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HOW THE TRANSFORMATIONAL LEADERSHIP STYLE OF SUPERINTENDENTS IS
ASSOCIATED WITH EMPLOYEES' ORGANIZATIONAL COMMITMENT VIA
THE MEDIATING EFFECT OF EXTRINSIC MOTIVATION WITHIN
NURSING HOMES FOR DISABLED PEOPLE IN TAIWAN

by

LING-HUI YANG

A DISSERTATION

Presented to the Faculty of the University of the Incarnate Word
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF THE INCARNATE WORD

August 2016

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Ling-Hui Yang

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Ling-Hui Yang, Ph.D.

University of the Incarnate Word, 2016

In 2013, about 4.8% of Taiwanese people qualified as having a disability; a disability is classified as having mild, moderate or severe, and in some cases, extremely severe intellectual disabilities or having multiple disabilities (Ministry of the Interior, Department of Statistics, 2013; Tseng, 2013). In 2013, there were 254 nursing homes for people with disabilities that were registered with the Social and Family Administration at the Ministry of Health and Welfare in Taiwan (Lee et al., 2013; Tseng, 2013). The current problems in Taiwan's nursing homes for the disabled include overworked employees, employees with a poor work-life balance and excessive job stress, ineffective leadership, poor communication among administrators, and little or no staff support (Lee, 2007; Lin, 2008; Tseng, 2013). This results in a low sense of job accomplishment, a low sense of belonging, low morale, and lack of cohesiveness (Lee, 2007; Lin, 2008; Tseng, 2013). This negative cycle has led to high turnover rates and minimal retention and has had crippling effects on the organizations (Chou, 2005; Lee, 2007; Lee et al., 2013). According to the Taiwan Council of Labor Affairs, there is nearly a 50% turnover rate of professional employees at these institutions (Lee et al., 2013; Tseng, 2013).

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how

this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. Data for analysis, using the Multifactor Leadership Questionnaire (MLQ), the Work Preference Inventory (WPI), and the Organizational Commitment Questionnaire (OCQ), were collected from full-time employees who were randomly selected from 70 nursing homes for disabled people. An SPSS program was used to analyze the data and descriptive statistics, Pearson correlation coefficients, and sequential multiple regression analysis were used to answer the research questions.

This study's findings showed that gender was not associated with organizational commitment and that superintendents should recruit married employees and employees with college degrees in order to promote more organizational commitment. The findings also indicated that physical care employees' commitment, compared with the commitment of social workers, special education teachers, and other professionals in nursing homes of Taiwan, was low. Superintendents, therefore, should conduct official self-assessments and unofficial sessions with them to understand which factors lead to their stress and, ultimately, their intention of leaving the organization. The data further showed that deploying transformational leadership practices would be an inevitable trend in order to increase organizational commitment and lower turnover rates aggressively. Lastly, the findings showed that transformational leadership contributed to the variability of organizational commitment significantly and that extrinsic motivation was the important factor of shared variability of organizational commitment. This means that transformational leaders of nursing homes should not only use strategic techniques to develop future innovations and offer high quality services but also take into consideration extrinsic motivation to promote organizational commitment.

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Chapter 1: Introduction

Context of the Study

Leadership has always played an important role in human resources because leadership involves the process of influencing a changing environment through leaders' behaviors, which affect employees' job-related behaviors and attitudes (Slack, 1997). Hersey and Blanchard (1982) referred to leadership as "the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation" (p. 3). Leaders need to exhibit an effective leadership style to motivate, organize, and direct tasks of subordinates. They also need to build up teamwork to improve morale and cohesion within organizations (Yukl, 2002).

Effective leadership can motivate employees to complete common goals with confidence (DuBrin, 2004). Employees' high motivation toward their work affects their performance in the organization (Herzberg, 1996). Furthermore, leadership style has a significant bearing on employees' motivation, attitudes, and job performance (Yukl, 2002). Work motivation is a force that drives one to achieve certain goals (Herzberg, 1996). In addition to motivation, the role of a leader is crucial in enhancing the performance of employees (Muchinsky, 2003). Likewise, if employees are highly motivated under a good leader, then they will show commitment and loyalty on their own (Trang, Armanu, Sudiro, & Noermijati, 2013).

Drucker stressed that employees are the most important asset of any company, so building a committed and motivated workforce is the main objective and the key to success in today's organizational development (as cited in Joo & Park, 2010; Liu, 2006). He also stated that organizations are shifting from hierarchical management to information-based and self-governing specialists (as cited in Joo & Park, 2010; Liu, 2006). Organizational jobs are becoming more complex and unpredictable, characterized by multidisciplinary and nonrepetitive

tasks. They require increased intrinsic motivation and organizational commitment, which are contributors to the success of an organizational development (Parker, Wall, & Cordery, 2001).

Several studies have been conducted to decipher the best methodologies to affect positive change in leadership at social welfare institutions in Taiwan. These studies were conducted in a variety of industries including, business, military, high-tech industrial systems, and educational fields (Podsakoff, MacKenzie, & Bommer, 1996; Seltzer & Bass, 1990; Waldman, Bass, & Einstein, 1987). Specifically, social welfare institutions for disabled people in Taiwan also have an emergent need for effective leadership training to improve the service quality and morale within the work environment. The leaders in Taiwan's nursing homes need to acquire effective leadership training in order to meet the demands of the rapidly changing environments of social welfare systems (Liu, 2006). Notably, leaders of nursing homes for disabled people in Taiwan are facing unexpected and unprecedented challenges in their positions that often make them feel overwhelmed, so positive reinforcement delivered under transformational leadership is necessary (Lee, Lin, & Chu, 2013). Although research on work motivation and organizational commitment has increased during the past two decades (Joo & Park, 2010), the relationship between leadership styles, work motivation, and organizational commitment has not been well addressed in social welfare institutions for disabled people in Taiwan.

Organizational characteristics of nursing homes for people with disabilities in Taiwan. In 2013, about 4.8% of Taiwanese people qualified as having a disability; a disability is classified as having mild, moderate or severe, and in some cases, extremely severe intellectual disabilities or having multiple disabilities (Ministry of the Interior, Department of Statistics, 2013; Tseng, 2013). According to the statistics published by the Social and Family Affairs Administration of Health and Welfare, in 2013 there were 254 nursing homes for people with

disabilities that were registered with the Social and Family Administration at the Ministry of Health and Welfare in Taiwan (Lee et al., 2013; Tseng, 2013). These registered nursing homes fall into one of three categories. They are either (a) private nursing institutions for people with disabilities that are registered legally as nonprofit corporations, (b) public social welfare institutions for people with disabilities, or (c) private nursing institutions approved by the Ministry of the Interior and operated by private organizations (Lin, 2008; Tseng, 2013; Yen, Lin, Loh, & Wu, 2004).

The target population of nursing homes for people with disabilities fall under two categories: (a) child and adolescent services whose target population includes 5- to 6-year-old children with developmental delays and 7- to 17-year-old children and adolescents with moderate, severe, or extremely severe intellectual disabilities or multiple disabilities; and (b) elderly and adult services whose target population includes people aged 18 or over with moderate, severe, or extremely severe intellectual disabilities, multiple disabilities, dementia, or Alzheimer's disease (Lin, Yen, & Loh, 2004; Yen, 2007). Services provided include consultation, early therapy, residential programs, special education, health care, rehabilitation, employability skill training, auxiliary aids, family care, life education, and referral consultation (Chou, 2005, 2006). For the most part, funding comes from government subsidies and payments made by parents and other social resources (Lee, 2007; Tseng, 2013).

Leadership styles. A successful and effective leader should motivate his employees by building high morale, self-esteem, and confidence in order to see positive work results (Chuang, 2013; Punnett, 2004). Logically, a motivated work environment leads to higher performance and increased productivity of the organizations (Watkiss, 2004). Leaders should be responsible for the increase in motivation of their employees, which would allow their employees to feel a

stronger sense of commitment and ownership toward achieving their goals and a more desirable intention to stay with their organization (Chuang, 2013; Punnett, 2004). An effective organization would assure a spirit of cooperation and a sense of commitment and satisfaction in order to make employees feel satisfied and committed to their jobs (Rawung, 2013). A key to a successful organization lies in whether its employees are motivated by deeply held values, beliefs, and a shared vision (Brown & Sheppard, 1997; Tella, Ayeni, & Popoola, 2007).

What are the characteristics of a good leader? As cited in Bass (1995), Burns classified three main leadership styles: transformational, transactional, and laissez-faire. Each is uniquely different and purposeful in the right work environment.

Transformational leadership. As indicated by Givens (2008), “Burns identified transformational leadership as a relationship in which the leader and the follower motivated each other to higher levels which resulted in value system congruence between the leader and the follower (Krishnan, 2002)” (p. 4). Transformational leadership focuses on the ability of a leader who can adjust to accommodate the changing organizational development, professionalism, and complexity of job patterns without stalling productivity of the workplace (Avolio, Zhu, Koh, & Bhatia, 2004). By promoting high-level workplace motivation and inspiring common goals and values and a shared vision, transformational leaders are more confident to stimulate their employees to get more involved in their jobs (Avolio, 1999; Bass & Avolio, 1994; Yammarino, Spangler, & Bass, 1993). Transformational leaders stimulate employees to seek new ways to solve problems and overcome challenges, and to identify their own needs. Leaders are able to motivate their employees to be more involved in their work, resulting in higher levels of organizational commitment (Walumbwa & Lawler, 2003).

Transactional leadership. Transactional leadership is a style of leadership in which the

leader promotes compliance of his or her followers through both rewards and punishments (Bass, 1985, 1990, 2000, 2008; Burns, 1978). In the transactional work relationship, the leader issues assignments, then praises or punishes the employee for effectively or ineffectively completing the tasks. The only responsibility of the employee is to effectively complete the assigned tasks and receive the appropriate reward or discipline (Bass, 1990).

Laissez-Faire leadership. Although empirically separable, transformational and transactional leadership are both displayed by effective leaders (Burns, 1978). In addition to these two styles, researchers have distinguished a laissez-faire style that is marked by a general failure to take responsibility for managing (Avolio, 1999; Bass, 2000). Robbins (2004) defined the laissez-faire style as a characteristic of one who abdicates responsibilities and avoids making decisions. Laissez-faire leadership is definitely different from the other two styles and not easily defined. In this case, the followers or employees of a laissez-faire leader have to be well-trained and well-motivated experts (Luthans, 2005). In addition, laissez-faire leaders normally release complete authority to their followers and avoid interference in decision-making. Sometimes these leaders just “provide necessary materials, participate only to answer questions, and avoid giving feedback” (Bartol & Martin, 1994, p. 412).

Organizational commitment. Organizational commitment is an individual expression of loyalty and devotion to an organization (Meyer & Herscovitch, 2001). It is often related to goal and congruence, behavioral investment, and intention to stay (Mowday, Porter, & Steers, 1982). Furthermore, organizational commitment is “the relative strength of an individual’s identification with and involvement in a particular organization” (Steers, 1977, p. 46). It has become more essential than ever to put emphasis on job-related behaviors because assessment of such conduct is more constant and less subjective than job satisfaction in such organizations. Note that

although these principles were discussed by researchers in the early 1980s, they still apply in today's organizations of the 21st century (Nguyen, Mai, & Nguyen, 2014). Organizational commitment can stimulate employees' productivity and their loyalty, trust, and acceptance of organizational goals and values (Chen & Aryee, 2007). Thus, organizational commitment can be beneficial to job-related behaviors, work outcomes, and decreased turnover rate (Rose, Kumar, & Pak, 2009).

The question then arises as to how these facilities are managed. It is a weighty burden to care for those who lack competency and independence. It is extremely necessary that the leaders of such organizations be well trained and knowledgeable about what works and what does not when it comes to staffing and management. In most cases, management and the availability of select services has changed to an individual service plan (ISP); as such, there is more emphasis on teamwork, diversified demands of clients and their parents, professionalism, and complexity of their organizational jobs (Chang & Yen, 2011; Chou, 2005; Lin, 2008).

Statement of the Problem

Research has shown that leadership styles can significantly affect employees' job-related behaviors and organizational effectiveness (Armstrong, 2006; Ketchand & Strawser, 2001; Mathieu & Zajac, 1990; Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989). Relevant studies have also indicated that if leaders fail to exhibit effective leadership styles, their employees show lower morale, lower job performance, and greater dissatisfaction (McMillan, 2010; Pan, 1994). The same situation would result in an increase in employee absenteeism and a higher turnover rate, which may have an impact on job commitment (Cohen, 1993; Lin, 1999; Park, Christie, & Sype, 2014). With the trend toward a substantial increase in the use of ISPs, professionals must face new challenges (Lee et al., 2013; Tseng, 2013). Nursing home employees are expected to

handle each ISP directly. This can be difficult and leads to more responsibility. In turn, adhering to an ISP means that these employees become an instrumental tool in communications between the nursing institutions, clients and parents, and governmental departments of social welfare (Lee, 2007; Lin et al., 2004; Tseng, 2013). The current problems in Taiwan's nursing homes for the disabled, for example, include overworked employees, employees with a poor work-life balance and excessive job stress, ineffective leadership, plus poor communication among administrators, and little or no staff support (Lee, 2007; Lin, 2008; Tseng, 2013). This results in a low sense of job accomplishment, a low sense of belonging, low morale, and lack of cohesiveness (Lee, 2007; Lin, 2008; Tseng, 2013).

This negative cycle has led to high turnover rates and minimal retention and has had crippling effects on the organizations (Chou, 2005; Lee, 2007; Lee et al., 2013). According to the latest statistics from the Taiwan Council of Labor Affairs, there is nearly a 50% turnover rate of professional employees at nursing institutions for disabled people (Lee et al., 2013; Tseng, 2013). Such high turnover rates negatively affect businesses because of the significant amounts of time and money spent on personnel training and recruitment costs. Instability within the work environment is also created resulting in a lack of trust between the service provider and the patient or their family members (Chou, 2006; Lee, 2007; Lee et al., 2013). Employees are negatively affected as well, suffering from low morale, lacking a sense of purpose or accomplishment at work, and lacking a sense of commitment to the organization. Organizations must survey the changing of times. In fact, the job of caring for and nurturing disabled people in Taiwan has faced unprecedented challenges involving nonrepetitive, complicated, and diverse tasks (Janz, Colquitt, & Noe, 1997; Lee, 2007; Lee et al., 2013; Lin, 2008).

In this study, the leaders are superintendents of nursing homes in Taiwan that are taking

increased responsibilities; therefore, they need to increase work motivation and organizational commitment of professional employees in order to contribute to the success of organizational development (Joo & Lim, 2009). Well-motivated and committed employees often feel that organizations value them and that they play an essential role within their jobs, which significantly enhances organizational performance (Curtis, Upchurch, & Severt, 2009; Meyer et al., 1989).

Purpose of the Study

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation.

Research Questions

Answers were sought to the following questions:

1. Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment?
2. Does transformational leadership predict organizational commitment after controlling for covariates?
3. Does extrinsic motivation mediate the association of transformational leadership and organizational commitment after controlling for covariates?

Methodology

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of

extrinsic motivation. In order to examine the purpose of the study, a path analysis model was first developed to find out whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling for the covariates, also known as demographic variables. Four survey questionnaires were used to collect the data because it is the most useful and cost-efficient method that a single researcher can use. An SPSS program was also used to analyze the data: Using descriptive statistics to characterize the sample, Pearson correlation coefficients were used to examine the relationships among these variables. Additionally, sequential multiple regression was used to predict whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling for the covariates.

Theoretical Framework

For the purpose of this study, a theoretical framework that integrates concepts drawn from three theories was developed. The first theory, leadership style theory, is based on Bass' (1998) full range leadership model. The second is work motivation theory, which was assessed by using the Work Preference Inventory (WPI; Amabile, Hill, Hennessey, & Tighe, 1994). This second theory includes intrinsic and extrinsic motivation dimensions. And the third is organizational commitment theory. By choosing these three theories and integrating leadership styles, work motivation, and organizational commitment, I was able to use three valid and reliable instruments to guide and test specifically for the variables identified for the study.

Definition of Terms

Professional employees. The professional employees of nursing homes for disabled people in Taiwan include social workers, pastors, training and caring staff, and an administrative staff. Interdisciplinary and professional teams are composed of occupational therapists, physical

therapists, speech therapists, and special education teachers and psychiatrists (Lee et al., 2013; Tseng, 2013).

Leadership. Chemers (1997) described leadership as a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task. Studies of leadership have produced theories involving traits, situational interaction, function, behavior, power, vision and values, charisma, and intelligence (Northouse, 2001; Richards & Engle, 1986).

Intrinsic and extrinsic motivation. Employees' work motivation was assessed by using the Work Preference Inventory (WPI) developed by Amabile et al. (1994). The WPI was used in this study because it is a validated instrument for use in measuring work motivation (Amabile, Conti, Coon, Lazenby, & Herron, 1996). The WPI is a 30-item paper and pencil inventory scored on two primary scales: intrinsic motivation (15 items) and extrinsic motivation (15 items). Intrinsic motivation is defined as "the motivation to engage in work primarily for its own sake," while extrinsic motivation is defined as "the motivation to work primarily in response to something apart from the work itself" (Amabile et al., 1994, p. 950). Intrinsic motivation aims to measure the elements of self-determination, competence, task involvement, curiosity, enjoyment, and interest. Extrinsic motivation elements include concern with competition, evaluation, recognition, and money or other tangible incentives, and constraints by others.

Organizational commitment. Organizational commitment is defined as "the relative strength of an individual's identification with and involvement in a particular organization" (Mowday, Steers, & Porter, 1979, p. 226). Organizational commitment is composed of three main conditions: "belief and acceptance of goals and values, willingness to exert effort for the organization, and the strong intention to continue membership in the organization" (Dean &

Wanous, 1984; Mowday et al., 1979, p. 225).

Delimitations of the Study

Based on the theories of leadership styles, work motivation, and organizational commitment, the purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. Survey questionnaires were answered only by professional employees currently working full-time in nursing homes for the disabled (Lee et al., 2013; Tseng, 2013). The professional employees included administrative staff, social workers, special education teachers, physical care staff, and other professionals (Lee et al., 2013; Tseng, 2013). This study was delimited by conducting a quantitative method to explore the above relationships by using the following four survey questionnaires: (a) the Multifactor Leadership Questionnaire Form 5X-Short (MLQ), (b) the Work Preference Inventory (WPI), (c) the Organizational Commitment Questionnaire (OCQ), and (d) the covariates survey.

Limitations of the Study

This study's sampling unit was limited to approximately 400 randomly selected employees from 254 nursing homes for disabled people that currently own certificates of registration with the Department of Social Affairs at the Ministry of the Interior in Taiwan (Lee et al., 2013; Tseng, 2013). As a result, this study may include some biased inaccuracy in the data because the sample obtained may not cover the common characteristics of all nursing homes for disabled people in Taiwan. This study only focused on transformational leadership styles of the superintendents and the professional employees' extrinsic motivation and organizational commitment. In addition, leadership theories have been studied mostly in school, enterprise,

military, and health-care workplaces, and little research has been conducted in nursing institutions for disabled people in Taiwan. But there are indeed some differences between past workplaces and this current research site.

Significance of the Study

Past research has mentioned the importance of leadership in Taiwan's social welfare institutions, but there has been less discussion on the relationships between leadership styles of superintendents and professional employees' work motivation and commitment in Taiwan's nursing homes for disabled people (Lee, 2007; Lee et al., 2013). There has been considerable attention placed on leadership styles, motivation, job satisfaction, organizational culture, organizational commitment, and performance (Trang et al., 2013). This study tested these old theories with new participants who work in Taiwan's nursing homes. With this in mind, I hope this study provides (a) better answers as to how transformational leadership is associated with work motivation and organizational commitment (Diefendorff, Brown, Kamin, & Lord, 2002); and (b) more helpful and constructive suggestions to solve the current phenomenon of emergent problems, such as the lack of professional leadership training, low morale and sense of belonging, insufficient motivation, and a high turnover rate. I also hope that this study contributes to the progress of leadership and leads to the improvement of the service quality of Taiwan's nursing homes and the implementation of improved social welfare policies.

Chapter 2: Literature Review

Introduction

The rapid changes in long-term nursing homes for people with disabilities have made them more aggressive in developing effective leadership to maintain continuous improvement in the practice of management (Dana & Olson, 2007). In Taiwan after the 1990s, the operational types of nursing homes gradually moved toward outsourcing services to private organizations and so-called welfare privatization (Chen, 1997). During this period, the long-term nursing industry for people with disabilities faced continuous change and emerging issues that affected leadership behaviors significantly (Connor & Walton, 2011; Walton, 2009). For example, the prevalence of consumer rights and entrepreneurialism, the expectation of ideal care quality, the demands needed to integrate more social resources, the costly professional staff turnover and retention, plus limited finances and the competitive marketplace emphasized the importance of effective leadership practices (Gilster, 2005; Yu & Hu, 2013).

Effective leadership is now required to inspire organizational creativity and innovation to maintain these accessible facilities and offer quality care and services (Lee & Wendling-Adams, 2004). Today's trends in nursing home transformation purposes are to provide extensive service alternatives and proficiency both in management and leadership, to survive within the field, and to compete within the health-care marketplaces (Lee & Wendling-Adams, 2004). The nursing home top administrator, the superintendent, has the responsibility to improve the quality of care and develop a vision to inspire the organizational creativity and innovations by effectively using capital and human resources (Frisina, 2005). It is only the leader of health-care nursing that has access to resources and the authority to influence the quality of care, the staff's attitudes and behaviors, and the improvement of performance (Dana & Olson, 2007).

Drucker (2002) stated that large health-care institutions may be the most complex in

human history and that even small health-care organizations are barely manageable. According to his observation, nursing settings are both complex and require much professionalism (as cited in Bradley, 2003). As such, the importance of effective leadership within long-term nursing settings has attracted more attention to this issue. This is still a rare discussion where limited research has been conducted and few quality and culture transformation initiatives have been activated (Dana & Olson, 2007). The emergent concern of health-care or welfare care organizations is centered on recruiting, retaining, and motivating staff and ensuring quality of care (McGuire & Kennerly, 2006).

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. The specific areas of concentration for this literature review include the following five main topics: (a) the historical development of nursing homes for people with disabilities in Taiwan, (b) leadership in the evolution of long-term care nursing homes, (c) Bass' (1998) full range leadership model, (d) motivation, and (e) organizational commitment.

The historical development of nursing homes for people with disabilities in Taiwan between 1945 and 2007. Between 1945 and 1980, philanthropic organizations and missionary groups, funded by donations, created varied types of private shelters, asylums, and relief housing (Cao, 1995; Pan, 1986). These sheltered institutions focused on the elderly, poor orphans, and mentally and physically disabled people (Huang, 1999; Swain, French, & Cameron, 2003). During this time, the legal infrastructure for the support and treatment of people with disabilities was rudimentary in Taiwan. The only welfare service provided by the government was limited to free surgery and some assistive devices for those low-income families of the disabled population

(Hsiao & Ho, 2010).

These sheltered institutions wanted to implement limited work capacity and undergo training to be more productive. However, the operational consequences of these institutions failed to provide functional benefits in practice and few people with disabilities could live independently (Kao, 1992; Kwon, 2005). In the 1970s, these sheltered or nursing institutions for people with disabilities began to adopt Western scientific medical treatment and social work practices. By offering private services to support the practical and emotional needs of disabled people, these nursing institutions created a service-oriented network, which became the “social infrastructure” that underpinned the mobilization of nursing institutions in the mid-1980s (Kwon, 2005; McCarthy, 1987).

In 1980, the Ministry of the Interior enacted the Disabled Persons Welfare Law, which allowed private institutions for people with disabilities to gain legitimacy of establishment to enhance their continuity and credibility (as cited in Hsiao & Sun, 2000). The new operational type of government-run nursing institutions in Taiwan began to pop up between 1981 and 1999. During this period of time, the professional staff was key institutional agents who were instrumental in implementing and following regulatory principles or guidelines for the management of nursing institutions for people with disabilities (Scott & Backman, 1990). Medical professionals and special educators were then authorized by the Disabled Persons Welfare Law to identify the categories and level of disability (Chang, 1981). The involvement of these professionals led to the adoption of the charity model, which focused on the standardized process of screening and evaluating treatment and rehabilitation (Chang, 1981).

The only public subsidy stipulated in the Disabled Persons Welfare Law was for medical and rehabilitation expenses. While rehabilitation could mean rebuilding capacities in many

different spheres, it was noticeable that people with physical disabilities were the only recipients of vocational rehabilitation during this period of time (Chang, 1981; Su, 1993). These vocational training programs were provided to facilitate social reintegration into the workforce (Su, 1993), and medical supplements were given to patients to alleviate and cure their physical impairments (Ho, 2005; Jiang & Wang, 1981). Then, a new pattern of partnership on behalf of “welfare privatization” between state and disability organizations emerged (Cao, 1995; Ho, 2005). Because the relevant authorities were criticized as being ineffective, the operational types of nursing homes gradually moved toward outsourcing services to private organizations and so-called welfare privatization (Chen, 1997; Ho, 2005). The hope was that the emergent operational type of welfare privatization within nursing institutions would replace the traditional government agencies to administer and offer services. Although these government-run nursing homes for disabled people usually outsourced to private institutions that accepted and provided care for patients with disabilities, these institutions were “publicly-owned and privately-managed” (Huang, 1999; Tsai & Ho, 2010).

In 1997, the Physically and Mentally Disabled Citizens Protection Act was promulgated by the Ministry of the Interior in Taiwan (as cited in Tsai & Ho, 2010). The new operational trend of nursing institutions for people with disabilities gradually transformed from the charity model to the social model, which has had extreme influence over the administration and quality of care of these organizations (as cited in Tsai & Ho, 2010). The social model emerged as a result of a political movement by disabled groups during the 1970s and 1980s to destabilize and deconstruct the past medical and charity models (Edmonds & Chattoe, 2005). The aim of the social model was to create positive attitudes among people with disabilities, their families, and society as a whole, so as to encourage people with disabilities to proactively participate in social

affairs and activities (Edmonds & Chattoe, 2005). The ultimate goal was for people with disabilities to overcome existing social and environmental barriers and to evolve from social dependency into self-reliance (Tsai & Ho, 2010).

A decade later, on July 11, 2007, the People with Disabilities Rights Protection Act was amended and promulgated by the Ministry of the Interior (as cited in Tsai & Ho, 2010). The act adopted the international health function and disability categorization system of the World Health Organization (WHO) to define disability and disability verification and demand an evaluation system (as cited in Chiu, Han, & Hung, 2011). According to Article 19 of the People With Disabilities Rights Protection Act, “The competent authorities of individual levels and the competent authorities in charge of specific business shall, based on the results of service need assessment, provide individualized and diversified services to people with disabilities” (as cited in Ministry of Health and Welfare, 2015). Article 62 continues:

The municipal and county (city) authorities shall, according to the characteristic and need of people with disabilities in their domicile, establish by themselves or consolidate the resources of the private sector to establish the welfare care facilities/institutions to provide services of life care, (daily) living re-construction, welfare counseling for people with disabilities. The care facilities/institutions in the preceding Paragraph 1 may charge fees for the facilities/installations or services, and regulations of charging fees shall be submitted to the municipal and county (city) competent authorities for approval. The care facilities/institutions in the preceding Paragraph 1 extending their business into other fields are acceptable, and shall be under the regulations and directions of the competent authorities in charge of other specific business. (as cited in Ministry of Health and Welfare, 2015)

The definition and organizational characteristics of nursing homes for people with disabilities in Taiwan. Nursing homes are defined as long-term, institutional, or community-based professional welfare care facilities or institutions for disabled residents with chronic mental or physical conditions (Gerteis, Gerteis, Newman, & Koepke, 2007; Yu & Hu, 2013). According to Articles 6, 7 and 8 of the Standards of Facilities and Staffing of Welfare

Organizations for the Disabled People (Ministry of Health and Welfare, 2015), the staff at welfare institutions for people with disabilities should consist of one superintendent, administrative staff, social workers, nurses, physical care staff, and other professionals.

In 2013, about 4.8% of Taiwanese people qualified as having a disability; a disability is classified as having mild, moderate or severe, and in some cases, extremely severe intellectual disabilities or having multiple disabilities (Ministry of the Interior, Department of Statistics, 2013; Tseng, 2013). According to the statistics published by the Social and Family Affairs Administration at the Ministry of Health and Welfare, in 2013 there were 254 nursing homes for people with disabilities that were registered with Social and Family Affairs Administration at the Ministry of Health and Welfare in Taiwan (Lee et al., 2013; Tseng, 2013). These registered nursing homes fall into one of three categories. They are either (a) private nursing institutions for people with disabilities that are registered legally as nonprofit corporations, (b) public social welfare institutions for people with disabilities, or (c) private nursing institutions approved by the Ministry of Health and Welfare and operated by private organizations (Lin, 2008; Tseng, 2013; Yen et al., 2004).

The target population of nursing homes for people with disabilities fall under two categories: (a) child and adolescent services whose target population includes 5- to 6-year-old children with developmental delays and 7- to 17-year-old children and adolescents with moderate, severe, or extremely severe intellectual disabilities or multiple disabilities; and (b) elderly and adult services whose target population includes people aged 18 or over with moderate, severe, or extremely severe intellectual disabilities, multiple disabilities, dementia, or Alzheimer's disease (Lin et al., 2004; Yen, 2007). Services provided include consultation, early therapy, residential programs, special education, health care, rehabilitation, employability skill

training, auxiliary aids, family care, life education, and referral consultation (Chou, 2005, 2006). For the most part, funding comes from government subsidies and payments are made by parents and other social resources (Lee, 2007; Tseng, 2013).

The caring model for nursing homes in Taiwan. The importance of providing professional nursing services and quality care facilities for people with disabilities has been commonly accepted, recognized, and addressed in the welfare policies of advanced countries (Wu, White, Cash, & Foster, 2009). In 1987, the Omnibus Budget Reconciliation Act (OBRA) was promulgated in the United States (as cited in Lopez, 2006; Hawes et al., 1997), which emphasized the transformation of nursing homes for persons with disabilities from a medical model to an institutional (residential) model (as cited in Lopez, 2006). This type of caring model was intended to meet residents' physical needs and to create great quality of care and safety (Hawes et al., 1997; Lopez, 2006). During the 1980s and 1990s, the new trend of long-term care at nursing homes in the United States was to offer community-based services (Vladeck, 2003). The main purpose of this new caring model was to allow residents to live in the community and be integrated into normal social affairs and activities (Vladeck, 2003). However, in order to meet the new demands of community-based services, long-term nursing homes or institutions needed to take different approaches by either following an institutional model or a community-based model in order to respond to the changing environment (Vladeck, 2003).

These two U.S. reforms have significantly affected the current caring model of welfare care institutions for people with disabilities in Taiwan (Cheng, 2005). With regards to nursing homes, the caring model would transform them from a culture of charity model management to a culture of social care and from a culture of bureaucratic authority to client-centered services (Cheng, 2005; Yang, 2013). In order to avoid nursing homes for people with disabilities from

being excluded from society, the new caring model of social care would encourage more social interaction with nearby communities and eliminate stereotypical views of the disabled by the general public. The first initiative would be to win over the nearby residents in order to establish a caring and normalized social environment for the disabled (Gerteis et al., 2007; Lopez, 2006). In short, the organizational culture of nursing homes needed to change into a caring and normalized social environment, and interactions with the local communities needed to increase (Cheng, 2005; Gerteis et al., 2007). The modernized nursing homes needed to find ways to connect with ordinary people's lives and activities, and they needed to share the resources held in their large-scaled pieces of land and facilities (Mui & Yang, 2005; Yang, 2013). In addition, political, demographic, social, and legal changes in Taiwan's social environment have forced the current nursing homes to meet all of their diverse demands (Wang, Yang, Lin, Chen, & Wong, 2005).

Relevant research has raised the issue: Is residential care an act of charity, or is it just another "business" in an emerging market? As previously mentioned, the early establishment of institutional care originated from compassion for the disadvantaged group and traditionally declined the charity caring model (Cheng, 2005). As these welfare care institutions for the disabled have evolved from the traditional charity caring model to the current social caring model, the importance of "consumer voice and rights" and "quality of care" needs to be taken into consideration (Wang et al., 2005). Meanwhile, the new caring model of social care has gradually imported a business- or customer-oriented model into the traditionally institutional care sector (Kwon, 2005). This means that the well-functioned social care model will eventually form a mixed market with public, nonprofit, and publicly-owned and privately-managed providers collaborating together to support integrated care service (Vladeck, 2003).

Leadership in the evolution of long-term care nursing homes. Changes in perspectives and expectations of long-term care nursing homes for people with disabilities have resulted in more aggressive development of effective leadership strategies to enable continuous improvement in management practices (Dana & Olson, 2007). For example, in the 1960s, the nursing industry grew rapidly and development focused on minimal regulations and the expansion of social welfare care to access long-term care services (Gilster, 2005). Most of these nursing homes or institutions were established by both proprietary- and faith-based organizations, which offered facilities based on the operational processes of the charity model (Dana, 2005). The necessary condition of leaders during this period of time focused on how to motivate the authorities and the public to finance or sponsor the needs of the facilities (Dana & Olson, 2007). The charismatic personalities of the nursing home superintendents were critical to inspire positive morale within the environment to ensure job commitment and motivate the relevant agencies to allocate and integrate more social resources to the nursing homes (Castle & Fogel, 2000).

Then in the 1970s and 1980s, in order to respond to the complexity of financing and relevant social welfare policies, another new management style for publicly traded multifacility groups emerged through acquisitions (Castle & Fogel, 2000). The lack of competition finally resulted in poor care quality and relevant assessment regulations were promulgated through legislation (Dana & Olson, 2007). During this period, the culture of management focused on the ability to maintain an organization to deliver care and service well and to enhance its efficiency and control (Dana, 2005; Olson & Decker, 2003).

After the 1990s, the whole long-term nursing industry for people with disabilities faced changes that prompted a significant change in leadership behaviors (Olson, Decker, & Johs-

Artisensi, 2006; Walton, 2009). For example, the prevalence of consumer rights and preferences, the expectation of ideal care quality, the demands needed to integrate more social resources and the professional training of staff, limited finances, and the competitive marketplace have emphasized the importance of effective leadership practices (Hutchinson & Jackson, 2013; Nakrem, Vinsnes, Harkless, Paulsen, & Seim, 2009). Furthermore, effective leadership is now required to inspire organizational creativity and innovation to maintain these accessible facilities and good quality care (Lee & Wendling-Adams, 2004). Today's trends in nursing home transformation are aimed at providing service alternatives and proficiency in both management and leadership, in order for the nursing home field to possess the ability to survive and compete within the health-care marketplaces (Hutchinson & Jackson, 2013; Lee & Wendling-Adams, 2004; Nakrem et al., 2009).

Developing effective leadership behaviors in nursing homes for people with disabilities. Leadership within nursing homes is identified as the central domain that is interwoven with four other domains: (a) communication and relationship management, (b) professionalism, (c) knowledge of the health-care environment, and (d) management and marketing competencies (Rubino, Esparza, & Chassiakos, 2014). Within the domain of leadership, important skills and behavior, organizational climate and culture, communicating vision, and managing change are equally vital to a successful facility (Rubino et al., 2014). The nursing home top administrator, which is the superintendent, has the responsibility to improve the quality of care and develop a vision to inspire the organizational creativity and innovations by effectively using capital and human resources (Frisina, 2005). Researchers have investigated the relationship between leadership styles of nursing home top administrators and quality of care provided by nursing homes (McGuire & Kennerly, 2006). The quality of care and safety

provided by health-care nursing homes is composed of many factors, including a culture of fostering safety and quality, the provision of services that meet the demands of residents, the availability of human and capital resources, a sufficient and competent professional staff, and ongoing evaluations and continuous improvement (Hutchinson & Jackson, 2013; Nakrem et al., 2009).

It is the leader's role at a health-care nursing home to make good use of the available resources, to exercise authority and control, to influence the quality of care and the staff's attitudes and behaviors, and to motivate improved performance (Spilsbury, Hewitt, Stirk, & Bowman, 2011). Effective leaders of health-care organizations can establish the mission, vision, and goals. Additionally, effective leaders can develop the organizations' culture through their inspiration, expectations for action to form high-quality care, responsible use of resources, community service, and ethical concerns (Owusu-Frimpong, Nwankwo, & Dason, 2010). Safety and quality of care and continuous improvement of performance are central concepts that leaders should demonstrate to enhance the culture of creativity and innovation (Spilsbury et al., 2011).

The management of nursing homes. Research has focused on the concept of new management or managerialism in order to respond to the managerial activities of individual nursing homes (Murphy & Topel, 2003). It is only the leaders within nursing homes that can have a great impact on daily activities and affairs (Olson & Decker, 2003; Owusu-Frimpong et al., 2010). Current nursing homes are in need of formal training related to leadership practices that provide direction, supervision, and cohesion within the nursing home (Olson et al., 2006). If the role of leadership could be applied to this model, it would define the administrator as a director or superintendent. It is important to recognize the development of an administrator's effectiveness as a leader as well as a superintendent (Haimann, 1990; Olson et al., 2006).

The formal term of top administrator as a superintendent is usually found in statutory or licensure requirements for nursing homes as well as accreditation and certification standards (Singh & Schwab, 2000). Most nursing home superintendents view quality of care as satisfactory levels of clinical performance outcome and regulatory assessment (Goodson & Jang, 2008; Nyman & Bricker, 1989). Visionary thinking seeks to align excellence in care with increased productivity. The effects of new managerialism should contribute to job satisfaction and organizational commitment of employees and create a person-centered culture (Goodson & Jang, 2008; Nyman & Bricker, 1989).

The concept of managerialism has been introduced into long-term nursing fields; the idea of a customer- or market-oriented model has gradually become popular with the goal being increased effectiveness and control (Lambers, 2002; Singh & Schwab, 2000; Walter, Nutley, Percy-Smith, McNeish, & Frost, 2004). Parallel to these organizational changes, job satisfaction among employees has decreased, and the demands of user participation have increased (Lambers, 2002; Singh & Schwab, 2000; Walter et al., 2004). There have been critical changes and challenges within long-term nursing organizations because the leadership role and new concepts of new management or managerialism have been imported to social welfare service fields (Lawler, 2007).

The new concept was to improve the effectiveness, accountability, flexibility, and transparency of these organizations. However, the new idea of customer- or market-oriented models has been questioned, and many scholars argue that welfare care organizations differ too much from their private counterparts (Langan, 2000; Persson & Westrup, 2009). The shift to managerialism led to increased responsibility in general and to taking responsibility for the achievement of goals in particular (Lawler, 2007). Research has revealed that leaders within

welfare care organizations have an increased responsibility for budget and staff and have faced an inevitable administrative transformation with an increased sense of loyalty to those higher up in the organization (Karlsson, 2006).

The uniqueness and complexity of long-term care nursing homes. With the emergent demands for effective leadership, the complex and burdened administrative tasks of health-care organizations must be influenced by a number of factors, such as shrinking reimbursements, persistent shortages of health professionals, endless requirements to use performance and safety indicators, and prevailing calls for transparency (Bradley, 2003). Under the Omnibus Budget Reconciliation Act (OBRA) of 1987, the nursing home superintendent is responsible for management of the skilled nursing facility (Olson & Decker, 2003). Superintendents of nursing homes and a variety of other long-term care settings play a central role in the quality of care and improvement of performance within these settings. The traditional management within long-term care nursing homes has focused on entry-level licensure requirements and exams, along with regulatory structure (Castle & Fogel, 2000; Olson et al., 2006). Consequently, most nursing home leaders viewed quality of care and performance as achieving the standards set by regulations and passing these regulatory assessments in the past rather than meeting and exceeding the needs and expectations of the patients and their families (Castle & Fogel, 2000).

Research has revealed that long-term care nursing homes have clearly connected effective leadership practice with organizational performance (Dana & Olson, 2007). Though these long-term care nursing homes support broader research on effective leadership, scholars still think some differences between the business sector and long-term nursing organizations could be beneficial to enhance leadership in these homes (Dana, 2005). This difference mainly includes the need for a compassionate perspective, closer interaction with people, regulation-

oriented performance, a predominantly professional workforce, a flat organizational structure, and frequent change in leadership positions (Olson & Decker, 2003). Long-term care services at nursing homes are provided to residents with complex interactions of many factors, including professional practitioners, technology advancement, relevant policies, legal procedures and regulations, limited budget, and human resources (Lopez, 2006). Developing effective leadership within nursing homes has become an emergent issue that requires the investment of capital and human resources, the identification of needs, and more professional leadership training and knowledge (Olson & Decker, 2003). Therefore, the need for effective leaders to provide services and employee support that match the uniqueness and complexity of nursing homes and organizational changes is real and significant (Ballard, Bannister, Oyeboode, & Wilcock, 1995; Olson & Decker, 2003).

The current challenges of leadership and organizational changes. Osborne and Gaebler (1992) described a new type of “entrepreneurial public organization” that differs from the traditional bureaucratic models within health-care or nursing organizations. Much of the idea has been applied to health-care and long-term care nursing organizations, including their internal functions and external relationship with government agencies (Gabler, 1993; Olson, Dana, & Ojibway, 2005). The driving force of changes with long-term nursing systems includes economic, demographic, social, political, and technological factors. In short, they can consist of three elements of globalization, empowerment, and technology (Olson et al., 2005; Wolford, Moeller, & Johnson, 1992). Long-term care nursing homes for people with disabilities in the 21st century will require professional leadership training for providing new visions and empowered professional models to promote quality of care and assured safety (Trofino, 1995, 2000). Therefore, the driving force of the inevitable changes will be leadership. The new vision of

leadership competence in the 21st century would lie in successfully importing the new concept of an entrepreneurial public organization or a market-oriented model into the traditionally institutional operation (Trofino, 1995, 2000).

Additionally, the current health-care and long-term care nursing environment requires leaders to develop more employees committed to their jobs, to create an empowered workforce, and to transform leaders into agents of change (Wu et al., 2009). Naisbitt and Aburdene (1990) observed that “the dominant principle of organization has shifted from management in order to control an enterprise, to leadership, with the goal of bringing out the best in people and motivating a quick response to change” (p. 47). Thus, the main purpose of managing nursing homes would be to identify which factors influence quality of care and how influential those factors are. Studies have shown that leadership is a key factor for quality of care in nursing homes (Anderson, Issel, & McDaniel, 2003). Unfortunately, there is still limited discussion regarding what type of leadership behavior is most influential in quality of care. But studies have recognized that staffing has further been associated with quality of care (Havig, Skogstad, Kjekshus, & Romoren, 2011). Schnelle et al. (2004), for example, believed that staffing is the most crucial element for quality care service in nursing homes. With regard to quality of care, Donabedian (1980) suggested three approaches to assess quality of care: structure, process, and outcome. Structure refers to the general conditions that can affect the quality of nursing care, such as professional training and skills of staff, internal facilities, and external workforce (Spilsbury et al., 2011). Process refers to relevant assessment of regulations, work routines, and legal procedures. Outcome usually refers to the consequence of quality of care that depends on whether residents obtain satisfactory nursing care (Comondore et al., 2009; Rantz et al., 1998). Outcome is not only the most decisive measure but also the most complicated and time-

consuming. Donabedian's theoretical framework for understanding quality of care has been widely accepted among researchers (as cited in Havig et al., 2011). And studies have shown that leadership styles have a positive relationship with productivity in nursing homes, as quality of care is an essential indicator for the productivity level within these settings (Havig et al., 2011). Furthermore, Yukl (2010) stated that "the overall pattern of results suggests that effective leaders use a pattern of behavior that is appropriate for the situation and reflects a high concern for task objectives and a high concern for relationship" (p. 130). Northouse (2001) stated that "the key to being an effective leader often rests on how the leader balances these two behaviors [task-oriented and relationship-oriented leadership]" (p. 44).

The importance of leadership for high-performing organizations. The quality of care and safety provided by health-care nursing homes are determined by the following factors: the provision of services, the availability of human and capital resources, a sufficient and competent staff, and improvement of performance (Castle, 2008; Castle & Ferguson, 2010). Only leaders of a health-care organization have the influential power to establish the organizational mission and vision. It is the leaders who can strategically plan for the provision of services, acquire and allocate resources, and develop high-quality culture values, safe patient care, and responsible use of resources, community service, and ethical behavior (Castle & Ferguson, 2010; Rantz et al., 1998). When organizational structure factors support the care processes and emphasize that leaders should inspire or motivate employees committed to their jobs and elevate job satisfaction, only then can the residents receive high-quality care (Donabedian, 1980).

Leaders who use transactional leadership establish trust in the relationship with employees and provide clear job expectations (Murphy, 2005). However, transformational leadership develops a means to identify and commit to change (Murphy, 2005). Leaders see

change as the opportunity to learn, adapt, and improve organizations and promote health-care quality within nursing homes (Roger, 2003). The effectiveness of teamwork lies in leadership practices that allow leaders to understand goals and effective communication, have shared governance, and be empowered by the organization (Sohmen, 2013). Shortell et al. (2005) asserted that the characteristics of high-performing long-term care organizations included the following:

a willingness and ability to stretch themselves; maximize learning; take risks; exhibit transforming leadership; exercise a bias for action; create a chemistry among top managers; manage ambiguity and uncertainty; exhibit a 'loose coherence;' exhibit a well-defined culture; and reflect a basic spirituality. (p. 8)

Shortell et al. furthered pointed out that what distinguished high-performing organizations was certain key factors, such as having a quality-centered culture, reporting performance, and the ability to overcome quality improvement redesign barriers by directly involving top leaders and leadership practice (Shortell et al., 2005).

Leadership behaviors within the health-care industry have been viewed as a critical attribute to the successful operation of nursing facilities (McGuire & Kennerly, 2006). Therefore, the leadership role is increasingly gaining attention in regards to the effect of leadership on staff attitudes and behaviors and quality of care (McGuire & Kennerly, 2006). The type of leadership exhibited by the superintendent can have a significant impact on the work environment and organizational commitment in residents' care quality (McGuire & Kennerly, 2006). For example, superintendents of nursing homes who positively influence the work environment can stimulate or motivate employees toward commitment to their jobs and generate better quality of care to match new trends of a market- or business-oriented model of operation (Newton, Stewart, & Sabra, 2010; Pearson et al., 2007).

Studies have revealed that there exists a relationship between the transformational and

transactional leadership behaviors of leaders for health-care nursing homes and the development of professional staff's organizational commitment (Newton et al., 2010; Pearson et al., 2007).

Most research conducted to date has focused on the role of leaders within the health-care unit or nursing homes in upper-level positions in the health-care organization (Parsons, Simmons, Penn, & Furlough, 2003; Stordeur, Vandenberghe, & D'hoore, 2000). The emergent concern of health-care or welfare care organizations is emphasized on recruitment, retention, motivation of staff, and ensuring quality of care (McGuire & Kennerly, 2006; Pearson et al., 2007).

The leader's role within these nursing settings is essential to attain these ideal performance outcomes and to establish trust and respect among employees (Laschinger & Finegan, 2005). Furthermore, the leader's role serves to establish and maintain a positive work environment and builds a solid team to achieve better quality of care and meet the residents' expectations (Institute of Medicine, 2004; Pearson et al., 2007). The establishment of a positive work environment at a long-term care nursing home has a significant association with attracting and retaining staff (O'Shea, Foti, Hauenstein, & Bycio, 2009). The current shortage and high turnover of professional employees within long-term nursing organizations has caused administrators to stress the importance of developing an effective, supportive, and inspirational leadership model (O'Shea et al., 2009; Parsons et al., 2003). The reciprocal relationship between developing leadership and staff organizational commitment has been documented in literature for several decades (O'Shea et al., 2009; Parsons et al., 2003). The concepts of transformational and transactional leadership and the relationships that emerge between leader and follower were proposed by Bass (1985) and Bennis and Nanus (1985). Transformational and transactional leadership offers a framework through which leaders can further develop their own leadership characteristics and spirits to motivate their staffs' commitment to their jobs and to develop a

more positive work environment (Bass, 1985).

Transformational leadership in nursing homes. *The full range of transactional and transformational leadership.* Bass' full range leadership model explained that leaders exhibit transformational and transactional characteristics, only in differing quantities (as cited in Bodla & Nawaz, 2010). In other words, the full range of leadership, as measured by the Multifactor Leadership Questionnaire (MLQ), implies that every leader exhibits a frequency of both transactional and transformational leadership, but each leader's consequence may involve more of one and less of the other (Bodla & Nawaz, 2010). Research has shown that leaders who display transformational leadership styles are more effective and more satisfying to their employees than transactional leadership (Avolio & Bass, 1991, 1994).

An effective leader may demonstrate both transformational and transactional leadership styles that can be applied to organizations as a whole (Bono & Judge, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996). Transformational leadership focuses on enhancing the motivation, morale, and job performance of followers through a variety of mechanisms, such as individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence. Transactional leadership emphasizes the exchange relationship between leader and employees to meet their own self-interest (Avolio & Bass, 1991). It mainly includes two types: contingent reward and management-by-exception. The contingent reward emphasizes that the leader clarifies for the follower through direction or participation what the follower needs to do to be rewarded for the effort. It may take the form of active management-by-exception, in which the leader monitors the follower's performance and takes corrective action if the follower fails to meet standards (Avolio & Bass, 1991). Transformational leaders focus on team building, motivation, and collaboration with employees at different levels of an organization to accomplish

change for the better. Transformational leaders set goals and incentives to push their subordinates to higher performance levels while providing opportunities for personal and professional growth for each employee (Avolio & Bass, 1991; Bass, 1999).

The implication of transformational leadership in nursing homes. As previously mentioned, social welfare care institutions for people with disabilities have experienced unprecedented changes in both leadership practice and staffing. The driving forces of change within long-term care nursing systems are economics, demographics, environment, society, politics, and technology. Together, they comprise the three elements of globalization, empowerment, and technology (Newton et al., 2010; Nielsen, Yarker, Brenner, Randall, & Borg, 2008). Due to the uniqueness and complexity of nursing homes for people with disabilities, new demands are now set forth for the leadership role, and guidelines have been established for leading the transforming organizations (Dana, 2005; Newton et al., 2010). Because there have been numerous legal, social, and technological changes and competitive circumstances within nursing care institutions for the disabled, the development of effective leadership is viewed as the key to retain employees and to intensify their organizational commitment in order to advance quality of care (Lawler, 2007; Newton et al., 2010; Nielsen et al., 2008).

As Osborne and Gaebler (1992) stated, an entrepreneurial public organization represents a new type of operation that differs from the traditionally bureaucratic models within welfare care institutions. Unfortunately, most administrators do not think of themselves as confident and capable to lead the whole organization and envision the future (Osborne & Gaebler, 1992). Transformational leadership often uses strategic techniques for building an effective collaborative workforce where the goal is to collectively elevate staff morale and harvest respect and trust, thus, gaining productivity (Fraczkiewicz-Wronka, Austen, & Wronka, 2010).

Transformational leadership, associated with staff's attitudes, job satisfaction, performance outcome, and support for the organizational environment, develops trust and values among leaders and employees (Bass & Avolio, 1995). Transformational leaders increase followers' trust levels by showing concern for their personal needs, demonstrating capability and persistence to achieve the vision. In the end, transformational leaders have a positive effect on followers' trust, value congruence, and performance (Dong & Avolio, 2000). It is the transformational leader's frequent empowerment and encouragement of followers to make their own decisions that can also build trust in the leader (Dong & Avolio, 2000).

Meeting the unique and complex needs of the disabled community calls for a deep understanding of the comprehensive requirements that define good quality care; as such, transformational leadership and profound revisions within the entire health-care enterprise are now required (Fraczkiewicz-Wronka et al., 2010). Studies have demonstrated that the availability of transformational leadership within social welfare organizations especially refers to the care of the disabled in terms of being associated with employees' positive attitudes and well-being (Trofino, 1995, 2000). In addition, transformational leaders have identified factors that may both help and interrupt the transformational leadership process in this context (Fraczkiewicz-Wronka et al., 2010). Effective leaders are often described as displaying transformational leadership because they practice the art of "delegating significant authority to others, developing co-worker skills and self-confidence, creating self-managed teams, providing direct access to sensitive information, eliminating unnecessary controls, and building a strong culture to support empowerment" (Yukl, 2006, p. 271).

Transformational leadership is associated with all types of organizations and a variety of situations (Judge & Piccolo, 2004; Sun & Anderson, 2012). To be effective, these leaders have to

have a “contextual intelligence” which gives them “an almost uncanny ability to understand the context they live in—and to seize the opportunities in the moment” (Dana & Olson, 2007, p. 7). Displaying transformational leadership does the following things: (a) it connects the follower's sense of identity and the collective identity of the organization, (b) it establishes a role model for followers that inspires them and peaks their interest, (c) it challenges the followers to take greater ownership for their work, and (d) it allows for a greater understanding of the strengths and weaknesses of the followers, allowing the leader to align followers with tasks that enhance their performance (Yukl, 2006). The current long-term care nursing system requires leaders who can motivate or inspire employees toward job commitment, make employees feel empowered within the workforce, develop a challenging vision and translate it to actions, plus improve employee confidence and self-management to achieve high performance (Trofino, 1995, 2000). Naisbitt and Aburdene (1990) observed that “the dominant principle of organization has shifted from management in order to control an enterprise, to leadership, in order to bring out the best in people and to respond quickly to change” (p. 218).

Transformational leadership seems to be the most promising theory for managing emerging organizational uniqueness, complexity, and changes within the welfare care nursing system because studies have determined that transformational leadership has a positive effect on both organizational outcomes and employee attitudes and behaviors (Judge, Woolf, Hurst, & Livingston, 2006; Skakon, Nielsen, Borg, & Guzman, 2010). However, many scholars of social service organizations argue that the organizational context in nursing organizations for people with disabilities in terms of size and structure, for example, makes transformational leadership difficult to pursue (e.g., Alvesson, 2002; Currie & Lockett, 2007). Many social welfare sector scholars still question the availability of transformational leadership in the context fields (Wright

& Pandey, 2010). They argue that transformational leadership cannot have the same effectiveness as private business sectors (Wright & Pandey, 2010). First, the operations of these organizations are too bureaucratic; as such, there is a lot of emphasis on regulatory compliance, routinization, and proceduralism (Bass & Riggio, 2006; Sun & Anderson, 2012). Such regulatory guidelines and relevant legal procedures within a bureaucratic system may neutralize and offset the positive effects of transformational leadership. Second, it is usually the goal of bureaucratic constraints to place highly complex guidelines on the institution (Currie & Lockett, 2007; Sun & Anderson, 2012), so that transformational leadership is difficult to display within the settings. Furthermore, there are ethical concerns and questions pertaining to professional morals and values. Currie and Lockett (2007) asked if morals would be forgotten if the transformational leadership model strengthened the establishment of role model and charismatic personalities. Third, as questioned by Dunoon (2002), does the leader's vision conflict with relevant policies and regulations thereby impeding the success of this leadership model? Yet another argument against the implementation of transformational leadership is that the social welfare service sector leaders are punished for failure—in terms of public criticism—but not rewarded for success. This may prevent leaders from adopting risk-taking, personal sacrifice, and role modeling behaviors associated with transformational leadership (Dobell, 1989; Nielsen et al., 2008).

Nevertheless, it is important to note that “there are many components of leadership that are critical to success including integrity and professionalism, setting vision, strategy, operating tactics and aligning resources, inspiring others, and, most importantly, execution, actually moving the ball in a positive direction” (Trastek, Hamilton, & Niles, 2014, p. 378). As previously mentioned, the three elements of globalization, empowerment, and technology have forced welfare nursing facilities to focus more on performance outcome and to be more sensitive

to residents' demands and expectations (Javidan & Waldman, 2003). Emerging challenges have gradually provided the potential for demands to be met for transformational leadership practices in the context fields (Javidan & Waldman, 2003).

Empirical studies have revealed that the application of transformational leadership into social welfare organizations is a necessity, but there are still limited discussions and findings and much more to be discovered in the field (Elpers & Westhuis, 2008; Gellis, 2001; Mary, 2005). In the United States and Canada, relevant studies have demonstrated the effect of transformational leadership on employees' job related attitudes and behaviors and positive relationships (Elpers & Westhuis, 2008; Gellis, 2001; Mary, 2005). In addition, research has shown that transformational leadership practices can successfully predict service effectiveness with supportive work routines (Murphy, 2005; Yoo & Brooks, 2005). Studies have also found that transformational leadership has a positive correlation with service effectiveness, which were measured in terms of plan implementation, goal attainment, and client empowerment (Boehm & Yoels, 2008). One exception is a series of studies in Danish long-term care that demonstrated the positive influence of transformational leadership on work characteristics and employee well-being (Nielsen et al., 2008). Current empirical studies further indicate that transformational leadership within social welfare nursing organizations has a positive effect on organizational outcomes, such as quality of care and service effectiveness (Nielsen et al., 2008). In short, during the last few decades welfare care nursing institutions for people with disabilities have changed in a variety of ways and the urgent demands for effective leadership is desirable and clear (Boehm & Yoels, 2009; Lawler, 2007).

There is limited application of transformational leadership in the public sector in general and in social services in particular (Elpers & Westhuis, 2008; Wright & Pandey, 2010). These

limited studies have found that transformational leaders in health-care nursing homes inspire employees to achieve their assigned jobs and inspire important employee attitudes in times of organizational change (Judge & Piccolo, 2004; Mukherjee & Malhotra, 2006). Because the current welfare care nursing system has faced dramatic changes, and it is an immediate concern whether a leader should possess the ability to increase both commitment and role clarity, transformational leadership should be the most appropriate style to effect a changing environment and unprecedented challenges (Judge & Piccolo, 2004; Mukherjee & Malhotra, 2006).

Studies have reported that transformational leadership has been proven to have significant importance in the health-care industry (Nielsen et al., 2008). In addition, transformational leadership was found to be the key to improving the provisions of health-care (Nielsen et al., 2008). Spinelli (2006) found that transformational leadership is most appropriate to meet current health-care organizations' demands, including rapid changes in the workforce and uncertainty and complexity within the fields. Newton et al. (2010) reported that transformational leaders are necessary to deal with continuous health-care organizations' challenges, including recruiting professionals, staff retention, and costly turnover; plus these leaders create a positive work environment and meet the growing demand for market or customer orientation issues. Furthermore, research has shown that transactional leaders cannot effectively manage the continuous changes and unprecedented challenges to develop a growing climate of health-care organizations (Bamford-Wade & Moss, 2010).

These findings have marked a significant contribution to relevant literature on the application of transformational leadership. In addition, the results further prove the advantages of transformational leadership in keeping employees committed and well-informed about duties and

assignments, something found to be important for positive employee attitudes in times of organizational change (Mukherjee & Malhotra, 2006). With professional growth and the principles of equity, accountability, transparency, and ownership, current health-care organizations have formed a new workforce culture for sustainable changing processes. These changing processes emphasize that shared governance and action processes are necessary in order for the staff to grow in self-esteem, self-actualization, recognition, and autonomy (Bamford-Wade & Moss, 2010). Transformational leadership also does three things: (a) it challenges existing structures, (b) it fosters creativity and innovation, and (c) it emphasizes trust and respect among staff. Together, shared governance, action processes, and transformational leadership generate new cultural change within relevant health-care fields (Bamford-Wade & Moss, 2010).

Transactional leadership in nursing homes. Both transformational and transactional leadership can help respond to issues that nursing homes face. Transformational leaders put emphasis on the four elements of the leaders' capacities to influence their employees toward achieving their vision in congruence with the followers' beliefs, values, and needs (Sun & Anderson, 2012; Tomey, 2009; Weberg, 2010). Transactional leadership plays the role that complements and enhances the effects of transformational leadership outcomes (Bass & Riggio, 2006). Effective leadership style is required for leaders or executives of health-care organizations that include the ability to create an organizational culture combining high-quality health care and safety and highly developed teamwork (Curtis, de Vries, & Sheerin, 2011; Pearson et al., 2007).

Organizational development within health-care organizations has turned to how leaders can effectively solve current problems and resource issues in order to help the organization maintain a competitive advantage (Curtis et al., 2011; Huston, 2008; Pearson et al., 2007). The

leader's role within the health-care nursing system is essential to achieving these performance outcomes, rebuilding respect and trust among leaders and staff, and maintaining a positive workforce and team morale (Laschinger & Finegan, 2005). According to the Institute of Medicine (2004), maintaining a positive work environment and promoting good teamwork are critical to achieving performance outcomes. Research revealed that a positive health-care work environment must be focused on attracting and retaining staff (Laschinger & Finegan, 2005). Although the interdependence of leadership practice and staff commitment has been documented since the 1950s, there is still a need for discussion and investigation on a variety of perspectives in health-care organizations (McGuire & Kennerly, 2006).

Burns, Bennis and Nanus, and Bass fueled interest in Bass' full range leadership model, which suggests that leaders display both transformational and transactional characteristics, only in differing quantities (as cited in Bodla & Nawaz, 2010). Transformational leaders use ideals, inspiration, intellectual stimulation, and individual consideration to influence the behaviors and attitudes of others (Bodla & Nawaz, 2010). Hater and Bass (1988) concluded that transformational leadership has a positive effect on maintaining the competitive advantage of the organization. Transactional leadership, on the other hand, is a model based on the two conditions of reinforcement and punishment. This model is characterized by directing followers to engage in their jobs with the fulfillment of contractual requirements that will limit organizational commitment and job satisfaction (Bass, 1985; McGuire & Kennerly, 2006). The model also emphasizes that the status quo should be maintained.

The transactional leadership model has been thought of as the most popular and common leadership type employed in health-care organizations (Schwartz & Tumblin, 2002). Transactional leaders set up goals and performance standards for their employees to achieve, in

exchange for rewards if their results are met. Otherwise, they will face discipline or punishment (Bass, 1985). The transactional leader should set up goals and clear procedures and directions and have the authority to control and manipulate situations as well as followers (Bass, 1985). The main purpose of using either transformational or transactional leadership is to find key factors of organizational success (Laohavichien, Fredendall, & Cantrell, 2009). Different scholars have considered transformational and transactional leadership as independent variables to predict an association with other criterion variables (Alharbi & Yusoff, 2012; Laohavichien et al., 2009). Studies have shown that employees are satisfied with the contingent reward of transactional leadership and the individualized consideration of transformational leadership (Chen, Beck, & Amos, 2005). In addition, research has revealed that transformational leadership practice actually contributes to existing knowledge and has a positive effect on exploitative innovation (Jansen, Vera, & Crossan, 2009).

An effective leader should adopt transactional and transformational behaviors that will result in different consequences in various scenarios (Bennett, 2009). Transformational leadership behaviors have a significant effect on predicting variables in some situations. Likewise, transactional leadership can provide higher job satisfaction and organizational identification than transformational leadership despite the fact that transactional leaders have substantial influence on the followers (Epitropaki & Martin, 2005; Laohavichien et al., 2009).

The transactional leadership model uses the contingent reward approach that stresses extrinsically motivating employees to achieve the assigned goal on behalf of their own interest. Most professionals enter their profession and dedicate their energy out of both compassion and their passion to serve the disadvantaged. The intrinsic motivation that exists within the task itself rather than relying on outside rewards actually conflicts with the transactional leadership practice

(Kreps, 1997; Ryan & Deci, 2000). The contingent reward of transactional leadership stresses extrinsic motivation and refers to the accomplishment of assigned tasks in exchange for outside desired rewards. In short, transactional leadership values personal interests that may undermine employees' performance and result in a negative outcome to those who need high intrinsic motivation to inspire them to commit to their jobs (Kreps, 1997; Lam & Gurland, 2008).

Some scholars believe that transactional leadership cannot account for the complex motivation of health-care organizations, professionalism, and uniqueness and ethical issues for their clients (Trastek et al., 2014). Additionally, transactional leadership, unlike transformational leadership, cannot build respect and trust among staff and the leader because this model does not take into consideration ethical issues and quality care (Trastek et al., 2014). The effective leader should seek a balance between adopting transformational and transactional leadership to match different situations that arise in the workplace (Bass, 1998). Health-care organizations have been tainted with bureaucratic authority in the past and traditionally displayed the transactional leadership model. This leadership model is focused on extrinsic motivation to drive employees to meet assigned tasks by providing outside rewards (Barker, 2006). The transactional leadership model provides limited opportunities for harvesting creativity, motivation, teamwork, participatory decision-making, empowerment, or the creation of a new culture for organizations (Heuston & Wolf, 2011; McGuire & Kennerly, 2006). Conversely, some evidence-based research revealed that the outcomes of transformational leadership are evident in a confident, competent, and committed health-care workforce that embraces continuous learning and shows professional respect and trust among staff and the leaders (Kelly, McHugh, & Aiken, 2011).

Application to the management of health-care organizations—especially in reference to nursing institutions—is the interplay between transformational leadership, shared governance,

and action processes. Together, these three concepts lead to creative innovation, questioning and challenging existing structures, and providing an excellent quality of care. These transformational leadership practices complement and enhance the basic model of transactional leadership (Bamford-Wade & Moss, 2010). The augmentation effect, which means transformational leadership, adds to the effect of transactional leadership (Bass & Avolio, 1994). Bass (1998) described the augmentation effect as the degree to which “transformational leadership styles build on the transactional base in contributing to the extra effort and performance of followers” (p. 5). Bass (1999) went even further in commenting, “The best leaders are both transformational and transactional” (p. 21). Howell and Avolio (1993) agreed with this viewpoint, stating that transformational leadership can complement and enhance transactional leadership. In sum, an effective leader should realize that transformational leadership must be built on the foundation of transactional leadership and often supplement and amplify it. Bass (1998) argued that “transformational leadership does not substitute for transactional leadership” (p. 21), but seeks to extend or amplify the effect of transactional leadership. Avolio (1999) declared that “transactions are at the base of transformations” (p. 37). In closing, with the foundation of transactional leadership, transformational leadership plays a vital role to extend or strengthen the basic model of transactional leadership, thus inspiring employees to be more committed to the workforce and to obtain better performance outcomes (Avolio, 1999).

Bass’ (1998) Full Range Leadership Model

The full range of leadership, as measured by the Multifactor Leadership Questionnaire (MLQ), implies that every leader displays both transactional and transformational factors, but each leader shows more of one and less of the other (Bodla & Nawaz, 2010). Those leaders who

are more satisfying to their followers and who are more effective as leaders are more transformational and less transactional (Avolio & Bass, 1991). The transactional and transformational theories of leadership developed by Burns (1978) and Bass (1985) are clarified and extended by using a constructive developmental theory to explain how critical personality differences in leaders lead to either transactional or transformational leadership styles.

Transformational leadership. Transformational leadership originated with Burns (1978) while working in a political capacity. Burns (1978) described transformational leadership as the quality of leaders and followers that make each other advance to a higher level of morality and motivation. Bass (1985) developed a typology of leadership behaviors fitting into the broad categories of transactional and transformational leadership. Barbuto (2005) declared that the emergence of both transformational and transactional leadership is the result of more than 100 years of assessment, so it can be said that the two leadership styles represent many kinds of leadership styles.

Bass, Avolio, Jung, and Berson (2003) defined transformational leadership style as the ability of leaders to change the work environment, work motivation, work patterns, and work values perceived by subordinates so that they are better able to optimize performance to achieve organizational goals. The relationship between transformational leadership and organizational performance has been analyzed in literature (as cited in Pradeep & Prabhu, 2011). And meta-analyses show a positive relationship between transformational leadership and organizational performance (as cited in Pradeep & Prabhu, 2011). Previous research suggests that transformational leadership strengthens the common identity of work groups and can stimulate followers' team spirit and helpfulness (Dionne, Yammarino, Atwater, & Spangler, 2004; Kark, Shamir, & Chen, 2003). Persons being led by transformational leaders tend to be motivated to

put forth maximum effort while performing their job and to involve themselves in their jobs, usually exemplifying high levels of trust, respect, and loyalty (Katz & Kahn, 1978; Mellor, Mathieu, Barnes-Farrell, & Rogelberg, 2001). Transformational leaders are positioned in such a way that they can improve subordinates' trust, job satisfaction, and citizenship (Lian & Tui, 2012; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). In addition, transformational leaders can often attain organizational goals and improve their work outcome because they are able to motivate or inspire their subordinates to adopt creative and innovative problem-solving methods (Bass, 1985; Yammarino & Bass, 1990).

Northouse (2001) stressed that transformational leadership focuses on the ability of leaders to assess subordinates' needs and to demonstrate the value of each subordinate, which improves the morale and the level of subordinates' commitment to the organization. Consequently, transformational leaders achieve maximum organizational effectiveness and find it easier to attain organizational objectives (Frances & Cohen, 1999). Sidani (2007) proposed that there are four elements of transformational leadership: idealized influence, intellectual stimulation, inspirational motivation, and individual consideration. The definition for each element is as follows:

- Idealized influence: A charismatic leader whose personality traits attract followers; this leader finds it easy to get subordinates to trust and respect, resulting in accomplishing organizational goals and missions.
- Intellectual stimulation: A leader whose strengths are the ability to challenge subordinates intellectually and fill them with confidence and encouragement to devise plausible and creative solutions.
- Inspirational motivation: Describes the relationship between leaders and subordinates. It

can create an intense emotional bond and generate complete loyalty and trust and emulation of the leaders. The result will lead to a charismatic relationship for undertaking major change.

- Individual consideration: The leader treats each employee differently but equitably, providing all with individual attention. The leaders should develop a positive interactional relationship to make employees feel more confident and unique; this would lead to self-motivation for achieving organizational objectives (Sidani, 2007, p. 712).

Historically, leadership research focused on trait theory, contingency theory, and behavioral theory, at least until the early 1970s. However, in 1985 Bass proposed transformational and transactional leadership, which changed how individuals defined and practiced leadership. In short, transformational leaders have the ability to assess subordinates' needs, value them, and provide some sense of work satisfaction so as to motivate the employee to surpass expectations and to foster new ideas and creativity without being assigned to do so (Yeh & Hong, 2012).

Transactional leadership. Transactional leadership is based on the basic concept of exchange between the leader and the subordinate. The leader provides the subordinate with rewards in exchange for work motivation, productivity, and effectively accomplishing a set task (Bass, 1985). Largely, transactional leadership comprises two main types: management-by-exception and contingent reward. Transactional leadership emphasizes that a leader should realize the employees' needs and use rewards in exchange for assigned job performance in order to achieve organizational objectives. Furthermore, transactional leadership is described as a process of exchanging a reward for accomplishing an assigned job (Howell & Hall-Merenda,

1999).

Transactional leaders are obligated to inspire the subordinates to achieve the assigned job by assisting them with job content, and establishing regulations and responsibilities in order to achieve predictable objectives (Riaz, Akram, & Ijaz, 2011). The distinction between transformational leadership and transactional leadership is definite but not mutually exclusive (Bass, 1985).

Management-by-exception. Management-by-exception originated from the contingent reinforcement theory, which emphasizes the use of economic rewards in exchange for exact job performance (Bass, 1990). Leaders do not involve themselves in subordinates' job-related behaviors until job-related failures occur (Bass, 1985, 1990). Under passive leadership little or no intervention happens unless the subordinate fails to meet occupational expectations, in which case the leader will intervene to take some sort of corrective measure (Bass, 1985, 1990). Such leaders just expect to maintain the status quo from current subordinates' job performance and do not expect further job outcomes; they passively wait to be informed of any job failure (Hater & Bass, 1988).

A leader who usually employs management-by-exception routinely takes interventions whenever a predictable failure occurs. This intervention encourages subordinates to maintain their job status quo and to avoid putting forth any exceptional effort into their job. However, the passive leadership style does not inspire or stimulate personal and organizational growth. Employees in any dynamic and fast-paced work environment often need the intervention of a leader because they have not been motivated to seek authority or empowerment to solve any problem independently (Bass, 1985, 1990).

Contingent reward. Leaders and subordinates simultaneously play reciprocal roles in the

contingent reward theory (Howell & Avolio, 1993). Each party surrenders to the economic reward approach in exchange for their mutual expectations and goals (Bass, 1990; Seltzer & Bass, 1990). This theory originates partly from the reinforcement theory and has become a hot topic in the research of organizational behaviors and management. Blanchard and Johnson (1985) stressed that transactional leadership is a simple process where the leader should give clear instructions and expectations to employees in return for exact job performance and met objectives. Most research has confirmed that contingent rewards have a significant relationship with positive organizational outcomes (Howell & Avolio, 1993; Lowe et al., 1996). Conger and Kanungo (1998) stressed that transactional leaders should possess three important characteristics. First, transactional leaders should have the ability to give clear explanations, expectations, and goals to their employees in exchange for the promised practical reward. Second, they should exchange rewards and promises of rewards for worker effort. Third, transactional leaders should be responsive to the immediate self-interests of workers if their needs can be met while getting the work done (Conger & Kanungo, 1998). In short, they emphasized that modern leaders should have the ability to effectively exhibit both transformational and transactional leadership styles in various workforce settings (Conger, 1999).

Motivation

Vroom (1964) pointed out that the word *motivation* originates from the Latin word *movere*, which means *to move*. Motivation refers to the internal force that often relies on different human needs that can drive humans to carry on predicable objectives. Schulze and Steyn (2003) proposed that in order to realize job-related behaviors or attitudes within various workplaces, leaders must first recognize the concept of motivation, which can inspire their employees to develop maximum potential to achieve organizational missions. Robbins (2004) defined

motivations as “the processes that account for an individual’s intensity, direction, and persistence of effort toward attaining a goal” (p. 170). According to Armstrong (2006), “motivation is a goal-directed behavior which involves taking a course of action that leads to the attainment of a goal or a specific valued reward” (p. 252). Based on Watkiss’ (2004) definition, motivation can provide the energy that drives all the existed potential, creating high and noble desires and can improve morale and excitement of working together.

Robbins and Coulter (1999) explained that motivation is the voluntary intent of an employee to put forth maximum effort to attain organizational missions or objectives. Simultaneously, it is subject to first satisfying the personal needs of the employee. Work motivation usually includes two types: intrinsic and extrinsic motivation. First, intrinsic motivation means employees are internally motivated and usually have little regard for external rewards. They are self-motivated because they really attach themselves to their jobs and are glad to accept various challenges to achieve final goals (Armstrong, 2006). Second, extrinsic motivation means employees are mainly externally motivated to achieve perfect job performance only when they desire economic rewards, such as salary, performance bonus, promotion, or praise (Armstrong, 2006). Intrinsic motivation may be long term and result in employee stability due to the fact that it is rooted in employees’ psychological balance (Ryan & Deci, 2000).

Organizational Commitment

Many research findings have proven that there is a relationship between organizational commitment and job-related behaviors and attitudes in the fields of organizational behavior or management (Angle & Perry, 1981; Koch & Steers, 1978; Mohammed & Eleswed, 2013; Porter, Steers, Mowday, & Boulian, 1974). Bateman and Strasser (1984) described organizational commitment as multidimensional in nature, referring to employees’ loyalty, willingness to

exhibit maximum effort to their organizations, degree of goal and value in accordance with organizations, and the intentions to remain within the organizations. Mowday et al. (1982) proposed that organizational commitment is popular due to “(a) a strong belief in and acceptance of the organization’s goals and values; (b) a willingness to exert considerable effort on behalf of the organization; and (c) a strong desire to maintain membership in the organization” (p. 27). Related research has proven that such factors as age and tenure have a positive relationship with organizational commitment, but level of education is negatively related (Angle & Perry, 1981; Mathieu & Zajac, 1990; Steers, 1977).

Meyer and Allen (1991) identified three types of organizational commitment: affective commitment, continuance commitment, and normative commitment. Affective commitment is described as the emotional linkage, self-identity, and involvement in jobs associated with organizational goals (Meyer, Allen, & Smith, 1993; O’Reilly & Chatman, 1986). Mowday et al. (1979) further explained that affective commitment is “when the employee identifies with a particular organization and its goals in order to maintain membership to facilitate the goal” (p. 225). Continuance commitment is the willingness to stay in an organization because the employee has nontransferable assets. Nontransferable assets include retirement funds, pensions, personal relationships and career experience, tenure of employment or vested benefits, or any intangible irreplaceable asset (Reichers, 1985). Meyer and Allen (1997) further stressed that employees who have continuance commitment to their organizations indeed possess strong intentions to remain with the organizations. Normative commitment stresses the importance of responsibility and obligation to the organization (Bolon, 1993). Also, normative commitment can be summarized as a generalized value placed on loyalty and obligation (Meyer & Allen, 1991). Meyer et al. (1993) further explained that the three types of commitment are based on a

psychologically emotional state that characterizes the employees' attachment to the organization, therefore impacting the intent to remain in the organization.

Summary

The emergent issues within Taiwan's nursing homes for people with disabilities are multidimensional and highly complex, involving costly staff turnover, a nonmotivational work environment, uncommitted staff, and inefficient work performance. Professional development in the areas of creating a positive work environment to motivate staff toward job commitment and promote higher performance and quality of care are the driving factors (Arling, Kane, Lewis, & Mueller, 2005). The literature review presents relevant information and research that provides a broader and deeper discussion and attention to the development of effective leadership practices within nursing homes for people with disabilities. The object of this research is to identify an application that will address Taiwan's nursing home issues and promote positive organizational changes.

Chapter 3: Methodology

Introduction

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. In this study, a quantitative approach was used to collect the data. Creswell (2003) defined quantitative approach as the following:

[an investigation that primarily uses] postpositive claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield. (p. 21)

To explore the relationships between leadership styles of superintendents and their employees' organizational commitment via the mediating effect of employees' work motivation, employees were selected from 254 nursing homes for disabled people that currently own certificates of registration with Social and Family Affairs Administration at the Ministry of Health and Welfare in Taiwan as the study population (Lee et al., 2013; Tseng, 2013). This chapter consists of the following sections: Research Questions, Study Population and Sample, Instrumentation, Research Variables, Research Design, Data Collection, and Data Analysis.

Research Questions

The three research questions were the following:

1. Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment?
2. Does transformational leadership predict organizational commitment after controlling for covariates?
3. Does extrinsic motivation mediate the association of transformational leadership and

organizational commitment after controlling for covariates?

The three null hypotheses were the following:

1. Transformational leadership, extrinsic motivation, and demographic covariates are not associated with organizational commitment.
2. Transformational leadership does not predict organizational commitment after controlling for covariates.
3. Extrinsic motivation does not mediate the association of transformational leadership and organizational commitment after controlling for covariates.

Study Population and Sample

In statistics, a population is a complete set of items that share at least one property in common that is the subject of a statistical analysis (Creswell, 2003). In contrast, a statistical sample is a subset drawn from the population to represent the population in a statistical analysis (Creswell, 2003). If a sample is chosen properly, characteristics of the entire population that the sample is drawn from can be inferred from corresponding characteristics of the sample. Also, the survey population is the actual population that is studied and surveyed (Creswell, 2003). In this study, the population consisted of employees and did not include the superintendents in Taiwan's nursing homes. The definition of sampling is to gather data from the population in order to make an inference that can be generalized to the population (Tashakkori & Teddlie, 2003). Creswell (2003) and Sproull (2003) believed that the larger the sample size, the more likely it would represent the population and the better accuracy of the data findings.

In this study, however, the sampling units were first defined. The sampling units were limited to employees and excluded superintendents. It was calculated that if there were about four employees per nursing home and about 250 nursing homes, then the employee population

may be estimated at 1,000. Leedy and Ormrod (2004) further raised the rules for determining the sample size, suggesting that the larger the population, the smaller the percentage of the population required to get a representative sample. For example, with any population of 100 or less, the entire population should be surveyed. If the population size is around 500, 50% should be sampled. If the population size is around 1,500, 20% should be sampled. Using this guideline, the number of employees sampled for this study should be somewhere between 250 and 300. Because a response rate of 75% was anticipated for this study, a sample size of 400 was pursued so that the useable sample size would be 300. Furthermore, leader qualities and characteristics were measured from the perceptions of the employees within nursing homes for disabled people in Taiwan.

Instrumentation

Multifactor Leadership Questionnaire Form 5X-Short (MLQ). The Multifactor Leadership Questionnaire (MLQ) that was developed by Bass and Avolio in 1990 has been used for scholarly research in leadership fields. The Multifactor Leadership Questionnaire Form 5X-Short is the most widely accepted instrument due to its acceptable validity and reliability attributes (Avolio & Bass, 1995). The instrument contains 45 items that participants must answer using a 5-point Likert scale. The scale options include the following: 0 (*not at all*); 1 (*once in a while*); 2 (*sometimes*); 3 (*fairly often*); and 4 (*frequently, if not always*). The MLQ is also called a full range of leadership styles, which includes 45 items to explain nine leadership factors: (a) attributed idealized influence, (b) behavioral idealized influence, (c) inspirational motivation, (d) intellectual stimulation, (e) individualized consideration, (f) contingent reward, (g) active management-by-exception, (h) passive management-by-exception, and (i) laissez-faire leadership. In addition, there are three leadership outcome scales: satisfaction, extra effort, and

effectiveness.

Avolio (2011) stated that the MLQ is a strong and validated predictor of leadership performance. Reliability of the MLQ for each leadership factor scale ranges from 0.74 to 0.94 (Avolio & Bass, 2004). Avolio and Bass reported internal consistency reliability on Cronbach's alpha, ranging from 0.69 to 0.85 on the MLQ (as cited in Church, 2012). The instrument utilizes a nine-factor questionnaire; five of them representing the transformational leadership style were included: "(a) attributed idealized influence, (b) behavioral idealized influence, (c) inspirational motivation, (d) intellectual stimulation, and (e) individual consideration" (Bass & Avolio, 2004, p. 6; see Appendix A for certification of questionnaire translation and Appendix B for documentation of permission to use the MLQ in this study).

Work Preference Inventory (WPI). The Work Preference Inventory (WPI) is a "direct and explicit measurement that is designed to find the differences in the degree to which employees perceived themselves to be intrinsically and extrinsically motivated to achieve their job performance in the workforce" (Amabile et al., 1994, p. 952). The WPI is a validated instrument for use in measuring work motivation (Amabile et al., 1996). The WPI is a 30-item questionnaire scored on two primary scales: intrinsic motivation (15 items) and extrinsic motivation (15 items). Intrinsic motivation is defined as "the motivation to engage in work primarily for its own sake," while extrinsic motivation is defined as "the motivation to work primarily in response to something apart from the work itself" (Amabile et al., 1994, p. 950). Intrinsic motivation aims to measure the elements of self-determination, competence, task involvement, curiosity, enjoyment, and interest. Extrinsic motivation elements include concern with competition, evaluation, recognition, money, or other tangible incentives, and constraints by others. The instrument is composed of a 5-point Likert scale, ranging from 1 (*never or almost*

never true of me) to 5 (*always or almost always true of me*). The reliability of the questionnaire for internal consistency reported was .79 for the intrinsic motivation subscale and .78 for the extrinsic motivation subscale (Amabile et al., 1994; Kim, 2000; see Appendix C for documentation of permission to use the WPI in this study and Appendix D for a copy of the WPI that was given to participants).

Organizational Commitment Questionnaire (OCQ). In order to measure the dependent variable of organizational commitment, the Organizational Commitment Questionnaire (OCQ) is commonly and acceptably administered to collect and analyze the interval and continuous variables (Cemaloglu, Sezgin, & Kilinc, 2012; Meyer & Allen, 1991). Because the OCQ is multidimensional rather than unidimensional, organizational commitment was calculated using the following three subscale scores: affective commitment, continuance commitment, and normative commitment. Each dimension of the three scales is assessed by eight items that are composed of a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*; Meyer et al., 1993). The total reliability coefficient of the questionnaire was found at .74. Internal consistency coefficients of continuance, affective, and normative commitments were .88, .72, and .63, respectively (Cemaloglu et al., 2012; see Appendix E for documentation of permission to use the OCQ in this study and Appendix F for a copy of the OCQ that was given to participants).

Covariates survey. A survey of six demographic variables as the covariates was designed for this study, which was completed only by full-time professional employees within nursing homes. The survey asked employees for their age, gender, marital status, education level, job classification, and the length of employment at the present nursing home (see Appendix G). Each covariate was defined as follows:

- Age: The current legal age of each employee.
- Gender: Male or Female.
- Marital status: The current marital status of each employee.
- Education level: The highest level of education completed by each employee.
- Job classification: The current job classification of each employee.
- Length of employment: The years of employment of each employee in his or her current job classification.

Then, a sequential multiple regression was conducted after controlling for the covariates because multiple regression is more powerful than single regression through the full exploitation of the covariance structure (Tabachnick & Fidell, 2007).

Research Variables

A codebook consistent with the following research variables table was prepared. Table 1 shows how each of the variables was defined and labeled and how each of the possible responses was assigned a number.

Transformational leadership, the independent variable, was calculated as the average of the five raw transformational scores. The raw score weights were used. For example, because the transformational leadership scores contain five subscales (i.e., attributed idealized influence, behavioral idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration), it was assumed that a leader has the following scores:

(a) attributed idealized influence = a, (b) behavioral idealized influence = b, (c) inspirational motivation = c, (d) intellectual stimulation = d, and (e) individualized consideration = e.

Therefore, the transformational leadership composite scores were $(a + b + c + d + e)/5$.

Next, extrinsic motivation, the mediating variable, was calculated as the average of the

five raw extrinsic motivation scores. The extrinsic motivation scores were as follows:

(a) evaluation concerns = A2, (b) recognition concerns = B2, (c) competition concerns = C2,

(d) a focus on money or other tangible incentives = D2, and (e) a focus on the dictates of others =

E2. Therefore, the extrinsic motivation composite scores were $(A2 + B2 + C2 + D2 + E2)/5$.

Table 1

Research Variables

Variable	Variable type	Variable classification	Variable coding
Transformational leadership	Continuous	Independent	Continuous
Organizational commitment	Continuous	Dependent	Continuous
Extrinsic motivation	Continuous	Mediator	Continuous
Age	Continuous	Covariate	Continuous
Gender	Dichotomous	Covariate	0 = Males 1 = Females
Marital status	Dichotomous	Covariate	0 = Unmarried 1 = Married
Education level	Dichotomous	Covariate	0 = Less than a college degree 1 = College degree
Job classification	Categorical	Covariate	0 = Other professionals 1 = Administrative staff 2 = Social worker 3 = Special education teacher 4 = Physical care staff
Length of employment	Continuous	Covariate	Continuous

Research Design

In order to examine the purpose of the study, a path analysis model was first developed to

find out whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling for the covariates (see Figure 1). Before testing the effect of extrinsic motivation in this study, the following relationships were confirmed:

1. Transformational leadership is a significant predictor of extrinsic motivation after controlling for the covariates.
2. Extrinsic motivation is a significant predictor of organizational commitment after controlling for the covariates.
3. Transformational leadership is a significant predictor of organizational commitment after controlling for the covariates.

Since the above path analyses were significant, the hypothesis of mediating effect was tested.

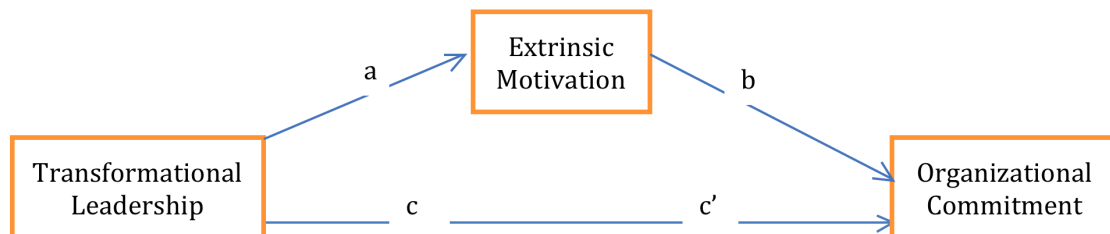


Figure 1. “Controlling for” covariates.

In order to analyze the above relationships, questionnaire surveys were used to collect the data because that is the most useful and cost-efficient method for a single researcher to use. The Multifactor Leadership Questionnaire (MLQ), the Work Preference Inventory (WPI), and the Organizational Commitment Questionnaire (OCQ) were combined to collect the data about job-

related attitudes and behaviors of employees for the deductive quantitative method. An SPSS program was then used to analyze the data. Descriptive statistics were used to characterize the sample, and Pearson correlation coefficients were used to examine the relationships among these variables. Additionally, sequential multiple regression was used to predict whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling for the covariates.

Data Collection

Organizational surveys are commonly used for data collection for various sizes of population and are supportive of different related functions of human resources (Kraut, 1996). The entire process of conducting a survey research may involve several stages, including “planning and design, administration, data analysis, feedback and interpretation, action planning and follow-through” (Kraut, 1996, p. 151). As to how the data were collected, the following steps were taken.

Step 1: Writing an introductory letter. Before the survey research was implemented, a formal introductory letter was written to those chief administrators, such as presidents or superintendents, within 70 randomly chosen nursing homes for disabled people. The introductory letter included as attachments the questionnaires, which were then enclosed in a sealed envelope and mailed to the human resource (HR) departments at the selected nursing homes for disabled people. The HR director of each organization was contacted either by phone or in person to restate the purpose of this study and to discuss legal policies. The letter emphasized the importance of voluntary participation and the freedom of termination from the study for each participant at any time. Additionally, the letter explained the purpose of the study and the participants’ benefits, risks, and fundamental rights of confidentiality and privacy (Creswell,

2005; see Appendices H and I).

Step 2: Protecting the human subjects. In most educational research, obtaining permission is often necessary before entering any research site and gathering data (Creswell, 2005). These permissions may come from relevant institutions or organizations, or the institutional review board (IRB) on the campus on which the research project is conducted (see Appendix J for a copy of the university's IRB approval). It is required to obtain approval of all personnel in administration or representatives of the organizations (Creswell, 2005). The best way to obtain permission is with a formal introductory letter and an informed consent form. For this study, an introductory letter explained the purpose of the study and the participants' benefits, risks, and fundamental rights of confidentiality and privacy (Creswell, 2005). And an informed consent form was approved by the University of the Incarnate Word's IRB (see Appendices K and L).

Step 3: Distributing the questionnaires and informed consent forms. Four hundred hardcopies of the questionnaires and official informed consent forms were prepared and mailed to the 70 randomly selected nursing homes. Participants were asked to first sign the informed consent form to show that they actually understood the content of this research project and then to complete the questionnaires. In order to guarantee anonymity and confidentiality of each participant, it was ensured that no one could be identified from the demographic data. Only group results of questionnaires were reported in this study. Participants were then asked to place their completed questionnaires in an assigned envelope to be sealed and mailed to the address provided.

Step 4: Storing the data. After receiving the raw data, the data from the questionnaires were transcribed into an Excel spreadsheet to store them safely. Next, the data were transferred

from Excel into an SPSS program. Before transferring the data to SPSS, the data were organized properly so that the responses from different participants appeared in different rows and the responses to different variables appeared in different columns. Additionally, the raw data were electronically protected via the use of a password.

Data Analysis

An SPSS program was used to analyze the data, including using descriptive statistics, Pearson correlation coefficients, and sequential multiple regression analysis to determine the relationships among these variables and to answer the research questions. In this study, a priori level of significance was adopted ($\alpha = .05$).

Descriptive statistics. Descriptive and inferential statistical methods were used to analyze the data. The main function of descriptive statistics includes describing the characteristics of the sample and checking whether these variables violate any assumptions of the research questions. It is useful to collect information regarding the distribution of frequencies, percentage, means, standard deviations, and skewness and kurtosis on the variables. A summary of descriptive statistics was interpreted for the six demographic variables, which were the employee's age, gender, marital status, education level, job classification, and the length of employment. Each covariate was defined as continuous, dichotomous, or nominal. For example, age and length of employment were defined as continuous; gender, marital status, and education level were defined as dichotomous, and job classification was defined as nominal. It was also important to inspect the violations of assumptions among these variables using parametric statistic techniques. In other words, most of the parametric statistic tests, such as *t*-test, ANOVA, bivariate correlation, and multiple regressions, were based on a normal distribution so that they could work best. In this study, the Sig. value of tests of normality was less than .05, suggesting

violation of the assumption of normality. This phenomenon, however, is very common due to large samples.

Bivariate correlation. Bivariate correlations were used to describe the strength and direction of the linear relationship between variables. In this study, a Pearson correlation analysis was performed to answer the first research question: Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment? A Pearson correlation analysis is designed to describe the strength and direction of the linear relationship between two continuous variables (Mukaka, 2012). The dependent variable of this study was organizational commitment and the four independent variables were the two demographic variables of age and length of employment, transformational leadership, and extrinsic motivation. Both the dependent variable and the independent variables were continuous and had interval natures (Mukaka, 2012).

Sequential multiple regression. Sequential multiple regression permits a researcher to specify a fixed order of entry for variables after controlling for the effects of covariates (Leech, Barrett, & Morgan, 2008; Pedhazur, 1997). Assumptions associated with sequential multiple regression were used to test the three research hypotheses. The covariates were entered in the first block, and then the primary independent variables were entered in the second block. Additionally, the categorical variable of job classification was dummy coded. A sequential multiple regression analysis was conducted in order to answer the second research question: Does transformational leadership predict organizational commitment after controlling for covariates? In this study, sequential multiple regression was used to predict the outcome variable (organizational commitment) based on the predictor variable of interest (transformational leadership) after controlling for covariates. The two predictor variables including the covariates

and transformational leadership were entered into the equation in a fixed order. The purpose of conducting sequential multiple regression was to observe how well transformational leadership predicted organizational commitment after controlling for the effect of covariates. Likewise, how much of a contribution transformational leadership would make to the variance of organizational commitment would be determined.

Mediation effect. In order to examine how much change the association between transformational leadership and organizational commitment would result via the mediating effect of extrinsic motivation, the following steps were taken.

1. Bivariate correlations were first used to demonstrate that the associations (a, b, c) existed and were statistically significant.
2. Before starting multiple regression analysis, the categorical variable (job classification) was dummy coded. Assumptions associated with sequential multiple regression were used to test the three research questions. Sequential multiple regressions were used to demonstrate that transformational leadership can predict organizational commitment after controlling for the covariates. The covariates were entered in the first block, and the independent variable (transformational leadership) was entered in the second block.
3. Extrinsic motivation was added to mediate the association between transformational leadership and organizational commitment. The mediating variable (extrinsic motivation) was then entered in the third block to observe how much partial mediation would result between transformational leadership and organizational commitment.

Chapter 4: Analysis and Results

Data Analysis and Presentation

The purpose of this quantitative study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. Data for analysis were collected from full-time employees who were randomly selected from 254 nursing homes for disabled people. These nursing homes own certificates of registration with the Social and Family Affairs Administration at the Ministry of Health and Welfare in Taiwan (Lee et al., 2013; Tseng, 2013). In order to examine the purpose of the study, it was essential to use descriptive and inferential statistics from the survey results. Four questionnaires were used to collect the data: the Multifactor Leadership Questionnaire Form 5X-Short (MLQ), the Work Preference Inventory (WPI), the Organizational Commitment Questionnaire (OCQ), and employees' demographic characteristics (EDC). As per the research design, the sample unit of the study was limited to only employees currently working at the nursing homes, with the exception of the superintendents. The ideal number of the sampling unit was estimated to be between 250 and 300. Because a response rate of 75% was anticipated, the useable sample size would be largely 300. Thus, 400 hardcopies of the questionnaires and introductory letters were mailed out to 70 randomly selected nursing homes in Taiwan. Random sampling is the most appropriate method to use when working with quantitative surveys. It is often referred to as probability sampling, which means each participant of the target population has an equal probability to be selected in a survey. In this study, a simple random sample was drawn by using the lottery method. Each of the 254 currently registered nursing homes in Taiwan was assigned a number. The numbers were placed in a box, thoroughly mixed, and then 70 numbers were selected randomly.

The collecting process of the survey began on October 10, 2015 and ended on December 2, 2015. Before mailing out the envelopes, the HR directors of these nursing homes were contacted either by phone or in person to explain the purpose of the study and the participants' benefits, risks, and fundamental rights of confidentiality and privacy. Three hundred and ten copies of completed and valid questionnaires were returned. After receiving the raw data, the data from the questionnaires were transcribed into an Excel spreadsheet. Then, the data were transferred from Excel into an SPSS program.

Response Rate

As previously mentioned, out of 400 questionnaires, 310 were returned and determined to be complete and valid. A total response rate was calculated to be 77.5%.

Reversing Negatively Worded Items

The Likert scale was developed in 1932 to measure attitudes directly by collecting the responses to a set of opinion statements of an attitude (Allen & Seaman, 2007). In this study, the three questionnaires with Likert scale formats were the Multifactor Leadership Questionnaire Form 5X-Short (MLQ), the Work Preference Inventory (WPI), and the Organizational Commitment Questionnaire (OCQ). Two of these questionnaires included both positively worded and negatively worded items (Allen & Seaman, 2007). Before computing the total scores of a scale or subscale, these negatively worded items should be "reverse-coded" (Jamieson, 2004). The purpose of reverse coding is to ensure that the negatively worded items and the positively worded ones are consistent with each other and go in the same direction (Norman, 2010). Also, high scores on a Likert scale questionnaire represent the same high levels of the attribute being measured.

In this study, two of the three questionnaires—the WPI and the OCQ—contained a mixture of positively worded and negatively worded items, so that reverse coding was required

to be completed first in order to ensure that all the items in the questionnaires were consistent with each other (Jamieson, 2004). In the WPI, its response scale was scored as N (*never or almost never true of you*) = 1, S (*sometimes true of you*) = 2, O (*often true of you*) = 3, and A (*always or almost always true of you*) = 4. As to extrinsic subscales, there were three negatively worded items (items #1, #16, and #22). On the other hand, the OCQ's response scale was scored as 1 (*strongly disagree*), 2 (*disagree*), 3 (*undecided*), 4 (*agree*), and 5 (*strongly agree*; Meyer et al., 1993). This questionnaire included four negatively worded items (items #3, #4, #5, and #13). Therefore, these negatively worded items were transformed from high scores to low scores. For example, a score of 4 was transformed to a score of 1, a score of 3 to a score of 2, a score of 2 to a score of 3, and a score of 1 to a score of 4 in the 4-point Likert scale of the WPI. Likewise, it was also necessary to recode a score of 5 to a score of 1, a score of 4 to a score of 2, and leave the score of 3 (*neutral*) alone in the 5-point Likert scale of the OCQ.

Adding Up the Total Scores for a Scale or Subscale

SPSS procedures were used to compute the total scores of a scale or subscale by summing up the responses to all of the items. In this study, the three questionnaires were computed by summing up all the items after reverse coding negatively worded items, such as transformational leadership (TFL-sum) and extrinsic motivation (WPIEX_sum), and the total scores of the scale of organizational commitment (OCQ_sum). The total scores of the scale or subscales are shown in Table 2.

Table 2

New Variables of a Codebook

New variable	SPSS Variable name	Coding instructions
Transformational leadership (TFL_sum)	TFL_sum = SUM (TFLa_sum, TFLb_sum, TFLc_sum, TFLd_sum, TFLe_sum)	Enter the number circled from 0 (strongly disagree) to 4 (strongly agree)
TFLa = Idealized influence (attributed)	TFLa_sum = SUM (mlq10, mlq18, mlq21, mlq25)	
TFLb = Idealized influence (behavior)	TFLb_sum = SUM (mlq6, mlq14, mlq23, mlq34)	
TFLc = Inspirational motivation	TFLc_sum = SUM (mlq9, mlq13, mlq26, mlq36)	
TFLd = Intellectual stimulation	TFLd_sum = SUM (mlq2, mlq8, mlq30, mlq32)	
TFLe = Individualized consideration	TFLe_sum = SUM (mlq15, mlq19, mlq29, mlq31)	
Extrinsic work motivation (WPIEX)	WPIEX = WPIEXa + WPIEXb	
WPIEXa = Outward	(WPIEXa_sum) = SUM (wpi1r, wpi2, wpi6, wpi12, wpi15, wpi18, wpi21, wpi24, wpi25, wpi29)	1 = N = Never or almost never true of you 2 = S = Sometimes true of you
WPIEXb = Compensation	WPIEXb = wpi4 + wpi10 + wpi16r + wpi19 + wpi22r	3 = O = Often true of you 4 = A = Always or almost always true of you
Organizational commitment (OCQ)	OC = AC + CC + NC	1 = SD = Strongly Disagree 2 = DA = Disagree 3 = UD = Undecided 4 = AG = Agree 5 = SA = Strongly Agree
Affective commitment (AC)	AC = ocq1 + ocq2 + ocq3r + ocq4r + ocq5r + ocq6	
Continuance commitment (CC)	CC = ocq7 + ocq8 + ocq9 + ocq10 + ocq11 + ocq12	
Normative commitment (NC)	NC = ocq13r + ocq14 + ocq15 + ocq16 + ocq17 + ocq18	

Checking the Reliability of a Scale

As to checking reliability, Cronbach's alpha is the most common and acceptable measure of internal consistency to be reported when using Likert scale questionnaires. The main objective of using Cronbach's alpha coefficient is to assess whether such questionnaires are reliable and trustful (Gliem & Gliem, 2003). Cronbach's alpha reliability coefficient normally ranges between 0 and 1. George and Mallery (2003) provided the following rules of thumb: “ $\alpha > .9$ – Excellent, $\alpha > .8$ – Good, $\alpha > .7$ – Acceptable, $\alpha > .6$ – Questionable, $\alpha > .5$ – Poor, and $\alpha < .5$ – Unacceptable” (p. 231). It is assumed that a Cronbach's alpha of .8 means a reasonable and ideal goal (Gliem & Gliem, 2003).

Reliability of Multifactor Leadership Questionnaire Form 5X-Short (MLQ). Avolio (2011) stated that the MLQ is a strong and validated predictor of leadership performance. Reliability of the MLQ for each leadership factor scale ranges from 0.74 to 0.94 (Avolio & Bass, 2004). Avolio and Bass (2004) reported internal consistency reliability on Cronbach's alpha, ranging from 0.69 to 0.85 on the MLQ. The instrument utilizes a nine-factor questionnaire; five of those factors that represent the transformational leadership style were included in the questionnaire given to the participants of this study: “(a) attributed idealized influence, (b) behavioral idealized influence, (c) inspirational motivation, (d) intellectual stimulation, and (e) individual consideration” (Bass & Avolio, 2004, p. 6). In this study, the Cronbach alpha coefficient of transformational leadership was .98.

Reliability of Work Preference Inventory (WPI). The WPI is a validated instrument for use in measuring work motivation (Amabile et al., 1996). The WPI is a 30-item questionnaire scored on two primary scales: intrinsic motivation (15 items) and extrinsic motivation (15 items). Extrinsic motivation is defined as “the motivation to work primarily in response to something apart from the work itself” (Amabile et al., 1994, p. 950). The instrument is composed of a 5-

point Likert scale, ranging from 1 (*never or almost never true of me*) to 5 (*always or almost always true of me*). The reliability of the questionnaire for internal consistency was .79 for the intrinsic motivation subscale and .78 for the extrinsic motivation subscale (Amabile et al., 1994; Kim, 2000). In this study, the Cronbach alpha coefficients of extrinsic motivation and intrinsic motivation were .79 and .89, respectively.

Reliability of Organizational Commitment Questionnaire (OCQ). In order to measure the dependent variable of organizational commitment, the OCQ is commonly and acceptably administered to collect and analyze the interval and continuous variables (Cemaloglu et al., 2012; Sersic, 1999). The OCQ is also multidimensional and is calculated by using the following three subscale scores: affective commitment, continuance commitment, and normative commitment. Each dimension of the three scales is assessed by eight items that are composed of a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*; Meyer et al., 1993). The total reliability coefficient of the questionnaire was found to be at .74. Internal consistency coefficients of continuance, affective, and normative commitments were .88, .72, and .63, respectively (Cemaloglu et al., 2012). In this study, the total reliability coefficient of the questionnaire was .94. The Cronbach alpha coefficients of continuance, affective, and normative commitments were .93, .86, and .89, respectively.

Demographic Analysis

It is useful and important to collect and report relevant demographic characteristics, such as age, gender, marital status, and education level, because they will truly generate actionable and meaningful results when conducting a survey analysis (Perry & Mackun, 2001; Schutt, 2006). In this study, 310 participants were qualified as full-time employees currently working within nursing homes for disabled people in Taiwan. Six demographic characteristics of the 310 participants were collected. Four of the demographic characteristics were categorical variables—

gender, marital status, education level, and job classification—while the other two were continuous ones—age and length of employment.

The following data show the frequency for each of the four categorical demographic variables. Of the 310 participants, there were 144 males (46.5%) and 166 females (53.5%). In the sample of 310, 166 participants were married (53.5%) and 143 were unmarried (46.1%). Sixty-five of them had less than a college degree (21%) and 245 had a college degree (79%, $N = 310$). As to job classification, there were 62 administrative staff (20%), 59 social workers (19%), 51 special education teachers (16.5%), 62 physical care staff (20.0%), and 76 other professionals (24.7%) in the sample ($N = 310$).

For continuous variables, descriptive statistics were used to summarize data from a sample, which includes mean, median and standard deviation. Thus, a relevant descriptive analysis was obtained for the continuous variables of age and length of employment (see Table 3). In this study, the age range of the 310 participants was 22 to 56 years old, with a mean of 36.62 and a standard deviation of 8.74. The length of employment ranged from 1 to 18 years, with a mean of 7.32, and a standard deviation of 4.25.

Table 3

Descriptive Statistics for Age and Length of Employment

	Descriptive statistics							
	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	<i>SE</i>	Statistic
Age	310	22.00	56.00	36.62	8.74	.377	.138	-.776
Length of employment	310	1.00	18.00	7.32	4.25	.654	.138	-.536

Descriptive Analysis

Descriptive analysis involves examining the characteristics of individual variables that may include the mean, standard deviation, and ranges of scores, skewness, and kurtosis (Schutt, 2006). Before conducting relevant statistical analyses, it is important to check whether the data would violate any underlying assumptions. Testing of assumptions may involve descriptive analysis on the variables that are of particular interest. There are different procedures depending on whether the types of variables are categorical or continuous ones. In this study, the frequencies of four categorical variables—gender, marital status, education level, and job classification—and the descriptive statistics for two continuous demographic variables—age and length of employment—were examined.

In addition, three other continuous variables were examined: transformational leadership, extrinsic work motivation, and organizational commitment. The summary statistics for each of the three continuous variables are shown in Table 4. The following list highlights the results:

1. The sum of transformational leadership ranged from .00 to 80.00, had a mean of 43.47, and had a standard deviation of 17.96.
2. The sum of extrinsic motivation ranged from 27.00 to 59.00, had a mean of 42.03, and had a standard deviation of 6.01.
3. The sum of organizational commitment ranged from 18.00 to 89.00, had a mean of 56.83, and had a standard deviation of 13.36.

Analysis of Demographic Variables and Organizational Commitment

A *t*-test and one-way ANOVA were conducted to determine the significance of different demographic variables (gender, age, marital status, education level, length of employment, and job classification) and organizational commitment. An independent *t*-test compares the means

Table 4

Descriptive Statistics for Transformational Leadership, Extrinsic Work Motivation, and Organizational Commitment

	Descriptive statistics								
	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	<i>SE</i>	Statistic	<i>SE</i>
Sum of transformational leadership	310	.00	80.00	43.47	17.96	-.427	.138	-.459	.276
Sum of extrinsic motivation	310	27.00	59.00	42.03	6.01	.059	.138	-.156	.276
Sum of organizational commitment	310	18.00	89.00	56.83	13.36	-.575	.138	.723	.276

between two unrelated groups on one dependent (continuous) variable. In this study, an independent *t*-test was used to check whether there was a significant difference in mean scores for two different groups from the same sample (Green & Salkind, 2003). Four of the demographic variables were composed of both nominal and dichotomous variables. The dichotomous variables were gender (females/males), marital status (married/unmarried), and education level (less than a college degree/college degree), while job classification was a nominal variable. Organizational commitment, the dependent variable, was a continuous variable. In this study, the null hypothesis was that there are no significant differences in the mean scores between any of the two groups (females/males, married/unmarried, less than a college degree/college degree) on the dependent variable of organizational commitment.

Analysis of gender on organizational commitment. The group statistics for gender and sum of organizational commitment are shown in Table 5. In the independent samples test output, the results of Levene's test for equality of variances indicate whether the variance of scores for the two groups (females/males) is the same. In this study, the results of Levene's test show that

the significance value was less than .05, which meant that the variances for these two groups were not the same (see Table 6). As a result, the information in the second row, which refers to Equal variances not assumed, was used to assess whether there was a significant difference between the two groups. In this study, the results under the column labeled *Sig. (2-tailed)* show that the significance value was greater than .05, indicating there was no significant difference between the two groups.

Table 5

Group Statistics for Gender and Sum of Organizational Commitment

	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
Sum of organizational commitment	Females	166	56.72	10.95	.85
	Males	144	56.95	15.73	1.31

Table 6

Independent Samples Test for Gender and Sum of Organizational Commitment

		Independent samples test								
		Levene's test for equality of variances				<i>t</i> -test for Equality of means				
		<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig. (2-tailed)	<i>M</i> Difference	<i>SE</i> Difference	95% CI of the difference	
									Lower Bound	Upper Bound
Sum of organizational commitment	Equal variances assumed	16.910	<.001	-.154	308	.878	-.23452	1.52416	-3.23361	2.76456
	Equal variances not assumed			-.150	250.217	.881	-.23452	1.56229	-3.31144	2.84240

Note. CI = confidence interval.

Analysis of marital status on organizational commitment. The group statistics for marital status and sum of organizational commitment are shown in Table 7. In the independent samples test output, the results of Levene's test for equality of variances indicate whether the variance of scores for the two groups (married/unmarried) is the same. In this study, the results of Levene's test show that the significance value was less than .05, which meant that the variances for these two groups were not the same (see Table 8). As a result, the information in the second row, which refers to Equal variances not assumed, was used to assess whether there was a significant difference between the two groups. In this study, the results under the column labeled *Sig. (2-tailed)* show that the significance value was less than .05, indicating there was a significant difference between the two groups.

Table 7

Group Statistics for Marital Status and Sum of Organizational Commitment

	Marital status	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
Sum of organizational commitment	Married	166	59.07	11.26	.87
	Unmarried	144	54.08	14.99	1.25

Analysis of education level on organizational commitment. The group statistics for education level and sum of organizational commitment are shown in Table 9. In the independent samples test output, the results of Levene's test for equality of variances indicate whether the variance of scores for the two groups (less than a college degree/college degree) is the same. In this study, the results of Levene's test show that the significance value was greater than .05, which meant that the variances for these two groups were the same (see Table 10). The value for equal variance, under the column labeled *Sig. (2-tailed)*, was examined in order to assess whether there was a significant difference between the two groups. In this study, the results

showed that the significance value was less than .05, indicating there was a significant difference between the two groups.

Table 8

Independent Samples Test for Marital Status and Sum of Organizational Commitment

		Independent samples test								
		Levene's test for equality of variances		<i>t</i> -test for Equality of means						
		<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig. (2-tailed)	<i>M</i> Difference	<i>SE</i> Difference	95% CI of the difference	
									Lower bound	Upper Bound
Sum of organizational commitment	Equal variances assumed	4.578	.033	3.334	307	<.001	4.98934	1.49646	2.04473	7.93395
	Equal variances not assumed			3.265	260.614	<.001	4.98934	1.52791	1.98071	7.99797

Note. CI = confidence interval.

Table 9

Group Statistics for Education Level and Sum of Organizational Commitment

	Education level	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
Sum of organizational commitment	Less than a college degree	65	47.18	13.68	1.69
	College degree	245	59.38	12.07	.77

Table 10

Independent Samples Test for Education Level and Sum of Organizational Commitment

		Independent samples test								
		Levene's test for equality of variances		<i>t</i> -test for Equality of means						
		<i>F</i>	Sig.	<i>t</i>	<i>df</i>	Sig. (2-tailed)	<i>M</i> Difference	<i>SE</i> Difference	95% CI of the difference	
									Lower bound	Upper Bound
Sum of organizational commitment	Equal variances assumed	1.334	.249	-7.038	308	<.001	-12.19906	1.73324	-15.60954	-8.78858
	Equal variances not assumed			-6.547	92.166	<.001	-12.19906	1.86339	-15.89983	-8.49829

Note. CI = confidence interval.

Analysis of job classification on organizational commitment. The one-way ANOVA is used to compare the mean scores of more than two groups according to the different levels of independent (categorical) variables. The only demographic variable that was a nominal variable was job classification because it involved more than two different levels or groups, such as administrative staff, social workers, special education teachers, physical staff, and other professionals (see Table 11 for the descriptives of job classification on sum of organizational commitment). A one-way ANOVA was used to test whether there were significant differences between the five different groups in mean scores of organizational commitment. The results of the one-way ANOVA for the five different groups of job classification and organizational commitment are shown in Table 12. The significant value was less than .001. This value indicates there was a significant difference in mean scores between the five different groups on organizational commitment. Therefore, the null hypothesis was rejected.

Table 11

Descriptives of Job Classification on Sum of Organizational Commitment

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI		Min	Max
					Lower Bound	Upper Bound		
Administrative staff	62	55.83	12.46	1.58	52.68	59.00	20.00	89.00
Social worker	59	60.97	9.56	1.25	58.47	63.46	38.00	79.00
Special education teacher	51	61.35	11.70	1.64	58.06	64.65	27.00	87.00
Physical care staff	62	50.03	17.33	2.20	45.63	54.43	18.00	85.00
Other professionals	76	56.92	11.68	1.34	54.25	59.59	19.00	85.00
Total	310	56.83	13.36	.76	55.33	58.32	18.00	89.00

Note. CI = confidence interval.

Table 12

An ANOVA of Job Classification on Sum of Organizational Commitment

ANOVA					
Sum of organizational commitment					
	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Between groups	4979.165	4	1244.791	7.563	<.001
Within groups	50197.428	305	164.582		
Total	55176.594	309			

The results of the one-way ANOVA can only indicate that at least two groups were different, but it cannot indicate which specific groups were significantly different from each other. Therefore, post hoc tests were run to find out which specific groups were significantly different from each other. As shown in Table 13, the mean differences were significant at the 0.05 level in the demographic variable of job classification.

Table 13

Post Hoc Tests for Job Classification and Sum of Organizational Commitment

Multiple comparisons						
Dependent variable: Sum of organizational commitment						
Tukey HSD						
(I) Job classification	(J) Job classification	<i>M</i> Difference (I – J)	<i>SE</i>	Sig.	95% CI	
					Lower bound	Upper bound
Administrative staff	Social worker	-5.12739	2.33325	.183	-11.5302	1.2754
	Special education teacher	-5.51423	2.42521	.156	-12.1694	1.1409
	Physical care staff	5.80645	2.30415	.089	-.5165	12.1294
	Other professionals	-1.08234	2.19547	.988	-7.1071	4.9424
Social worker	Administrative staff	5.12739	2.33325	.183	-1.2754	11.5302
	Special education teacher	-.38684	2.45288	1.000	-7.1179	6.3443
	Physical care staff	10.93384*	2.33325	<.001	4.5310	17.3367
	Other professionals	4.04505	2.22600	.366	-2.0635	10.1536
Special education teacher	Administrative staff	5.51423	2.42521	.156	-1.1409	12.1694
	Social worker	.38684	2.45288	1.000	-6.3443	7.1179
	Physical care staff	11.32068*	2.42521	<.001	4.6655	17.9759
	Other professionals	4.43189	2.32221	.315	-1.9406	10.8044
Physical care staff	Administrative staff	-5.80645	2.30415	.089	-12.1294	.5165
	Social worker	-10.93384*	2.33325	<.001	-17.3367	-4.5310
	Special education teacher	-11.32068*	2.42521	<.001	-17.9759	-4.6655
	Other professionals	-6.88879*	2.19547	.016	-12.9135	-.8641
Other professionals	Administrative staff	1.08234	2.19547	.988	-4.9424	7.1071
	Social worker	-4.04505	2.22600	.366	-10.1536	2.0635
	Special education teacher	-4.43189	2.32221	.315	-10.8044	1.9406
	Physical care staff	6.88879*	2.19547	.016	.8641	12.9135

Note. CI = confidence interval.

*The mean difference is significant at the 0.05 level.

Study Results and Findings

Research Question 1. A Pearson correlation analysis was performed to answer the first research question: Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment? The null hypothesis was that transformational leadership, extrinsic motivation, and demographic covariates are not associated with organizational commitment. A Pearson correlation analysis is designed to describe the strength and direction of the linear relationship between two continuous variables (Mukaka, 2012). The dependent variable of this study was organizational commitment and the four independent variables were the two demographic variables of age and length of employment, transformational leadership, and extrinsic motivation. Both the dependent variable and the independent variables were continuous and had interval natures (Mukaka, 2012). Scatterplots were also created to display the linearity between two variables. A simple scatterplot can be used to (a) determine whether a relationship is linear, (b) detect outliers, and (c) graphically present a relationship. Secondly, it shows a simple bivariate correlation between two continuous variables.

Age and organizational commitment. Before conducting a correlation analysis, a scatterplot was first created to check for violation of the assumptions of linearity and homoscedasticity (Friendly & Denis, 2005). As can be seen from Figure 2, the data points spread out all over the graph, indicating there was a low or small correlation between age and organizational commitment.

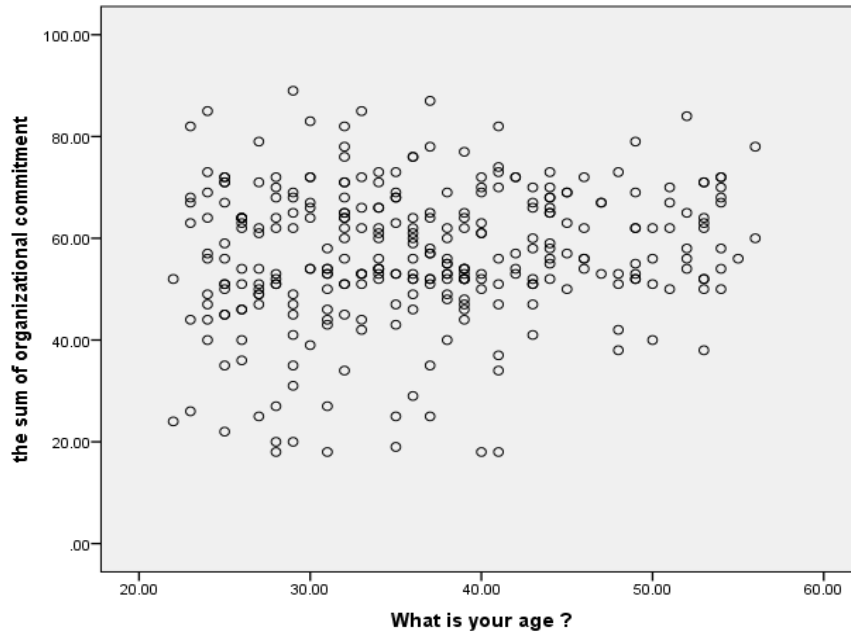


Figure 2. Scatterplot illustrates the relationship between age and the sum of organizational commitment.

After exploring the distribution of scores on the scatterplot, the Pearson correlation coefficients were calculated to further explore the correlation between the two variables. The strength and direction of the linearity between the two variables were checked by following five steps. First, the descriptive information of the sample in the study was checked. The means of organizational commitment and age were 56.83 and 36.62, respectively. And the standard deviations of organizational commitment and age were 13.36 and 8.74, respectively.

Second, the direction of the relationship between age and organizational commitment was determined. Note that the Pearson correlation coefficient was .14, indicating a positive correlation between age and organizational commitment. Third, the strength of the relationship was determined. Usually, the correlation coefficients range from -1.00 to 1.00. But according to Cohen's (1988) guidelines, a "small" $r = .10$ to $.29$, a "medium" $r = .30$ to $.49$, and a "large"

$r = .50$ to 1.0 . Also, the guidelines can be applied to negative correlation coefficients. In this study, the Pearson coefficient was $.14$, also indicating there was a low correlation. In other words, this analysis showed there was a weak relationship between age and organizational commitment.

Fourth, the coefficient of determination was calculated by squaring the r value and multiplying by 100 . In this study, the correlation coefficient, $r = .14$, only shared $.14 * .14 = 1.96\%$ of their variance in age of employees on their organizational commitment. The fifth step consisted of checking the significance level. The significance level can be found in the column labeled *Sig. (2-tailed)*. The level of significance does not indicate how strongly the two variables are associated by the r value, but it represents how much confidence there is. Additionally, the significance level is easily influenced by the size of the sample. In a large sample ($N = 100+$), a small correlation may still reach significance level ($\text{Sig.} < .05$). In this study, the focus was on the r value and the shared variance of the relationship. In short, the finding shows that there was only a small correlation between age and organizational commitment, even though the significance value reached a significance level ($\text{Sig.} < .05$). The null hypothesis was that the demographic covariate of age was not associated with organizational commitment. Therefore, based on this analysis, the null hypothesis was rejected, even though there was a low correlation between age and organizational commitment.

Length of employment and organizational commitment. Again, a scatterplot was first created in order to check the linearity and the distribution of scores in the relationship between two continuous variables. In this case, the distribution of data points indicated a weak positive direction of linearity, which meant there was a medium correlation between length of employment and organizational commitment (see Figure 3).

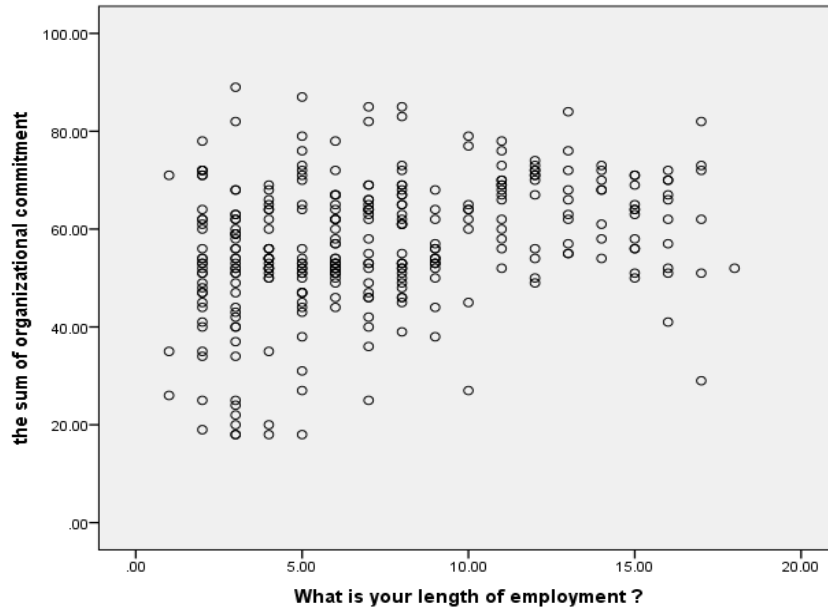


Figure 3. Scatterplot illustrates the relationship between length of employment and the sum of organizational commitment.

As outlined above, the five steps were then followed to check the strength and direction of the linear relationship between the two variables. The means of organizational commitment and length of employment were 56.83 and 7.32, respectively. The standard deviations of organizational commitment and length of employment were 13.36 and 4.25, respectively. The Pearson correlation coefficient was .314, indicating a positive correlation between length of employment and organizational commitment. The coefficient of determination was also calculated by squaring the r value and multiplying by 100. The correlation coefficient, $r = .314$, only shared $.314 * .314 = 9.88\%$ of their variance in length of employment on their organizational commitment. This finding showed that there was a medium correlation between length of employment and organizational commitment, even though the significance value reached significance at the 0.01 level, two-tailed (Sig. < .05). The null hypothesis was that the demographic covariate of length of employment was not associated with organizational

commitment. In short, the null hypothesis was rejected because there was a medium correlation between length of employment and organizational commitment.

Transformational leadership and organizational commitment. When the scatterplot for these two variables was created, the distribution of data points appeared in the shape of a cigar, indicating a strong positive direction of linearity (see Figure 4). This meant there was a high correlation between transformational leadership and organizational commitment.

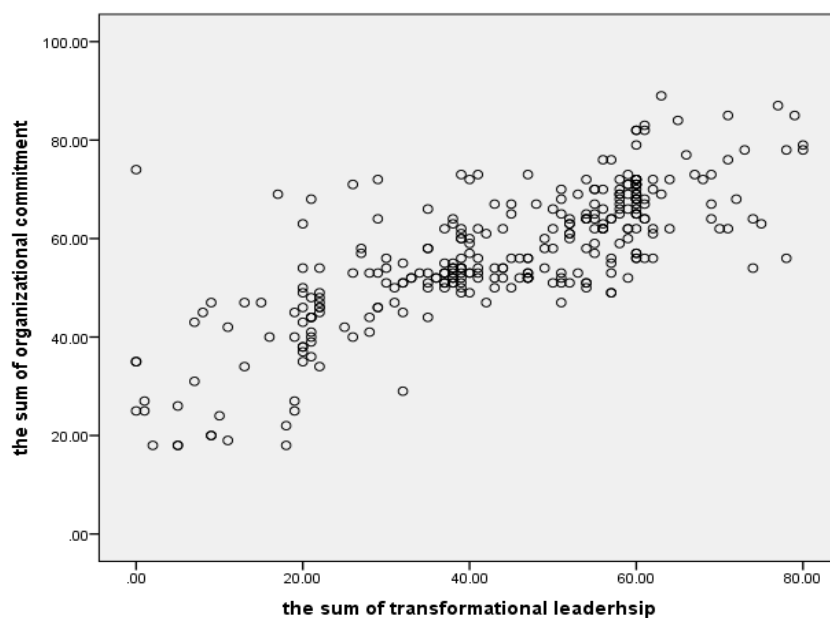


Figure 4. Scatterplot illustrates the relationship between transformational leadership and the sum of organizational commitment.

The means of transformational leadership and organizational commitment were 43.47 and 56.83, respectively. The standard deviations of transformational leadership and organizational commitment were 17.96 and 13.36, respectively. The Pearson correlation coefficient was .774, indicating a positive strong correlation between transformational leadership and organizational commitment. This r value of .774 also indicated there was a high correlation between transformational leadership and organizational commitment. In this study, the

correlation coefficient, $r = .774$, shared $.774 * .774 = 59.94\%$ of their variance in transformational leadership on their organizational commitment. In short, the null hypothesis was rejected because there was a high correlation between transformational leadership and organizational commitment.

Extrinsic motivation and organizational commitment. The distribution of data points in this scatterplot indicated a strong positive direction of linearity because its shape was like a cigar (see Figure 5). This meant there was a high correlation between extrinsic motivation and organizational commitment.

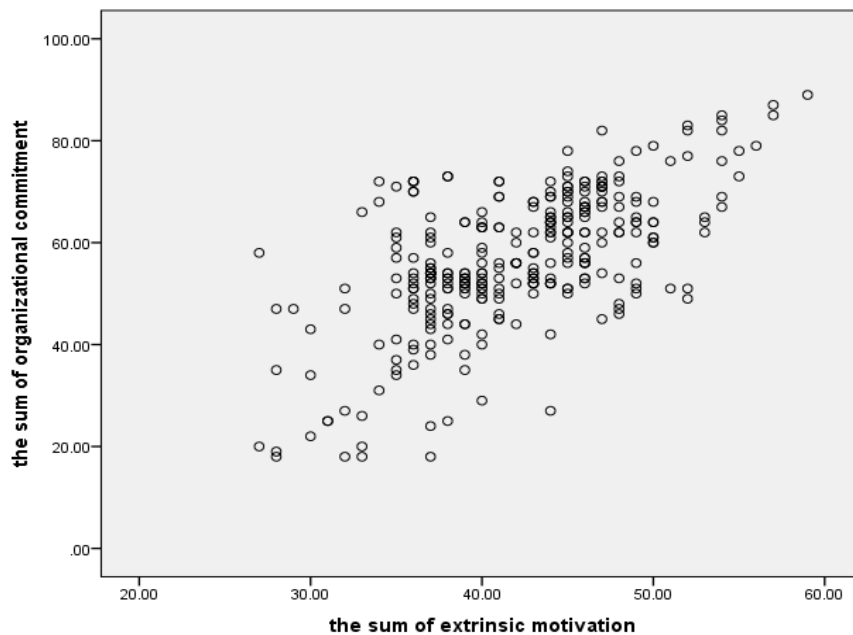


Figure 5. Scatterplot illustrates the relationship between extrinsic motivation and the sum of organizational commitment.

The means of organizational commitment and extrinsic motivation were 56.83 and 42.03, respectively. The standard deviations of organizational commitment and extrinsic motivation were 13.36 and 6.01, respectively. The Pearson correlation coefficient was .640, indicating a positive correlation between extrinsic motivation and organizational commitment. In this study,

the correlation coefficient, $r = .640$ shared $.640 * .640 = 40.96\%$ of their variance in extrinsic motivation on their organizational commitment. To sum up, the null hypothesis was rejected because there was a high correlation between extrinsic motivation and organizational commitment.

Research Question 2. A sequential multiple regression analysis was conducted in order to answer the second research question: Does transformational leadership predict organizational commitment after controlling for covariates? The null hypothesis was that transformational leadership does not predict organizational commitment after controlling for covariates. Multiple regression is an extension of simple linear regression (Chance & Rossman, 2006). It is a statistical analysis based on multiple correlations and the variance of prediction in an outcome variable by using a combination of several predictor variables. The objective of multiple regression analysis is to decide which predictor variables have significant contribution to the model (Pedhazur, 1997). In short, multiple regression shows all possible predictor variables and the relative contribution of each of them in a model (Chance & Rossman, 2006).

In this study, sequential multiple regression was used to predict the outcome variable (organizational commitment) based on the predictor variable of interest (transformational leadership) after controlling for covariates. When categorical (nominal) variables with two or more levels are used as predictor variables, it is necessary to recode the categorical variables into a series of separate or dichotomous variables. The process of recoding the categorical variables is called “dummy coding” (Garson, 2006). In this study, the categorical variables of gender, marital status, education level, and job classification were used as the covariates. In order to make the results of multiple regression interpretable, these covariates were first converted into a series of dummy variables. The first step in this process was to decide the number of dummy variables

(Modupe, 2012). Then, one of the k levels was chosen as the reference group (comparing group) and then the number of dummies was assigned (Modupe, 2012). In this study, there were three dichotomous variables among the covariates: gender, education level, and marital status. Thus, “males,” “unmarried,” and “less than a college degree” were selected as the reference group, and they were assigned a 0. After having identified the reference group, “females,” “college degree,” and “married” were created as new dummy variables, and they were assigned a 1.

As to the last covariate of job classification, the same procedure of dummy coding was followed and this nominal variable with five ($k = 5$) levels was converted into four ($k-1$) new dummy variables. In this study, “other professionals” was selected as the reference group because it was of special interest to determine the contribution of administrative staff, social workers, special education teachers, and physical care staff in the variance of the dependent variable (organizational commitment). Thus, the four new dummy variables that were coded were the following: administrative staff, social worker, special education teacher, and physical care staff. In order to answer the second research question, sequential multiple regression was used to assess the contribution of variance of transformational leadership on organizational commitment (outcome variable) after controlling for the influence of all the covariates—age, gender, marital status, education level, job classification, and length of employment (see Table 1 in Chapter 3).

Preliminary analyses for checking the assumptions. Before analyzing the data using multiple regressions, preliminary analyses for checking the following assumptions were necessary because they would determine whether the study could actually be analyzed via multiple regression to get a valid result (Garson, 2006). The first assumption states that the dependent variable should be measured on a continuous scale (interval or ratio variable). A

common question is whether it is legitimate to use Likert scale data in parametric statistical procedures that require interval data. Common opinion insists that the underlying concept of Likert scale data should be continuous and that the intervals between points should be approximately equal (Garson, 2006). The second assumption says there should be two or more independent variables that are either continuous (interval or ratio variables) or categorical (nominal or ordinal). In this study, age and length of employment were continuous variables, whereas gender, marital status, education level, and job classification were categorical variables.

The third assumption involves checking the independence of residuals. Residuals refer to the difference between the obtained and the predicted dependent variable scores (Chatterjee & Simonoff, 2013). It is necessary to check the independence of residuals by observing the Durbin-Watson statistic (Garson, 2006). Independence of the residuals means that the residuals are not correlated serially from one observation to the next (Garson, 2006). After running a multiple regression analysis, the Durbin-Watson statistic can be observed and interpreted from the model summary in an enhanced multiple regression guide. The Durbin-Watson statistic is used to test for the presence of serial correlation among the residuals. Commonly, the residuals are uncorrelated serially whenever the value of the Durbin-Watson statistic is approximately 2. The model summary, presented in Table 14, shows that the Durbin-Watson statistic was 1.953, indicating no serial correlation (Chatterjee & Simonoff, 2013).

The fourth assumption involves checking the linearity of the residuals. In this case, linearity means that the residuals should have a straight-line relationship with the predicted dependent variable. As can be seen from the normal P-P plot, presented in Figure 6, the residuals displayed a similarly straight-line with the predicted dependent variable of organizational commitment.

Table 14

Model Summary of the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

Model summary										
Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>SE</i> of the estimate	Change statistics					
					<i>R</i> ² Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change	Durbin-Watson
1	.488 ^a	.238	.215	11.83791	.238	10.385	9	299	<.001	
2	.802 ^b	.643	.631	8.11505	.405	338.266	1	298	<.001	1.953

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

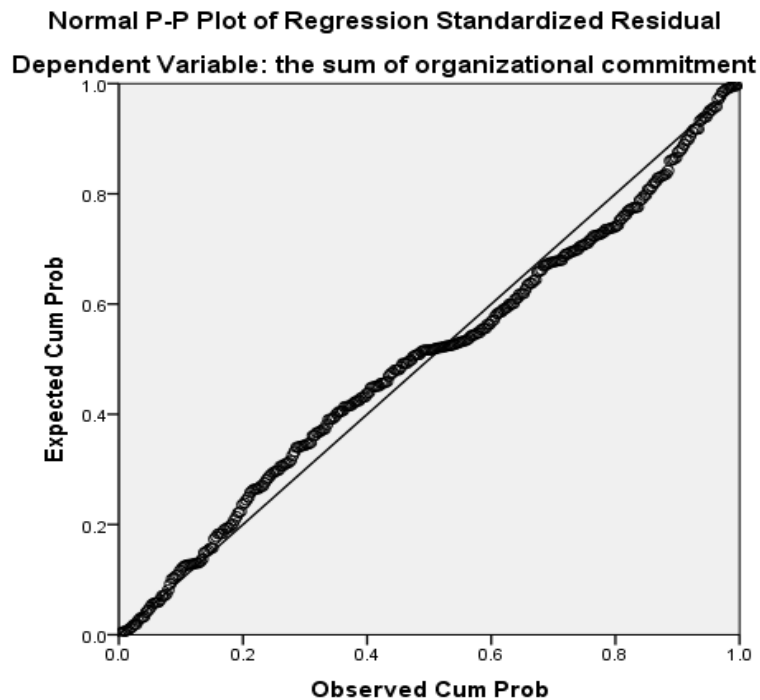


Figure 6. Normal P-P plot of regression standardized residual with the sum of organizational commitment as the dependent variable.

The fifth assumption involves checking the normality of the residuals, which can be done by creating a normal P-P plot and a scatterplot of the standardized residuals (Ghasemi & Zahediasl, 2012). Normality is assumed when the points of residuals lie in a reasonably straight line from bottom left to top right. As previously seen in Figure 6, the residuals (points) were appropriately dependent on the straight line, indicating that the residuals were normally distributed. The scatterplot of the standardized residuals is presented in Figure 7, and it can be observed that most residuals were largely concentrated in the center and normally distributed for each point across the horizontal axis. In addition, the histogram of the standardized residuals presented in Figure 8 shows that the residuals collectively were normally distributed with the shape of the normal curve. Therefore, the standardized residuals were normally distributed.

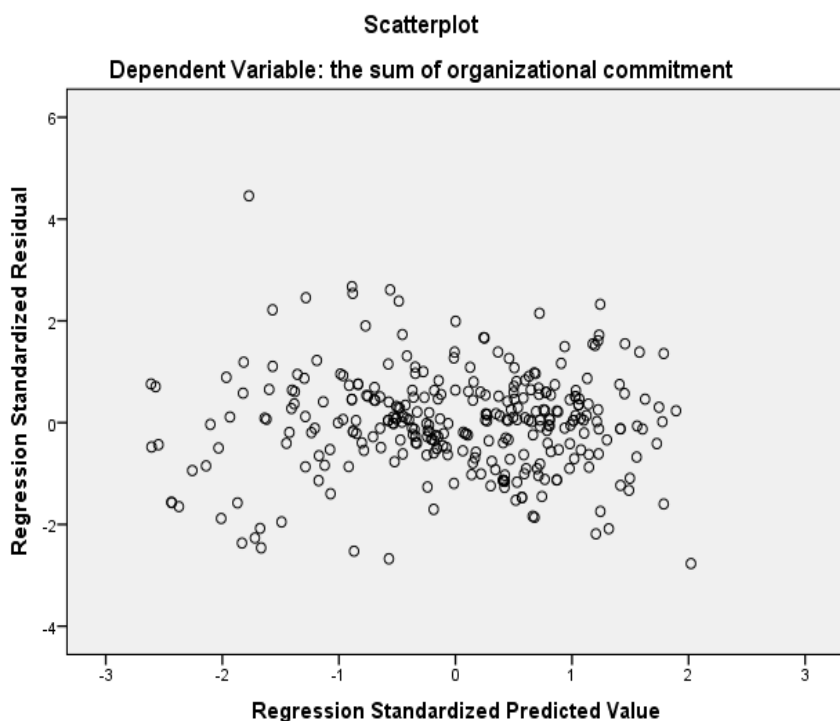


Figure 7. Scatterplot of regression standardized residual with the sum of organizational commitment as the dependent variable.

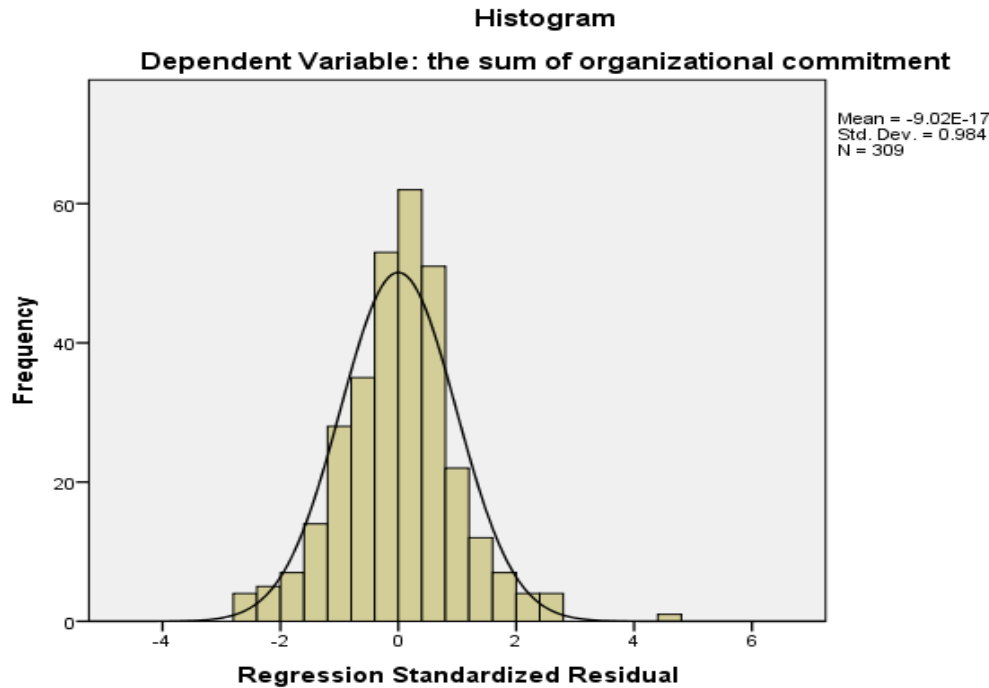


Figure 8. Histogram of regression standardized residual with the sum of organizational commitment as the dependent variable.

The sixth assumption involves identifying outliers from the residuals. It is possible to find unusual cases by creating a Casewise diagnostics table, which would indicate the cases that have standardized residual values above 3.0 or below -3.0. These cases would be referred to as outliers (Tabachnick & Fidell, 2007). It is an acceptable guide to expect only 1% of all cases to fall outside the reasonable range in a normally distributed sample (Tabachnick & Fidell, 2007). In this study, the cases of outliers must be less than 3. The casewise diagnostics is presented in Table 15. It shows that one case (case number 170) with a residual value of 36.16 may be viewed as the unusual case (outlier). According to Tabachnick and Fidell (2007), cases where the value of Cook's distance is greater than 1 could be problematic. In this study, the value of Cook's distance was .096, indicating that the outlier did not influence the residuals (see Table 16).

Table 15

Casewise Diagnostics for Sum of Organizational Commitment as the Dependent Variable

Casewise diagnostics				
Case no.	Std. residual	Sum of organizational commitment	Predicted value	Residual
170	4.457	74.00	37.8321	36.16793

Table 16

Residuals Statistics of Sum of Organizational Commitment as the Dependent Variable

Residuals statistics					
	Min	Max	<i>M</i>	<i>SD</i>	<i>N</i>
Cook's distance	<.0005	.096	.004	.008	309

The seventh assumption involves checking for homoscedasticity of the residuals. Homoscedasticity refers to the assumption that the residuals exhibit similar amounts of variance across the range of values for an independent variable (Hamsici & Martinez, 2007). As seen previously in Figure 7, the scatterplot shows that the residuals (points) for the predicted dependent variable scores should be the same for all predicted scores.

The eighth and final assumption involves checking for multicollinearity. After the assumptions of normality, outliers, homoscedasticity, and independence of the residuals are met, the next step is to check the assumption of whether there is a high correlation between the independent variables in the multiple regression analysis. Yoo et al. (2014) explained, “As literature indicates, collinearity increases the estimate of standard error of regression coefficients, causing wider confidence intervals and increasing the chance to reject the significant test statistic” (p. 2). If the correlation between each of the independent variables is too high, with a correlation

coefficient greater than 0.7, one may consider omitting it or forming a composite variable from these highly correlated independent variables (Kumari, 2008). On the other hand, one may check the Collinearity statistics column from the Coefficients table, which includes tolerance and VIF (variance inflation factor) values, to identify multicollinearity (Tu, Kellet, Clerehugh, & Gilthorpe, 2005). Tolerance is an indicator of describing the variance of the specified independent variable that is not explained by the other independent variables. It can be calculated by using the formula $1 - R^2$. If this value is less than .10, it indicates that multicollinearity between the independent variables may exist in the multiple regression models (Tu et al., 2005). The VIF value is the reciprocal of tolerance. If its value is greater than 10, then there is the possibility of multicollinearity (Tu et al., 2005). In this study, the tolerance value for each predictor variable was greater than .10, and the VIF value was less than 10; therefore, no multicollinearity occurred between each of the predictor variables (see Table 17).

Interpretation of analyses. After checking that all the assumptions were met, sequential multiple regression was used to specify a fixed order of entry for variables in order to test the contribution of certain predictor variables to the variance of the outcome variable after controlling for the effect of covariates. In this study, whether transformational leadership can predict organizational commitment after controlling for covariates was explored.

The model summary is presented in Table 18, and it shows that the variability in the dependent variable of organizational commitment was accounted for by the R^2 value by all the predictor variables. Model 1 represents the covariates that accounted for 23.8% of variability in the dependent variable of organizational commitment. Likewise, the R^2 value from Model 2 shows there was 64.3% of variability in the dependent variable. Note that this R^2 value included all the predictor variables from both blocks, not just transformational leadership in Model 2.

Table 17

Coefficients for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

Model	Coefficients											
	Unstandardized coefficients		Standardized coefficients			95% CI for <i>B</i>		Correlations			Collinearity statistics	
	<i>B</i>	<i>SE</i>	β	<i>t</i>	Sig.	Lower bound	Upper bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	44.818	3.569		12.557	<.001	37.794	51.843					
Age	-.045	.091	-.029	-.494	.622	-.224	.134	.143	-.029	-.025	.720	1.388
Length of employment	.669	.193	.213	3.461	<.001	.289	1.049	.314	.196	.175	.675	1.482
Females	-1.344	1.383	-.050	-.972	.332	-4.065	1.377	-.009	-.056	-.049	.953	1.049
Married	2.422	1.424	.091	1.701	.090	-.379	5.224	.194	.098	.086	.900	1.111
College degree	9.228	1.792	.282	5.149	<.001	5.701	12.755	.372	.285	.260	.852	1.174
Administrative staff	1.791	2.068	.054	.866	.387	-2.279	5.861	-.037	.050	.044	.663	1.509
Social worker	3.544	2.100	.104	1.688	.092	-.588	7.677	.150	.097	.085	.667	1.498
Special education teacher	3.195	2.166	.089	1.475	.141	-1.067	7.457	.151	.085	.074	.703	1.422
Physical care staff	-3.369	2.093	-.101	-1.610	.108	-7.487	.749	-.255	-.093	-.081	.647	1.545
2 (Constant)	32.535	2.536		12.828	<.001	27.544	37.526					
Age	-.104	.062	-.068	-1.669	.096	-.227	.019	.143	-.096	-.058	.719	1.392
Length of employment	.281	.134	.089	2.094	.037	.017	.545	.314	.120	.072	.658	1.520
Females	-2.155	.949	-.081	-2.271	.024	-4.022	-.287	-.009	-.130	-.079	.951	1.051
Married	2.470	.976	.092	2.532	.012	.550	4.391	.194	.145	.088	.900	1.111
College degree	3.726	1.264	.114	2.946	.003	1.237	6.214	.372	.168	.102	.804	1.243
Administrative staff	.440	1.420	.013	.310	.757	-2.354	3.234	-.037	.018	.011	.661	1.513
Social worker	.179	1.451	.005	.123	.902	-2.677	3.034	.150	.007	.004	.657	1.522
Special education teacher	1.348	1.488	.037	.906	.366	-1.581	4.276	.151	.052	.031	.700	1.428
Physical care staff	-1.380	1.439	-.041	-.959	.338	-4.211	1.451	-.255	-.055	-.033	.644	1.554
Sum of transformational leadership	.526	.029	.707	18.392	<.001	.470	.582	.774	.729	.636	.810	1.234

Note. CI = confidence interval.

In order to find how much variability was interpreted by the assigned variables of interest by the fixed order (transformational leadership) after the covariates were removed, it was necessary to observe the R^2 Change column in the model summary. The value shown for Model 2 was 40.5%, which means transformational leadership accounted for an additional 40.5% of variance in organizational commitment after controlling for covariates.

Table 18

Model Summary for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

Model summary										
Model	R	R^2	Adjusted R^2	SE of the estimate	Change statistics					Durbin-Watson
					R^2 Change	F Change	$df1$	$df2$	Sig. F Change	
1	.488 ^a	.238	.215	11.83791	.238	10.385	9	299	<.001	
2	.802 ^b	.643	.631	8.11505	.405	338.266	1	298	<.001	1.953

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

In this study, variability in the dependent variable ranged from 23.8% to 64.3%.

Therefore, the R^2 change value was the same value of 40.5%. This means that an additional predictive power of transformational leadership in Model 2 (the predictor variable of interest) reached significant contribution on the dependent variable of organizational commitment.

Additionally, from the Sig. F Change column, it can be observed that the value for both rows was less than .001. This indicates there was a significant contribution in predicting organizational commitment. The results of the ANOVA, presented in Table 19, also show that both blocks of predictor variables made significant contributions to the dependent variable of organizational commitment, $F(10, 298)$, $p < .0005$.

Table 19

An ANOVA for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

		ANOVA				
Model		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
1	Regression	13097.333	9	1455.259	10.385	<.001 ^a
	Residual	41900.695	299	140.136		
	Total	54998.029	308			
2	Regression	35373.534	10	3537.353	53.715	<.001 ^b
	Residual	19624.494	298	65.854		
	Total	54998.029	308			

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

In order to interpret how much additional predictive power the assigned predictor variable of interest (transformational leadership) had after controlling for covariates, the Model 2 row in the Coefficients table was examined (see Table 17). After entering all the predictor variables, it was clearly observed that the values under the Sig. column for length of employment, females, married, college degree, and transformational leadership made a significant contribution (less than .05). When there are more than one predictor variables, the strength of the relationship between each predictor variable and outcome variable cannot be assessed by simply comparing the correlation coefficients. The beta regression coefficient is used to assess the direction and strength of the relationship between each predictor variable and outcome variable after adjusting for the effect of other independent variables (Vittinghoff, Glidden, Shiboski, & McCulloch, 2005). In other words, the beta value represents an objective measure of the strength and direction of each predictor variable that may have influence on the outcome variable after

adjusting for the effect of other independent variables (Vittinghoff et al., 2005). In addition, the beta is measured in units of standardized deviation. Thus, the greater the magnitude (positive or negative) of the beta value, the greater the influence of each predictor variable on the outcome variable. As shown in Model 2 of Table 17, there were five predictor variables—length of employment ($\beta = .089$), females ($\beta = -.081$), married ($\beta = .092$), college degree ($\beta = .114$), and transformational leadership ($\beta = .707$)—that made a significant contribution to the prediction of organizational commitment. In short, the null hypothesis was rejected because transformational leadership had a significant additional predictive power on organizational commitment after controlling for covariates.

Research Question 3. The third question was the following: Does extrinsic motivation mediate the association of transformational leadership and organizational commitment after controlling for covariates? The null hypothesis was that extrinsic motivation cannot mediate the association of transformational leadership and organizational commitment after controlling for covariates. A mediator variable is the variable that causes mediation between the dependent and the independent variables. In other words, it explains the relationship between the dependent variable and the independent variable (Hayes & Preacher, 2014). The mediating effect is explained as a hypothesized causal chain where the independent variable affects the dependent variable via the portion of the intervening (mediator) variable that is added to the original path analysis (Hayes & Preacher, 2014). In this study, a path analysis model was developed to find out whether transformational leadership (independent variable) had direct or indirect effects on organizational commitment (dependent variable) via the mediation effect of extrinsic motivation (mediator variable) after controlling for covariates (see Figure 1, which is presented again in this section).

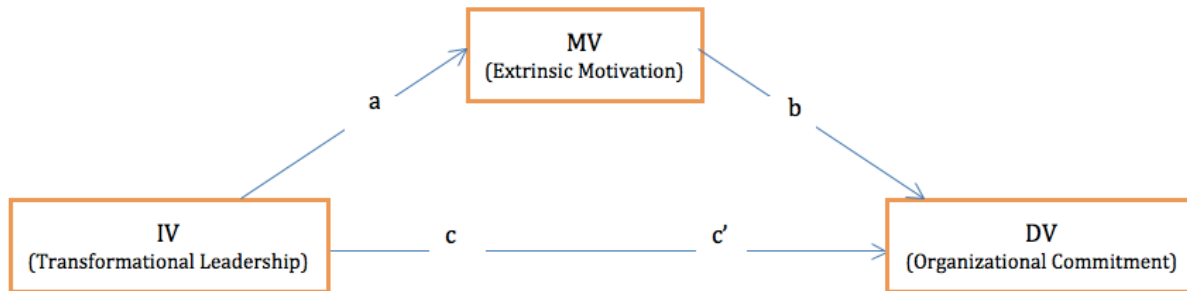


Figure 1. “Controlling for” covariates, which were age, gender, marital status, education level, job classification, and length of employment. IV = independent variable; MV = mediator variable; DV = dependent variable.

The model shows four paths. Path *a* represents the effect of the independent variable (IV) on the mediator variable (MV). Path *b* represents the effect of the MV on the dependent variable (DV). Both paths *a* and *b* are called direct effects (Hayes & Preacher, 2014; MacKinnon, Fairchild, & Fritz, 2007). Path *c* represents the effect of the IV on the DV when the MV is *not* included in the path analysis. Path *c'*, however, represents the effect of the IV on the DV when the MV is added to the original relationship. When the IV leads to the DV *through* the MV, this is called the mediation effect (Hayes & Preacher, 2014; MacKinnon et al., 2007). And the mediation effect is called the indirect effect. The indirect effect represents the portion of the relationship between the IV and the DV that is mediated by the mediator variable after controlling for covariates.

In most cases, however, full mediation, which is when *c'* drops to zero, never happens. But, partial mediation often occurs; this is when *c'* does not drop to zero, and the indirect effect of the IV on the DV is significantly different from zero when using the Sobel test. The Sobel test is a statistical method for determining the influence of a mediating variable on the association between an independent variable and an outcome variable (MacKinnon et al., 2007). Preacher and Leonardelli (2001) provided an interactive web-based tool that can calculate the Sobel test

by running the necessary regression analysis and computing the amount of additional variance, which is mediated by the mediator variable, automatically. In order to answer Research Question 3, it was necessary to examine how much change in the relationship between transformational leadership (IV) and organizational commitment (DV) would result via the mediating effect of extrinsic motivation (MV).

Before the actual test of mediation could take place, it was necessary to confirm that all simple linear regressions were significant. In short, it was important to ensure that the following statements were true:

1. The IV (transformational leadership) is a significant predictor of the MV (extrinsic motivation) after controlling for covariates.
2. The MV (extrinsic motivation) is a significant predictor of the DV (organizational commitment) after controlling for covariates.
3. The IV is a significant predictor of the DV after controlling for covariates.

If any of these paths had not been significant, then the test of mediation would have ended here, and the conclusion would have been that there was no mediation or that the hypothesis could not be tested due to insufficient correlation among variables.

Examining path a. First, it was necessary to ensure that the IV (transformational leadership) was a significant predictor of the MV (extrinsic motivation) after controlling for covariates. In other words, it needed to be determined whether path *a* existed. In order to do so, sequential multiple regression had to be performed to assess the contribution of variance of the IV (transformational leadership) on the DV (extrinsic motivation) after controlling for covariates. But before sequential multiple regression could be used, it was necessary to check the following underlying assumptions in order to get a valid result. The first assumption involves checking the

independence of residuals, which can be determined by finding the Durbin-Watson statistic.

Independence of residuals means that the residuals are not correlated serially, and this occurs whenever the value of the Durbin-Watson statistic is approximately 2. As shown in Table 20, the Durbin-Watson value was 1.85, indicating that there was no serial correlation between the residuals.

Table 20

Model Summary for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Extrinsic Motivation as the Dependent Variable

Model summary										
Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>SE</i> of the estimate	Change statistics					Durbin-Watson
					<i>R</i> ² Change	<i>F</i> Change	<i>df</i> 1	<i>df</i> 2	Sig. <i>F</i> Change	
1	.431 ^a	.186	.161	5.50018	.186	7.589	9	299	<.001	
2	.639 ^b	.408	.388	4.69908	.222	111.638	1	298	<.001	1.852

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

The second assumption involves checking the normality of the residuals. In this study, a normal P-P plot and a scatterplot of standardized residuals were created to check the normality of the residuals (Osborne & Waters, 2002). The normal P-P plot, presented in Figure 9, shows no major deviation since the residuals (points) were appropriately dependent on the straight line. Therefore, it can be assumed that the residuals were normally distributed. Likewise, the scatterplot of the residuals, presented in Figure 10, shows that most residuals (points) were concentrated in the center (along 0), and the distribution formed a large rectangular shape. In short, it can be assumed that the residuals were normally distributed (Osborne & Waters, 2002).

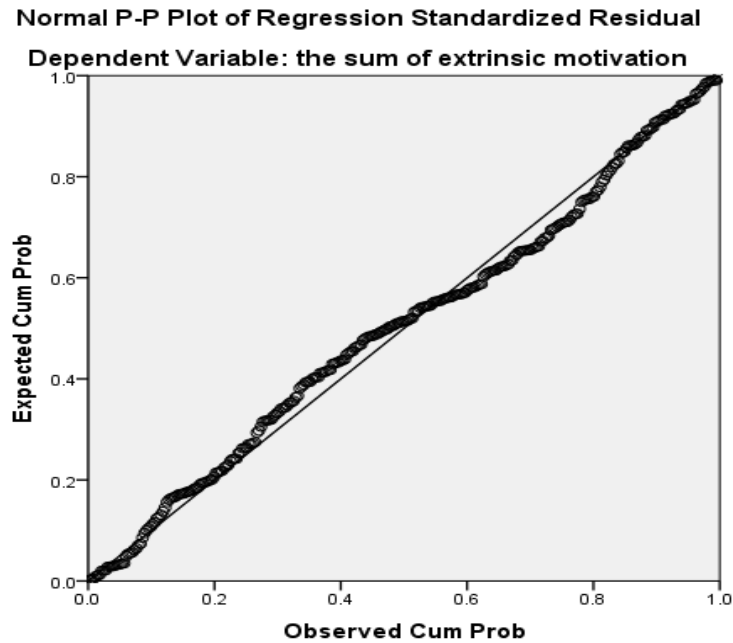


Figure 9. Normal P-P plot of regression standardized residual with the sum of extrinsic motivation as the dependent variable.

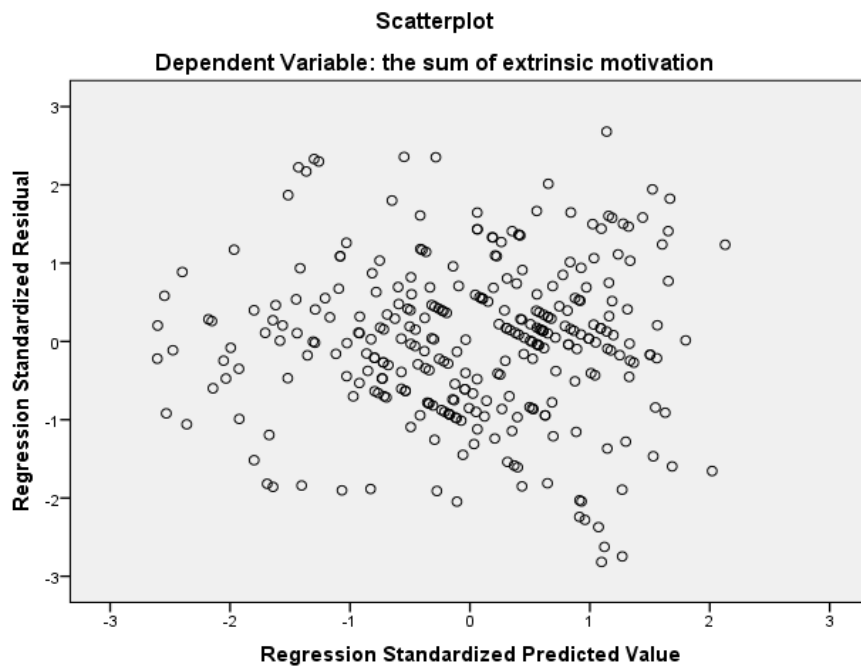


Figure 10. Scatterplot of regression standardized residual with the sum of extrinsic motivation as the dependent variable.

The third assumption involves identifying outliers from the residuals. In order to check whether the outlier cases had an inappropriate impact on the results of multiple regression analysis, it was necessary to determine the value of Cook's distance. According to Tabachnick and Fidell (2007), if the value of outlier cases is greater than 1, it could form a potential problem. In this study, the maximum value for Cook's distance was .027, indicating no undue influence (see Table 21).

Table 21

Residuals Statistics of Sum of Extrinsic Motivation as the Dependent Variable

Residuals statistics					
	Min	Max	<i>M</i>	<i>SD</i>	<i>N</i>
Cook's distance	<.0005	.027	.003	.005	309

The fourth assumption involves checking for homoscedasticity of the residuals. Homoscedasticity refers to the assumption that the residuals exhibit similar amounts of variance across the range of values for an independent variable (Hamsici & Martinez, 2007). As previously seen in Figure 10, the scatterplot shows that the residuals (points) for the predicted dependent variable scores should be the same for all predicted scores. The fifth and last assumption involves checking for multicollinearity. In this study, multicollinearity was checked by examining the tolerance and the variance inflation factor (VIF) values. If the value of tolerance is less than .10, it indicates that multicollinearity between the independent variables may exist in the multiple regression analysis. If the VIF value is greater than 10, then there is the possibility of multicollinearity. In this study, the tolerance value for each independent variable was not less than .10, and the VIF value was also less than 10 (see Table 22). Therefore, the results indicated that multicollinearity was not present in the data.

Table 22

Coefficients for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Extrinsic Motivation as the Dependent Variable

Model		Coefficients											Collinearity statistics	
		Unstandardized coefficients		Standardized coefficients					95% CI for <i>B</i>		Correlations			
		<i>B</i>	<i>SE</i>	β	<i>t</i>	Sig.	Lower bound	Upper bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	39.155	1.658		23.610	<.001	35.892	42.419						
	Age	-.041	.042	-.059	-.966	.335	-.124	.042	.085	-.056	-.050	.720	1.388	
	Length of employment	.229	.090	.162	2.553	.011	.053	.406	.242	.146	.133	.675	1.482	
	Females	-.944	.642	-.079	-1.469	.143	-2.208	.320	-.036	-.085	-.077	.953	1.049	
	Married	.840	.661	.070	1.270	.205	-.462	2.142	.151	.073	.066	.900	1.111	
	College degree	3.402	.833	.231	4.086	<.001	1.763	5.041	.317	.230	.213	.852	1.174	
	Administrative staff	-.211	.961	-.014	-.220	.826	-2.102	1.680	-.075	-.013	-.011	.663	1.509	
	Social worker	1.810	.976	.119	1.856	.064	-.110	3.730	.182	.107	.097	.667	1.498	
	Special education teacher	1.025	1.006	.063	1.019	.309	-.955	3.006	.127	.059	.053	.703	1.422	
	Physical care staff	-2.056	.972	-.137	-2.115	.035	-3.969	-.143	-.250	-.121	-.110	.647	1.545	
2	(Constant)	35.069	1.469		23.878	<.001	32.179	37.959						
	Age	-.061	.036	-.088	-1.674	.095	-.132	.011	.085	-.097	-.075	.719	1.392	
	Length of employment	.100	.078	.071	1.290	.198	-.053	.253	.242	.075	.057	.658	1.520	
	Females	-1.214	.550	-.101	-2.209	.028	-2.295	-.132	-.036	-.127	-.098	.951	1.051	
	Married	.856	.565	.071	1.515	.131	-.256	1.968	.151	.087	.068	.900	1.111	
	College degree	1.572	.732	.107	2.146	.033	.131	3.013	.317	.123	.096	.804	1.243	
	Administrative staff	-.661	.822	-.044	-.804	.422	-2.279	.957	-.075	-.047	-.036	.661	1.513	
	Social worker	.691	.840	.045	.822	.412	-.963	2.344	.182	.048	.037	.657	1.522	
	Special education teacher	.411	.862	.025	.477	.634	-1.285	2.107	.127	.028	.021	.700	1.428	
	Physical care staff	-1.394	.833	-.093	-1.674	.095	-3.034	.245	-.250	-.097	-.075	.644	1.554	
	Sum of transformational leadership	.175	.017	.523	10.566	<.001	.142	.208	.596	.522	.471	.810	1.234	

Note. CI = confidence interval.

After checking that the above assumptions had been met, sequential multiple regression was used to determine whether path a existed. Thus, the predictor variables were entered in a

fixed order. The covariates were entered into Block 1, transformational leadership (the predictor variable of interest) was entered into Block 2, and extrinsic motivation (mediator variable) was entered into the dependent box. The model summary, presented in Table 23, shows that the variability in the dependent variable (extrinsic motivation) was accounted for by the R^2 value by all the predictor variables. Model 1 represents the covariates that accounted for 18.6% of variability in the dependent variable of extrinsic motivation. Likewise, the R^2 value from Model 2 shows 40.8% of variability in the dependent variable. Note that the R^2 value includes all the predictor variables from both blocks, not just transformational leadership in Model 2. In order to find how much variability was interpreted by the assigned variables of interest by the fixed order (transformational leadership) after the effects of the covariates were removed, it was necessary to observe the R^2 Change column in the model summary. The value shown for Model 2 was 22.2%, indicating that transformational leadership accounted for an additional 22.2% of variance in extrinsic motivation after controlling for covariates.

Table 23

Model Summary for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Extrinsic Motivation as the Dependent Variable

Model summary										
Model	R	R^2	Adjusted R^2	SE of the estimate	Change statistics					Durbin-Watson
					R^2 Change	F Change	$df1$	$df2$	Sig. F Change	
1	.431 ^a	.186	.161	5.50018	.186	7.589	9	299	<.001	
2	.639 ^b	.408	.388	4.69908	.222	111.638	1	298	<.001	1.852

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

In this direct relationship, variability in extrinsic motivation ranged from 18.6% to 40.8%. Therefore, the R^2 change value was 22.2%. This means that an additional predictive power of transformational leadership in Model 2 (the predictor variable of interest) reached significant contribution on the dependent variable of extrinsic motivation. Additionally, the Sig. F Change column shows that the value for both rows was less than .001, indicating there was a significant contribution in predicting extrinsic motivation. The results of the ANOVA, presented in Table 24, also show that the multiple regression model as a whole—including both blocks—was significant, $F(10, 298) = 20.52$.

Table 24

An ANOVA for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Extrinsic Motivation as the Dependent Variable

		ANOVA				
Model		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
1	Regression	2066.252	9	229.584	7.589	<.001 ^a
	Residual	9045.349	299	30.252		
	Total	11111.601	308			
2	Regression	4531.365	10	453.137	20.521	<.001 ^b
	Residual	6580.236	298	22.081		
	Total	11111.601	308			

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, and the sum of transformational leadership.

In order to interpret how much the additional predictive power of the assigned independent variable of interest (transformational leadership) contributed to the variance of DV (extrinsic motivation) after controlling for the effect of covariates, the Model 2 values in the Coefficients table were examined (see Table 22). The values in the Sig. column for both Models

1 and 2 show that there was a significant contribution (the value was less than .05). The beta (β) value of standardized coefficient represents an objective measure of the strength and direction of each predictor variable that may have influence on the outcome variable (Vittinghoff et al., 2005). In addition, the beta is measured in units of standardized deviation. Thus, the greater the magnitude (positive or negative) of the beta value, the greater the influence of each predictor variable on the outcome variable. The Coefficients table includes unstandardized and standardized coefficients necessary for constructing a predictive regression equation. The above path *a* coefficient represents *B*—the raw (unstandardized) coefficient between the predictor variable (transformational leadership) and the mediator variable (extrinsic motivation) after controlling for covariates. The unstandardized coefficient (*B*) column in this table shows that *a* was .175. The standard error of *a*, represented by S_a , was .017.

Examining path *b*. Next, it was necessary to examine whether the MV (extrinsic motivation) was a significant predictor of the DV (organizational commitment) after controlling for covariates. In short, it needed to be determined whether path *b* existed. After the basic assumptions for the residuals of the dependent variable (organizational commitment) were checked and met, the model summary and the predictor variables were interpreted and evaluated. Then sequential multiple regression was used to determine whether path *b* existed. Thus, the predictor variables were entered in a fixed order. The covariates were entered into Block 1, transformational leadership and extrinsic motivation (the predictor variables of interest) were entered into Block 2, and organizational commitment (dependent variable) was entered into the dependent box.

The model summary, presented in Table 25, shows that the variability in the dependent variable (organizational commitment) was accounted for by the R^2 value by all the predictor

variables. Model 1 represents the covariates that accounted for 23.8% of variability in the dependent variable of organizational commitment. Likewise, the R^2 value from Model 2 shows 67.4% of variability in the dependent variable. Note that the R^2 value includes all the predictor variables from both blocks, not just transformational leadership and extrinsic motivation in Model 2. In order to find how much additional predictive power of the two predictor variables of interest after the effects of the covariates were removed, it was necessary to observe the R^2 Change column in the model summary. The value shown for Model 2 was 43.6%, indicating that transformational leadership and extrinsic motivation accounted for an additional 43.6% of variance in organizational commitment after controlling for covariates.

Table 25

Model Summary for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

Model summary										
Model	R	R^2	Adjusted R^2	SE of the estimate	Change statistics					
					R^2 Change	F Change	$df1$	$df2$	Sig. F Change	Durbin-Watson
1	.488 ^a	.238	.215	11.83791	.238	10.385	9	299	<.001	
2	.821 ^b	.674	.662	7.77072	.436	198.451	2	297	<.001	2.017

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, the sum of extrinsic motivation, and the sum of transformational leadership.

In this direct relationship, variability in the dependent variable of organizational commitment ranged from 23.8% to 67.4%. Therefore, the R^2 change value was 43.6%. This means there was an additional predictive power of transformational leadership and extrinsic motivation in Model 2. These two predictor variables were viewed because assessing the

additional predictive power on the dependent variable after controlling for covariates was of particular interest. In other words, transformational leadership and extrinsic motivation reached significant contribution on the dependent variable of organizational commitment. Additionally, the *F* Change column shows that the value for both rows was less than .001. The results from the ANOVA, presented in Table 26, also show there was a significant contribution in predicting organizational commitment.

Table 26

An ANOVA for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

		ANOVA				
Model		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
1	Regression	13097.333	9	1455.259	10.385	<.001 ^a
	Residual	41900.695	299	140.136		
	Total	54998.029	308			
2	Regression	37063.937	11	3369.449	55.800	<.001 ^b
	Residual	17934.092	297	60.384		
	Total	54998.029	308			

^aPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, and administrative staff.

^bPredictors were constant and included physical care staff, females, age, special education teacher, married, college degree, social worker, length of employment, administrative staff, the sum of extrinsic motivation, and the sum of transformational leadership.

The results of the Coefficients are presented in Table 27. The above path *b* coefficient represents *B*—the raw (unstandardized) coefficient between the two predictor variables (transformational leadership and extrinsic motivation) and the dependent variable (organizational commitment) after controlling for covariates. The unstandardized coefficient (*B*) column in the table shows that *b* was .507. The standard error of *b*, represented by *S_b*, was .096. In short, the following was determined: *a* = .175, *S_a* = .017, *b* = .507, *S_b* = .096.

Table 27

Coefficients for the First Multiple Regression Model and the Second Multiple Regression Model With Sum of Organizational Commitment as the Dependent Variable

Model	Coefficients											
	Unstandardized coefficients		Standardized coefficients						Correlations		Collinearity statistics	
	<i>B</i>	<i>SE</i>		<i>t</i>	Sig.	95% CI for <i>B</i>		Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	44.818	3.569		12.557	<.001	37.794	51.843					
Age	-.045	.091	-.029	-.494	.622	-.224	.134	.143	-.029	-.025	.720	1.388
Length of employment	.669	.193	.213	3.461	<.001	.289	1.049	.314	.196	.175	.675	1.482
Females	-1.344	1.383	-.050	-.972	.332	-4.065	1.377	-.009	-.056	-.049	.953	1.049
Married	2.422	1.424	.091	1.701	.090	-.379	5.224	.194	.098	.086	.900	1.111
College degree	9.228	1.792	.282	5.149	<.001	5.701	12.755	.372	.285	.260	.852	1.174
Administrative staff	1.791	2.068	.054	.866	.387	-2.279	5.861	-.037	.050	.044	.663	1.509
Social worker	3.544	2.100	.104	1.688	.092	-.588	7.677	.150	.097	.085	.667	1.498
Special education teacher	3.195	2.166	.089	1.475	.141	-1.067	7.457	.151	.085	.074	.703	1.422
Physical care staff	-3.369	2.093	-.101	-1.610	.108	-7.487	.749	-.255	-.093	-.081	.647	1.545
2 (Constant)	14.760	4.145		3.561	<.001	6.602	22.919					
Age	-.073	.060	-.048	-1.224	.222	-.192	.045	.143	-.071	-.041	.712	1.405
Length of employment	.230	.129	.073	1.787	.075	-.023	.484	.314	.103	.059	.654	1.528
Females	-1.540	.916	-.058	-1.681	.094	-3.342	.263	-.009	-.097	-.056	.936	1.068
Married	2.037	.938	.076	2.171	.031	.190	3.883	.194	.125	.072	.893	1.120
College degree	2.929	1.220	.089	2.401	.017	.528	5.330	.372	.138	.080	.792	1.262
Administrative staff	.775	1.361	.023	.569	.570	-1.904	3.453	-.037	.033	.019	.659	1.517
Social worker	-.171	1.391	-.005	-.123	.902	-2.909	2.566	.150	-.007	-.004	.655	1.526
Special education teacher	1.139	1.425	.032	.799	.425	-1.666	3.945	.151	.046	.026	.700	1.429
Physical care staff	-.673	1.384	-.020	-.486	.627	-3.397	2.050	-.255	-.028	-.016	.638	1.568
Sum of transformational leadership	.437	.032	.588	13.620	<.001	.374	.500	.774	.620	.451	.590	1.696
Sum of extrinsic motivation	.507	.096	.228	5.291	<.001	.318	.695	.640	.293	.175	.592	1.689

Note. CI = confidence interval.

Examining paths c and c' . As to examining whether the IV (transformational leadership) was a significant predictor of the DV (organizational commitment) after controlling for covariates, or path c , this relationship was proven to exist previously when Research Question 2 was answered. But further observation was needed to determine if any change occurred in path c when adding the MV (extrinsic motivation) to the original multiple regression analysis and to see how much change occurred. Because full mediation usually does not occur, it was still necessary to further calculate the indirect effect of partial mediation by using the online calculator of the Sobel test (Dudley, Benuzillo, & Carrico, 2004). By looking at the p values of the Sobel test, one could determine whether partial mediation was significantly different from zero (Dudley et al., 2004).

It is commonly recommended to use the interactive and web-based calculation software provided by Preacher and Leonardelli (2001) to calculate the indirect effect of partial mediation. The online calculator first instructs the user to enter the path a and path b coefficients (B value of unstandardized coefficients) and the standard errors of path a (S_a) and path b (S_b) into the cells. In this study, the path a coefficient was .175, the path b coefficient was .507, S_a was .017, and S_b was .096. After entering these values into the cells, this program calculated the critical ratio as a test of whether the indirect effect of the IV on the DV via the mediator was significantly different from zero. The results of the Sobel test are shown in Table 28. Only the relevant values of the Sobel test were observed, and the other test statistics were ignored. It was found that the test statistic was equal to 4.70, with a standard error of 0.019, and a p value less than .001. Therefore, the null hypothesis of no mediation was rejected. However, the test provided some evidence to support partial mediation from the IV (transformational leadership) to the DV (organizational commitment) by the mediator variable (extrinsic motivation) after controlling for

covariates. In conclusion, the null hypothesis was rejected because extrinsic motivation had a significant mediating effect between transformational leadership and organizational commitment after controlling for covariates.

Table 28

Calculation for the Sobel Test for Examining the Mediation Effect (Extrinsic Motivation) Between Transformational Leadership and Sum of Organizational Commitment

Input	Test	Test statistic	<i>SE</i>	<i>p</i> value
$a = 0.175$	Sobel	4.69893781	0.01888193	0.00000262
$b = 0.507$	Aroian	4.68148392	0.01895232	0.00000285
$S_a = 0.017$	Goodman	4.7165884	0.01881127	0.0000024
$S_b = 0.096$				

Note. Table adapted from “Calculation for the Sobel Test,” by K. J. Preacher and G. J. Leonardelli, 2001. Retrieved from <http://quantpsy.org/sobel/sobel.htm>

Chapter 5: Conclusion, Discussion, and Recommendations

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. This chapter consists of four sections: Conclusion, Discussion, Recommendations for Future Research, and Implications for Practice. The conclusion summarizes the results of the research questions in this study. The discussion provides some reflections after reviewing the findings of this study. The recommendations section provides practical recommendations for future research and the relevant practice of social welfare policies. The last section discusses important implications of the study.

Conclusion

A number of conclusions were drawn. Overall, the conclusion of this study is summarized by the following research questions.

Analysis of demographic variables and organizational commitment. A *t*-test and one-way ANOVA were conducted to determine the significance of different demographic variables (age, gender, marital status, education level, job classification, and length of employment) and organizational commitment. In this study, an independent *t*-test was used to check whether there was a significant difference in mean scores for two different groups from the same sample (Green & Salkind, 2003). Four of the demographic variables were composed of both nominal and dichotomous variables. The dichotomous variables were gender (females/males), marital status (married/unmarried), and education level (less than a college degree/college degree), while job classification was a nominal variable. The results of this current study indicated the following: (a) there was no significant difference between the female group and the male group, $p > .05$; (b) there was a significant difference between the married group and the unmarried

group, $p < .05$; and (c) there was a significant difference between the group that had less than a college degree and the group that had a college degree, $p \leq .05$. Additionally, a one-way ANOVA was used to test whether there were significant differences between the five different groups of job classification in mean scores of organizational commitment. The results of this study showed that there was a significant difference in mean scores between the five different groups on organizational commitment, $p < .001$. Therefore, post hoc tests were run to find out which specific groups were significantly different from each other, and the results showed that the mean differences were significant at the 0.05 level in the demographic variable of job classification.

As mentioned above, gender was not associated with organizational commitment in nursing homes for disabled people. This finding suggests that superintendents do not need to take gender into consideration when recruiting new employees. On the other hand, the above findings of this study showed that there was a significant difference on organizational commitment between the married group and the unmarried group. As indicated by the data, participants that were married were able to engender significantly more organizational commitment than those that were not. Such findings suggest that superintendents of nursing homes should prefer to recruit married employees in order to promote more organizational commitment. Likewise, the above findings of this study indicated that participants with a college degree were able to engender significantly more organizational commitment than those that had less than a college degree. This finding seems to suggest not only that superintendents should recruit more employees with a college degree but also that relevant departments of social welfare institutions should provide employees with opportunities for advanced studies in order to promote organizational commitment. Additionally, the output of the ANOVA analysis showed that there

was a statistically significant difference in mean scores of organizational commitment between the five different groups, $p < .001$. When post hoc tests were conducted to investigate which of the specific groups differed, it was discovered that there was a significant difference in organizational commitment between (a) social workers and the physical care staff, (b) special education teachers and the physical care staff, and (c) other professionals and the physical care staff ($p < .05$). The data showed that the mean scores of social workers, special education teachers, and other professionals were significantly greater than the scores of the physical care staff. These findings suggest that these three groups were more associated with organizational commitment than the physical care staff. Physical care employees are responsible for the daily care and safety of nursing home residents and the quality of services the residents receive. Therefore, nursing home superintendents should empathize with their physical care staff and try to understand the issues they face every day. For example, superintendents should conduct official self-assessments and unofficial sessions with them to understand which factors lead to their stress and, ultimately, their intention of leaving the organization.

Research Question 1. A Pearson correlation analysis was performed to answer the first research question: Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment? The dependent variable of this study was organizational commitment and the two independent variables were the two demographic variables of age and length of employment, transformational leadership, and extrinsic motivation. Both the dependent variable and the independent variables were continuous and had interval natures (Mukaka, 2012). The results of this study showed that there was a weak and positive correlation between age and organizational commitment, $r = .14$. In addition, the results showed there was a medium and positive correlation between length of employment and organizational

commitment, $r = .314$. These findings suggest that nursing home superintendents in Taiwan do not need to consider age and length of employment in order to increase organizational commitment. On the other hand, the results indicated there was a strong and positive correlation between transformational leadership and organizational commitment, $r = .774$, and a strong and positive correlation between extrinsic motivation and organizational commitment, $r = .64$. These findings indicate that relevant departments of social welfare for nursing homes for disabled people should offer more transformational leadership programs in order to popularize the transformational practice in Taiwan. In addition, providing more incentives or rewards would inspire employees to reach their maximum potential and achieve their assigned goals, which would then improve employee loyalty and trust.

Research Question 2. The second research question was the following: Does transformational leadership predict organizational commitment after controlling for covariates? The null hypothesis was that transformational leadership does not predict organizational commitment after controlling for covariates. In this study, sequential multiple regression was used to predict the outcome variable (organizational commitment) based on the predictor variable of interest (transformational leadership) after controlling for covariates. The results of this study showed that the covariates in Model 1 in Table 10, Chapter 4, accounted for 23.8% of variability in the dependent variable of organizational commitment, indicated by the R^2 value, and for 64.3% of variability in the dependent variable from Model 2. It was necessary to observe the R^2 Change value in order to find out how much variability was interpreted by the assigned variables of interest by the fixed order (transformational leadership) after the covariates were removed. The R^2 Change value shown for Model 2 was 40.5%, which means transformational

leadership accounted for an additional 40.5% of variance in organizational commitment after controlling for covariates.

These findings provide valuable insight as to how superintendents could effectively solve the current problems in Taiwan's nursing homes for the disabled. The current problems these nursing homes face include low sense of job accomplishment, low sense of belonging, low morale, lack of cohesiveness, and high turnover rates. Thus, deploying transformational leadership practices would be an inevitable trend in order to increase organizational commitment and lower turnover rates aggressively. In addition, superintendents should employ strategic transformational leadership techniques in order to build an effective collaborative workforce, collectively elevate staff morale, harvest respect and trust, gain better performance outcomes, and improve quality of care.

Research Question 3. The third question was the following: Does extrinsic motivation mediate the association of transformational leadership and organizational commitment after controlling for covariates? In this study, a path analysis model was developed to find out whether transformational leadership (independent variable) had a direct or an indirect effect on organizational commitment (dependent variable) via the mediation effect of extrinsic motivation (mediator variable) after controlling for covariates. Before the actual test of mediation took place, the significance of all simple linear regressions was confirmed.

Examining path *a*. Examining path *a* involved using sequential multiple regression to determine whether the independent variable of transformational leadership was a significant predictor of the mediator variable of extrinsic motivation after controlling for covariates. The results of this study showed that the variability in the dependent variable (extrinsic motivation) was accounted for by the R^2 value by all the predictor variables. The covariates from Model 1 in

Table 16, Chapter 4, accounted for 18.6% of variability in the dependent variable of extrinsic motivation. Likewise, the R^2 value from Model 2 showed 40.8% of variability in the dependent variable. In order to find how much variability was interpreted by the assigned variable of transformational leadership after the effects of the covariates were removed, it was necessary to observe the R^2 Change column in the model summary. The value shown for Model 2 was 22.2%, indicating that transformational leadership accounted for an additional 22.2% of variance in extrinsic motivation after controlling for covariates. The above path a coefficient represents B —the raw (unstandardized) coefficient between the predictor variable (transformational leadership) and the mediator variable (extrinsic motivation) after controlling for covariates. The unstandardized coefficient (B) column showed that a was .175. The standard error of a , represented by S_a , was .017.

Examining path b. Next, sequential multiple regression was used to determine whether path b existed, which was whether the mediator variable of extrinsic motivation was a significant predictor of the dependent variable of organizational commitment after controlling for covariates. The model summary, presented in Table 21, Chapter 4, showed that the variability in the dependent variable (organizational commitment) was accounted for by the R^2 value by all the predictor variables. Model 1 represents the covariates that accounted for 23.8% of variability in the dependent variable of organizational commitment. Likewise, the R^2 value from Model 2 accounted for 67.4% of variability by the two predictors of transformational leadership and extrinsic motivation in organizational commitment. In order to find how much additional predictive power of the two predictor variables of interest after the effects of the covariates were removed, it was necessary to observe the R^2 Change column in the model summary. The value shown for Model 2 was 43.6%, indicating that transformational leadership and extrinsic

motivation accounted for an additional 43.6% of variance in organizational commitment after controlling for covariates. The unstandardized coefficient (B) column in Table 23, Chapter 4, showed that b was .507. The standard error of b , represented by S_b , was .096. In short, the following was determined: $a = .175$, $S_a = .017$, $b = .507$, $S_b = .096$.

Examining paths c and c'. As to examining whether the independent variable (transformational leadership) was a significant predictor of the dependent variable (organizational commitment) after controlling for covariates, or path c , this relationship was proven to exist previously when Research Question 2 was answered. But further observation was needed to determine if any change occurred in path c when adding the mediator variable (extrinsic motivation) to the original multiple regression analysis. It was necessary to further calculate the indirect effect of partial mediation by using the online calculator of the Sobel test (Dudley et al., 2004). The p values of the Sobel test were examined to determine whether partial mediation was significantly different from zero (Dudley et al., 2004). In this study, the statistical significance (p value) was 0.00000262, indicating that the p value was less than alpha at .05. Therefore, the null hypothesis of no mediation was rejected. In conclusion, the test provided some evidence to support partial mediation from the independent variable (transformational leadership) to the dependent variable (organizational commitment) by the mediator variable (extrinsic motivation) after controlling for covariates.

Based on the above findings of this study, the mediating effect of extrinsic motivation could be explained as a hypothesized causal chain where transformational leadership affected organizational commitment via the portion of the intervening (mediator) variable that was added to the original path analysis. Transformational leaders should, therefore, be able to not only use strategic techniques to develop future innovations and offer high quality services but also take

into consideration extrinsic motivation to promote organizational commitment. The strategies of extrinsic motivation include competition, evaluation, recognition, money, or other tangible incentives, and constraints by others (Amabile et al., 1994). As transformational leaders of nursing homes in Taiwan, their main purpose for using extrinsic motivation strategies, such as providing job promotions, overtime pay, performance bonuses, and objective performance evaluations, would be to help their employees achieve their assigned jobs and improve performance.

Discussion

In this study, data showed that age had a very low relationship with organizational commitment and that length of employment had a medium relationship with organizational commitment. This means that even though age and length of employment had a low or medium relationship with organizational commitment, they still had a very low and limited influence on organizational commitment. Thus, superintendents of nursing homes in Taiwan may not need to take age and length of employment into consideration in order to increase organizational commitment. On the other hand, the findings of another correlation analysis in this study indicated that transformational leadership had a significantly positive relationship with organizational commitment. Likewise, extrinsic motivation had a significantly positive relationship with organizational commitment. Many previous studies have reported that transformational leadership has a significantly positive relationship with organizational commitment (Chi, Tsai, & Chang, 2007; Chi, Yeh, & Chiou, 2008; Fry & Matherly, 2006; Pradeep & Prabhu, 2011; Yukl, 2002). In addition, recent research has shown that transformational leadership actually has a significantly positive effect on organizational

commitment in various organizational sites and cultural environments (Dumdum, Lowe, & Avolio, 2002; Koh, Steers, & Terborg, 1995; Lowe et al., 1996; Walumbwa & Lawler, 2003).

Additionally, the findings of this study also indicated that extrinsic motivation had a significantly positive relationship with organizational commitment. There are also many previous studies with findings that are consistent with this study's findings. For example, numerous research indicates that the interaction between motivational variables and organizational commitment is relevant within the tourism industry (Curtis et al., 2009; Dermody, Young, & Taylor, 2004; Trang et al., 2013). Additionally, previous research has reported that commitment is a motivational phenomenon and has emphasized that employees' work motivation can make a contribution to organizational commitment (De Silva & Yamao, 2006; Eby, Freeman, Rush, & Lance, 1999; Johnson, Chang, & Yang, 2010; Pool & Pool, 2007). In short, these previous research findings emphasize that employee commitment levels are significantly related to work motivation (Curtis et al., 2009; Eby et al., 1999; Johnson et al., 2010; Meyer, Becker, & Vandenberghe, 2004). Overall, the findings of this study indicated that both transformational leadership and extrinsic motivation had a significantly positive relationship with organizational commitment, thus, supporting the above research reports.

The results of the sequential regression indicated that transformational leadership accounted for 40.5% of variance in organizational commitment after controlling for covariates. This means that an additional predictive power of transformational leadership made a significant contribution to the variance of organizational commitment. Research has revealed that long-term care nursing institutions have clearly connected effective leadership practice with organizational performance (Dana & Olson, 2007). Scholars still think long-term nursing institutions may have their own uniqueness and complexity, which makes them different from the business field (Dana,

2005). This uniqueness and complexity mainly come from the need for a compassionate perspective, closer interaction with people, regulation-oriented performance, a predominantly professional workforce, technology advancement, investment of capital and human resources, the identification of needs, and frequent change in leadership positions (Olson & Decker, 2003). Therefore, the need for effective leadership to provide services and employee support that match the uniqueness and complexity of current nursing homes and organizational changes is real and significant (Ballard et al., 1995; Olson & Decker, 2003).

Studies have also indicated that there exists a relationship between transformational leadership behaviors at health-care nursing homes and the development of professional staff's organizational commitment (Newton et al., 2010; Pearson et al., 2007). Transformational leadership often uses strategic techniques for building an effective collaborative workforce where the goal is to collectively elevate staff morale and harvest respect and trust, thus, gaining productivity (Fraczkiewicz-Wronka et al., 2010). The current long-term care nursing system requires transformational leaders who can motivate or inspire employees toward job commitment, make them feel empowered within the workforce, develop a challenging vision and translate it to actions, plus improve employee confidence and self-management to achieve high performance (Trofino, 1995, 2000). In this study, the above findings of the sequential multiple regression analysis reinforces the previous research reports and demonstrates that the superintendents of nursing homes in Taiwan should develop transformational leadership, such as using personal charisma to positively influence and motivate their employees to engender more trust and respect in their professional fields, paying more consideration to understand what predicaments employees are facing, and learning to solve problems collectively in order to achieve organizational vision. Thus, it would allow more employees to identify with the organization's

mission and goals, stay with the organization, go above and beyond their job requirements, and then receive a salary increase for a job well done.

Additionally, the findings of the study showed that the mediator variable of extrinsic motivation actually had a significant mediating effect (indirect effect) between transformational leadership and organizational commitment after controlling for demographic covariates.

Extrinsic motivation is defined as “the motivation to work primarily in response to something apart from the work itself” (Amabile et al., 1994, p. 950). Extrinsic motivation is related to competition, evaluation, recognition, money, or other tangible incentives, and constraints by others (Amabile et al., 1994). This study was the first to understand the influence of transformational leadership (independent variable) and extrinsic motivation (mediator variable) on organizational commitment within the social welfare nursing field for disabled people in Taiwan. Hence, the superintendents of nursing homes in Taiwan should also notice the connection and influence of extrinsic motivation to employees’ commitment.

Based on the findings of this study, it can be recognized that providing employees with appropriate and objective personal performance evaluations and providing them with chances for professional training programs can more practically promote their commitment levels to their organizations. Overall, the above findings of this study have provided a valuable reference to relevant departments in the social welfare nursing system in Taiwan. In other words, the current superintendents of nursing homes in Taiwan should be encouraged to learn how to combine effectively transformational leadership and extrinsic motivation to inspire job-related attitudes of employees to achieve their assigned jobs in times of organizational change. Having highly committed and motivated employees indicates improvement in quality of service, shows stronger

identification and retention with the organizations, and increases competitiveness in the market (Gabcanova, 2011; Ozturk, Hancer, & Im, 2014).

Recommendations for Future Research

The purpose of this study was to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation. The three covariates in this study included one independent variable (transformational leadership), one dependent variable (organizational commitment), and one mediator variable (extrinsic motivation). Descriptive and inferential statistics were used to explore the above relationships posed in the research questions. Taiwan's social welfare nursing institutions for disabled people are undergoing unprecedented challenges, including enforcement of individual service plans (ISP), globalization, and technology, and they are experiencing a high employee turnover (Chou, Lee, Ho, Chang, & Liu, 2013; Tseng, 2013). Employees are the most important assets; therefore, employee turnover has been viewed as an important issue facing current long-term nursing institutes (Cohen, 1993; Gabcanova, 2011; Rutowski, Guiler, & Schimmel, 2009). Employee commitment and turnover are important issues because they are strongly related to organizational productivity, financial expense, and organizational effectiveness (Kang, Huh, Cho, & Ahu, 2014; Mor Barak, Levin, Nissly, & Lane, 2006; Ozturk et al., 2014).

This study showed its unique value and importance for two reasons. First, this study is the first to use sequential multiple regressions to test whether transformational leadership can predict the variance of organizational commitment via the mediating effect of extrinsic motivation after controlling for covariates in the field of social welfare nursing institutions for

disabled people in Taiwan. The research design of this study considered transformational leadership and extrinsic motivation as important factors in the understanding of employees' commitment and turnover in the social welfare care institutions for people with disabilities in Taiwan. Second, previous studies have demonstrated that the availability of transformational leadership within social welfare organizations especially refers to long-term nursing institutions in terms of being associated with employee positive attitudes and well-being (Trofino, 1995, 2000). Transformational leadership is associated with all types of organizations and a variety of situations (Judge & Piccolo, 2004; Sun & Anderson, 2012). Nevertheless, empirical studies have revealed that the application of transformational leadership into social welfare nursing institutions is a necessity, but there are still limited discussions and findings and much more to be discovered in the field (Elpers & Westhuis, 2008; Gellis, 2001; Mary, 2005). Thus, similar replication studies should be conducted to make valuable contributions to the same field context in the future.

In order to explore Bass's (1985) full range of leadership model, future research should explore if the transactional leadership of superintendents is associated with employees' organizational commitment in the same field context. Then, the two different leadership styles should be compared in order to find which leadership style contributes more to increase organizational commitment. Additionally, the results of this study are valuable because they provide important suggestions for improvement of social welfare policies for disabled people in Taiwan. The findings of this study indicated that transformational leadership and extrinsic motivation had a significant contribution on the variance of organizational commitment. Extrinsic motivation actually had a partial mediation effect between the two variables. The study also suggested that relevant social welfare administration departments in Taiwan can offer more

professional programs of transformational leadership practices for these nursing home superintendents in order to match the current unprecedented changes. Transformational leadership seems to be the most promising theory for managing emerging organizational uniqueness, complexity, and changes within the welfare care nursing system because studies have determined that transformational leadership has a positive effect on both organizational outcomes and employee attitudes and behaviors (Judge et al., 2006; Skakon et al., 2010). Likewise, current long-term nursing homes for disabled people in Taiwan are facing unprecedented challenges, including empowerment, globalization, and technology. Therefore, the nursing care industry also requires transformational leaders who can effectively use extrinsic motivation to inspire employees to be committed to their organizations, make them feel empowered within the workforce, develop a challenging vision and translate it to actions, plus improve employee confidence and self-management to achieve high performance.

Future research may also be devoted to a more detailed exploration to compare the influence of intrinsic and extrinsic motivation between leadership style and job-related attitudes of employees in social welfare care institutes for disabled people in Taiwan. Intrinsic motivation is defined as “the motivation to engage in work primarily for its own sake” (Amabile et al., 1994, p. 950). It includes the challenge and the enjoyment involving the elements of self-determination, competence, task involvement, curiosity, and interest (Amabile et al., 1994). Further, research should compare which motivational factor contributes more to job-related attitudes, such as organizational commitment, job performance, and organizational productivity. Thus, it would further discover which reasons may engender more intention to stay with organizations and increase efforts to identify and achieve the values and goals of organizations in order to promote nursing service quality and effectively lower current high turnover rates. For future research,

there may be benefit in qualitative studies to help explain how and why transformational leadership and extrinsic motivation are associated with organizational commitment.

Implications for Practice

This study's findings provide valuable implications for practice as to how superintendents could effectively solve the current problems in Taiwan's nursing homes for the disabled. The current problems these nursing homes face include low sense of job accomplishment, low sense of belonging, low morale, lack of cohesiveness, and high turnover rates. As indicated by the data, gender, age, and length of employment were not significantly associated with organizational commitment. Therefore, superintendents of nursing homes in Taiwan should not take these factors into consideration when recruiting new employees. In addition, participants that were married and had college degrees were able to engender significantly more organizational commitment than those that were not married or did not have college degrees. Such results showed superintendents of nursing homes should prefer to recruit married employees and employees with college degrees in order to promote more organizational commitment. The findings of this study also indicated that current physical care employees' commitment, compared with the commitment of social workers, special education teachers, and other professionals in nursing homes of Taiwan, was low. Superintendents, therefore, should conduct official self-assessments and unofficial sessions with them to understand which factors lead to their stress and, ultimately, their intention of leaving the organization.

This study's data further showed that deploying transformational leadership practices would be an inevitable trend in order to increase organizational commitment and lower turnover rates aggressively. Relevant department of social welfare policies in Taiwan should, therefore, offer more professional training programs for top administrators of nursing homes for disabled

people. In order to tackle unprecedented challenges and changes, including globalization, empowerment, technology, and reinforcement of ISPs within the long-term care field, government authorities should hold conferences periodically to share transformational leadership theories and practices.

Lastly, the findings of this study showed that transformational leadership contributed to the variability of organizational commitment significantly and that extrinsic motivation was the important factor of shared variability of organizational commitment. This means that transformational leaders of nursing homes should not only use strategic techniques to develop future innovations and offer high quality services but also take into consideration extrinsic motivation to promote organizational commitment. For example, superintendents should provide job promotions, overtime pay, performance bonuses, and objective performance evaluations to help their employees achieve their assigned jobs and improve performance, which would then create a sense of belonging and effectively lower employees' intentions to leave the organization. In short, the critical innovative directions of nursing homes for disabled people in Taiwan may depend on whether superintendents can focus on combining transformational leadership practices and extrinsic motivation successfully in order to develop a general leadership practice and culture of nursing homes in Taiwan that matches their uniqueness and complexity and that effectively solves the current challenges of high turnover rates.

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Appendices

Appendix A

Certification of Questionnaire Translation

Certification of Questionnaire Translation

David Chihung Hsieh Ph.D.

Chang Jung Christian University

No.1 Changda Rd.Gueiren Dist.,Tainan City 71101 Taiwan

Subject: Certificate of Chinese translation of the English document "MLQ-5X Short form Questionnaire" "WPI" and "OCQ" conducted by Ph.D. student Ling-Hui Yang

Date 06/23/2015

To Whom It May Concern,

My name is David Chihung Hsieh. I was born and raised in Taiwan and Chinese is my native language. I own Ph.D. in Applied Statistics from Northern Colorado university. My English proficiency, both oral and written, is considered to be fluent. I have read the Chinese version of the above documents "MLQ-5X Short Form", "WPI" and "OCQ" questionnaires by Ms. Ling-Hui Yang and made some suggestions for revisions. In my opinion, the translation versions, as amended per my suggestions, reflected the original meaning of the English documents.

Sincerely,

Chihung Hsieh

Appendix B

Permission to Use the Multifactor Leadership Questionnaire (MLQ)

For use by Ling-Hui Yang only. Received from Mind Garden, Inc. on June 19, 2015



www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her research:

Instrument: *Multifactor Leadership Questionnaire*

Authors: *Bruce Avolio and Bernard Bass*

Copyright: *1995 by Bruce Avolio and Bernard Bass*

Five sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix C

Permission to Use the Work Preference Inventory (WPI)

Finan, Thomas

From: Amabile, Teresa
Sent: Tuesday, May 12, 2015 11:25 AM
To: Finan, Thomas
Subject: Fwd: questionnaire permission

Follow Up Flag: Follow up
Flag Status: Flagged

Tom, please print this email and leave it for me with a note saying that I should sign it giving permission for research use of the WPI. After I sign it, please return it by email with the WPI materials. Thanks!

Teresa Amabile
 Sent from my iPhone

Begin forwarded message:


From: Steven Kramer [REDACTED]
Date: May 12, 2015 at 9:07:58 AM EDT
To: Teresa Amabile [REDACTED]
Subject: FW: questionnaire permission

-----Original Message-----

From: Ling-Hui Yang [REDACTED]
Sent: Monday, May 11, 2015 11:53 PM
To: [REDACTED]
Subject: questionnaire permission

Researcher : Ling-Hui Yang, Doctor student of organizational leadership , University of the Incarnate Word, San Antonio, TX, 78209
 Phone: [REDACTED]
 E-mail: [REDACTED]

Title of the Research : How the transformational leadership style of superintendents is associated with employees' organizational commitment via the mediating effect of extrinsic motivation within nursing homes for disabled people in Taiwan The researcher would like to use the Work Preference Inventory (WPI) which was developed by Dr. Teresa Amabile. Her questionnaires bring great help in this study. As a result, the researcher would like to get the permission that can be used in this research before adopting her instrument. Please have Dr. Teresa Amabile's signature for permission.
 Thanks for your help
 Yours Truly

*I give permission for Ling-Hui Yang
 to use the WPI for research purposes.*

 Teresa M. Amabile

Appendix D

The Work Preference Inventory (WPI) in English and in Traditional Chinese

http://www.uky.edu/~holler/survey/chem/work_preference_new.htm

BRIEF SCORING GUIDE FOR THE WORK PREFERENCE INVENTORY (WPI)**針對工作動機問卷(WPI)簡短計分說明**

Teresa M. Amabile, Ph.D

The WPI consists of 30 questions designed to assess college students' and working adults' overall intrinsic and extrinsic motivational orientations toward their work. The working adult and college student versions are scored in the same manner; they differ slightly in the wording of five questions. In addition to the two primary scales of Intrinsic and Extrinsic orientation, the WPI is also scored on four secondary scales. The Intrinsic primary scale is sub-divided into the Challenge and Enjoyment secondary scales. The Extrinsic primary scale is sub-divided into the Outward and Compensation secondary scales.

Below you will find the scoring system for each secondary scale. The score on each scale is computed as the mean of each item on that scale. Please note that any items followed by "R" are reverse scored (that is, N = 4, S = 3, O = 2, and A = 1).

工作動機問卷(WPI)包含30個問題而被設計成為評估大學生和成人的所有的內在與外在的有關工作動機的傾向 這些有工作的成人和大學生的版本是以相同態度來計分;他們在五個問題的字義上有一點不同 除了內在傾向與外在傾向兩種主要的測量外 WPI問卷也被四種次等的量表計分 內在主要的量表 是被次分為挑戰和喜愛的次等測量 外在主要的測量 也被次分為 外部的事物和 薪水報酬的次等測量 以下你將發現這為每個次等測量計分系統 每個量表的分數是以每個量表的每個項目的平均值 請注意下列任何項目中出現“R”時需要被被相反計分(那就是 N = 4, S = 3, O = 2, and A = 1).

Never or almost never true of you	Sometimes true of you	Often true of you	Always or almost true of you
N = 1	S = 2	O = 3	A = 4

從來沒有真正的你	有時候是真實的你	經常是真實的你	總是真實的你
N = 1	S = 2	O = 3	A = 4

PRIMARY SCALES:**INTRINSIC MOTIVATION (15 ITEMS):**

03, 05, 07, 08, 09R, 11, 13, 14R, 17, 20, 23, 26, 27, 28, 30

EXTRINSIC MOTIVATION (15 ITEMS):

01R, 02, 04, 06, 10, 12, 15, 16R, 18, 19, 21, 22R, 24, 25, 29

SECONDARY SCALES:**ENJOYMENT (Intrinsic – 10 items):**

05, 07, 08, 11, 17, 20, 23, 27, 28, 30

CHALLENGE (Intrinsic – 5 items):

03, 09R, 13, 14R, 26

OUTWARD (Extrinsic – 10 items):

01R, 02, 06, 12, 15, 18, 21, 24, 25, 29

COMPENSATION (Extrinsic – 5 items):

04, 10, 16R, 19, 22R

NOTES:

- Cronbach's Alpha is presented for each scale. The student version reliability is given first, followed by the adult version reliability.
- The WPI response scale is scored as: N = 1, S = 2, O = 3, A = 4
- Items followed by "R" are reversed scored (N = 4, S = 3, O = 2, A = 1).
- Numbers in parentheses following each item are the loading of the item on its scale, based on Oblimin factor analysis. Student version loadings precede the adult versions.

Never or almost never true of you = N = 1

Sometimes true of you = S = 2

Often true of you = O = 3

Always or almost always true of you = A = 4

THE WORK PREFERENCE INVENTORY (WPI)

PRIMARY WPI SCALES(工作動機問卷)—INTRINSIC MOTIVATION(內在的動機測量)

INTRINSIC SCALE Cronbach's Alpha = .79 & .75

內在的動機測量

Item (項目) #

3. The more difficult the problem, the more I enjoy trying to solve it. (.66)(.67).....1 2 3 4

問題越困難 我越樂於試著解決它.....1 2 3 4

5. I want my work to provide me with opportunities for increasing my knowledge and skill.

(.55)(.32).....1 2 3 4

我想要我的工作能提供增加我知識與技能的機會.....1 2 3 4

7. I prefer to figure things out for myself. (.51)(.36).....1 2 3 4

我較喜歡為自己弄清楚事情.....1 2 3 4

8. No matter what the outcome of a project, I am satisfied if I feel I gained a new experience.

(.41)(.15).....1 2 3 4

無論一項計畫的結果如何 假如我得到新的經驗我就會很滿意.....1 2 3 4

9. I enjoy relatively simple, straightforward tasks. (-.35)(-.45).....1 2 3 4

我喜愛相對地簡單 直接易懂的工作.....1 2 3 4

11. Curiosity is the driving force behind much of what I do. (.55)(.49).....1 2 3 4

在我工作的大部分 好奇心是背後主要的驅動力.....1 2 3 4

13. I enjoy tackling problems that are completely new to me. (.72)(.63).....1 2 3 4

我喜愛處理對我而言是完全新的問題.....1 2 3 4

14.R I prefer work I know I can do well over work that stretches my abilities. (-.42) (-.50).....1 2
3 4

我較喜歡從事我知道能夠做的好並能伸展我的能力的工作.....1 2 3 4

17. I'm more when I can set my own goals. (.37)(.41).....1 2 3 4

當我能夠設定我的目標時我能感到更加舒服.....1 2 3 4

20. It is important for me to be able to do what I most enjoy. (.34)(.30).....1 2 3 4

對我而言 能夠從事我所喜愛的工作是重要的.....1 2 3 4

23. I enjoy doing work that is so absorbing that I forget about everything else. (.37)(.34).....1 2
3 4

我喜歡從事的工作是如此精彩有趣以至於我忘記其他的事情.....1 2 3 4

26. I enjoy trying to solve complex problems. (.67)(.74).....1 2 3 4

我喜愛嘗試去解決複雜的問題.....1 2 3 4

27. It is important for me to have an outlet for self-expression. (.39)(.52).....1 2 3 4

能夠有自我表現的出口是重要的.....1 2 3 4

28. I want to find out how good I really can be at my work. (.48)(.45).....1 2 3 4

我想要去找出我真正在工作上表現得如何優秀.....1 2 3 4

30. What matters most to me is enjoying what I do. (.42)(.33).....1 2 3 4

對我最重要的事情就是喜愛我所做的一切.....1 2 3 4

EXTRINSIC SCALE Cronbach's Alpha = .78 & .70

外在動機的測量

Item #

1.R I am not that concerned about what other people think of my work. (-.28)(-.17).....1 2 3 4

我並不關心其他人對我工作的看法.....1 2 3 4

2. I prefer having someone set clear goals for me in my work. (.27)(.36).....1 2 3 4

我較喜歡讓別人為我建立清楚的目標 在我的工作中.....1 2 3 4

4. I am keenly aware of the [goals I have for getting good grades.][income goals I have for myself.] (.46)(.63).....1 2 3 4

我敏銳地意識到為我自己設立的收入目標.....1 2 3 4

6. To me, success means doing better than other people. (.52)(.51).....1 2 3 4

對我而言 成功意味著做得比別人好.....1 2 3 4

10. I am keenly aware of the [GPA (grade point average)][promotion] goals I have for myself. (.60)(.60).....1 2 3 4

我敏銳地意識到為我自己設立的工作升遷的目標.....1 2 3 4

12. I'm less concerned with what work I do than what I get for it. (.32)(.28).....1 2 3 4

我比較不關心我做甚麼工作比起我如何得到它.....1 2 3 4

15. I'm concerned about how other people are going to react to my ideas. (.39)(.40).....1 2 3 4

我關心其他人對我的觀點如何反應.....1 2 3 4

16. R I seldom think about [grades and awards.][salary and promotions.] (-.56)(-.25).....1 2 3 4

我有時候考慮到薪水和升遷.....1 2 3 4

18. I believe that there is no point in doing a good job if nobody else knows about it. (.41)(.20).....1 2 3 4

我相信做好一份工作沒有意義假如沒有其他人知道它的話.....1 2 3 4

19. I am strongly motivated by the [grades][money] I can earn. (.72)(.63).....1 2 3 4

我是強烈地被我所賺的錢所激勵的.....1 2 3 4

21. I prefer working on projects with clearly specified procedures. (.40)(.38).....1 2 3 4

我較喜歡從事有清楚和特定程序的計畫.....1 2 3 4

22.R As long as I can do what I enjoy, I'm not that concerned about exactly what [grades and awards I can earn][I'm paid.] (-.53)(-.23).....1 2 3 4

一旦我能夠從事我所喜愛的工作 準確地說我並不在意我賺多少.....1 2 3 4

24. I am strongly motivated by the recognition I can earn from other people. (.61)(.58).....1 2 3 4

我是強烈地由其他人所得到的認同受到鼓勵.....1 2 3 4

25. I have to feel that I'm earning something for what I do. (.52)(.53).....1 2 3 4

我必須感受到為我所從事的工作賺到一些收入.....1 2 3 4

29. I want other people to find out how good I really can be at my work. (.59)(.59).....1 2 3 4

我想要其他人發現我真正地在工作上表現得如何優秀.....1 2 3 4

Appendix E

Permission to Use the Organizational Commitment Questionnaire (OCQ)



Department of Psychology

May 14, 2015

Dear Ling-Hui Yang,

I am writing to give you permission to use our commitment measures in your research project entitled "How the transformational leadership style of superintendents is associated with employees' organizational commitment via the mediating effect of extrinsic motivation within nursing homes for disabled people in Taiwan." I hope all goes well with your research.

Best regards,

A handwritten signature in black ink, appearing to read "John P. Meyer".

John P. Meyer, PhD
Professor

Appendix F

The Organizational Commitment Questionnaire (OCQ) in English and in Traditional Chinese

Organizational Commitment Questionnaire: 組織投入問卷調查**Directions: 使用說明**

For each of the items below, please circle the appropriate number to describe how you feel. There are no right or wrong answers. We would like your honest opinion on each of the statements. The letters represent the following options:

請在下列的每個項目後面, 圈選是當的數字來表達你的意見 你的答案並沒有對錯之分 謝謝你誠實的表達意見

SD = Strongly Disagree (完全不同意) = 1

DA = Disagree (不同意) = 2

UD = Undecided (無法決定) = 3

AG = Agree (同意) = 4

SA = Strongly Agree (完全同意) = 5

1. I would be very happy to spend the rest of my career with this organization.....1 2 3 4 5

我將很樂意在今後的職業生涯中一直為這個組織工作.....1 2 3 4 5

2. I really feel as if this organization's problems are my own.....1 2 3 4 5

我確實感到這個組織的問題就像我自己的問題一樣.....1 2 3 4 5

3. I do not feel a strong sense of "belonging" to my organization.....1 2 3 4 5

對我的組織我沒有一種強烈的歸屬感.....1 2 3 4 5

4. I do not feel "emotionally attached" to this organization.....1 2 3 4 5

我沒有感到對這個組織有感情上的依賴.....1 2 3 4 5

5. I do not feel like "part of the family" at my organization.....1 2 3 4 5

在組織裡我沒有感到自己是這個大家庭的一部份.....1 2 3 4 5

6. This organization has a great deal of personal meaning for me.....1 2 3 4 5

我的組織對我有很大的意義.....1 2 3 4 5

7. Right now, staying with my organization is a matter of necessity as much as desire.....

1 2 3 4 5

目前繼續留在我所在的組織對我來說是很必要的.....1 2 3 4 5

8. It would be very hard for me to leave my organization right now, even if I wanted to.....

1 2 3 4 5

現在對我來說即使我想要離開我的組織也已經很難離開了.....1 2 3 4 5

9. Too much of my life would be disrupted if I decided I wanted to leave my organization

now.....1 2 3 4 5

如果我現在決定離開我的組織我的生活秩序會被打亂.....1 2 3 4 5

10. I feel that I have too few options to consider leaving this organization.....1 2 3 4 5

我感到我的選擇太少了因此無法考慮離開這組織.....1 2 3 4 5

11. If I had not already put so much of myself into this organization, I might consider working

elsewhere.....1 2 3 4 5

要不是我已經對我的組織投入太多我也許會考慮到別處工作.....1 2 3 4 5

12. One of the few negative consequences of leaving this organization would be the scarcity of

available alternatives.....1 2 3 4 5

離開這個組織的少數幾個負面結果之一是我所有的選擇非常少.....1 2 3 4 5

13. I do not feel any obligation to remain with my current employer.....1 2 3 4 5

我沒有感到有任何義務要繼續受雇於我現在的雇主.....1 2 3 4 5

14. Even if it were to my advantage, I do not feel it would be right to leave my organization

now.....1 2 3 4 5

我感到現在離開我的組織是不對的即使這樣做對我自己有好處.....1 2 3 4 5

15. I would feel guilty if I left my organization now.....1 2 3 4 5

如果離開我的組織我會感到很內疚.....1 2 3 4 5

16. This organization deserves my loyalty.....1 2 3 4 5

我應該忠於這個組織.....1 2 3 4 5

17. I would not leave my organization right now because I have a sense of obligation to the
people in it.....1 2 3 4 5

我現在不會離開這個組織 因為我感到我對這個組織中的人負有義務.....1 2 3 4 5

18. I owe a great deal to my organization.....1 2 3 4 5

我欠我的組織很多.....1 2 3 4 5

Appendix G

Employee Demographic Characteristics (EDC) in English and in Traditional Chinese

Employee Demographic Characteristics (EDC) (基本資料問卷)**基本資料**

1. Gender (性別):

Males (男性)____0

Females (女性)____1

2. What is your age (請問你的年齡?)

3. Marital status (婚姻狀況):

Unmarried (未婚)____0

Married (已婚)____1

4. Education level (教育程度):

Less than college degree (大專以下)____0

College degree (大專以上)____1

5. What is your length of employment (目前服務的年資?)

6. Job classification (職位分類):

Administrative staff (行政人員)____1

Social worker (社工人員)____2

Special education teacher (特殊教育老師)____3

Physical care staff (保健員)____4

Other professionals (其他專業人員)____0

Appendix H

Introductory Letter to the HR Directors of Assigned Nursing Homes
for People With Disabilities in Taiwan (English)

A STUDY OF HOW THE TRANSFORMATIONAL LEADERSHIP STYLE OF
SUPERINTENDENTS IS ASSOCIATED WITH EMPLOYEES' ORGANIZATIONAL
COMMITMENT VIA THE MEDIATING EFFECT OF EXTRINSIC MOTIVATION WITHIN
NURSING HOMES FOR DISABLED PEOPLE IN TAIWAN

University of the Incarnate Word

Dear HR Directors of Assigned Nursing Homes for People with Disabilities:

I am a doctoral student from the University of the Incarnate Word working towards a doctoral degree in organizational leadership. I would like for your employees to take part in a study of how the transformational leadership style of superintendents is associated with employees' organizational commitment via the mediating effect of extrinsic motivation within nursing homes for disabled people in Taiwan. Your employees' participation is very important for this study.

If you decide to allow your employees to take part in this study, it will take them approximately 30 minutes to complete the questionnaires. They will be free to choose not to participate in this study or to withdraw from participating at any time. Rest assured that your employees' privacy will be highly protected. Participants will fill in their questionnaires anonymously, and all of their responses on the questionnaires will be confidential. In addition, I am the only one who will have access to their responses, which will not be reported individually but by group.

If you have any questions about this study or about the protection of your employees' privacy, please feel free to contact me or the University of the Incarnate Word (UIW) committee that reviews research on human subjects. The Institutional Review Board (IRB) will answer any questions about your rights as a research subject.

Thank you,

Ling-Hui Yang

Researcher: [REDACTED]

Dean of Graduate Studies and Research: [REDACTED]

Appendix I

Introductory Letter to the HR Directors of Assigned Nursing Homes

for People With Disabilities in Taiwan (Traditional Chinese)

問卷調查與參與者須知與介紹信(中文版)

A STUDY OF HOW THE TRANSFORMATIONAL LEADERSHIP STYLE OF
SUPERINTENDENTS IS ASSOCIATED WITH EMPLOYEES' ORGANIZATIONAL
COMMITMENT VIA THE MEDIATING EFFECT OF EXTRINSIC MOTIVATION WITHIN
NURSING HOMES FOR DISABLED PEOPLE IN TAIWAN

University of the Incarnate Word

敬愛的院長,主任及問卷調查參與者 你好:。」

我是正在美國德州University of the Incarnate Word攻讀博士學位主修組織領導的學生楊玲惠,目前正進行我的博士論文:藉由員工外在的工作激勵的中介變數去探討台灣身心障礙教養院院長的轉換型領導風格和員工的組織投入有如何的相關。

貴院正式全職的員工參與與否將會決定本研究是否能夠順利完成,如果貴院的員工願意參加此問卷調查,擬將大約花15分鐘來完成所有的問卷填寫,可以自願性地選擇是否參與此問卷調查,並且可以隨時決定退出此問卷調查。貴院的員工的隱私權將受到高度的保護,並且所填寫的問卷資料均會以匿名和團體的方式呈現在本研究中。所填寫的問卷內容及所有個人資料將會受到高度保密,而且將不會對你的工作職務及生活產生任何影響。

因為本校對於參與者的隱私權有相當嚴格的保護的規定因此只有本研究可以接觸到問卷內容的資料,參與問卷調查的對象:限於目前服務於身心障礙教養機構的員工,例如社工、行政、保健員、特教老師其他專業人員

參與問卷調查的機構:目前合格登記的身心障礙教養機構。

如果你對本問卷調查或是受試者的隱私權保護有任何問題的話,歡迎隨時與研究者聯絡如果你需要更進一步了解受試者的權利,本校的 Institutional Review Board將會回答你任何相關的問題 聯絡方式如下:

楊玲惠

本校研究所所長:

Appendix J

UIW Application for IRB Approval

DocuSign Envelope ID: EE51716D-57B9-477B-9462-90915DFCEFE8

UIW Application for IRB Approval
Part I: Application Form

This application is to be used for initial application for IRB review only. Sufficient time must be allowed for review. Incomplete applications will be returned without review. For a list of application components, see the [IRB Manual](#).

Submit this completed form as part of the application to the Office of Research Development electronically for IRB review. **Do not submit applications directly to the IRB representative**, as this form will be electronically routed to them for review after it has been checked for completion and logged into the IRB database. Signatures will be applied electronically once the application is approved.

Principal Investigator				
A Principal Investigator (PI) must be designated for any human subjects research. The PI is responsible for ensuring university and federal regulatory compliance for all research activities and research personnel associated with this protocol. For the responsibilities of the PI, refer to the UIW IRB Manual.				
Name: Ling-Hui Yang	Phone #: [REDACTED]	E-mail: [REDACTED]	Mailing Address: [REDACTED]	
College/School or Department: Dreeben School of Education		CITI Training Date: 6/11/2015	PIDM (UIW ID): 743257	
Is the PI a student? <input type="checkbox"/> NO <input checked="" type="checkbox"/> If, YES, a faculty supervisor must be designated for this research protocol. Include a signed copy of the Faculty Supervisor Agreement with this application.				
Faculty Supervisor				
Name:	Phone #:	E-mail:	CPO:	
College/School or Department:		CITI Training Date:	PIDM (UIW ID):	
Other Project Personnel				
List all other project personnel, including co-investigators, research associates, and student researchers who will be recruiting, consenting, collecting data, or working with data collected from human subjects. Use "enter"/"return" key to list personnel on separate lines.				
Name:	Role in Research:	CITI Training Date:	Email:	PIDM (if student):
Research Information				
Title of Study: How the transformational leadership style of superintendents is associated with employees' organizational commitment via the mediating effect of extrinsic motivation within nursing homes for disabled people in Taiwan				
Research Category: <input type="checkbox"/> Exempt <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Full Board				
This research will be conducted: <input type="checkbox"/> On the UIW campus or UIW facilities <input checked="" type="checkbox"/> Off campus (list all locations where research will be conducted): Within nursing homes for disabled people in Taiwan				
Number of Subjects: About 400	Number of Controls: About 400		Total Duration of Study Activities: Three months	
This research will involve the following (check all that apply): <input type="checkbox"/> Inmates of penal institutions <input checked="" type="checkbox"/> Institutionalized intellectually handicapped <input checked="" type="checkbox"/> Institutionalized mentally disabled <input type="checkbox"/> Committed patients <input type="checkbox"/> Intellectually handicapped outpatient <input type="checkbox"/> Mentally disabled outpatient				

DocuSign Envelope ID: EE51716D-57B9-477B-9462-90915DFCEFE8

<input type="checkbox"/>	Pregnant women
<input type="checkbox"/>	Fetus in utero
<input type="checkbox"/>	Viable fetus
<input type="checkbox"/>	Nonviable fetus
<input type="checkbox"/>	Dead fetus
<input type="checkbox"/>	In Vitro fertilization
<input type="checkbox"/>	Minors (under 18)

Funding Disclosures	
Funding source(s):	<input type="checkbox"/> Internal <input type="checkbox"/> External <input type="checkbox"/> Pending <input checked="" type="checkbox"/> None
List all funding sources (pending and awarded):	
The funding provides for (select all that apply):	
<input type="checkbox"/>	Investigator release time or compensation
<input type="checkbox"/>	Research materials
<input type="checkbox"/>	Graduate assistants, student workers, or other project employees
<input type="checkbox"/>	Travel
<input type="checkbox"/>	Other:
Financial Conflict of Interest	
Does any member of the project team hold financial interest in the funding organization or any similar organization (stocks, board membership, etc)?	
<input checked="" type="checkbox"/>	NO
<input type="checkbox"/>	If YES, describe below:

This Section for Office of Research Development Use Only
Signatures will be applied electronically upon approval

Investigator Signature(s) & Assurances		
I certify that the information above is accurate and complete. I will request prior IRB approval for any changes to the approved protocol and/or informed consent forms, and will not implement those changes until I receive IRB approval. I will report any adverse effects to the IRB immediately. I agree to comply fully with the ethical principles and regulations regarding the protection of human subjects in research.		
Principal Investigator:		
Name: Ling-Hui Yang	Signature: DocuSigned by: <i>Ling-Hui Yang</i>	Date: 10/1/2015
Faculty Supervisor (if Principal Investigator is a student):		
Name: Osman Ozturgut	Signature: DocuSigned by: <i>Osman Ozturgut</i>	Date: 10/1/2015

Approval Signature(s)		
IRB Representative/Reviewer:		
Name: Rebecca Penaloza	Signature: DocuSigned by: <i>Rebecca Penaloza</i>	Date: 10/2/2015
IRB Chair (or Chair's Designee):		
Name:	Signature:	Date:

**UIW Application for IRB Approval
Part II: Research Protocol**

Section 1: Purpose

The purpose of this study is to measure the degree to which the superintendents at nursing homes for disabled people in Taiwan demonstrate transformational leadership and how this is associated with employees' organizational commitment via the mediating effect of extrinsic motivation.

The three research questions are the following:

1. Are transformational leadership, extrinsic motivation, and demographic covariates associated with organizational commitment?
2. Does transformational leadership predict organizational commitment after controlling for covariates?
3. Does extrinsic motivation mediate the association of transformational leadership and organizational commitment after controlling for covariates?

Section 2: Background and Significance

The field of my research is leadership of superintendents within nursing homes for disabled people in Taiwan. Two hundred fifty-four nursing homes for people with disabilities are registered with the Department of Social Affairs at the Ministry of the Interior in Taiwan (Social and Family Affairs Administration, 2013). These current registered nursing homes fall into one of three categories. They are either (a) private nursing institutions for people with disabilities that are registered legally as nonprofit corporations, (b) public social welfare institutions for people with disabilities, or (c) private nursing institutions approved by the Ministry of the Interior and operated by private organizations (Yen, 2007).

Past research has mentioned the importance of leadership in Taiwan's social welfare institutions, but there has been less discussion on the relationships between leadership styles of superintendents and professional employees' work motivation and commitment in Taiwan's nursing homes for disabled people (Lee, 2007; Lee, Lin, & Chu, 2013). There has been considerable attention placed on leadership styles, motivation, job satisfaction, organizational culture, organizational commitment, and performance (Trang, Armanu, Sudiro, & Noermijati, 2013). This study will test these old theories with new participants who work in Taiwan's nursing homes. The researcher hopes that her study will provide better answers as to how transformational leadership is associated with work motivation and organizational commitment (Diefendorff, Brown, Kamin, & Lord, 2002).

The researcher intends to provide more helpful and constructive suggestions to solve the current phenomenon of emergent problems, such as the lack of professional leadership training, low morale and sense of belonging, insufficient motivation, and a high turnover rate. The researcher also hopes that this study will contribute to the progress of leadership and lead to the improvement of the service quality of Taiwan's nursing homes and the implementation of improved social welfare policies.

Section 3: Location, Facility, and Equipment to be Used

The study will be conducted at facilities listed among the 254 nursing homes for people with disabilities that were registered with the Department of Social Affairs at the Ministry of the Interior in Taiwan. The following four questionnaires will be used to collect data: the Multifactor Leadership Questionnaire

Form 5X-Short (MLQ), the Work Preference Inventory (WPI), the Organizational Commitment Questionnaire (OCQ), and the covariates survey.

Section 4: Subjects and Informed Consent

The population number of employees may be estimated at 1,000 and a useable sample size of 400 will be obtained. If there are approximately four employees per nursing home, there will be about 100 nursing homes randomly chosen. Before the survey research is implemented, the researcher will write a formal introductory letter to those chief administrators, such as presidents or superintendents, within those 100 randomly chosen nursing homes for disabled people. The introductory letter will include as attachments the questionnaires, be enclosed in a sealed envelope, and then mailed to the human resource (HR) departments at the selected nursing homes for disabled people. If possible, the researcher will visit the HR director of each organization personally to restate the purpose of this study and to discuss legal policies. The letter will emphasize the importance of voluntary participation and the freedom of termination from the study for each participant at any time.

In most educational research, obtaining permission is often necessary before the researcher enters any research site and gathers data (Creswell, 2005). These permissions may come from relevant institutions or organizations, or the institutional review board (IRB) on campus on which the researcher conducts the research project. It is required to obtain approval of all personnel in administration or representatives of the organizations (Creswell, 2005). For this study, the letter will explain the purpose of the study and the participants' benefits, risks, and fundamental rights of confidentiality and privacy (Creswell, 2005).

In this study, the population will consist of full-time, professional employees of nursing homes for disabled people in Taiwan but will not include the superintendents (Tseng, 2013). The professional employees will include administrative staff, social workers, special education teachers, physical care staff, and other professionals (Tseng, 2013).

Section 5: Subject Compensation

This study does not offer subject compensation.

Section 6: Duration

The researcher estimates taking about six months to complete all the activities, including recruitment, data collection, and data analysis. Specifically, the researcher estimates taking 2 months to recruit employees at nursing homes for disabled people in Taiwan to participate in filling out the questionnaires, 2 months to collect the data, 2 months to analyze the data, and 30 minutes to give each of these questionnaires to each participant.

Section 7: Research Design (Description of the Experiment, Data Collection, and Analysis)

In order to examine the purpose of the study, the researcher will first develop a path analysis model to find out whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling for the covariates (see Figure 1). Before testing the effect of extrinsic motivation in this study, the researcher will make sure the following relationships exist:

1. Transformational leadership is a significant predictor of extrinsic motivation after controlling for the covariates.

2. Extrinsic motivation is a significant predictor of organizational commitment after controlling for the covariates.
3. Transformational leadership is a significant predictor of organizational commitment after controlling for the covariates.

If any of the above path analyses are not significant, then the hypotheses of mediating effect will not be tested.

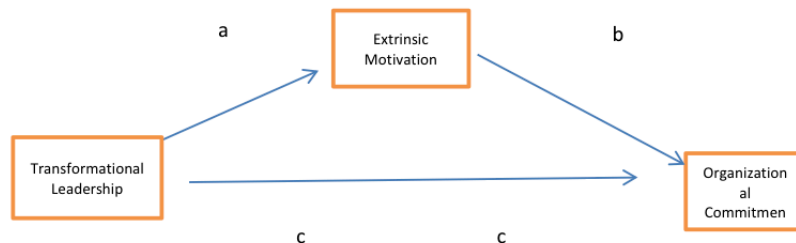


Figure 1. "Controlling for" covariates.

In order to analyze the above relationships, the researcher will use questionnaires to collect the data because that is the most useful and cost-efficient method for a single researcher to use. The Multifactor Leadership Questionnaire (MLQ), the Work Preference Inventory (WPI), and the Organizational Commitment Questionnaire (OCQ) will be combined to collect the data about job-related attitudes and behaviors of employees for the deductive quantitative method. The researcher will then use an SPSS program to analyze the data. Descriptive statistics will be used to characterize the sample, and Pearson correlation coefficients will be used to examine the relationships among these variables. Additionally, sequential multiple regression will be used to predict whether transformational leadership can have direct or indirect effects on organizational commitment via the mediation effect of extrinsic motivation after controlling the covariates.

Section 8: Risk Analysis

This study involves less than minimal risk to participants. Participants will be given a consent form, which will fully inform them of the nature of their involvement in the project, and they will fill in their questionnaires anonymously.

Section 9: Confidentiality

Participants will be asked to first sign the informed consent form to show that they understand the content of this research project before completing the questionnaires. In order to guarantee anonymity and confidentiality of each participant, the researcher will ensure that no one can be identified from the demographic data. Only group results of questionnaires will be reported in this study. Participants will then be asked to place their completed questionnaires in an assigned envelope to be sealed and mailed back to the researcher, or the researcher may opt to pick up the questionnaires in person.

Section 10: Literature Cited

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Appendix K

Consent Agreement in English

SUBJECT CONSENT TO TAKE PART IN A STUDY OF HOW THE TRANSFORMATIONAL LEADERSHIP
STYLE OF SUPERINTENDENTS IS ASSOCIATED WITH EMPLOYEES' ORGANIZATIONAL
COMMITMENT VIA THE MEDIATING EFFECT OF EXTRINSIC MOTIVATION WITHIN NURSING
HOMES FOR DISABLED PEOPLE IN TAIWAN

University of the Incarnate Word

Dear Prospective Survey Participant:

I am a doctoral student from the University of the Incarnate Word, working towards a doctoral degree in organizational leadership. I would like for you to take part in a study of how the transformational leadership style of superintendents is associated with employees' organizational commitment via the mediating effect of extrinsic motivation within nursing homes for disabled people in Taiwan. Your participation is very important for this study.

If you decide to take part in this study, it will take them approximately 30 minutes to complete the questionnaires. You will be free to choose not to participate in this study or to withdraw from participating at any time. Rest assured that your privacy will be highly protected. Everything I learn from your response that you fill out on the questionnaires will be confidential; you will not be identified. Participants will fill in their questionnaires anonymously, and all of your responses on the questionnaires will be confidential. In addition, I am the only one who will have access to your responses, which will not be reported individually but by group.

If you have any questions about this study or about the protection of your privacy, please feel free to contact me or the University of the Incarnate Word (UIW) committee that reviews research on human subjects. The Institutional Review Board (IRB), will answer any questions about your rights as a research subject.

Thank you,

Ling-Hui Yang

Researcher: [REDACTED]

Dean of Graduate Studies and Research: [REDACTED]

YOUR SIGNATURE INDICATES THAT YOU CONSENT TO TAKE PART IN THIS RESEARCH STUDY AND THAT YOU HAVE READ AND UNDERSTAND THE INFORMATION GIVEN ABOVE AND EXPLAINED TO YOU.

Signature of Subject Date _____

Appendix L

Consent Agreement in Traditional Chinese

問卷調查與受試者須知與同意函(中文版)

SUBJECT CONSENT TO TAKE PART IN A STUDY OF HOW THE TRANSFORMATIONAL LEADERSHIP
STYLE OF SUPERINTENDENTS IS ASSOCIATED WITH EMPLOYEES' ORGANIZATIONAL
COMMITMENT VIA THE MEDIATING EFFECT OF EXTRINSIC MOTIVATION WITHIN NURSING
HOMES FOR DISABLED PEOPLE IN TAIWAN

University of the Incarnate Word

敬愛的問卷調查參與者 你好:

我是正在美國德州University of the Incarnate Word攻讀博士學位主修組織領導的學生 楊玲惠 目前正進行我的博士論文:藉由員工外在的工作激勵的中介變數去探討台灣身心障礙教養院院長的轉換型領導風格和員工的組織投入有如何的相關

你的參與與否將會決定本研究是否能夠順利完成 如果你願意參加此問卷調查 擬將大約花15分鐘來完成所有的問卷填寫 並將在受試者須知及同意書上簽名 可以自願性地選擇是否參與此問卷調查 並且可以隨時 決定退出此問卷調查 你的隱私權將受到高度的保護 並且你所填寫的問卷資料均會以匿名和團體的方式呈現在本研究中你所填寫的問卷內容將部會對你的工作 職務及生活產生任何影響 本校對於受試者(參與者)的隱私權有相當嚴格的保護的規定因此只有本研究者可以接觸到問卷內容的資料

如果你對本問卷調查或是受試者的隱私權保護有任何問題的話 歡迎隨時與研究者聯絡如果你需要更進一步了解受試者的權利 本校的 Institutional Review Board將會回答你任何相關的問題 聯絡方式如下:

楊玲惠

本校研究所所長:

如果你瞭解上述說明 並且願意在受試者權利保護下參與此研究 請在以下簽名

受試者簽名_____ 日期_____