comprise transformational leadership: Idealized Influence (Attributes), Idealized Influence (Behaviors), Inspirational Motivation, Intellectual Stimulation, and Individual Consideration. This finding may prompt an action by community colleges in Kansas to instate program mechanisms to improve efficacy and advocacy of leadership development programs for CIOs and top level IT executives. Chen (2004) concluded that transformational leadership training may have the potential to enhance workers' job satisfaction. Showing a relationship between IT workers' job satisfaction and the perceived transformational leadership behaviors of their CIOs, this study supports Chen's idea of transformational leadership training.

The findings revealed measures of job satisfaction influences on IT workers in Kansas community colleges, including: (a) pay, (b) promotional opportunities, (c) work on present job, (d) people on present job, (e) supervision, and (f) transformational leadership behaviors. Recommendations invite all Kansas-based community college stakeholders to participate in the process of heightening job satisfaction among IT workers of the organizations, and further suggest additional research be conducted on leadership and job satisfaction of collegiate level IT workers.

The job satisfaction literature contains almost endless combinations involving professions, measures of satisfaction, and the effects of leadership behaviors. This wealth of research provides commonalities and differences that researchers and administrators can use to evaluate studies regarding practices to help achieve job satisfaction in their own organizations. However, the findings of the current study point to other opportunities for information technology leadership research in institutions of higher education. Further research may seek to relate other CIOs' leadership styles with various metrics of institutional effectiveness and IT success in the institution.

Case studies focused on a specific community college can determine the leadership style that fits best with specific elements of the institution. By working from the broader study characterizing the group of Kansas-based community college IT workers, progressing to a more narrow view of the individual college experience, researchers can add depth of knowledge and understanding of the more specific phenomena that might occur within individual campuses. By adopting added qualitative research methods, potential indicators for success of a certain leadership style can be ascertained so colleges can know which leadership style is best suited for their campus environment, and how the CIOs specific to each campus can most positively impact workers.

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