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AN INVESTIGATION OF THE IMPACT OF LEADER-MEMBER EXCHANGE, TEAM-MEMBER EXCHANGE ON STAFF ATTITUDES AND PERCEPTIONS FOR ACCOUNTING PROFESSIONALS

By

Yaying Mary Chou Yeh

A DISSERTATION

Submitted to
H. Wayne Huizenga School of Business and Entrepreneurship
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Yaying Mary Chou Yeh

We hereby certify that this Dissertation submitted by Yaying Mary Chou Yeh conforms to acceptable standards, and as such is fully adequate in scope and quality. It is therefore approved as the fulfillment of the Dissertation requirements for the Degree of Doctorate of Business Administration.

Approved:

Barbara Dastoor, Ph.D.
Chairperson

5/25/05
Date

Paul Dion, Ph.D.
Committee Member

5/16/05
Date

Pedro F. Pellet, Ph.D.
Committee Member

5/18/05
Date

Russell Abratt, Ph.D.
Chair, Doctoral Programs

6/6/05
Date

J. Preston Jones, D.B.A.
Associate Dean, H. Wayne Huizenga School
of Business and Entrepreneurship

2 Sept 2005
Date

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Yaying Mary Chou Yeh

ABSTRACT

AN INVESTIGATION OF THE IMPACT OF LEADER-MEMBER EXCHANGE, TEAM-MEMBER EXCHANGE ON STAFF ATTITUDES AND PERCEPTIONS FOR ACCOUNTING PROFESSIONALS

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This study examined the role of interpersonal relationships, specifically the quality of leader-member exchange (LMX) in conjunction with team-member exchange (TMX) in employee attitudes in terms of organizational commitment, job satisfaction and turnover intention among 202 accounting professionals. Structural equation modeling (SEM) was used to analyze the casual-effect relationships of the proposed model in its entirety. The findings indicated that LMX and TMX are positively related to organizational affective commitment, but not to continuance commitment. Highly mobile knowledge workers such as accounting professionals are more committed to their profession than to an organization, and therefore, are not concerned with their vested investment in an organization. Organizations wishing to increase employee commitment should focus on the affective commitment by improving the quality of LMX and TMX relationships.

This study also tested a comprehensive model of the turnover process encompassing direct and mediating constructs. Job satisfaction is the only significant direct influence on employee's intent to leave. Professional knowledge workers with vested capital in expertise and skills are likely to move around unless they are satisfied with the work or the job. TMX was not directly related to job satisfaction, but was mediated by affective commitment. Job satisfaction also

mediated the effect from affective commitment to turnover intention. The quality of LMX and affective commitment are important antecedents of job satisfaction. This study enhances management's understandings of group network exchange relationships involving multi-level supervisors and subordinates. An interactive strategy in human resource management is recommended to initiate activities that will improve the quality of LMX, TMX and job satisfaction to design modern retention strategies.

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INTRODUCTION

Background

The accounting profession has experienced profound changes in the past two decades. The globalization of the market place, advances in information technology, mergers of firms and increased litigation activity are but some of the challenges facing the profession (Schuetze, 1993). Accounting transactions today are vastly complex. Accounting accurately for everything from derivatives to pensions to securitizations is intellectually demanding (Laschenski, 2002). Organizational success ultimately depends upon the caliber of the professional services their members can deliver (Fogarty, 2000). Employees are the most valuable assets to an entity. Effective human resource management practices in hiring, training, and retaining valuable employees are important to the profession in assuring the quality of service delivered to their clients.

Certified Public Accounting (CPA) is one of the most important sectors in the accounting profession. CPA firms used to be accounting and auditing service providers. With the changes in the profession, CPA firms have transformed themselves into commercial businesses that sell managerial consulting and other services. The American Institute of Certified Public Accountants (AICPA) has developed programs such as Accreditation in Business Valuation (ABV), Personal Financial Planning (PFP) and the Certified Information Technology Professional (CITP) to add value to the profession. Revenues generated from consulting have increased and caused firms to shift some emphasis away from traditional auditing and tax practices. Mergers and acquisitions are common for firms to cope with the increased competition

and greater client service diversification. To respond to increased market competition and the complex environment, CPA firms seek to maximize revenue through multi-disciplinary practices (MDP). Shamis (2000) suggests four strategies to implement MDP: (1) Merge, (2) Align, (3) Retrain, and (4) Hire. During the past ten years, we have seen medium-sized and large accounting firms go through mergers and reorganizations to gain a competitive advantage in the industry. Effective internal human resource management, on the other hand, is an important MDP strategy to minimize cost and maximize long-term profit.

In addition to the public sector, professionals in the private accounting sector-corporate, government, or not-for-profit organizations face changes due to new regulations, globalization of business, and technology improvement. High employee turnover is a continuing problem, especially for accounting knowledge workers with vested capital in expertise and skills. The capital costs involved in hiring and retaining valuable employees are very expensive. Many organizations regard retaining competent and committed accounting professionals as one of the major human resources functions. Employee work attitudes and perceptions in commitment, satisfaction and propensity to remain, especially in the international framework, are linked to the performance of individual and organization.

Effective management is essential for survival. Management is responsible for fostering a working environment that respects individual needs and promotes professional development for employees. With the instability in the economy, firms should focus on management practices, particularly with regard to employee productivity, cost savings, and efficiencies.

Statement of the Problem

Turnover has been and continues to be a phenomenon of great interest to organizational researchers (De Luca & Betts, 2005). There could be many reasons to the high turnover problem. It is important to clarify employee concerns for the development of effective retention strategies.

Accounting professionals are knowledge workers who work for a living at the tasks of developing or using knowledge. They accumulate intellectual capital based on their technical skill and managerial experiences. The market values these expertise and professional certification. Job opportunities increase as one's vested capital increases.

In the public accounting profession, there is an up-or-out policy. CPA firms usually recruit college graduates and train them at the staff level. Young professionals usually stay with the firm to meet the experience requirement for certification. Accountants leave CPA firms after two to six years of tenure, especially at the senior level. As their careers progress, some leave public practice for the private sector for better compensation or better life quality. Those who choose to stay in public accounting pursue careers as managers and, eventually, as partners. In 1990 AICPA survey statistics indicate that only 5% of staff accountants advanced to partner. Lander, Reinstein, and Henson (1993) surveyed CPAs who stayed in the public accounting profession and those who left. Results show those who left were not satisfied with their relationship with supervisors, coworkers and subordinates in CPA firms. Effective human resource strategy in retaining valuable employee is an important attribute to successful accounting practices.

These departures cause frustration to the management and distress to the remaining staff, and it is an added expense to the firm (Fusaro, Gaida, & Zimmerman, 1984). Such short tenure does not allow firms to recoup their investment in training, nor does it allow them to socialize the

recruits into the firm's culture and place them as higher-level "alumni" in client firms (Lander, et al., 1993). The accounting profession is particularly concerned with recruiting high quality candidates (Collins, 1987; Holdeman, Aldridge, & Jackson, 1996) and training them to act professionally (Bedford, 1988; Goetz, Morrow, & McElroy, 1991). The Enron implosion wreaked more havoc on the profession than any other case in U.S. history (Thomas, 2002). The accounting profession is worried about not being able to recruit enough professionals to fill the need after many scandals and the negative publicity in these couple of years (AOMAR, 2002).

Accounting work is team oriented. Professional and personal support from peers, counselors and mentors are as important in solving problems as professional and technical skills. Numerous studies have investigated the human resource management concerns for accounting professionals, such as staff performance, work attitudes, job satisfaction, professional and organizational commitment, and turnover (Apostolou, Pasewark, & Strawser, 1993; Aranya, Lachman, & Amernic, 1982; Fusaro, et al., 1984; Lander et al., 1993; Norris & Niebuhr, 1984). Supervisor-subordinate and team-member relationships, therefore, merit further study to learn more about their relationship to organizational commitment since, according to Nystrom (1990) very little research has examined leader-member exchange (LMX) and organizational commitment in business settings. Future research on LMX should expand from the analysis of independent dyads (a leader and a member) to group and network levels of interacting collectivities (Graen & Uhl-Bein, 1995). Because the nature of the work in accounting is team-oriented, team-member exchange (TMX) is an appropriate way to extend previous research. No previous studies on LMX and TMX in relation to organizational commitment, job satisfaction and employee turnover for professional knowledge workers were found in an extensive review of the literature. Hence, it was the intention of this study to fill this gap in the research. The

challenges for management includes fostering organizational commitment and bringing employee's personal beliefs into congruence with the mission, goals, and values of the organization in order to solve the turnover problem, as suggested by many researchers (Allen & Meyer, 1996; Larson & Fukami, 1984; Mathieu & Zajac, 1990; Tett & Meyer, 1993).

Purpose of the Study

This purpose of this study is to investigate the role of leadership for the accounting knowledge workers, specifically how the quality of LMX in conjunction with TMX relates to employee work attitudes and perceptions in terms of organizational commitment, job satisfaction and turnover intention. This study utilizes the three dimensions of organization commitment articulated by Allen and Meyer (1996) in order to identify how each form is related to LMX and TMX. Thus, the results may give managers some insight into the dynamics of collaborative environments that satisfy individual needs and promote ongoing growth and development for employees. This study hopes to make an incremental contribution by generalizing characteristics about other types of professional knowledge workers. The conclusion may also help managers meet the challenges of competitive businesses and support human resource processes as hiring, training, promoting and retaining valuable employees. In turn, this will meet one's goal of pursuing professional careers that are personally and professionally satisfying.

Core Theory

Leader-member exchange (LMX) has theoretical roots in two distinct streams of research: role theory and social exchange theory. Role theory describes the roles of individuals in organizations. Graen (1976) and his colleagues extended role theory to analyze reciprocal

relationships between a leader and a member, and called it vertical dyad linkage (VDL) theory. It was subsequently renamed by Graen, Novak, and Sommerkemp (1982) as leader-member exchange (LMX). Social exchange theory (Blau, 1964) differentiates between social and economic exchanges. Social exchanges involve high levels of obligation, gratitude and trust. LMX adopts social exchange's view on quality and reciprocal relationships.

Leader-member exchange differs from other leadership approaches in its unique focus on the vertical linkages that leaders form with followers/members. Two types of exchange were initially identified: high-quality relationship with in-group members and low-quality relationships with out-group members. In-groups involve mutual exchanges that go beyond the formal employment contract and mutual trust, respect, liking, and reciprocal influence. Out-groups, on the other hand, involve exchanges based on the formal employment contract. A subordinate in the out-group is less compatible with the leader and unwilling to take on new and different job responsibility. Low LMX employees receive less challenging assignments, get fewer promotions, and experience slower career progress than those in the in-group (Graen & Scandura, 1987; Graen & Uhl-Bien, 1995). Positive LMX relationships generate favorable organizational outcomes such as organizational commitment, faster career progress, job satisfaction and organization citizenship behavior. As an extension of LMX, team-member exchange (TMX) is explored in this study to assess team dynamics and understand their importance to social exchange relationships in the accounting profession. TMX describes the effectiveness of the working relationships and the reciprocity between a member and his/her peer group.

The other core theory for this research is the three-component conceptualization of commitment developed by Meyer and Allen (1991). They identified three common themes

among the conceptualizations of commitment, affective, continuance and normative commitment. Affective commitment is characterized by emotional attachment to, identification with, and involvement in the organization. Continuance commitment perceived as the cost associated with leaving an organization by giving up seniority and vested interest. Finally, normative commitment reflects a belief that it is one's moral obligation to stay with the organization (Meyer & Allen, 1991). According to this model, employees may experience varying degrees of the three forms of organizational commitment.

Research Questions

The following questions are posed in this study of the accounting profession:

1. Are leader-member exchange and team-member exchange positively related to affective, continuance, and normative organizational commitment in the accounting profession?
2. Are leader-member exchange and team-member exchange positively related to employee job satisfaction?
3. Does organizational commitment mediate the relationship of both leader-member exchange and team-member exchange with job satisfaction?
4. Is employee job satisfaction negatively related to turnover intention among accounting professionals?
5. Are the three dimensions of organizational commitment, affective commitment, continuance commitment and normative commitment, negatively related to turnover intention for accounting professionals?

6. Does employee job satisfaction mediate the relationship of the three dimensions of organizational commitment, affective commitment, continuance commitment and normative commitment, with job satisfaction?
7. Is leader-member exchange positively related to team-member exchange?

Definition of Terms

For the purpose of this study, the following terms are defined as they are used in the context of this research:

Leader-member Exchange (LMX): Leadership theory that emphasizes interactions between leaders and subordinates in a work unit. It is a revised term for "vertical-dyad linkage" (VDL).

In-group: Members of a work unit who develop high quality of leader-member exchange relationships with the supervisor, usually treated better by their supervisor with more latitude, support, and attention.

Out-group: Members of a work unit, who experience low quality of leader-member exchange relationships with the supervisor, usually treated less favorably than the in-group members.

Team-member Exchange (TMX): The working relationship and reciprocity between a member and his/her peer group. The quality of TMX represents reciprocal behaviors such as willingness to assist others; share ideas and feedback; share relevant information, offer help, and recognize peer group inputs and accomplishments.

Organizational Commitment (OC): represents a strong belief in an acceptance of the organization's goals and values, a willingness to exert considerable effort on behalf of the organization, and a definite desire to maintain organization membership (Porter, Steers, Mowday, & Boulian, 1974).

Affective Commitment (AC): refers to the employee's emotional attachment to, identification with, and the employee's emotional attachment to, identification with, and involvement in the organization. Employees with a strong affective commitment continue employment with the organization because they want to do so (Meyer & Allen, 1991).

Continuance Commitment (CC): refers to an awareness of the costs associated with leaving the organization. Employees whose primary link to the organization is based on continuance commitment remain because they need to do so (Allen & Meyer, 1991).

Normative Commitment (NC): reflects a feeling of obligation to continue employment. Employees with a high level of normative commitment feel that they ought to remain with the organization (Meyer & Allen, 1991).

Summary

Organizations are adapting effective management strategies in the face of increased market competition and complex business environments. Chapter I presented the background and some key issues and problems in accounting profession. Effective human resource management practices in hiring, training, and retaining valuable employees are important to the profession in assuring the quality of service delivered to their clients. As suggested by many practitioners,

management is responsible for fostering a working environment that respects individual needs and promotes professional development for employees. This study examines LMX, TMX, and OC and their relationships to job satisfaction and turnover intention. The results of this study can enhance management's understanding of group network exchange relationships and the value of congruence among team members and all employees and their organization.

Chapter II provides a review of literature, including the theoretical framework of the study, the significant related theories and the current research. Chapter III describes the research methodology for this study by presenting the research design, measures, sample collection procedures, and data analysis techniques. Data analysis results and findings will appear in Chapter IV. Finally Chapter V presents summary of findings, implications for managers, theoretical and methodological contributions, limitations of this study and recommendations for future research, and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This chapter reviews the literature relevant to this study that explores interpersonal relationships between leaders and members and among team members as they related to organizational commitment, job satisfaction and turnover. The model for this study originated with leadership process depicted in Figure 1: Process Definition of Leadership, which describes the reciprocal interaction of leaders and members and the quality of relationships among group members. This model was expanded to incorporate Team-member exchange (TMX) as an extension of Leader-member exchange (LMX) and links them to organizational commitment and job satisfaction as antecedents of intention to leave.

In contrast to the average leadership style (ALS) approach, leader-member exchange research (Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975) focuses the importance of relationship quality in leaders' attributes and behaviors. Graen and his colleagues describe the differentiated relationships that leaders develop with each their followers. LMX theory evolved to provide guidelines for generating more effective leadership by developing and maintaining mature leadership relationships (Graen & Uhl-Bien, 1991). Since its inception in 1975, through four stages of development, research shifted from analyzing relationships within groups and within dyads to focus on personal interactions in combinations of dyads, groups and networks (Graen & Uhl-Bien, 1995). This study builds on Graen and Uhl-Bien's recommendation to examine LMX in networks by adding the construct of team-member exchange (TMX) to LMX. It also links these relationships to staff attitudes and perceptions in terms of organizational

commitment, job satisfaction and turnover intention.

This chapter reviews the literature in this sequence. The first section provides the background of LMX and TMX by summarizing the major approaches to the study of leadership (trait theory, style approach of leadership, contingency theory, situational leadership theory, path-goal theory, and transformational leadership theory). It then discusses leader-member exchange theory, and its extension in team-member exchange. Then it summarizes the relevant literature on organizational commitment and its consequences (outcomes). The next section describes studies that incorporate LMX, TMX, organizational commitment and job satisfaction, and link them to their consequences including intention to leave. The final section is a summary for this chapter.

Leadership and Leadership Studies

There are almost as many definitions of leadership as there are persons who have attempted to define the concept (Stogdill, 1974). Nevertheless, a common component to nearly all descriptions is that leadership is an influence process that assists groups and individuals in moving goal attainment (Northhouse, 2001). In modern business settings Yukl (1998) defines leadership as traits, behavior, influence, interaction patterns, role relationships, and occupation of an administrative position. Since leadership involves the process of a leader affecting followers and being affected by them, this study focuses on the interaction of leaders and members within an organization as depicted in Figure 1: Process Definition of Leadership.

Leadership studies involve a broad spectrum of approaches, including goal-setting by the group or organization, follower motivation, organization of teamwork and enlistment of support from out-group people (Yukl & Van Fleet, 1994). The research on leadership in organizations is

extensive and multidimensional. Many theories address different aspects of leadership but there is little cohesion among the theories that helps

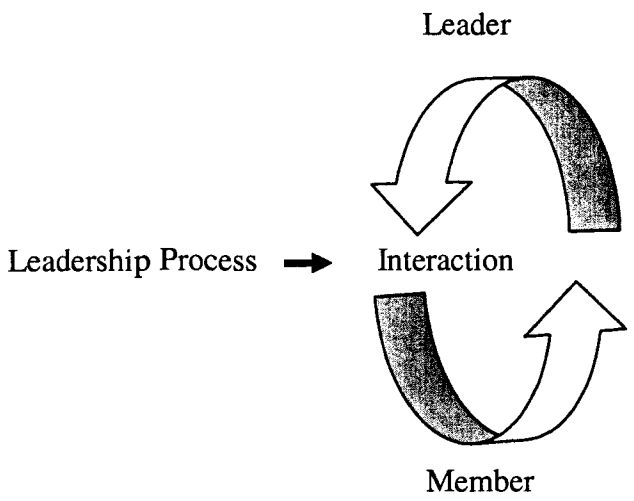


Figure 1: Process Definition of Leadership

Source: Northouse, (2001), p 5.

us understand how they are interrelated (Graen & Uhl-Bien, 1995). Some studies focus on a leader's personality, some on group processes, and others on leader behavior (Bass, 1990), and others on leader behavior (Bass, 1990). One categorization of research proposes that there are three major types of leadership research (1) trait approach of leadership, (2) effective leadership approach, and (3) leader-member exchange approach. Although each sub-field has its own domain and they sometimes overlap and interact, each one contributes distinct applications of leadership to organizational settings. The following section summarizes leadership studies with an overview of approaches in the US: trait approach, effective leadership, and leader-member exchange.

Trait Approach to Leadership

Trait theory is the first approach to the study of leadership in the U.S. and emerged during the early 20th century. It sought to identify the innate qualities and characteristics possessed by a leader, based on the "great man" belief. Some of the central traits identified by various researchers are intelligence, self-confidence, determination, integrity, and sociability (Northhouse, 2001). The trait approach was criticized for its over-simplicity. However, it does provide an in-depth understanding of the individual leader component in the leadership process. In organizational settings, it can be used for personal awareness and development, or personality assessment as an individual assessment measure. Recently there is a renewed interest in the importance of traits with regard to visionary and charismatic leadership (Bass, 1990; Bennis & Nanus, 1985; Nadler & Tushman, 1989; Zaleznik, 1977).

Effective Leadership Approach

This approach focuses on behaviors by examining what leaders actually do in the workplace; more specifically, it tries to identify and measure relevant leadership actions and patterns of behaviors that lead to high subordinate productivity and morale (Dorfman, 1995). Several lines of research emerged including the style approach, contingency theory, situational leadership theory, path-goal theory, and transformational leadership theory. A brief summary of each is presented in the following paragraphs.

The style approach focuses on two types of leader behavior: task behaviors and relationship behaviors and how leaders combine the two to influence others. It is represented by the Ohio State University studies (Bowers & Seashore, 1966; Fleishman, Harris & Burtt, 1955; Stogdill & Coons, 1957), the University of Michigan studies (Kahn & Katz, 1960; Likert, 1961), and Blake and Mouton's (1964) Managerial Grid.

The contingency approach shifted attention from leader activities/behavior to analyze the situation. A major contributor was Fiedler (Fiedler, 1964, 1967; Fiedler & Garcia, 1987) who suggests that effective leadership is characterized by "leader-match", that is, the fit between a leaders' style and the characteristics of situation. Fiedler (1967) introduced the Least Preferred Coworker (LPC) scale which categorized the leader's style as task motivation (low LPC) or relationship motivation (high LPC), and three contingency dimensions of leader-member relations, task structure, and position power. This theory provides guideline as to the type of leadership that will most likely to be effective in a particular combination of situational contexts.

The situational leadership approach, developed by Hersey and Blanchard (1969), applied the two leadership styles (directive and supportive) to another set of situational contexts. These two styles of leadership could be reclassified as four-dimensional: delegating, supporting, coaching, and directing. The contingency situation varies according to employees' relative competence and commitment. Effective leaders diagnose where subordinates are on the developmental continuum and adapt their leadership styles to match the situation.

The path-goal theory recognizes subordinates' needs and goals, and suggests that leaders should motivate subordinates by helping them define goals, clarifying the path, removing obstacles and providing resources for achieving success and satisfaction. Derived from expectancy theory, path-goal theory identified four types of leader behaviors: directive, supportive, participate and achievement-oriented (House & Mitchell, 1974). Effective leaders choose appropriate leadership styles to fit a subordinate's need for affiliation, preference for structure, desire for control, or self-perceived level of task ability, depending on the task characteristics.

Transformational leadership theory involves the leader's assessing followers' motives, satisfying their needs, and treating them as full human beings (Northouse, 2001). In the process of changing and transforming an individual or a group, the leader integrates charismatic and visionary leadership in ways that influence followers' values, ethics, standards, and long-term goals. Several scholars made major contributions to understand transformational leadership. Burns (1978) first distinguished between the two types of leadership: transactional and transformational. He identified transformational leadership as the process whereby an individual engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower (Northouse, 2001). Bass (1985) proposed a model of transformational and transactional leadership with four transformational dimensions: idealized influence and charisma, inspirational motivation, intellectual stimulation and individualized consideration. Bennis and Nanus (1985) identified four strategies used by leaders in transforming organizations: vision, social architects, trust and creative development of self through positive self-regard. The Multifactor Leadership Questionnaire (MLQ) was developed by Bass and his colleagues to measure transformational, transactional and laissez-faire leadership and three outcomes: employee extra effort, leader effectiveness and satisfaction with leadership. Even though transformational leadership is criticized for its lack of conceptual clarity and over simplicity, this approach provides a framework for understanding leadership beyond the traditional transactional model.

Leader-member Exchange Theory

The above-mentioned leadership theories either focus their analyses on the level of the leaders (e.g., trait theory, style theory, and transformational leadership theory), or concentrate

the analyses on the followers and the contextual factors (e.g. contingency theory, situational leadership, and path-goal theory). Leader-member exchange (LMX), in contrast, integrates leader and follower perspectives by identifying the importance of the quality of reciprocal behaviors between a leader and a member, or vertical dyad, thus uniquely focusing on the interaction process of the leader-member relationship.

Leader-member Exchange and Team-member Exchange

First proposed by Dansereau, Cashman, and Graen (1973), Graen and Cashman (1975), Dansereau, et al. (1975), and Graen (1976), LMX theory focused on the supervisor-subordinate vertical relationship. It is defined as: "a working relationship that is characterized by the physical or mental effort, material resources, information, and/or emotional support exchanged between the leader and the member" (Liden, Sparrowe, & Wayne, 1997, p 48).

LMX derives, in part, from role theory that attempts to determine how individual roles are defined and how an individual behaves within the parameters of roles within an organization. Katz and Kahn (1966) emphasize the leader's role in the role definition process for the members, and they suggest that the leader is the most influential role sender; the leader communicates a set of expectations (role expectation) regarding the appropriate role behavior of the member. The member receives the message (received role), and may modify his or her role behavior and transmits feedback to he leader (monitored behavior). Members in the organization are expected to behave in accordance with the roles for their positions.

Graen (1976) extended role theory to three phases of the socialization process between supervisor and subordinator: (1) role taking: the leader communicates the desired role to the member (2) role making: the relationship continues to develop and both parties contribute to

define the role of the member, and (3) role routinization: the nature of the exchange becomes routine and established. Graen and his colleagues' research on vertical dyad linkage specify that the member holds negotiation latitude in several manners in addition to resisting the sent role. Dansereau et al. (1975) and Graen and Cashman (1975) examined negotiating latitude as a continuum: high or low negotiating latitude leading to differential leader behavior throughout the relationship. In LMX, initially called vertical dyad linkage (VDL) theory, the superior-subordinate relationship is viewed as a social exchange or a negotiated transaction (Burns & Otte, 1999).

The basic presupposition of LMX theory is that effective leadership processes occur when leaders and followers are able to develop mature relationships and thus gain access to the many benefits they bring (Graen & Uhl-Bien, 1991). Leaders, by the virtue of their "linking pin" position, have the power to distribute material resources, development opportunity, and intangible resources and can provide loyalty, emotional support and respect to their subordinates (Dienesch & Liden, 1986). Each leader-member relationship has unique characteristics. Thus, the relationship between the two, rather than the work group or the individual member, is the center of analysis. Graen et al. (1982) renamed VDL as leader-member exchange (LMX).

Researchers classified two types of relationships between leader and subordinate: the in-group and the out-group. Subordinates becoming part of the in-group is based on how they involve themselves in expanding their role responsibilities and negotiating with the leader. These negotiations involve exchanges in which subordinates do certain activities that go beyond their formal job descriptions, and the leader, in turn, does more for these subordinates. Relationships with the in-group individuals are bonded by mutual trust, respect, liking, and reciprocal influence. The out-group members are those who perform duties based on the formal employment contracts.

Relationships within them are noted as formal communication according to their job descriptions. Subordinates in the out-group are less compatible with the leader, unwilling to take on new and different job responsibilities, and usually just come to work, do their job and go home.

Early LMX research primarily addressed the nature of the differences between in-groups and out-groups (Northhouse, 2001). Graen and Uhl-Bien (1995) identified the four stages of LMX research that evolved over the past 25 years in their comprehensive review article. Stage one research found that leaders developed differentiated relationships with their subordinates, a departure from the average leadership style (ALS) approach to leadership which assumes that leaders display consistent behavior toward all subordinates in their work unit (Schriesheim, Castro, & Cogliser, 1999).

The second stage of LMX theory development involves the investigation of characteristics of LMX relationships and related organizational variables, both as antecedents and outcomes (Graen & Uhl-Bien, 1995). The development of LMX is influenced by characteristics and behaviors of leaders and members (such as interactive communication patterns, leader-member value agreement, subordinate loyalty, influence tactics, member affect about the relationship, and member ability). The quality of leader-member exchange is positively related to desired outcomes for leaders, followers, groups and the organization in general. High quality leader-member exchanges are positively associated with subordinate job satisfaction (Graen, Liden, & Hoel, 1982; Major, Kozlowski, Chao, & Gardner, 1995; Schriesheim, Neider, Scandura, & Tepper, 1992; Stepina, Perrewe, & Hassell, 1991; Wilhelm, Herd, & Steiner, 1993;), favorable performance evaluation (Graen, et al., 1982; Wayne & Ferris, 1990), task performance (Graen, et al. 1982; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997), frequency of promotions and career progress (Wakabayashi & Graen, 1984; Wakabayashi, Graen, & Graen,

1988), greater organizational commitment (Kinicki & Vechio, 1994; Nystorm, 1990; Maslyn & Fedor, 1998; Major, et al., 1995; Seers & Graen, 1984; Shore & Wayne, 1993), and lower turnover (Ferris, 1985; Graen, Liden,& Hoel, 1982; Maslyn, et al., 1998; Major, et al., 1995; Vecchio & Gobdel, 1984; Vecchio, Griffeth, & Hom, 1986). Thus, LMX offers a direction for management in developing leadership as a relationship with employees, which, in turn, improves their leadership ability and leads to positive attitudes and desired organizational outcomes.

The third stage of LMX research explores the process of leadership making (Graen & Uhl-Bien, 1995) by focusing on developmental variables in the process of building dyadic partnership relationships. Still, research on the LMX developmental process is somewhat limited, and the leader and subordinate behaviors involved in the developmental process are not fully understood (Dienesch & Liden, 1986). Graen and Uhl-Bien's (1991) Leadership Making Model described three phases of the leadership relationship life cycle. The stranger phase - the leader and member interact formally within the prescribed organizational role. The acquaintance phase- career oriented social exchange starts to develop into quality of leader-member exchange. The mature partnership phase-reciprocity behaviors result in trust, respect and obligation between the leader and member. Leadership making emphasizes that a leader should build good dyad relationships with almost all of his or her subordinates, without differentiating between in-group or out-group members. Graen and Uhl-Bien (1991) recommend that leaders create a special relationship with all subordinates, similar to the ones with in-group members. Leaders are encouraged to create opportunities and show respects for every subordinate to build good relationship with the leader to enhance networking and partnership throughout the unit. This ultimately benefits both the organization and the individual by facilitating mutual goal achievement.

Research in this third stage incorporated additional variables to understand the LMX

development process. It suggested that employee performance and the degree of compatibility between leader and member determined the type of LMX that ultimately formed (Dienesch & Liden, 1986; Graen & Cashman, 1975). It proposed that demographic variables, such as age, gender, race, education, company, and job tenure could affect LMX (Tsui & O'Reilly, 1989). In a longitudinal study Liden, Wayne, and Stilwell (1993) identified expectations, job performance, and compatibility as key predictors of early LMX development within newly formed dyads.

The fourth stage of LMX research examined dyads within groups, focusing on the process of assembling dyads into groups and into networks (Graen & Uhl-Bein, 1995). Piror research was often limited to dyads within work groups and independent dyads. In complex organizations a leader frequently interacts with others in a variety interacting collectivities. Uhl-Bien and Graen (1992), therefore, urged that research focus on the system- level perspective of interdependent dyadic relationships, or network assemblies. Stage four is still in its infancy with very little empirical research at this level (Graen & Uhl-Bein, 1995). Schriesheim et al. (1999) noted that this final stage broadens the scope from the dyad to larger collectives, exploring how dyadic relationships are organized within and beyond the organizational system. Some preliminary work has begun in this area with an introductory foray into social networks as a way of explaining the structure of LMX relationships beyond the supervisor-subordinate dyad (Cogliser & Schriesheim, 2000, p508).

Seers (1989) expanded LMX to the work group or team level by developing the concept of team-member exchange (TMX) paralleling LMX. It depicts the quality and relationships, the reciprocal interactions between a team member and his or her peer group. TMX was subsequently tested in several studies (Major et al., 1995; Seers, 1989; Seers, Petty, & Cashman, 1995). The LMX construct was designed to jointly address employee role making and

supervisory leadership, and TMX construct was conceptualized to jointly address employee role making and work team dynamics (Seers, et al., 1995).

The quality of TMX describes reciprocity behaviors in terms of willingness to assist others, share ideas and feedback; to provide available information, help, and recognition to peer group members. TMX provides an alternative description of influences on followers' work attitudes and performance (Seers, 1989) and of their roles in the identification, commitment, and turnover rate of team members (Hellman, Witt & Hilton, 1993). Dose (1999) adapted Seers' (1989) measurement of TMX and explored the relationships between work value similarity and LMX/TMX. The results showed that perceived similarity on the work ethic and preference for the work environment were positively related to LMX but TMX was only positively related to the actual work value similarity. Dunegan, Tierney, and Duchon (1992) found that work group exchange (WGX) and is positively associated with work attitudes, perceptions of climate, efficiency, or performance. Both TMX and WGX focus on a member's relationship to his/her team as whole, based on the assumption that individuals can and do aggregate their perceptions of role episodes across members of the work group.

Another group exchange study identified coworker exchange (CWX), as the relationship one has with each member of his/her work group (Sherony & Green. 2002). It adapted the LMX-7 scale (Graen & Uhl-Bien, 1995) by rephrasing statements to gauge the respondent's assessment of his or her relationship with coworkers. A high quality CWX relationship is one that occurs between coworkers who report to the same supervisor that is characterized by mutual respect, trust, and obligation. Its underlying dimension and its measurement is similar to LMX (Sherony & Green, 2002). This research approach views leadership as various reciprocal influence processes among multiple individuals at different levels (Yukl & Van Fleet, 1994). Because the

nature of work in accounting is team-oriented, team-member exchanges may be a critical aspect in effective relationships and in intention to leave. Hence, it is incorporated into the present study.

Studies of vertical exchange have been criticized for their narrow focus on employees in lower-level jobs who typically work in the public sector, which may substantially underestimate the salience of vertical-exchange quality in business applications (Nystrom, 1990). This current study examines the theory in a competitive business environment, and in the service industry where human capital is the main investment and, hence, of great importance.

In summary, LMX theory provides clear direction for managers in enhancing effective leadership from a relationship perspective. The study of LMX theory has now evolved to applications to network systems within and beyond the individual and organizational levels.

Organizational Commitment

Organization commitment refers to an employee's attachment to an organization. The construct of organizational commitment is of great practical interest to both organizational behavior researchers and human resource practitioners. Committed people are more likely to remain with the organization and work toward organizational goal attainment (Mowday, Porter, & Steers, 1982). Nevertheless, there is little consensus regarding the specific definition of commitment in the academic literature. As noted by Mowday et al. (1982, p. 20) "researchers from various disciplines ascribed their own meanings to the topic, thereby increasing the difficulty involved in understanding the construct"

Early researchers sometimes viewed commitment as a side-bet (Becker, 1960) and described commitment as a function of the rewards and costs associated with organizational membership and the accumulated interest in binding one to a particular organization. Others

view commitment as binding the individual to behavioral acts that result when individuals attribute their attitude of commitment to themselves after engaging in behaviors that are volitional, explicit, and irrevocable (Kieslor & Sakumura, 1966; O'Relly & Caldwell, 1980; Salancik, 1977). Porter, et al., (1974) suggested that organizational commitment reflects an individual's willingness to work towards and accept organizational goals. In this context, commitment consists of: "(a) a belief in and acceptance of organizational goals and values, (b) the willingness to exert effort towards organizational goal accomplishment, and (c) a strong desire to maintain organizational membership."

A common theme of the various definitions and operationalizations of organizational commitment is the conceptualization of commitment as involving some form of psychological bond between employees and organizations. The next sections describe various classifications and distinctions developed by researchers to understand the dynamics of employee attachment to organizations, for example, the attitude-behavior dichotomy and the three-dimensional classification scheme of organizational commitment.

One popular classification approach to commitment into has two categories: attitudinal commitment and behavioral commitment (Bateman & Strasser, 1984; Mottaz, 1988; Mowday, et al., 1982; Salancik, 1977; Scholl, 1981; Staw, 1977). Mowday et al. (1982) describe attitudinal commitment in terms of the process by which people come to think about their relationship with the organization. In many ways it is a mindset in which individuals consider the extent to which their own values and goals are congruent with those of the organization. They then described behavioral commitment as the process by which an individual is locked into a certain organization and how he/she deals with this problem. Commitment attitudes lead to commitment

behaviors, which in turn reinforce commitment attitudes (Mowday, et al., 1982; Reichers, 1985). Thus, attitudes and behaviors reinforce each other.

While some researchers define organizational commitment as a single dimension, many view it as multi-dimensional (Angle & Perry, 1981; Dunham, Grube, & Castaneda, 1994; Hackett, Bycio, & Hausdorf, 1994; McGee & Ford, 1987). There are differences between employees' motivation to participate in an organization and motivation to produce beyond formal job requirements in the interests of the organization. Porter et al. (1974) also view organizational commitment in three constructs: a strong belief in an acceptance of the organization's goals and values, a willingness to exert considerable effort on behalf of the organization, a definite desire to maintain organizational membership.

Meyer and Allen (1990) developed a three-dimensional model of organizational commitment by synthesizing common themes in the existing literature. They view affective, continuance and normative commitment as distinguishable components rather than types of attitudinal commitment. They build on Mowday et al.'s (1982) work on employees' affective attachment to an organization as affective commitment and on Becker's (1960) side-bet theory which describes commitment as less affective and more concerned with accumulated investment, such as tenure and pension, that bind employees to an organization. Meyer and Allen (1984) named the side-bet definition of commitment "continuance commitment." Meyer and Allen (1984) identify normative commitment as a willingness to remain with an organization due to a sense of moral obligation. This third component derives from one's internalization of normative pressures from familial, cultural and/or organizational socialization to stay with an organization.

Meyer and Allen (1991, p. 67) define the three components of organizational commitments:

Affective commitment refers to the employee's emotional attachment to, identification with, and the employee's emotional attachment to, identification with, and involvement in the organization. Employees with a strong affective commitment continue employment with the organization because they want to do so.

Continuance commitment refers to an awareness of the costs associated with leaving the organization. Employees whose primary link to the organization is based on continuance commitment remain because they need to do so.

Finally, normative commitment reflects a feeling of obligation to continue employment. Employees with a high level of normative commitment feel that they ought to remain with the organization.

Employees can experience each of these psychological states in varying degrees. Some employees feel a strong need and an obligation to remain in an organization, but they choose not to; others have strong desire to remain in an organization without feeling the need or obligation to do so. The "net sum" of a person's commitment to the organization reflects each of these separable psychological states (Schappe & Doran, 1997). The most widely used measure, the Organizational Commitment Questionnaire (OCQ, Porter et al., 1974), is thought to measure the affective component of the three-component view of organizational commitment (Aven, Parker, & McEvoy, 1993; Dunham et al., 1994).

Many researchers utilized this model to study the behavioral consequences of commitment (Schappe & Doran, 1997; Sims & Kroeck, 1994; Tepper, 2000: Yousef, 2000; Wahn, 1998). Given the three components of commitment as independent variables, research evidence supports that they are correlated with such consequences as retention, job performance, organizational citizenship behavior (OCB). However, until recently, most researchers focused on work-related consequences of affective commitment, with very little emphasis on continuous commitment and normative commitment.

This present study investigates two correlates of organizational commitment - employee job satisfaction and turnover intention, since they are major concerns in many organizations. We define job satisfaction here as one's affective attachment to the job viewed in its entirety. Turnover is costly to organizations, and commitment is generally assumed to be a desirable quality that should be fostered in employees (Meyer, Allen, & Topolnytsky, 1989). Research findings consistently confirm the negative correlation between organizational commitment and employee intention to leave/actual turnover (Allen & Meyer, 1996; Larson & Fukaml, 1984; Mathieu & Zajac, 1990; Tett & Meyer, 1993). Significant relations exist between the three dimensions of commitments and intention to stay/leave variable and the correlation is strongest for affective commitment (Allen & Meyer, 1996). However, one recent finding applying structural equation modeling techniques in overall casual-effect relationships is contradictory. Stinglhamber and Vandenberghe (2003) demonstrated that affective organizational commitment did not influence employee actual turnover.

Still, research clearly demonstrates that commitment is multi-faceted in nature. There are other foci commitment, such as commitment to the work group, managers, occupation, profession, career, and union. Thus, commitment can be directed to many abstract systems such

as labor unions and careers (Meyer et al., 1998) and it is also a multidimensional construct. People are nested in a variety of collectivities in which they are simultaneously members of at least two groups, one encompassed within the other (for example, work groups and unions) (Lawler, 1992). Reichers (1985) also recognizes that employees experience several different commitments to the goals and values of multiple groups. Research on commitment has been extended to commitment to unions (Fullagar & Barling, 1989; Gordon, Philpot, Burt, Thompson, & Spiller, 1980), employment (e.g., Jackson, Stafford, Banks, & Warr, 1983), professions (e.g., Aranya, Pollock, & Amernic, 1981; Morrow & Wirth, 1989), careers (e.g., Arnold, 1990: Blau, 1985, 1988, 1989), among many others.

Empirical Studies on Leader-Member Exchange, Team-Member Exchange and Organizational Commitment

A large volume of research supports the positive relationships among LMX, TMX and organizational commitment and links them negatively to intention to leave. Meta-analysis found that LMX is consistently correlated with member job performance, job satisfaction (overall and supervisory), commitment, role perceptions, and turnover intentions in a meta-analysis (Gerstner & Day, 1997).

Kinicki and Vecchio (1994) tested a sample of 138 bank loan officers, and found that leader-member exchange mediated the relationship between employee locus of control and organizational commitment while employee locus of control correlated with leader-member exchange. The quality of supervisor-subordinate relationships correlates positively with employee organizational commitment. In a study of 1,370 employees from four organizations,

Maslyn and Fedor (1998) suggested that LMX is a significant predictor of organizational commitment and turnover intention.

Criticisms of studies of vertical exchange center on their narrow focus on employees in lower-level jobs or limited to the public sector (Cogliser & Schriesheim, 2000, Dienesch & Linden, 1986; Miner, 1980; Vecchio & Gobdel, 1984) and the absence of studies in business settings. Nystorm (1990) studied a sample of 171 alumni in a US executive MBA program. Participants and their colleague (managers) were all middle and upper managers in business (alumni from public sectors were excluded). In addition to vertical exchange and organizational commitment, this study assessed years in the position, seniority and job level. Results demonstrate that quality of vertical exchange and organizational commitment are positively related for American business managers. This relationship remains significant after taking into account the above four situational variables.

In an effort to better understand the development of exchange process between supervisor/subordinator and member/group, Major et al. (1995) studied 248 new hires before organizational entry and four weeks after entry. They found that the early development of LMX and TMX were significant predictors of socialization outcomes-organizational commitment, turnover intention and job satisfaction.

Dose (1999) studied work value similarity relationships using LMX and TMX and found that LMX is positively correlated to TMX, but that LMX is positively related to perceived work value similarity and TMX is positively related to actual work value similarity (Dose, 1999).

Lam (2003) examined the interactive effects of LMX and TMX on assimilation process for newcomers in a sample of 417 new employees in hotels, travel agencies, and airlines. Results demonstrated that LMX produced a moderating effect on turnover intentions and TMX produced

a moderating effect on organizational commitment in the relationships between unmet expectations of job factors and socialization outcomes. This study extended LMX and organizational commitment to an interactionist perspective.

Recent research reports some apparently contradictory findings on the relationship between LMX and affective organizational commitment and turnover variable. For example, in Stinglhamber & Vandenberghes' (2003) longitudinal study of 238 alumni from a Belgian university with an average age of 31 years old respondents, affective organizational commitment did not influence actual turnover. Sherony and Green (2000) examined LMX and coworker exchange within 110 coworker dyads. Coworker exchange was measured using similar scales in LMX. They found that the quality of LMX is positively related to organizational commitment and job satisfaction. Greater diversity in coworker exchange (CWX) relationships was negatively related to organizational commitment, but it was unrelated to job satisfaction. Employees are satisfied with the pleasure found in the tasks performed at work, in spite of the level of commitment. Coworker exchange relationships are not as central to the work experience (Sherony & Green, 2000).

Summary

This chapter started with the premise that organizational leadership theory and research are useful for human resources practitioners and managers at all levels. It described how leaders and managers affect all employees, their relationships in the organization, the rules and procedures for how work is performed and subsequent problems and solutions for many performance issues.

Average leadership style (ALS) approach assumes that leaders behave in the same manner toward each group member reporting to the same leader, that leaders are homogeneous in their

perceptions, interpretations, and reactions toward employees (Graen & Cashman, 1975). Members' reactions are operationalized in terms of overall unit performance, average morale, and other relevant variables (Dienesch & Liden, 1986). Examples of leadership theories in this category are (1) trait theory, (2) style approach, (3) contingency and situational leadership. For example, situational leadership theory (SLT) explains that leadership is a result of time, place and circumstance; contingency theory tries to match leaders to appropriate situations for a given organizational context; path-goal theory argues that leaders should help their members define goals, clarify paths, remove obstacles and provide resources for achieving success and satisfaction with their organizations.

Leader-member exchange theory takes a different perspective and incorporates an operationalization of a relationship-based approach to leadership. It recognizes interpersonal attraction between a leader and a member (Dansereau et al., 1973; Graen & Cashman, 1975), as well as attention, support, and sensitivity (Dansereau et al., 1975). The vertical dyad linkage approach has employed negotiating latitude as its key variable and has focus on differentiated dyad in-groups as its level of analysis. LMX theory holds that leaders develop a unique relationship with each subordinate that are either high or low quality. High-quality LMX is characterized by mutual respect and trust and affords greater autonomy and assistance for the member in return for enhanced commitment and loyalty to the leader (Yukl & Van Fleet, 1994). Team-member exchange extends the LMX concept and describes the effectiveness of the working relationship and the reciprocity between a team member and his or her peer group. The LMX construct addresses employee role making and supervisory leadership, whereas the TMX construct addresses employee role making and work team dynamics (Seers, et al., 1995). Both LMX and TMX are empirically examined here in terms of their relationships to organizational

commitment, employee job satisfaction and employee turnover intention. Chapter III describes the methods to examine these relationships.

CHAPTER III

RESEARCH METHODOLOGY

Overview

This chapter presents the design of the study and the methodology to assess perceptions of leader behaviors and group member work dynamics, and related work attitudes in a sample of accounting professionals. The constructs include leader-member exchange, team-member exchange, organizational commitment, job satisfaction, and turnover intention. The proposed research model appears in Figure 2. This chapter also describes the research questions and hypotheses, survey instruments and validity and reliability estimates, the population and sample, and data collection and analytical review procedures, and assessing multicollinerity and composite indicators. The final section is a summary for this chapter.

Research Design

The accounting profession faces new challenges and is adapting many managerial strategies to cope with changes. Effective human resource management is a key element in the profession's reputation and success. High employee turnover is a continuing problem and firms are generally concerned with staff performance and employee attitudes such as job satisfaction and organizational commitment (Apostolou et al., 1993; Aranya et al., 1982; Fusaro, et al., 1984; Lander et al., 1993; Norris & Niebuhr, 1984). Many scholars suggest that organizations must make greater efforts to align employees' personal beliefs with the mission, goals, and values of the organization in order to resolve these issues (Allen & Meyer, 1996; Larson & Fukami, 1984; Mathieu & Zajac, 1990; Tett & Meyer, 1993). This study applies the three-component model of

organizational commitment, in conjunction with LMX, TMX and job satisfaction, to investigate their relationships to employee turnover intention among accounting professionals.

Accounting professionals are people oriented. Their relationships with peers, supervisors and mentors are often closely linked to and related to important organizational objectives and outcomes. The quality of relationships between group members and their leaders (as exemplified by LMX) and among group members themselves (as exemplified by TMX) is important aspects of how leadership in enacted in this profession. Ideally relationships are characterized by reciprocity in terms of contributing ideas, feedback, assistance, information, and recognition in supervisor/subordinate and in member/group interactions (Seers et al., 1995). LMX theory proposes that supervisors develop distinct relationships with individual members, which relationships can be classified broadly as either in-group or out-group. In-group members gain more access to tangible and intangible benefits than do members of the out-group. Both leaders' and members' characteristics and behavior affect communications, leader-member value congruence, loyalty, and influence tactics, and member affects, which in turn, influence the development of LMX. TMX is a parallel construct to LMX based on reciprocal relationships within peer groups (Seers, 1989).

By incorporating both LMX and TMX constructs in the research model this study extends the focus from the dyads to teams and networking suggested by Graen and Uhl-

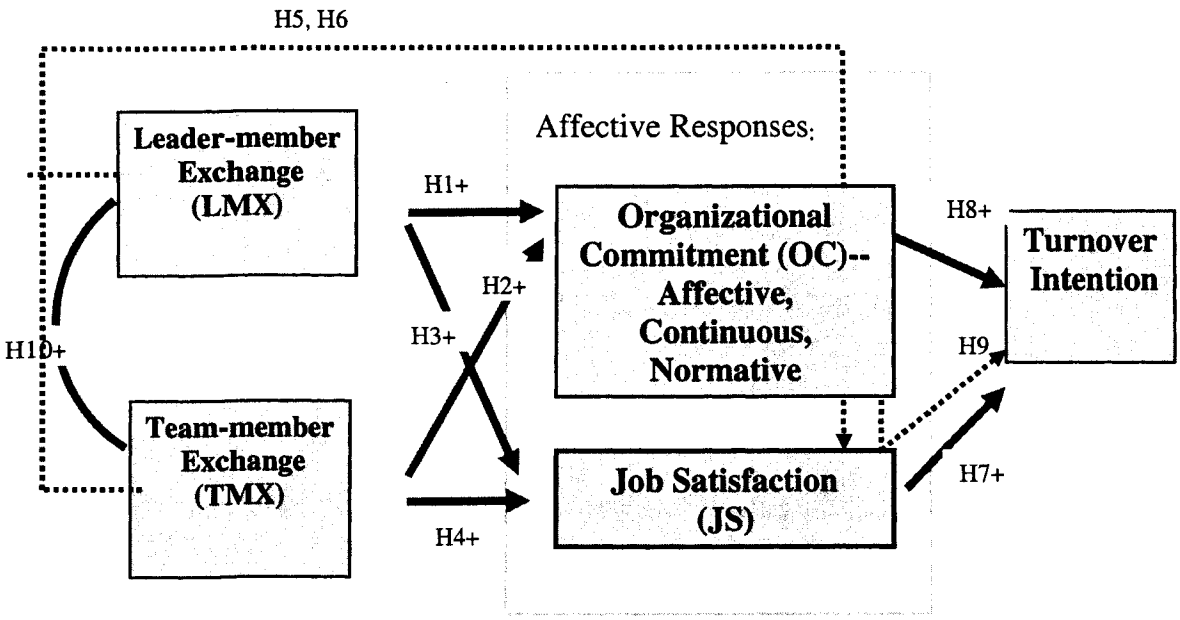


Figure 2: Proposed Research Model

(Dotted Lines Representing Mediating Effect)

Bien (1995). Thus, this study leverages the interactive relationship processes of leaders and teams to analyze how they relate to three forms of organizational commitment-AC, CC, and NC and to job satisfaction and ultimately, how they relate to intention to leave. Figure 2 presents the proposed research model. Hence, the results of this analysis should provide greater understanding of the interacting organizational behaviors among accounting professionals.

Research Questions

The following questions investigate various aspects of organizational behaviors in the accounting profession. Ten hypotheses are proposed corresponding to these research questions.

1. Are leader-member exchange and team-member exchange positively related to affective, continuance, and normative organizational commitment in the accounting profession?

2. Are leader-member exchange and team-member exchange positively related to employee job satisfaction?
3. Does organizational commitment mediate the relationship of both leader-member exchange and team-member exchange with job satisfaction?
4. Is employee job satisfaction negatively related to turnover intention among accounting professionals?
5. Are the three dimensions of organizational commitment, affective commitment, continuance commitment and normative commitment, negatively related to turnover intention for accounting professionals?
6. Does employee job satisfaction mediate the relationship of the three dimensions of organizational commitment: affective commitment, continuance commitment and normative commitment, with job satisfaction?
7. Is leader-member exchange positively related to team-member exchange?

Hypotheses

This study tests the above research questions with the following hypotheses concerning the relationships depicted in the proposed research model (Figure 2).

Hypothesis 1 is:

H01 Leader-member exchange is negatively related, or not related, to organizational commitment among accounting professionals.

HA1 Leader-member exchange is positively related to organizational commitment among accounting professionals.

Hypothesis 2 is:

H02 Team-member exchange is negatively related, or not related, to organizational commitment among accounting professionals.

HA2 Team-member exchange is positively related to organizational commitment among accounting professionals.

Hypothesis 3 is:

H03 Leader-member exchange is negatively related, or not related, to employee job satisfaction among accounting professionals.

HA3 Leader-member exchange is positively related to employee job satisfaction among accounting professionals.

Hypothesis 4 is:

H04 Team-member exchange is negatively related, or not related, to employee job satisfaction among accounting professionals.

HA4 Team-member exchange is positively related to employee job satisfaction among account professionals.

Hypothesis 5 is:

H05 Organizational commitment will not mediate the effect of leader-member exchange on job satisfaction.

HA5 Organizational commitment will mediate the effect of leader-member exchange on job satisfaction.

Hypothesis 6 is:

H06 Organizational commitment will not mediate the effect of team-member exchange on job satisfaction.

HA6 Organizational commitment will mediate the effect of team-member exchange on job satisfaction.

Hypothesis 7 is:

H07 Employee job satisfaction is positively related, or not related, to turnover intention among accounting professionals.

HA7 Employee job satisfaction is negatively related to turnover intention among accounting professionals.

Hypothesis 8 is:

H08 Organizational commitment is positively related, or not related, to intention to leave among accounting professionals.

HA8 Organizational commitment is negatively related to intention to leave in accounting professionals.

Hypothesis 9 is:

H09 Job satisfaction will not mediate the effect of organizational commitment on employee turnover intention.

HA9 Job satisfaction will not mediate the effect of organizational commitment on employee turnover intention.

Hypothesis 10 is:

H010 Leader-member exchange is negative related to, or not related to, team-member exchange among accounting professionals.

HA10 Leader-member exchange is positively related to team-member exchange among accounting professionals.

Instrumentation

The measures used in this study are adapted from existing scales. The constructs, their corresponding measures, and sources of measurement are listed in Table 1. The scales are described below along with references to validity and reliability estimates. The survey instruments appear in Appendix A. Requests and permissions to use instruments are included in Appendix C and Appendix D.

The LMX-7 scale (Scandura & Graen, 1984) is the most frequently used measure of leader-member exchange quality (Gerstner & Day, 1997; see Graen & Uhl-Bien, 1995 and Schriesheim et al., 1999 for reviews). Graen and Uhl-Bien (1995) revised the wording and increased the number of anchors on the response format from four to five. The LMX-7 is a global measure of LMX with internal consistency reliability of 0.91 (Cogliser & Schriesheim, 2000). This instrument is argued to contain three dimensions-respect, trust, and obligation, which are necessary in the process of building partnership in LMX (Graen & Uhl-Bien, 1995). Factor analysis will be conducted to verify the number of components contained in the scale. This study uses this scale to measure LMX as it is highly recommended by Graen and Uhl-Bien (1995) and Gerstner and Day (1997). It appears in Appendix A, Part 2.

Table 1: Summary of Survey Instruments

Constructs	Measurement Scales	Sources
Leader-member Exchange	LMX-7	Graen and Uhl-Bien (1995)
Team-member Exchange	TMX	Seers, Petty, & Cashman (1995)
Organizational Commitment	OC	Meyer, Allen, & Smith (1993)
Job Satisfaction	JS	Hackman & Oldham (1980)
Intention to leave	TOI	Colarelli (1984)

The ten-item Team-Member Exchange Quality Scale (Seers, et al., 1995) measures TMX. It assesses the reciprocal exchange quality between a group member and the work group, and it has an acceptable level of internal consistency (0.83, Seers, et al., 1995). Half of the items ask about what the member contributes to the team and the other half ask about what the member receives from the team. This is the only measure of TMX that this researcher found in an extensive search of the literature and has been used in several previous studies (Dose, 1999; Major, et al., 1995; Seers, et al., 1995). It is Part 3 of the questionnaire in Appendix A.

A revised measure of the three-component model of commitment-affective, continuance, and normative commitment (Meyer, Allen, & Smith, 1993) assesses organizational commitment; their validity and reliability estimates were reported by Meyer, et al. (1993) and confirmed by Clugston, Howell, and Dorfman (2000) using confirmatory factor analysis. It appears in Appendix A, Part 4.

The extent to which subordinates are satisfied with their jobs is assessed by three items from the general satisfaction scale of the Job Diagnostic Survey (JDS) by Hackman and Oldham (1980). This is a commonly used measure of overall job satisfaction and generated a coefficient alpha of 0.78 (Saks, Mudrak, & Ashforth, 1996). One of the items "I often think of quitting my job" is reverse coded and the reverse coding sign " ® " does not appear in the questionnaire distributed to respondents. It is Part 5 of the questionnaire in Appendix A.

Turnover intentions are measured with a three-item instrument by Colarelli (1984). The internal consistency estimate for turnover scale yielded a Cronback alpha of 0.82 (Ashforth & Saks, 1996). One of the items "I frequently think of quitting my job" also appears in the job

satisfaction scale, and it is repeated in this scale to maintain a minimum of three items in each scale. It is Part 6 of the questionnaire in Appendix A.

Data Collection Procedures

The purpose of this study is to investigate the role of leadership for knowledge workers in the accounting profession. A professional business fraternity for the certified public accountants (CPAs) was contacted and a local chapter in Florida agreed to participate. Correspondence with the organization appears in Appendix B. This organization frequently holds Continuing Professional Education (CPE) courses for members and non-members so that they can fulfill the continuing education requirement of certified public accountants or the education requirement of their employers if they are not certified. The questionnaires were distributed during these seminars. Since some attendees registered for more than one seminar, proper procedures were taken to ensure that each respondent complete the survey only once. A cover letter outlines the purpose of this study and stresses that the anonymity of response will be maintained. Demographic information such as sex, age, educational level, etc. is included in the first section of the questionnaire (Part 1, Appendix A).

Additional samples were obtained from accounting professionals attending master accounting program in a university in Florida. These are full time professionals in the accounting related field. The director of the master's degree in accounting gave permission to survey students. Correspondence with the program office also appears in Appendix B. The researcher personally distributed questionnaires in the same manner in the previous survey.

Analytical Review Procedures

Statistical procedures are used to establish the plausibility of the theoretical model. Multivariate techniques help to expand the researcher's capability in terms of explanatory ability and statistical efficiency. This study uses two multivariate techniques to test the component structure and hypotheses: factor analysis testing the component structure and structural equation modeling testing the hypotheses. These procedures used here involve the estimation of the degree to which the various explanatory variables seem to be influencing the dependent variables.

Factor Analysis

Factor analysis is a multivariate technique, which attempts to account for the correlation pattern present in the distribution of an observable random vector in terms of a minimal number of unobservable random factors (Giri, 2004). Factor analysis ensures the reliability of principle components using varimax orthogonal rotation. It is widely used in behavioral and social science research to ensure unidimentionality of the scales in the survey instrument. This type of analysis is referred to as exploratory factor analysis (EFA).

EFA is an exploratory mode to determine how and to what extent the observed variables (items) are linked to their underlying factors (Byrne, 2001, p. 5). EFA is used when links between the observed and latent variables are unknown or uncertain. The objective is to identify the minimal number of factors that account for covariation among the observed variables. These relations are presented by factor loadings without knowing which items measure the intended factors. There is no control over how the variables are loading on the factors. For each scale, factors must meet following criteria to be considered as principle components. This study utilizes SPSS 11.5 software program for exploratory factor analysis on the data collected.

1. Items with a low (<0.3) corrected item-total correlation were dropped. Items with negative inter-item correlations with others are reverse scored for the purpose of analysis.

2. Bartlett's test of sphericity is required to show the variance matrix contains significant correlation ($p<0.05$). Measures of sampling adequacy (MSA) or Kaiser-Meyer-Olkin (KMO), indicating the amount of variance in a variable accounted for by the other variables, must be greater than 0.5.

3. The correlation of each variable (or item in a scale) and a factor (the factor loading) must be greater than 0.5.

4. Finally, the eigenvalue, simply the column of squared loadings for a factor demonstrating that the factor contributes enough variance to equal that of a single variable, must be greater than 1.

Cronbach alpha coefficient is then used to assess the internal consistency (reliability) of the instruments with multiple items. A general rule of thumb is that a minimum acceptable level is 0.7 (Nunnally, 1976; Hair, Anderson, Tatham, & Black, 1998).

The percentage of variance criterion for factor analysis ensures the practical significance of the derived factors based on achieving a specified cumulative percentage of total variance extracted by successive factors. The cumulative percentage represents the extraction sums of squared loadings, that is, it explains at least a specified amount of variance. Hair, et al. (1998) suggest that 60%, sometimes even less, is regarded as satisfactory for social science where information is often less precise.

Structural Equation Modeling (SEM)

Structural equation modeling estimates the theoretical relationships in the interconnected hypotheses. It is a statistical procedure for investigating relations between sets of observed measurement variables and the underlying constructs they are designed to measure, that is, the unobserved latent variables. SEM is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001, p. 3). The underlying theories represent "casual" processes that generate observations on multiple variables (Bentler, 1989). The casual processes involved in SEM are presented by a series of regression equations. These equations are then modeled pictorially to enable a clearer conceptualization of the theory under study (Byrne, 2001). SEM is the only multivariate analysis technique that deals with multiple relationships between the dependent and independent variables (Maruyama, 1997). It should be noted that some people find the implication of the causality in SEM controversial.

SEM gained its popularity over the past 20 years in nonexperimental research by offering several advantages:

1) It takes a confirmatory, rather than exploratory, approach to the data analysis;

2) It provides explicit estimates of measurement error variance parameters so that such assessment and correction are possible for latent variables; and

3) It incorporates both observed and unobserved (latent) variables for estimating point and/or interval indirect effects.

LISREL (Joreskog & Sorbom, 1993), EQS (Bentler, 1989), and AMOS (Arbuckle, 1997) are the most widely known computer programs available in the market applying SEM concept. To test the proposed research model in Figure 2, SEM simultaneously estimates sets of theoretical relations using maximum likelihood estimation. Its advantage is that it can avoid the bias of piecemeal testing.

This study utilizes AMOS Version 5.0 to conduct systematic empirical investigations of equivalent models. The AMOS 5.0 (Arbuckle & Wothke, 2004) program uses iterative estimations of hypothesized and unhypothesized relationships between endogenous and exogenous variables. The researcher is interested in bivariate relations that were statistically significant at 0.01 levels and contribute fit statistics to a model. Single relations were deleted if they did not meet this requirement. The statistical result is then evaluated for its support of the proposed relationships or any possible areas of improving the results (Hair, et al., 1998).

As advocated by Anderson and Gerbing (1988) and other researchers (James, Muliak, & Brett, 1982; Kenny, 1979; Mulaik, James, Van Alstine, Bennett, Lind, & Stillwell, 1989; Williams & Hazer, 1986), this study uses a measurement model prior to examining the structural model relationships. The rationale for this approach is that accurate representation of the reliability of the indicator is best accomplished in two steps to avoid the interaction of measurement and structural (Hair, et al., 1998). The two-step procedure avoids interpretational confounding for within-construct versus between-construct effects (Burt, 1976). Some researchers prefer single-step approach by simultaneous estimating both measurement and structural models. Considerate debate has emerged on the appropriateness of this single-step approach on conceptual and empirical grounds (Hair, et al. 1998). Simultaneous estimation of both structural and measurement models are only appropriate when the model possesses both a strong theoretical rationale and highly reliable measures.

The relevant procedures are depicted in Figure 3: Two-step Approach of Structural Equation Modeling. Confirmatory factor analysis (CFA) is the first step in SEM procedures. CFA postulates relations between the observed measures and the underlying factors a priori based on known theory or empirical research (Byrne, 2001). CFA procedures supercede EFA

because the estimation process accounts for measurement error of factors. This will increase the estimated parameters and the true relationship will be greater (Hair, et al., 1998). The CFA model within the framework of SEM is termed the measurement model.

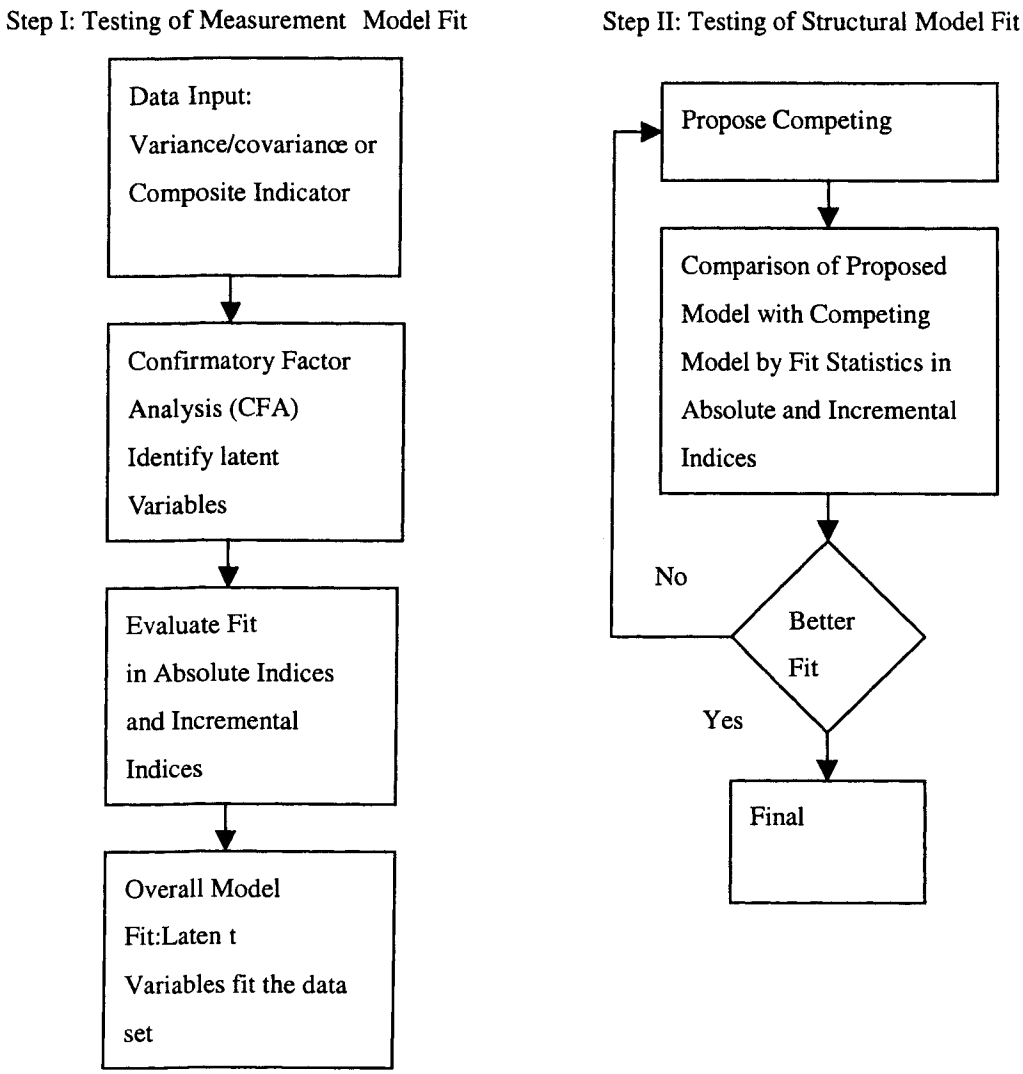


Figure 3: Two-step Approach of Structural Equation Modeling

Two types of factor models can be specified in the measurement procedure. First-order factor model specifies just one level of factors that are correlated. These factors are assumed to be separate constructs. An additional perspective on the factor analytic structure is the second-order factor model which posits the first the first-order factors estimated are actually subdimensions of a broader and more encompassing construct. Confirmatory factor analysis provides additional support for the proposed model based on the factor analyses.

This study models five constructs as seven correlated, first-order factors that correspond to a seven-item LMX factor, ten-item TMX factor, five-item AC factor, five-item CC factor, five-item NC factor, three-item job satisfaction factor, and three item intention to leave factor. A confirmatory factor analysis (CFA) is conducted to see if the items designed to measure a particular latent variables (e.g., OC) actually measure that variable in the data. The CFA procedure is a diagnostic procedure to detect identification problems such as one indicator representing two or more constructs. Any variables (items) with offending estimates should be corrected or even dropped. Construct loading might include negative error measurement values (known as a Heywood case), which indicate theoretical inappropriateness and must be corrected for model respecification before the goodness-of-fit procedure of the confirmatory factor analysis. Since SEM programs accept the variance-covariance, the correlation matrix, or composite indicators as input data, diagnostic tests on the data before the estimation procedure must be performed using conventional methods. Hair et al. (1998) recommend 200 as the critical sample size with 15 additional respondents for each for each parameter. The chi-square measure is a basis of comparison for sample size.

The appropriateness of the measurement model is assessed using fit statistic measures generated from the AMOS 5 computer programs. The fit statistic measurements are also

applicable to the evaluation of the full structural model in the second step (Hair, et al., 1998). A wide array of tests of the overall fit on SEM is available. There is no agreement about a single optimal test or even a set of optimal tests (Marayama, 1997). The fit indices can be classified as absolute indices and relative indices according to Hu and Bentler (1995). Absolute indices explain how well the model fits the data. Relative indices stress how a particular model explains a set of observed data compared with other possible models. The following paragraphs explain these indices in detail.

Absolute Indexes

Several absolute goodness-of-fit measures can be used in the assessment of overall model fit. The first measure is the likelihood chi-square statistic. Chi-square addresses the differences between the coefficients and correlations predicted by the model and what the sample values are. The null hypothesis postulates that specification of the factor loadings, factor variances/covariances, and error variances for the model under study are valid; the chi-square test simultaneously tests the extent to which this specification is true (Byrne, 2001). The higher the probability associated with chi-square, the closer is the fit between the hypothesized model and the perfect fit (Bollen, 1989a). It is the interest of this research to get a non-significant chi-square value.

A significant chi-square value relative to its degree of freedom indicates that the observed samples and estimated covariance or correlation matrices differ. The difference between the number of coefficients in the correlation covariance matrix and the actual estimated number of coefficients in the proposed model is called the degree of freedom (df). It is calculated using the following formula:

Df = ½ ((p+q)+(p+q+1))-t

p = number of endogenous indicators

q = number of exogenous indicators

t = number of coefficients in the model

Normally a good rule of thumb is a low chi-square/df ratio of 2 or less. A statistically significant level at probability > 0.1 or 0.2 should be achieved for the overall model fit.

Alternative indices of fit criteria are available. These are typically used as adjuncts to the chi-square statistic, commonly referred to as "subjective", "practical", or "ad hoc" indices of fix (Byrne, 2001).

The Goodness of Fit Index (GFI) is a function based on a ratio of the sum of the squared differences between the observed and reproduced matrices to the observed variances. GFI equal to 1 minus the ratio derived from the function. In other words, GFI assesses the relative amount of the variances and covariances jointly accounted for by the model and thus typically ranges between 0 and 1 (Maruyama, 1997). An acceptable fit standard for GFI is greater than 0.9. The Adjusted Goodness of Fit Index (AGFI) adjusts the GFI for the degrees of freedom of a model relative to the number of variables. Again, the acceptable fit standard for AGFI is also greater than 0.9, with values close to 1.00 being indicative of good fit. GFI and AGFI are classified as absolute indices of fit because they basically compare the hypothesized model with no model at all (See Hu & Bentler, 1995).

Another index, the parsimony goodness-of-fit index (PGFI), addresses the issue of parsimony and takes into account the number of estimated parameters of the hypothesized model (James et al., 1982). PGFI index has lower values than the threshold level generally perceived by GFI and AGFI, and if it is greater than 0.50 is considered acceptable (Mulaik, et al., 1989).

Relative Indexes

Various relative (incremental or comparative) indices are available (Hu & Bentler, 1995), and some are described here. Incremental indices of fit are based on a comparison of the hypothesized model against a baseline model such as an independence or null model.

The Normed Fit Index (NFI) by Bentler and Bonett (1980) is the comparison fit of two different models to the same data set. The index provides information about the possible improvement from null to best-fit model that is attained by the conceptual model. NFI is bounded between 0 and 1. Bentler and Bonett (1980) recommended accepting NFI of 0.9 or greater in comparison to the null model as indicative of a good fit for a theoretical model. The Comparative Fit Index (CFI, Bentler, 1990; Hu & Bentler, 1995) is a revised NFI taking sample size into consideration. CFI ranges between 0 and 1, and it is recommended that it be greater than 0.90. Hu and Bentler's (1995) revised cutoff value is close to 0.95. Bentler (1990) considers the CFI as the index of choice between CFI and NFI.

PNFI and PCFI are parsimonious adjusted for the total number of available degrees of freedom from the variance/covariance matrix. All these are relative indexes and the higher value the better.

The incremental index of fit (IFI) developed by Bollen (1989b) addresses the issues of parsimony and sample size, which were known to be associated with NFI. IFI takes degrees of freedom into consideration. Tucker-Lewis index (TLI) is a similar index. Both IFI and TLI values range from zero to 1.00, with a value close to 0.95 for large sample size being indicative of good fit (Hu & Bentler, 1995).

RMSEA, the root mean squared error of approximation, is recognized as one of the most informative criteria in covariance structure modeling. RMSEA values less than 0.05 indicate good fit, and values ranging 0.08 to 0.10 indicate mediocre fit (MacCallum, Browne, & Sugawara, 1996).

Assessing Multicollinerity

Multicollinearity represents the degree to which any variable's effect can be predicted or accounted for by the other variables in the analysis. For the purpose of conducting factor analysis, some degree of multicollinearity is desirable since the objective is to identify interrelated sets of variables. However, coefficients exceeding 0.90 could have some harmful effects in interpretating of the results (Hair, et al., 1998).

Composite Indicators

For each of the scales, composite indicators were calculated by summing questionnaire items in each scale. In other words, variables (items) loading high on a factor are combined into a total (scale), and then used as a replacement variable. These composite indicators became the bases to assess the structural equation models in this study.

According to Hair, et al. (1998), the summated total provides two specific benefits. One is to overcome the measurement error inherent in all measured variables. The second benefit is its ability to represent the multiple aspects of a concept in a single measure. The composite indicators are useful in multivariate analysis where rich descriptions of concepts are employed. Using summated scales accommodates multiple concepts but still maintains parsimony in the number of variables in multivariate models. Previous researchers recommended this procedure to

generate more nearly normally distributed in covariance structure analysis (Fitzerald, Drasgow, Hulin, Gelfand, & Magley, 1997) and to eliminate the poor fit due to instability of individual items in complex structural model (Robert, Probst, Martocchio, Drasgow, & Lawler, 2000).

Summary

This chapter presented the research methodology of this study. It included research design, research questions, hypotheses, instrumentation, data collection procedures and statistical method for data analysis. This study employs exploratory factor analysis to test the component structure and structural equation modeling to test hypotheses. The objective of the exploratory factor analysis is to identify the minimal number of factors to ensure unidimentionality of the scale in the survey instrument. Two-step structural equation modeling procedures are to be used to analyze the multivariate dependence relationships among endogenous and exogenous latent variables. Measurement model, which is the confirmatory factor analysis model within the framework of SEM, provides additional diagnostic procedure to detect identification problems. Structural model is then testing the multivariate dependence relationships. Chapter IV presents the data analysis results and tests hypotheses.

CHAPTER IV

ANALYSIS AND PRESENTATION OF FINDINGS

Introduction

This chapter describes results of data collection and analysis along with the findings and hypotheses testing. Two multivariate techniques are utilized: exploratory factor analysis (EFA) tests the factor structure and structural equation modeling tests the hypotheses. Exploratory factor analysis ensures reliability of principle components using varimax orthogonal rotation. Structural equation modeling involves two steps: confirmatory factor analysis (CFA) ensures the overall measurement model fits the data collected and the structural model estimates the theoretical relationships in the interconnected hypotheses. This chapter is presented in the following sequence: sampling procedures, factor analysis and instrument reliability, demographic data, descriptive statistics, assessing multicollinerity, composite indicators, structural equation modeling and the results of hypotheses testing. The final section summarized the analysis and presentation of results.

Sampling Procedures

Data were collected from two sources: practitioners attending CPE seminars and accounting professionals attending master's degree in accounting program. Questionnaires were distributed during three CPE seminars sponsored by a professional business fraternity for certified public accountants (CPAs) chaptered in Florida. These seminars offer topics on current professional development issues in accounting, auditing, law, etc. Seminars are open to the

member/non-member, and public practitioner/non-public practitioner. The attendees were asked to complete the survey during their break. The researcher provided a brief orientation about the purpose of the study and gave directions for completing the questionnaires. The number of attendees varied for each seminar with about 200 in total for the three seminars. Some of the attendees registered for more than one seminar and they were reminded not to fill out the questionnaire more than once. Of the 134 questionnaires returned, 27 were discarded due to incomplete data. Some items pertaining to staff attitude were not applicable to owners of a firm or a sole practitioner. Consequently, the final response rate was 107 representing a return rate of 50.4%.

The other source of data is from master's accounting students in a university in Florida. They are full time professionals in accounting and related fields. The director of the master's degree in accounting and instructors for each class gave permission to survey students. The researcher distributed the questionnaires in person to eight different class meetings. The researcher first introduced the study and provided general directions for completing the surveys and then administered the surveys. A total of 95 surveys were completed out of 125 distributed. The response rate from the second group was 76%. The overall response rate was 202 out of 325, or 62.1%.

The data were examined carefully for data entry errors. Surveys with fewer than two scales completed were discarded. The remaining missing values were replaced with the mean.

Factor Analysis and Instrument Reliability

The researcher conducted a factor analysis on the data collected using SPSS version 11.5 with principle components analysis and varimax orthogonal rotation. Measurement

characteristics with means, standard deviations and results of factor analysis and reliability estimates, and cumulative percentage of extraction sums of squared loadings appear in Table 2. Detailed factor analysis results for each scale follow.

LMX

Factor analysis generated one component for the LMX-7 with a significant Bartlett's statistic (0.89, p=.00) and a large Eigenvalue (4.10). The Cronbach's Alpha of 0.88 demonstrates strong correlations and internal consistency among items of the scale. Item statistics and reliability estimates for the LMX scale are presented in Table 3. One component was extracted and accounted for 58.6% of the total variance of LMX. It is considered satisfactory in social science according to Hair, et al. (1998). Results of exploratory factor analysis and reliability testing is included in Part 1 of Appendix E.

TMX

The TMX instrument assesses exchange quality between a team member and his/her work group. Table 4 presents item statistics and factor loadings. The initial principle components analysis identified two factors on the TMX scale. One item, "I am willing to help finish work that had been assigned to other members of my team," was

Table 2 Measurement Characteristics

Means, Standard Deviations, and Results of Factor Analysis and Reliability Testing

Instruments	Number of Component	Mean	Standard Deviations	Eigen Value (% of Variances Accounted For)	MSA>0.5	KMO Measure and Bartlett's Test	Factor Loadings >0.5	Cronbach Alpha
LMX	1	26.37	4.91	4.10 (58.6%)	Yes	0.89 (.00) Significant	Yes	0.88
TMX	1	34.19	5.88	4.76 (52.8%)	Yes	0. 87 (.00) Significant	Yes	0.89
OC	3							
	AC	18.13	4.65	3.54 (70.7%)	Yes	0.83(.00) Significant	Yes	0.89
	CC	15.44	4.44	2.93 (58.6%)	Yes	0. 82(.00) Significant	Yes	0.82
	NC	15.23	4.01	2.85 (57.0%)	Yes	0. 77(.00) Significant	Yes	0.81
JS	1	10.95	2.94	2.30 (76.7%)	Yes	0. 69(.00) Significant	Yes	0.89
TOI	1	7.44	3.51	2.44 (81.4%)	Yes	0. 73(.00) Significant	Yes	0.85

Notes: N=202; LMX=Leader-member exchange; TMX=Team-member exchange; OC=Organizational commitment; AC=Affective commitment; CC=Continuance commitment; NC=Normative commitment; JS=Job satisfaction; TOI=Turnover Intention.

Table 3 Item Statistics and Reliability (Cronbach's Alpha) for LMX-7				
LMX Item	Mean	SD(a)	Alpha if Deleted	Factor Loading
1. I usually know where I stand with my supervisor	3.93	0.88	0.86	0.78
2. My supervisor understands my job problems and needs.	3.69	0.93	0.86	0.80
3. My supervisor recognizes my potential.	3.91	0.96	0.86	0.78
4. Regardless of how much formal authority my supervisor has built into his/her position; my supervisor would be personally inclined to use his/her power to help me solve problems in my work.	3.76	0.93	0.86	0.77
5. I can count on my supervisor to "bail me out" at his/her expense, when I really need it.	3.46	0.98	0.88	0.66
6. I have enough confidence in my supervisor that I would defend and justify her/his decision if she/he were not present to do so.	3.82	0.82	0.86	0.79
7. How would you characterize your working relationship with your supervisor?	3.88	0.78	0.86	0.78
Overall Alpha: 0.88 Cumulative % from Extraction Sums of Squared Loading: 58.6				

(a) For each variable, missing values are replaced with the variable mean.

eliminated because it correlates poorly with other measure variables (with a negative or correlation < 0. 25 with the other nine TMX measure variables). According to the criteria set in Chapter III, this item was dropped. The 9-item solution resulted in a one-factor TMX scale yielding a Cronbach's Alpha of 0.89, an eigenvalue of 4.76 and Bartlett's test at 0.87 (p=.00).

One component was extracted to account for 52.8% of the total variance of TMX. Part 2 of Appendix E presents the output of exploratory factor

Table 4 Item Statistics and Reliability (Cronbach's Alpha) for TMX

TMX Item	Mean	SD(a)	Factor Loading	Alpha if Deleted
1. I often make suggestions about better work methods to other team members.	3.73	0.89	0.68	0.88
2. Other members of my team usually let me know when I do something that makes their jobs easier (or harder).	3.75	0.92	0.79	0.87
3. I usually let other members of my team know when they have done something that makes my job easier (or harder).	3.84	0.89	0.72	0.88
4. Other members of my team recognize my potential.	3.81	0.91	0.75	0.87
5. Other members of my team understand my problems and needs.	3.57	0.87	0.73	0.88
6. I am flexible about switching job responsibilities to make things easier for other team members.	3.92	0.85	0.75	0.87
7. In busy situations, other team members often ask me to help out.	3.87	0.89	0.72	0.88
8. In busy situations, I often volunteer my efforts to help others on my team.	3.93	0.95	0.71	0.88
9. The other members of my team are willing to help me finish work that was assigned to me.	3.76	0.88	0.69	0.88
Overall Alpha: 0.89 Cumulative % from Extraction Sums of Squared Loading: 52.8				

(a) For each variable, missing values are replaced with the variable mean.

analysis and reliability testing from SPSS 11.5 program.

Organizational Commitment

The Organizational Commitment (OC) scale contains fifteen items. The initial loading of all items reveals three separate dimensions, each measuring separate constructs, consistent with previous findings (Meyer, et al., 1993; Howell & Dorfman, 2000). All three components, affective commitment (AC), continuance commitment (CC), and normative commitment (NC), demonstrate strong reliability levels (see Table 5 for descriptive statistics and reliability results). AC has a large eigenvalue at 3.54, Barlett's test at 0.83 (p=. 00) and Cronbach's Alpha at 0.89 with factor loadings for variable items greater than 0.5. CC and NC also have significant eigenvalues, Bartlett's test statistics and Cronbach's Alphas at 2.93 and 2.85, 0.82 and 0.77, 0.82 and 0.81, respectively. The three dimensions of organizational commitment have high validity and internal consistency estimates. For AC, CC, and NC, one component was extracted for each accounting for 70.7%, 58.6% and 57.0%, respectively, of the total variance which is satisfactory in social sciences according to Hair, et al. (1998). The SPSS 11.5 output of exploratory factor analysis and reliability for organizational commitment appears in Part 3 of Appendix E.

Job Satisfaction and Turnover Intention

The job satisfaction (JS) and turnover intention (TOI) analysis in Table 6 shows that each has one factor and with Cronbach's Alphas of 0.89 and 0.85, respectively. The JS scale has a large eigenvalue at 2.30, Barlett's test at 0.69 (p=0.00). One component

Table 5 Item Statistics and Reliability (Cronbach's Alpha) for OC				
Item	Mean	SD (a)	Factor Loading	Alpha if Deleted
Affective Commitment:				
1. I would be very happy to spend the rest of my career with this organization.	3.71	1.19	0.82	0.88
2. I enjoy discussing my organization with people outside of it.	3.73	1.11	0.71	0.90
3. I really feel as if this organization's problems are my own.	3.59	1.19	0.87	0.87
4. This organization has a great deal of personal meaning for me.	3.60	1.10	0.88	0.86
5. I feel emotionally attached to this organization.	3.62	1.11	0.92	0.85
Overall Alpha for AC: 0.89				
Cumulative % from Extraction Sums of Squared Loading for AC: 70.7				
Continuance Commitment:				
1. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.	3.08	1.18	0.75	0.79
2. Right now, staying with my organization is a matter of necessity as much as desire.	3.25	1.22	0.73	0.80
3. I feel that I have too few options to consider leaving this organization.	2.82	1.17	0.77	0.79
4. Leaving would require considerable personal sacrifice because another organization may not match the overall benefit I have here.	3.33	1.18	0.79	0.78
5. It would be too costly for me to leave my organization in the near future.	3.08	1.17	0.79	0.78
Overall Alpha for CC: 0.82				
Cumulative % from Extraction Sums of Squared Loading for CC: 58.6				

Normative Commitment:				
1. I believe that a person must always be loyal to his or her organization.	3.74	1.10	0.65	0.81
2. Moving from organization to organization seems unethical to me.	2.58	1.13	0.72	0.78
3. If I got another offer for a better job elsewhere, I would not feel it was right to leave my organization.	2.67	1.13	0.77	0.77
4. I feel a sense of moral obligation to remain with this organization.	2.94	1.16	0.85	0.73
5. I was taught to believe in the value of remaining loyal to one organization.	3.44	1.08	0.77	0.77
Overall Alpha for NC: 0.81				
Cumulative % from Extraction Sums of Squared Loading for NC: 57.0				
(a) For each variable, missing values are replaced with the variable mean.				

was extracted to account for 76.7% of the total variance of JS. The TOI scale also demonstrates strong statistical power (eigenvalue at 2.44, Bartlett's test at 0.73, p=0.00). Again, one component was extracted to account for 81.4% of the total variance of TOI. It is much higher than the 60% rule of thumb that is considered satisfactory in social science research according to Hair, et al. (1998). Parts4 and 5 of Appendix E present the exploratory factor analysis and reliability results.

Demographic Data

The demographics section of the survey (refer to Part 1 of Appendix A) requested information on gender, age, education, tenure, months since last promotion, firm size and professional licenses held. Table 7 reports crosstabs on education, gender, and whether working in public accounting firms. Of the 202 respondents, 91 were male

Table 6 Item Statistics and Reliability (Cronbach's Alphas) for Job Satisfaction and Turnover Intention

Item	Mean	SD (a)	Factor Loading	Alpha if Deleted
Job Satisfaction:				
1. Generally speaking, I am very satisfied with this job.	3.72	1.06	0.92	0.69
2. I often think of quitting my job.	3.55	1.32	0.84	0.85
3. I am generally satisfied with the kind of work I do in this job.	3.75	1.03	0.87	0.79
Overall Alpha for JS: 0.89				
Cumulative % from Extraction Sums of Squared Loading for JS: 76.7				
Turnover Intention:				
1. If I have my own way, I will be working for another organization one year from now.	2.47	1.33	0.88	0.88
2. I frequently think of quitting my job.	2.40	1.31	0.91	0.83
3. I am planning to search for a new job during the next twelve months.	2.52	1.29	0.93	0.80
Overall Alpha for TOI: 0.85				
Cumulative % from Extraction Sums of Squared Loading For TOI: 81.4				

(a) For each variable, missing values are replaced with the variable mean.

Note: one item "I frequently think of quitting my job" is repeated for JS and TOI scales to maintain a minimum of three items per scale.

(45.0%) and 111 were female (54.0%). As to education level, one respondent holds a high school diploma; 4, associate degree; 120, Bachelor's degree; 70, Master's degree; and 7, Doctoral degree. With one respondent not reporting, 84 work in public accounting

Table 7 Crosstabs of Sample Demographics on Gender, Education, and Public Accounting Work

Education	Gender			Public Accounting		
	Male	Female	Total	Yes	No	Total
High School	0	1	1 (0.5%)	0	1	1 (0.5%)
Associate	0	4	4 (2.0%)	3	1	4 (2.0%)
Bachelor	49	71	120 (59.4%)	52	67	120 (59.2%)
Master	38	32	70 (34.6%)	28	42	70 (34.8%)
Doctor	4	3	7 (3.5%)	1	6	7 (3.5%)
Total	91 (45.0%)	111 (54.0%)	202 (100.0%)	84 (41.8%)	117 (58.2%)	201 (100.0%) (1 not reported)

firms (42%), and more than half of the respondents work in private/government/not-for-profit organizations (117 or 58%). As to age distribution, almost 80% of the respondents are over the age of 30 (see Table 8). They are professionals in an advanced career stage.

Licensing is an important requirement for accounting professionals. One survey item concerns respondents' professional certification in an accounting-related field, such as Certified Public Accountant (CPA), Certified Management Accountant (CMA), Certified Financial Planner (CFA), Certified Internal Auditor (CIA), Certified Information System Auditor (CISA) and other professional certifications such as attorney, etc. The distribution of licenses held reported in Table 9, Descriptive Statistics with other item reports, shows the average number of professional licenses held is 0.73. Professional certification serves as an indication of advanced qualification in a specific area. Of the 202 respondents, 90 people (45%) report having one

license; 17 people have 2 licenses; 4 people reports 3 licenses, 1 has 4 licenses. Over 55% of the respondents hold at least one professional license (113 out of 202). Most of the respondents reporting no licenses are between in the age range 20 to 39 (62 out of 89, or 70% at that age bracket).

Table 8 Age Distributions

Age Groups		Frequency	Percentage	Cumulative Percentage
Age	20-29	56	27.7	27.7
	30-39	63	31.2	58.9
	40-49	48	23.8	82.7
	50 & over	35	17.3	100.0
	Total	202	100.0	

Table 9 Descriptive Statistics on Firm Size, Tenure, Months Since Last Promotion, and Number of Licenses Held

	Firm Size	Tenure in Years	Months since Last Promotion	Number of Licenses Held
Mean	4,178	7.15	34.47	0.73
Standard Deviation	13,490	7.42	52.82	0.77
Maximum	80,000	40.00	300.00	4.00
Minimum	1	0.04	0.00	0.00
Medium	30	5.00	24.0	1.00
Valid N (listwise)	174	191	96	197
Not Reported	22	11	106	5

The average size of firms respondents work for is 4,178 employees. Some are large

international accounting firms with more than 80,000 employees worldwide while some are very small firms. The size of firms represented is diverse, and government agencies are also represented. The variety of types of organizations represented for the purpose of this research enhances the possibility of generalizing the results to accounting professionals.

The average job tenure at current organization is 7.15 years. Standard deviation on tenure in years is 7.42. This indicates relatively stable job tenure. Average number of months since the last promotion in the current position is 2 years and 10 months, based on a limited number of responses (106 are not reported).

Descriptive Statistics

Table 3 through Table 6 presented the scale item means and standard deviations for the scales: LMX, TMX, Affective Commitment, Continuance Commitment, Normative Commitment, Job Satisfaction, and Turnover Intention scales. As reported above, one item was dropped from the TMX scale.

After the factor analysis, bivariate correlations using Pearson indexes provide initial information on the relationships among constructs. Table 10 presents the correlations for all seven measures. LMX is strongly correlated to all other constructs except CC. AC is strongly correlated to all other constructs in this study. TMX is significantly correlated to LMX, AC and JS ($p<0.01$) and correlated to NC at only the 0.05 significance level. As expected and confirming previous research, intent to leave is negatively correlated with LMX, AC, NC and JS ($p< 0.01$). Intent to leave is not significantly related to TMX and CC. It should be cautioned that with a sample size over 200, even weak correlations can be significant.

Table 10 Correlation Matrix for All Model Constructs

Pearson Correlations	LMX	TMX	AC	CC	NC	JS	TOI
LMX	1						
TMX	.487(**)	1					
AC	.546(**)	.500(**)	1				
CC	-.101	-.008	.223(**)	1			
NC	.216(**)	.180(*)	.519(**)	.182(*)	1		
JS	.489(**)	.360(**)	.728(**)	.098	.377(**)	1	
TOI	-.306(**)	-.127	-.578(**)	-.041	-.297(**)	-.808(**)	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Assessing Multicollinerity

As discussed in Chapter 3, multicollinearity represents the degree to which any variable's effect can be predicted or accounted for by the other variables in the analysis. Coefficients exceeding 0.90 could have some harmful effects in interpreting the results (Hair, et al., 1998). The correlation coefficients for the independent variables ranged from 0.008 to 0.808 as shown in Table 10. Hence, multicollinearity does not exist in this study's independent variables.

Composite Indicators

For each of the scales, composite indicators were calculated by summing questionnaire items in each scale. This procedure combines the variables (items) loading high on a factor into a total (scale). These composite indicators became the bases to assess the structural equation models in this study. The advantages of using composite indicator were discussed in Chapter III.

For the multi-dimensional organizational commitment scale, three composite indicators are created, actot, cctot, and nctot, each comprised of five items. For leader-member exchange, team-member exchange, job satisfaction and turnover intention scales, each has one composite indicator. These variables were subsequently renamed as lmxtot, tmxtot, jstot, and toitot.

Structural Equation Modeling

The current study employs structural equation modeling (SEM) procedures to test the hypothesized model in order to investigate the multivariate dependence relationships simultaneously. The causal relationships are represented by a series of structural equations within the SEM approach (see Figure 4: Proposed Theoretical Structural Equation Model). The primary focus of the estimation process using SEM is to yield parameter values such that the discrepancy (i.e., residual) between the sample and the population implied by the model is minimal (Byrne, 2001). This study adopts a two-step approach in applying SEM as recommended by many researchers (Anderson & Gerbing, 1988, James, Muliak, & Brett, 1982; Kenny, 1979; Mulaik, James, Van Alstine, Bennett, Lind, & Stillwell, 1989, Williams & Hazer, 1986).

There are 7 observed endogenous constructs and 7 unobserved exogenous error terms in the initial model (Figure 4). LMX and TMX are exogenous latent variables, which are independent variables in the first path from LMX and TMX to OC and the second path from

LMX and TMX to JS. In the third path from OC and JS to TOI, OC and JS are independent exogenous latent variables and TOI is the dependent exogenous latent variable. TMX is also tested for its effect on LMX in the proposed model.

Chapter III described the framework of the two-step approach in order to analyze proposed theoretical causal relationships (See Figure 3: Two-step Approach of Structural Equation Modeling). This study used the relevant procedures depicted in the two-step approach. The first step of SEM is to test the measurement model. A measurement model is estimated prior to examining the structural relationships. Fit indices such as GFI, RMSEA, SRMR, NFI, CFI and NNFI test the acceptability of the competing measurement models.

Fit statistics can be divided into two broad categories: absolute fit indices and incremental fit indices. The absolute measures of fit include indices such as Chi-square, degree of freedom (df), p-value, Chi-square/df ratio, the Good-of-fit Index (GFI), the Adjusted Good-of-fit Index (AGFI), the Parsimony Good-of-fit Index (PGFI), Incremental fit indices evaluate the degree to which the proposed model improves comparing to the null model. Such incremental fit indices include the Normed Fit Index (NFI), the Parsimony Normed Fit Index (PNFI), the Comparative Fit Index (CFI), the Parsimony Comparative Fit Index (PCFI), the root mean square of approximation (RMSEA), the standardized root mean squared residual (SRMR), and the Tucker-Lewis Index (TLI, also known as the Non-normed Fit Index, NNFI). The acceptable fit standards for each of these indexes are presented in Table 11 and Table 12. The second step of SEM is to test the full structural model after the measurement model is fixed in the first step. Similar fit statistical indices such as GFI, RMSEA, SRMR, NFI, CFI and NNFI test the acceptability of the proposed model. One advantage to using SEM is that it allows possible modifications to the proposed model by examining potential alternative, competing models. Any alternative models

must be theoretically justified before testing the respecified model. The following two sections describe testing of measurement model and full structural model.

Measurement Model

The first step of the SEM process involves the substantiation of the factor structure of the measures used. The measurement model defines relations between the observed scores on a measuring instrument and unobserved latent variables. This step assesses and assures the fit of the observed variables to the latent constructs. This study includes five constructs: LMX, TMX, OC, JS, and TOI. According to the factor analysis reported above, each construct generated a one factor solution except OC, which generated three factors, consistent with previous research (Meyer & Allen, 1991).

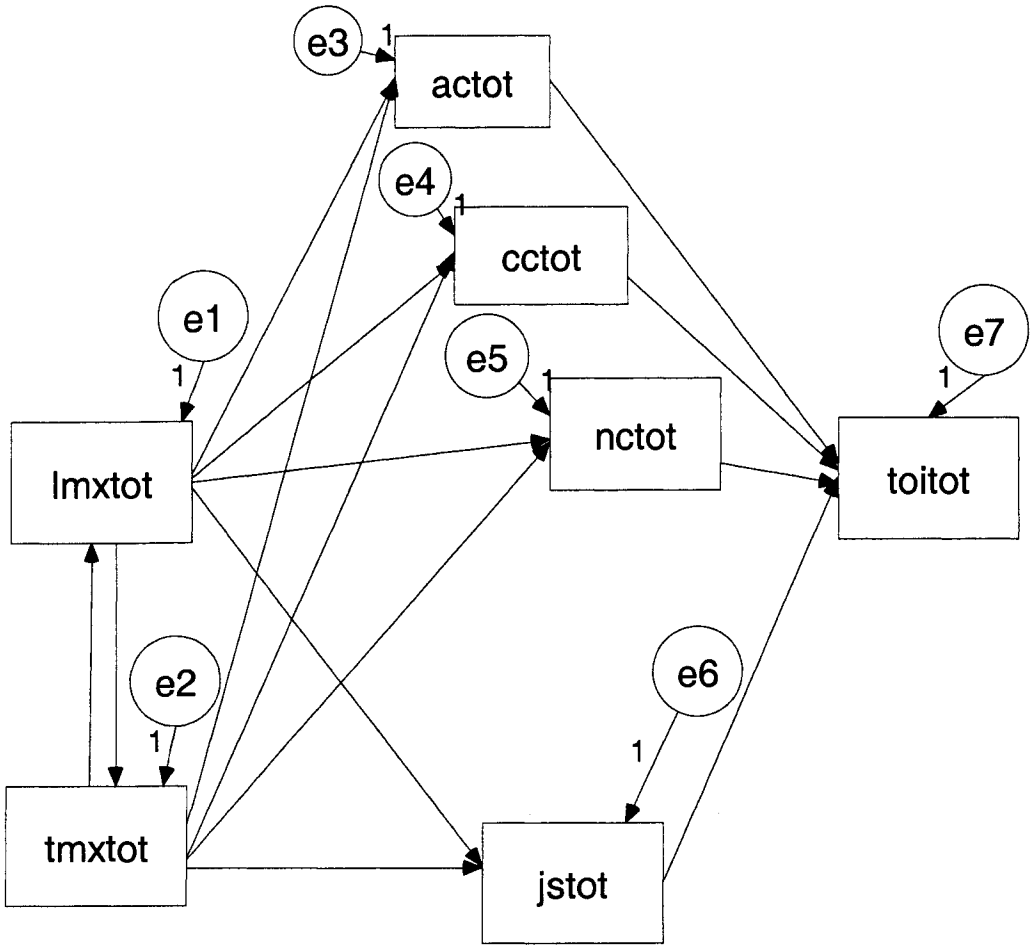


Figure 4 : Proposed Theoretical Structural Equation Model

Within the originally hypothesized model there are three factors (affective commitment, continuous commitment, and normative commitment) in the context of latent variable OC. The other constructs (LMX, TMX, JS, and TOI) are one-factor latent variables. Consequently, a confirmatory factor analysis was conducted only for the organizational commitment measure to determine if the indicators loaded appropriately, and significantly, on latent variables.

While some researchers define commitment as single dimension, many other view it as a multi-dimensional construct (Angle & Perry, 1981; Dunham, Grube, & Castaneda, 1994; Hackett, Bycio, & Hausdorf, 1994; McGee & Ford, 1987). Hence, three alternative measurements for the factor structure of OC were tested:

1. Three-factor OC Model: AC, CC, and NC were included.
2. Two-factor OC Model: AC and CC were included.
3. Two-factor OC Model: AC and NC were included.
4. One-factor OC Model: contained only AC factor.

Table 11 presents the fit statistics for the four organizational commitment measurement models. The three-factor OC model had a chi-square value of 128 and 65 degree of freedom resulting Chi-square/df ratio at 1.972 (See Figure 5: Three-factor Measurement Model for OC with AC, CC and NC). The two-factor OC Model with AC and CC model had a chi-square value of 41 and 20 degree of freedom resulting Chi-square ratio at 2.057 (See Figure 6: Two-factor Measurement Model with AC and CC). Even though these two models had acceptable fit indexes in GFI, CFI, NFI, IFI and RMSEA values, they did not generate satisfactory p-values. These two models are disregarded.

The two-factor OC model with AC and NC had chi-square value of 24 and 23 degree of freedom resulting Chi-square/df ratio at 1.051 and high GFI (0.977), AGFI (0.946), CFI (0.999)

and p-value at 0.394, and at the same time, it had an low RMSEA at 0.016 (See Figure 7: Two-factor Measurement Model with AC and NC). Finally, the one-factor OC model had the highest GFI (1.000), AGFI (0.994), CFI (1.000) and p-value at 0.659, and it had the lowest Chi-square/df ratio of 0.194, RMSEA at 0.000 (See Figure 8: One-factor Measurement Model for OC with AC). The one-factor OC model generated the best result among the four competing measurement model. The two-factor OC model with AC and NC also yielded satisfactory results according to the acceptable fit standard as shown in Table 11. This study then determined to run both measurement models in AMOS 5 to test the overall structural model fit. Output for all the four measurement models from AMOS 5 was included in Appendix F: Confirmatory Factor Analysis.

In summary, the results of confirmatory factor analysis on the organizational commitment measurement models indicated that one-factor model was the best model.
The two-factor model with AC and NC also met the acceptable fit standard. This study proceeded to use both the one-factor OC Model and two-factor OC Model with AC and CC to test the overall model fit in the following full structural model section.

Full Structural Model

Once the appropriate measurement model was determined, the next step is to test the full structural model. Fit indicators were examined to ensure the parsimonious

Table 11 Fit Indexes of Confirmatory Factor Analysis for Organizational Commitment Measurement Models

Measurement Model	Three-factor Model with AC, CC and NC	Two-factor Model With AC and CC	Two-factor Model With AC and NC	One-factor Model:AC	Acceptable Fit Standard

Absolute Indices:					
Chi-square	128	41	24	0.194	NA
df	65	20	23	1	NA
p-value	.000	.004	.394	.659	>0.05
Chi-square/df ratio	1. 972	2. 057	1. 051	0.194	<2.0
GFI	0.934	0.963	0.977	1.000	>0.9
AGFI	0.879	0.899	0.946	0.994	>0.9
Relative Indices:					
CFI	0.957	0.980	0.999	1.000	>0.9
NFI	0.919	0.962	0.978	1.000	>0.9
RMSEA	0.070	0.073	0.016	0.000	<0.1
IFI	0.958	0.980	0.999	1.001	>0.95 (For large sample size)
TLI	0.931	0.955	0.998	1.012	>0.95 (For large sample size)

Df=degree of freedom, GFI= Good-of-fit Index, AGFI= Adjusted Good-of-fit Index, CFI= Comparative Fit Index, NFI= Normed Fit Index, RMSEA=Root Mean Square of Approximation, IFI= Incremental Index of Fit, TLI= Tucker-Lewis Index.

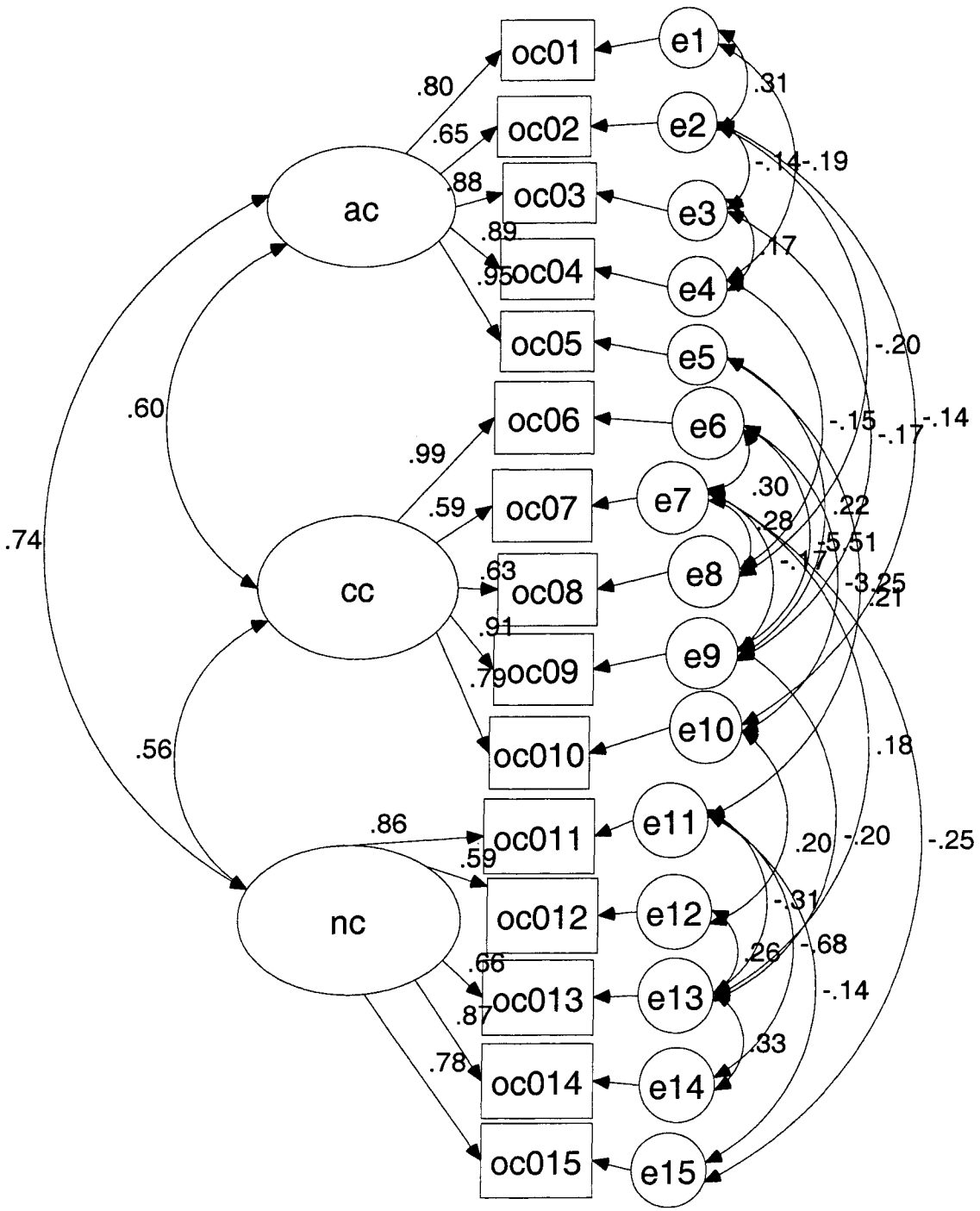


Figure 5: Three-factor Measurement Model for OC with AC, CC and NC

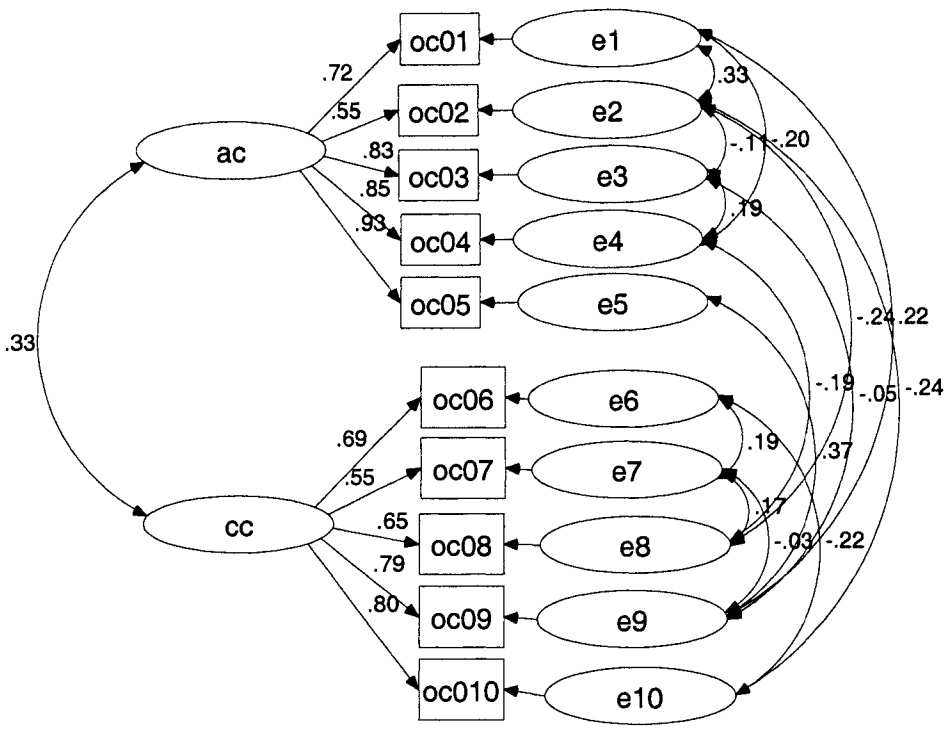


Figure 6: Two-factor Measurement Model with AC and CC

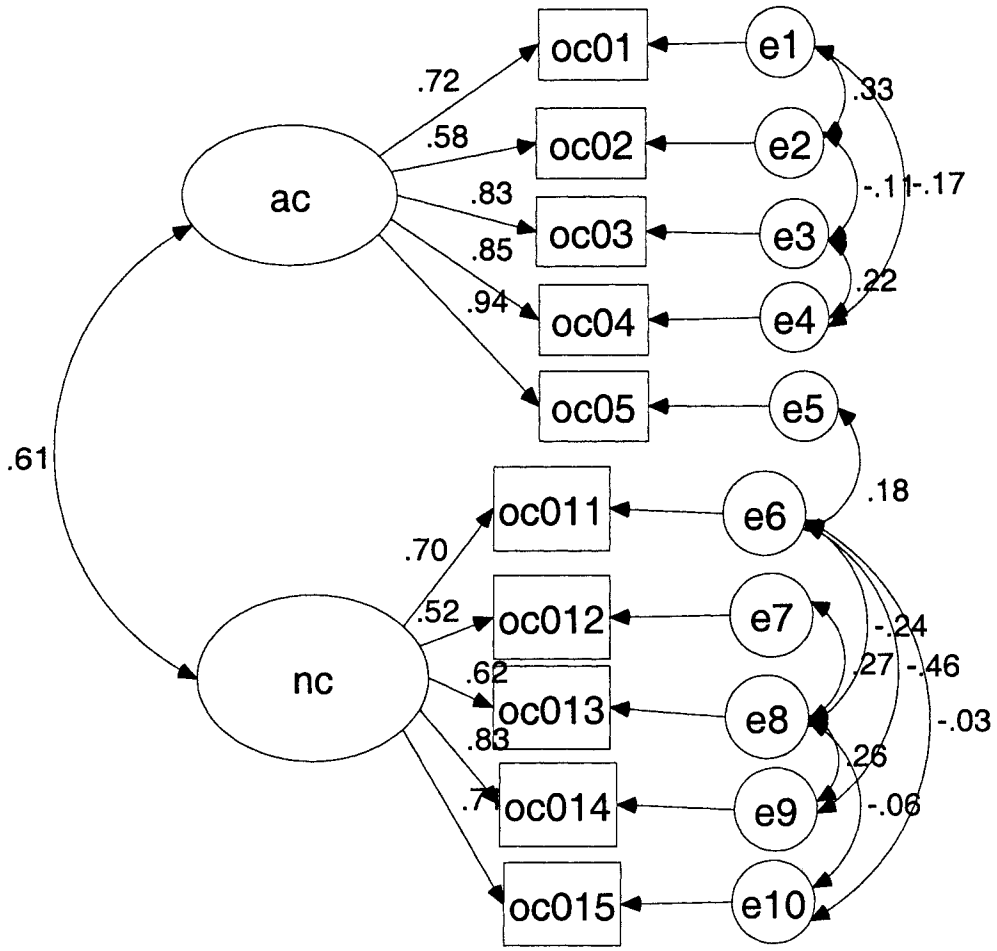


Figure 7: Two-factor Measurement Model with AC and NC

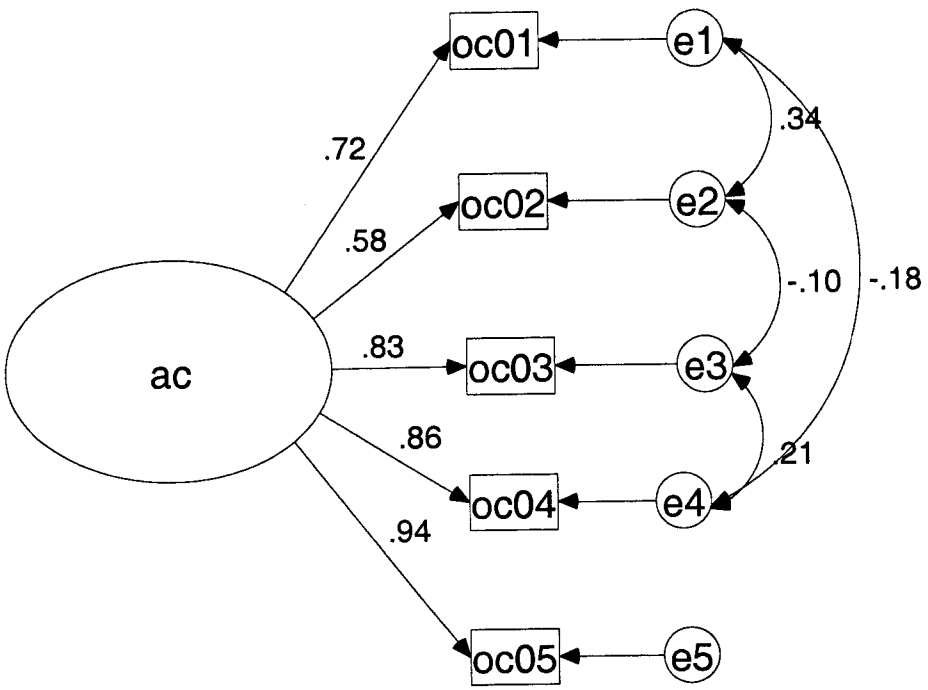


Figure 8: One-factor Measurement Model for OC with AC

expression of the inter-concept relationship in the sample. Two measurement models, Model 1 and Model 2, were tested for overall structural model fit. Model 1 is the full structural equation model containing a one-factor AC measurement model and hypothesized relationships among other latent variables. Two constructs, CC and NC, were eliminated from Model 1 due to their inability to contribute to an overall fit statistic from the measurement model. Model 1 was modified according to AMOS 5 modification indices and the final result is presented in Figure 9: Structural Equation Model 1. The numbers on the arrows represent standardized coefficients and the numbers on the top right corner of the boxes representing the squared multiple correlation of its predictors. The squared multiple correlation of a variable is also the percentage of its variation accounted for by its predictors. The modified models are scrutinized for overall fit through the chi-square statistics and SEM fit indexes. Model 1 yielded a Chi-square of 3.22, 3 degree of freedom, a p value of 0.36, a GFI of 0.994 and AGFI 0.969 (See Table 12 Fit Summary for Full Structural Models). Model 1 generated an acceptable result. Text output for Model 1 from AMOS 5 appears in Appendix G. The researcher then used the same data and procedures to test Model 2.

Model 2 is the full structural equation model containing measurement model with two factors- AC and NC, and hypothesized relationships among other latent variables. Figure 10 presents the final modified model. This model yielded a Chi-square of 5.578, 6 degree of freedom, a p value of 0.451 resulting in a Chi-square/df ratio of 0.96. It had a GFI of 0.994, AGFI 0.969, and low RSMEA at 0.00 (See Table 12). Model 2 is superior to Model 1 for its higher p value, lower Chi-square/df ratio and RMSEA value.

Table 12 Fit Summary for Full Structural Models

	Model 1	Model 2	Acceptable Fit Standard
Absolute Indices			
Chi-square	3.22	5.578	NA
df	3	6	NA
p-value	0.36	0.451	>0.05
Chi-square/df ratio	1.072	0.96	<1.0
Relative Indices:			
GFI	0.994	0.991	>0.9
AGFI	0.969	0.967	>0.9
CFI	1.000	1.000	>0.9
NFI	0.994	0.990	>0.9
RMSEA	0.019	0.000	<0.1
IFI	3. 000	1.000	>0.95
TLI	0.999	1.001	>0.95

Model 1: Contains one-factor OC measurement model with AC.
Model 2: Contains two-factor OC measurement model with AC and NC

Df=degree of freedom, GFI=Adjusted Good-of-fit Index (AGFI), CFI= Comparative Fit Index, NFI= Normed Fit Index, RMSEA=root mean square of approximation, IFI= Incremental Index of Fit, TLI= Tucker-Lewis Index.

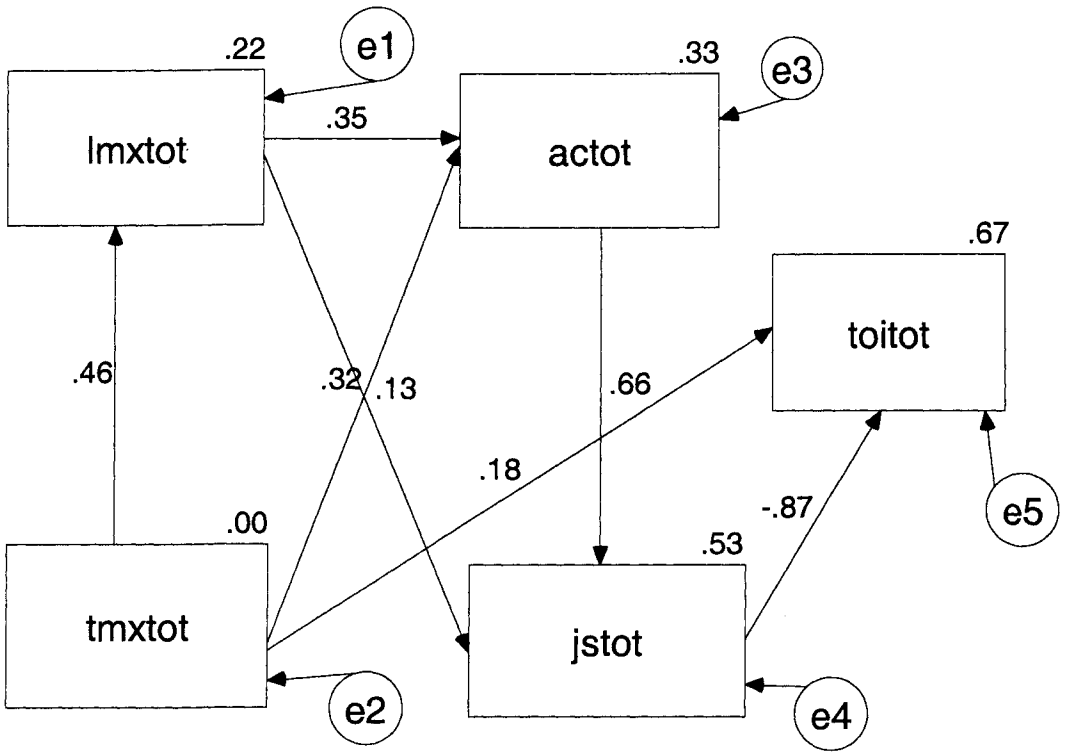


Figure 9 : Structural Equation Model 1

Note: Contains one-factor oc measurement model

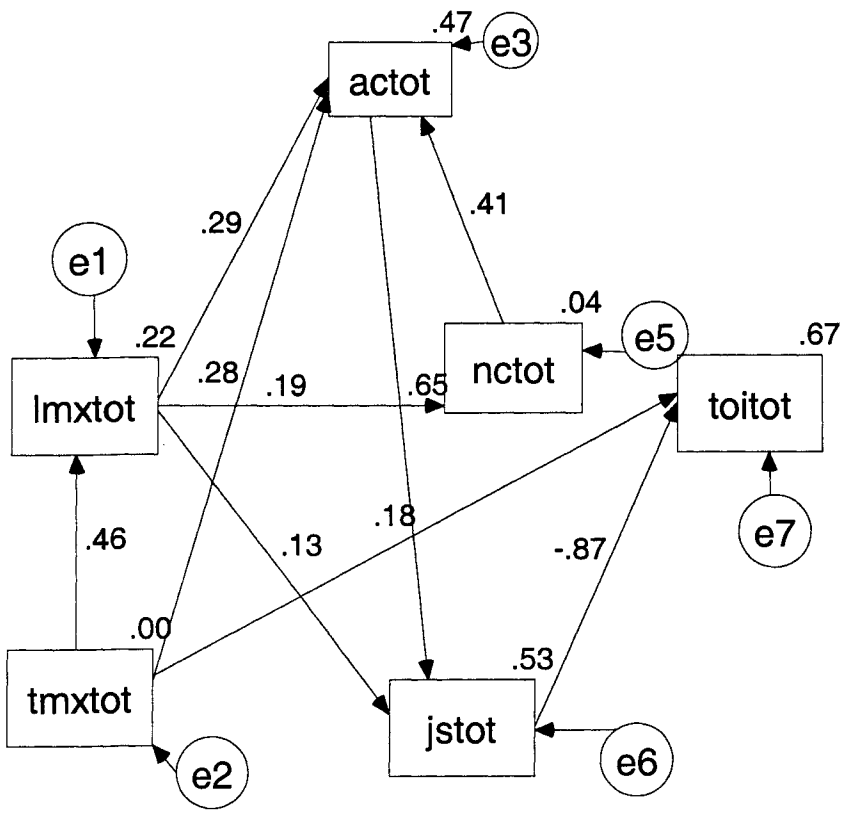


Figure 10 : Structural Equation Model 2

Note: Contains two-factor measurement model with AC and NC

Even though Model 1 also had acceptable fit statistics, this study selected Model 2 as final model for hypothesis testing. The AMOS test output for Model 2 appears in Appendix H.

Model 2 contains two components for organizational commitment- affective commitment and normative commitment. However, the casual relationships differ from the proposed theoretical model. Additional data in the final model regarding estimation of regression weights and standard error is shown in Table 13. The critical ratio (CR) is the ratio of estimated regression weights and standard error and should be above 2.5.

A two-component model best represents organizational commitment rather than the three-component model proposed by Meyer and Allen (1991) for knowledge workers sampled in this group of accounting professionals. An investigation of the correlation coefficient matrix for the research variables revealed that continuance commitment correlated very weakly with other variables and it was thus dropped. The dimension that Meyer and Allen named "continuance commitment", and was thought to refer to an awareness of the costs associated with leaving the organizations, did not correlate well with affective and normative commitment. It appears that organizational commitment functions as two distinction dimensions, affective and normative, and

Table 13 Maximum likelihood Estimation on Regression Weights for Model 2

Relationships			Estimate	S.E.	C.R.
lmxtot	<---	tmxtot	.465	.050	9.300
nctot	<---	lmxtot	.194	.064	3.031
actot	<---	lmxtot	.292	.061	4.787
actot	<---	nctot	.408	.059	6.915
actot	<---	tmxtot	.278	.048	5.792
jstot	<---	lmxtot	.129	.036	3.583
jstot	<---	actot	.655	.035	18.714
toitot	<---	jstot	-.866	.051	-16.980
toitot	<---	tmxtot	.180	.026	6.923

works in a chain sequence through satisfaction. LMX influenced affective and normative commitment directly, but TMX influenced only affective commitment. TMX was found to influence turnover intention directly but LMX does not. JS is the most important factor in determining employee turnover intention. Overall the model explains over two thirds (67%) of the variance in turnover intention. This study continues with hypothesis testing in the following section.

Results of Hypotheses Testing

The first causal path tested the relation among leader-member exchange, team-member exchange with organizational commitment for accounting professionals.

Hypothesis 1 is:

H01 Leader-member exchange is negatively related, or not related, to organizational commitment among accounting professionals.

HA1 Leader-member exchange is positively related to organizational commitment among accounting professionals.

Hypothesis 1 tests the relationships between LMX and organizational commitment. The results depicted in Figure 10 and Table 13 demonstrate that LMX is significantly related to affective commitment (with standardized B = 0.292 and CR=4.787) and to normative commitment (B=0.194 and CR=3.031) but not to continuance commitment. Hypothesis 1, therefore, is partially supported.

Hypothesis 2 examines the relationships between TMX and organizational commitment. Hypothesis 2 is:

H02 Team-member exchange is negatively related, or not related, to organizational commitment among accounting professionals.

HA2 Team-member exchange is positively related to organizational commitment among accounting professionals.

Figure 10 and Table 13 reveal that TMX is significantly related to affective commitment (B =0.129, CR=3.583). There is no direct relationship between TMX and both continuance commitment and normative commitment. In addition, TMX is not significantly correlated to continuance commitment in the data presented in Table 10, Correlation Matrix for All Model Constructs. Hence, the result for Hypothesis 2 is mixed.

The second causal path tested the relationships of leader-member exchange and team-member exchange with job satisfaction for accounting professionals. Hypothesis 3 and 4 are:

H03 Leader-member exchange is negatively related, or not related, to employee job satisfaction among accounting professionals.

HA3 Leader-member exchange is positively related to employee job satisfaction among accounting professionals.

H04 Team-member exchange is negatively related, or not related, to employee job satisfaction among accounting professionals.

HA4 Team-member exchange is positively related to employee job satisfaction among account professionals.

The results shown in Figure 10 and Table 13 show that LMX is related to JS with coefficient estimate of 0.129 and CR at 3.583. Therefore Hypothesis 3 is supported.

Hypothesis 4 examines TMX-job satisfaction relationship. The results in Figure 4 and Table 13 reveal that TMX is not related to JS. Hypothesis 4 is not supported. This is not consistent with Seers (1989) report of a positive relationship between TMX and JS. The above test of Hypothesis 4 also differs from, and may appear to contradict to correlation in Table 10 ($r=0.360$; $p< .01$). There might be a moderating effect from other constructs in the model. This study then proceeded to a more sophisticated analysis concerning the direct and indirect effects of other constructs in this conceptual model, the path from LMX/TMX to JS. To gain more understanding of the multiple effects of the interrelated factors, H5 and H6 tested for any mediating effects from other factors in the model.

Hypothesis 5 and 6 are:

H05 Organizational commitment will not mediate the effect of leader-member exchange on job satisfaction.

HA5 Organizational commitment will mediate the effect of leader-member exchange on job satisfaction.

H06 Organizational commitment will not mediate the effect of team-member exchange on job satisfaction.

HA6 Organizational commitment will mediate the effect of team-member exchange on job satisfaction.

The one-to-one bivariate relationship between LMX/JS (r=0.489) and TMX/JS (r=0.360) are significant (See Table 10). Hierarchical multiple regression analysis, with JS dependent and AC, CC, NC, LMX, and TMX as independent variables, examines mediating effects of LMX and TMX on other constructs' relationships with JS. The

Table 14 Hierarchical Multiple Regression Analysis for AC, CC, NC, LMX and TMX to JS

Model	Variables	Standardized Coefficients	t	Sig. (***)
		Beta		
1	(Constant)		1.674	.096
	LMXTOT	.150	2.076	.039 (***)
	TMXTOT	-.028	-.427	.670
	ACTOT	.612	7.688	.000 (***)
	CCTOT	-.071	-1.205	.230
	NCTOT	.053	.826	.410

a Predictors: (Constant), NCTOT, TMXTOT, CCTOT, LMXTOT, ACTOT
b Dependent Variable: JSTOT

results of hierarchical multiple regression analysis presented in Table 14, indicate that in the presence of AC, LMX is significant, while the other independent variables are not significant. Thus, only AC and LMX are related to JS in this analysis with standardized coefficients of 0.150 (p=.039), and 0.612 (p< .001), respectively. LMX directly affects JS and therefore AC does not mediate the effect from LMX to JS. Hypothesis 5 is not supported. The relationship between TMX and JS disappears when AC is included in the regression analysis.

Thus, we conclude that TMX affects JS through AC. Hypothesis 6 is supported.

Another way of verifying the mediator role of AC on the relationship from LMX/TMX to JS is tructural equations modeling. James and Brett (1984) suggest the following criteria for identifying mediating variables. Three conditions must obtain concurrently:

1. The direct effect without inclusion of the key mediator is significant.

2. The indirect effect upon inclusion of the key mediator is insignificant.

3. The influence pathways through the key mediator is statistically significant

This study used these criteria to test Hypothesis 5 and 6.

For Hypothesis 5:

1. The direct effect from LMX to JS without inclusion of AC is significant (r=0.489, see Table 10).

2. The indirect effect upon inclusion of the key mediator AC became significant (B=0.13, CR=3.583) as shown in Figure 10 and Table 13. Hypothesis 5 did not meet this criterion.

3. The influence pathways by SEM from LMX to AC (B=0.292, CR=4.787) and AC to JS (B=0.655, CR=18.714) are significant.

This test confirmed the result from hierarchical multiple regression testing that AC does not mediate the effect from LMX to JS. Hypothesis 5 is not supported.

For Hypothesis 6:

The mediating model of AC on the TMX-JS relationship is a better competing hypothesis because it meets the three conditions described above:

1. The direct effect from TMX to JS without inclusion of the key mediator AC is significant (B=0.360 at .005 significant level, See Table 10).

2. The indirect effect upon inclusion of the key mediator AC for TMX to JS is statistically insignificant as shown in Figure 10.

3. The influence pathway by SEM shown in Figure 10 from TMX to AC is significant (B=0.278, CR=5.792) as is the one from AC to JS (B=0.655, CR=18.714). Therefore, Hypothesis 6 is supported. This model provides additional empirical evidence that AC mediates the relationship between TMX and JS. Hypothesis 6 is supported.

The third casual path tested the relationships from OC to TOI and JS to TOI.

Hypothesis 7 and Hypothesis 8 are:

H07 Employee job satisfaction is positively related, or not related, to turnover intention among accounting professionals.

HA7 Employee job satisfaction is negatively related to turnover intention among accounting professionals.

H08 Organizational commitment is positively related, or not related, to intention to leave among accounting professionals.

HA8 Organizational commitment is negatively related to intention to leave in accounting professionals.

Hypothesis 7 examines the relationship between job satisfaction and intention to leave. Figure 10 suggests a significant inverse relationship with coefficient at -0.866 (CR= -16.980). The null hypothesis is therefore rejected.

Hypothesis 8 tested whether the three dimensions of organizational commitment, that is, affective commitment, continuous commitment, and normative commitment, are related to intention to leave among accounting professionals. The full structural model contains two factors:

AC and NC. The results in Figure 10 show that there is no relationship between affective commitment and normative commitment to turnover intention. Hypothesis 8 is not supported.

Bivariate correlation analyzes the relationship between two theoretical concepts from a single relationship perspective and SEM surmises a theory from multiple relationships perspective with several constructs simultaneously. Here, SEM analysis indicates that there is no relationship between both AC and NC and TOI. This appears to contradict findings in the literature that support an inverse relationship between organizational commitment and intention to leave (Wilhelm et al., 1993, Sparrowe, 1994). The correlations in Table 10 are also negative: AC and TOI (r=-0.578, p=.00); NC and TOI (r=-0.297, p=.00). At this stage of analysis, the two statistical outcomes appear to be contradictory.

To gain a better understanding of the multivariate relationships, this research proposes Hypothesis 9 to test for mediation effects of other constructs on the relationships between OC and TOI. Hypothesis 9 enables us to draw an inference of cause/effect and mediation among underlying factors.

Hypothesis 9 is:

H09 Job satisfaction will not mediate the effect of organizational commitment on employee turnover intention.

HA9 Job satisfaction will mediate the effect of organizational commitment on employee turnover intention.

First, hierarchical regression analysis tests the proposed mediating effects from JS to the relationship from OC to TOI. Using TOI as dependent variable, in the presence of JS, the other independent variables, AC, CC, and NC, are not significant. In this analysis, JS is the only

significant factor that influences TOI (see Table 15, B=-.825, p=.00). The relationship between AC to TOI and NC to TOI disappears when JS is included in the regression analysis. Therefore, hierarchical regression analysis indicated that AC and NC affect TOI through JS.

This study continues with the method suggested by James and Brett (1984) to identify key mediating factors using three criteria discussed above in H5 and H6 for SEM. Separate tests are conducted for AC to TOI and NC to TOI.

For AC to TOI:

1. The direct effect from AC to TOI without inclusion of JS is significant (See Table 10, B=-0.578 and p=.00).

2. The indirect effect from AC to TOI with inclusion of JS is statistically insignificant as shown in Figure 10.

3. The influence pathway from AC to JS is significant (B=0.655, CR=18.714) and JS to TOI is significant as well (B=-0.866, CR=-16.980).

Affective commitment is significantly related to TOI in the univariate relationship between AC and TOI. This relationship changes and is not significant when JS is included in the regression analysis. Therefore, AC influences TOI through JS. In other words, JS has mediating effect on the relationship between AC and TOI in hierarchical

Table 15 Hierarchical Multiple Regression Analysis for AC, CC, NC, LMX and TMX to TOI

Model	Variables	Standardized Coefficients	t	*Sig(***).*
		Beta		
1	(Constant)		21.307	.000
	AC	.011	.162	.871
	CC	.050	1.119	.264
	NC	.011	.214	.831
	JS	-.825	-13.201	.000(***)
a Dependent Variable: TOI				

regression analysis and SEM testing. JS mediates the effect of AC on TOI.

For NC to TOI:

1. The direct effect from NC to TOI without inclusion of JS is insignificant (See Table 10, B=-0.297 and p=.00).

2. The indirect effect from NC to TOI with inclusion of JS is statistically insignificant as shown in Figure 10.

3. There is no pathway from NC to JS in Figure 10, though the pathway from JS to TOI is significant (B=-0.866, CR=-16.980).

The above analysis confirmed that JS did not mediate the relationship from NC to TOI. In conclusion, JS mediated the effect from AC to TOI but JS did not have mediating effects on CC or NC to TOI. Hypothesis 9 is partially supported.

The last hypothesis in this study investigates the relationship between LMX and TMX. Hypothesis 10 is:

H010 Leader-member exchange is negative related to, or not related to, team-member exchange.

HA10 Leader-member exchange is positively related to team member exchange.

The results in Figure 10 indicated strong relationship from LMX to TMX (coefficient=0.465 and CR=9.30). Hypothesis 10 is supported.

In summary, Table 16 includes all hypotheses and their results.

Table 16: Summary of Hypotheses Testing		Results
H1	Relationship between LMX and OC.	Partially supported (LMX to AC and LMX to NC)
H2	Relationship between TMX and OC.	Partially supported (TMX to AC)
H3	Relationship between LMX and JS.	Supported
H4	Relationship between TMX and JS.	Not Supported
H5	AC mediating LMX to JS.	Not Supported
H6	AC mediating TMX to JS.	Supported
H7	Relationship between JS and TOI.	Supported
H8	Relationship between OC and TOI.	Not supported
H9	JS mediating OC to TOI.	Partially Supported (JS mediating AC to TOI)
H10	Relationship between LMX and TMX.	Supported

Summary

This chapter began with a presentation of sampling procedures, instrument factor analysis and reliability testing results. Respondent characteristics and descriptive statistics provided additional understanding of the population under study. Structural equation modeling yielded results for the basis of hypotheses testing. The rest of this

chapter addressed the results of testing the ten hypotheses in Table 17. The conclusions from different statistical techniques provided interesting comparisons for hypothesis testing.

Chapter V provides a summary of the findings and implications as well as recommendations for further research.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

In an attempt to provide additional insight into the little understood area of organizational dynamics among accounting professionals, this study explored the effects of accountants' relationships with leaders and behaviors with work group members in subunit networks to work attitudes using a confirmatory approach to the analysis of casual process in underlying theories. Even though respondents in this study were accounting professionals, the conclusions may also apply to other knowledge workers with specialized licensing and advanced education.

The objective of this study was, first, to explore the dynamic interactions involved in how employees are connected with their supervisor and team-members, and to examine the relationships between LMX, TMX and organizational commitment. Secondly, this research investigated the extent to which the quality of LMX and TMX relates to employee job satisfaction, and the extent to which it is mediated by other variables. Finally, this study tested a comprehensive model of the turnover process (Lee & Mowday, 1987) encompassing direct and mediating constructs (organizational commitment and job satisfaction) influencing turnover decisions.

Chapter IV presented the findings of the study. This chapter proceeds in the following sequence: summary of findings, implications for managers, theoretical and methodological contribution, limitations and recommendations for future research, and conclusion.

Summary of Findings

This study analyzed the role of leadership for the accounting knowledge workers, specifically how the quality of LMX in conjunction with TMX relates to organizational commitment, job satisfaction and turnover intention. This study sampled 202 accounting professionals, mostly in business settings as an improvement on the criticism on past studies of vertical exchange theory that were often limited to employees in lower-level jobs or public sector (Cogliser & Schriesheim, 2000). The average size of firms respondents work for is 4,178 employees, but it ranges from small firms to large international firms including CPA firms, private firms and some public service organizations. Forty-five percent of the total 202 respondents hold at least one professional license in accounting related fields. Average job tenure is 7.15 years. The respondents were from a variety of firm background, which provided a good basis for the generalization of the result to the accounting profession and other knowledge-based professions.

The first causal path tested the relationships among LMX, TMX with the three dimensions of organizational commitment. Organizational commitment pertains to some form of psychological bond between employees and organizations. Committed individuals demonstrate strong belief in and acceptance of organizational goals and values and are willing to work toward achieving these goals and values. (Porter et al., 1974). The results of Hypothesis 1 indicated that accounting professionals with high quality exchange relationships with their supervisor have stronger involvement and emotional attachment to the organization as measured by affective commitment. Past research demonstrated that subordinates with effective working relationship with their superiors are more committed and loyal (Gerstner & Day, 1997, Kinicki & Vechio, 1994; Nystorm, 1990; Maslyn, et al., 1998; Major, et al., 1995; Seers & Graen, 1984; Shore & Wayne, 1993). Employees who are considered as in-group members also internalizing normative

pressures from organizational socialization to stay due to a sense of obligation as measured by normative commitment. The relationship with the supervisor did not relate to members awareness of the costs of leaving an organization as measured by continuance commitment.

Accounting transactions today are vastly complex (e.g. derivates, pension and securitization). Reporting accuracy requires professional and technical skills. Reciprocal interaction among peers to share ideas, provide information and to help solve problem is important for this type of intellectually demanding work. From a single-relationship perspective, correlation analysis (See Table 10) indicated that TMX, like LMX, had a high positive correlation with affective commitment (B=0.50), a weaker but significant correlation with normative commitment (B= 0.18) and no relationship to continuance commitment (B=0.008). SEM tested the relationships in an integrated model and demonstrated that the relationship between TMX and affective commitment confirms with the results of Sherony and Green (2002). Dunegan, et al. (1992) also reported similar findings that work group exchange quality was positively associated with employee work attitudes and perceptions of climate. Results for Hypothesis 2 indicated that TMX is not related to continuance or normative commitments.

One possible explanation is that accounting professionals are knowledge workers with vested capital in their expertise and skills. Certification is an important professional achievement and the market values these professional accomplishments. Job opportunities increase as one's intellectual capital increases. Continuance commitment, based on side-bet theory, is linked to employees' concern with the accumulated investment in an organization. Professionals with necessary technical skills and managerial experiences are likely move to higher-level positions. Although not tested here, it may be that commitment to accounting profession and to their professional careers is stronger than their commitment to an organization. Thus, it makes sense

that both LMX and TMX are not associated with continuance commitments among accounting professionals.

The second casual path tested the relationships between LMX/TMX and job satisfaction, and the extent to which it is mediated by affective commitment. The results for Hypothesis 3 and Hypothesis 5 confirmed previous findings that LMX is an important antecedent of employee job satisfaction (Borchgrevink & Boster, 1994; Sherony & Green, 2000; Sparrowe, 1994). Training leaders and members in LMX enhancing strategies, for example, communication and rapport skills, can result in higher levels of employee satisfaction and performance (Hackett & Lapierre, 2004). The result for Hypothesis 4 indicated that TMX was not directly related to job satisfaction and confirmed similar finding (Sherony and Green, 2000). However, AC mediated the relationship between TMX and JS as proposed in Hypothesis 6. Tam (2004) asserted that a member with high quality relationship with team-members is more committed to an organization. Committed employees are likely to support the interests of those organizations and pursue innovative and profitable solutions on their behalf. These behaviors, in turn, are associated with higher overall satisfaction.

The next section tested a comprehensive model of the turnover process including direct and mediating constructs in organizational commitment and job satisfaction. Hypothesis 7 supported direct effect from JS to TOI. Organizational commitment, on the other hand, did not have a direct effect on TOI as tested in Hypothesis 8. Stinglhamber and Vandenberghes (2003) reported similar finding, that affective commitment did not influence actual turnover. The findings indicated that, for professional accountants, JS is the only significant influence on employee's intention to leave an organization. This result implies that efforts in an interactive retention program should focus on increasing in member satisfaction. For this sample, when a

staff member is satisfied with the work and the job, his or her chances of quitting the job or looking for another job is low. When job satisfaction results in lower turnover intention, organizations reap the benefits of cost savings through reduced training, staffing, and recruiting expenses. Furthermore, Hypothesis 9 supported the assertion that JS mediates the effect from AC to TOI. Accounting professionals, perhaps applicable to other knowledge professionals as well, are more committed to their professional career than their organizations. Professionals are likely to move around unless they are satisfied with the work or the job. This result coincided with the testing in Hypothesis 1, where continuance commitment was not a major concern to accounting professionals.

Hypothesis 10 proposed that TMX is related to LMX and, consistent with previous findings (Dose, 1999), it was supported. The SEM results (Figure 10) did not support a direct link from LMX to turnover intention, inconsistent with previous findings (Gerstner et al., 1997; Maslyn et al., 1998).

Practical implications for Management

The findings suggest that organizations wishing to increase employee commitment should focus on affective commitment by improving the quality of employee exchange relationships with supervisors and coworkers. Research indicates that supervisors and employees can be trained to improve the quality of network relationships (Yukl, 1998). An interactive strategy in human resource management is recommended to foster activities that will improve the quality of LMX and TMX with a focus on elements of job satisfaction. Organizations can administer diagnostic surveys or program evaluations to examine the quality of LMX and TMX relationships and pinpoint potential deficiencies in the design of training programs.

Initiatives from both leaders and followers are desirable. From the leaders' perspective, critical areas such as consultation, delegation, and mentoring skills are helpful in gaining support and developing open communication from subordinates. Favorable downward exchange relationship is usually correlated with higher job satisfaction and stronger organizational commitment (Yukl, 1989). From a member's perspective, the subordinate should demonstrate reciprocal behavior toward the leader and other peers. Effective programs using lecture, discussion and role-playing to communicate their concerns and expectations about each other's job and working relationships are advisable. Open communication and support, along with less use of pressure tactics such as threats and demands are desirable. Past research has indicated that attribution theory is helpful for managers in the cognitive processes to better quality LMX (Dugan, 1989; Gioia & Sims, 1986).

Indeed, LMX theory prescribes that effective leaders should seek to establish a special exchange relationship with all subordinates, not just with a few favorites (Graen &Uhl-Bien, 1995). It is not necessary to treat all subordinates exactly the same. Yukl (1989) suggests that leaders can have some trusted subordinates involving high level of mutual influences, while also having a relationship of mutual trust, supportiveness, respect, and loyalty with other subordinates. Equal opportunity and respect for in-group and out-group members from the leader reduces hostility between the two groups and can increase necessary cooperation and teamwork (Yukl, 1998).

Practitioner research has indicated that retaining valuable employees is a key to successful human resource management. Kubly (2001) reported that a recent Gallop study of seven hundred companies representing approximately seven million workers reported that the number one reason people leave their jobs is because of poor management. Ford (2003) concurs:

people don't leave companies; they leave their managers! Both academic and practitioner research have looked for ways to develop effective retention strategies to keep valuable employees. The model in this study indicated that job satisfaction is the most important turnover factor for professional knowledge workers. It also asserted that the quality of LMX and employees' affective commitment are important antecedents of job satisfaction. In the design of modern retention strategies, organizations must first focus on bringing in job satisfaction by concentrating on employee's affective commitment and the quality of LMX and TMX.

Theoretical Contributions

This study made an incremental contribution to our knowledge of turnover behavior by applying a theoretical model to professional knowledge workers. The major contributions were the following:

1. Organizational commitment influences turnover intention only indirectly through satisfaction. It appears that this emotional evaluative state is the key trigger point for turnover. Commitment appears to be a rationale or driver for satisfaction but not for turnover. This finding should be consistent with motivational theories.

2. The concept of continuance commitment appears to be fundamentally different than normative or affective commitment at least in the case of highly mobile knowledge workers. Organizational commitment appears to be a two versus three dimensional concepts for professional group. Accounting professionals, as well as other skilled professionals are intellectuals with vested capital in expertise and skills. One's intellectual capital is an important determinant of one's career mobility. The conclusion of this study can be generalized to other similar type of professional knowledge workers.

3. TMX but not LMX directly affects turnover, confirming previous findings by Hellman, Mitt, & Hilton (1993). Thus the immediate work environment of the employee appears to be more important than LMX that is not as immediate as the work team.

4. High-level knowledge employees appear to be motivated to leave the organization for similar reasons similar to those reported in other studies. However because highly skilled knowledge workers tend to have significant opportunities for career mobilility, continuance commitment is not a significant factor.

Methodological Contributions

This study made the following methodological contributions:

1. Criticisms of studies of vertical exchange center on their narrow focus on employees in lower-level jobs and/or limited to the public sector (Cogliser & Schriesheim, 2000, Dienesch & Linden, 1986; Miner, 1980; Vecchio & Gobdel, 1984) and the absence of studies in business settings. This study investigated LMX among accounting professionals and the results may be generalized among other knowledge professionals.

2. The study results revealed that the use of the three-part commitment model may be more appropriate in cases where workers have limited career mobility.

3. Prior researches often empirically examined the relationships among the study constructs from a univariate perspective and proposed relationship on one-by-one basis. This study shows the utility of assessing models as a complete whole with in interactive perspective using SEM modeling. In addition to providing evidence on the relevance of the various constructs, the findings also help to draw inference of cause/effect in their entirety.

Limitations and Recommendations for Future Study

This study has some limitations. First, data came from only US accounting professionals, and the results may not generalize to other non-service oriented professions in the U. S. and other countries and cultures. In addition, this study did not investigate other influences in the commitment-turnover process such as the nature and structure of the organization, climate and culture. It did not explore the potential effect of gender differences in the male dominated accounting profession (Adebayo & Udegbe, 2004).

Another limitation derives from questionnaires using self-report by individuals who provided their perspectives of dyadic relationships with their supervisors and of multiple interacting relationships with team/workgroup members. This study did not include reactions from the supervisor, in the case of dyads and from team members in the case of team relationships.

Future research should examine the relationships between LMX and TMX with multiple foci of commitment rather than only to the organization, for example the work group. Commitment can be directed to many abstract systems (Meyer et al., 1998) and employees experience several different commitments to the goals and values of multiple groups (Reichers, 1985), such as professions (Aranya, et al., 1981; Morrow & Wirth, 1989), unions (Fullagar & Barling, 1989; Gordon, et al., 1980), employment (Jackson, et al., 1983), careers (Arnold, 1990: Blau, 1985, 1988, 1989), among many others.

A longitudinal study is recommended to understand the experiences involved in the leader-member relationship life cycle and team-member relationships. Leadership effectiveness cannot be understood without examining how a leader and a follower influence each other over time (Yukl, 1998). A favorable exchange relationship is correlated with more organizational

citizenship behavior by the subordinators, more support of the leader, more open communication with the leader, and less use of pressure tactics such as threats, demands to influence the leader. The understanding of leadership making model in stranger phase, acquaintance phase and the mature partnership phase should provide good basis for human resource strategic development.

Conclusion

This study identified the ways in which perceptions of relationships with leaders and with work group members can result in improved work attitudes in commitment, satisfaction, and retention in both accounting and organizational behavior contexts. It is useful to practitioners in the accounting profession in designing management development, succession planning, and managerial coaching processes or attempting to solve performance issues in a work group.

Firms are adapting effective management strategies in the phase of increased market competition and the complex business environment. Organizational leadership theory and research are useful for human resources practitioners and managers at all levels. They provide solutions for enhancing performance in the current business environment. Leaders and managers affect employees' commitment to organizations by the quality of the relationships they establish and with the rules and procedures for how work is performed.

Management is responsible for fostering a working environment that respects individual needs and promotes professional development for employees. This study provided some insight into effective human resource management practices in hiring, training, and retaining valuable employees. By using the LMX theory and TMX theory, this study hopes to enhance management's understandings of group network exchange relationships and the value congruence of employees and their organizations.

Appendix A

Survey Questionnaire

Part 1 Cover Letter to Survey Participants

Dear Respondent:

Warm welcome!

You are invited to be part of the multi-firm study on relationship oriented organizational behavior in public accounting profession.

This research project is approved by Nova Southeastern University as part of my doctoral dissertation. Your perceptions of leader-member and team-member relationships and their effects are valuable in understanding employee behavior in this profession.

This is an anonymous and confidential study. The questionnaire is designed to minimize the time you need to spend responding. Please give your honest and thoughtful answers by circling the appropriated response.

Your support in this survey is greatly appreciated. The compiled results of this study will be available to Alpha Kappa Psi or upon your request. Please feel free to contact me any time at chouyeh@nova.edu.

Sincerely Yours,

Yaying Mary Yeh
Candidate for Doctorate in Business Administration
Nova Southeastern University

Dr. Barbara R. Dastoor, Ph.D.
Doctoral Programs
School of Business and Entrepreneurship
Nova Southeastern University

Part 2 Information about the participant

Responses are strictly confidential. Make sure to answer all questions!

Information about the participant:

1. **Gender: I am** ☐ Male ☐ Female

2. **Age: I am** ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50 or over

3. **Education: My highest degree is**

   ☐ High School ☐ Associate ☐ Bachelor ☐ Master ☐ Doctoral

4. **Job Level: I am a**

   ☐ Partner ☐ Manager ☐ Senior ☐ Staff

5. **Job Field: My major job area is (Mark only one)**

   ☐ Auditing ☐ Taxation ☐ Accounting Services

   ☐ Management Services ☐ Other: (Please specify_____)

6. **How many years you have worked for this firm?** _____ Years _____ Months
   How long ago was your last promotion? _____ Years _____ Months

7. **Do you work for a public accounting firm?** ☐ Yes ☐ No

   What is the size of your firm? Numbers of employees _____

8. **Licenses held: I hold the following licenses: (Mark all that apply)**

   ☐ CPA ☐ CMA ☐ CFA ☐ Chartered Accountant

   ☐ Attorney ☐ CIA ☐ CGA ☐ CISA

   ☐ None ☐ Other: (Please specify_____)

Part 3 Measures of LMX-7

PLEASE TURN TO NEXT PAGE AND CONTINUE

The following statements concern relationships between supervisors and subordinates. Please read the statements carefully, and indicate to what extent you disagree or agree with each statement. Circle the number corresponding to you choices using the scale below.

1	2	3	4	5
Strongly Disagree	Disagree	Neither	Agree	Strongly Agree

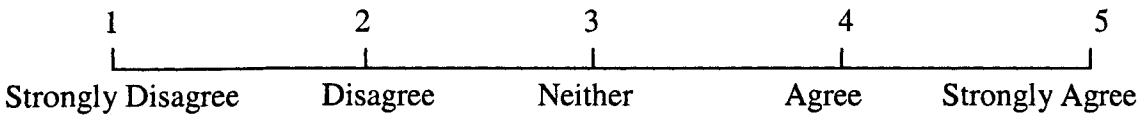
(1). I usually know where I stand with my supervisor.	1	2	3	4	5
(2). My supervisor understands my job problems and needs.	1	2	3	4	5
(3). My supervisor recognizes my potential.	1	2	3	4	5
(4). Regardless of how much formal authority my supervisor has built into his/her position, my supervisor would be personally inclined to use his/her power to help me solve problems in my work.	1	2	3	4	5
(5). I can count on my supervisor to "bail me out" at his/her expense, when I really need it.	1	2	3	4	5
(6). I have enough confidence in my supervisor that I would defend and justify her/his decision if she/he were not present to do so.	1	2	3	4	5

(7). How would you characterize your working relationship with your supervisor?
(Please circle the number that corresponds to your answer)

1	2	3	4	5
Extremely Ineffective	Worse Than Average	Average	Better Than Average	Extremely Effective

Part 4 Team-member Exchange Quality Scale

The following statements concern the relationship between member and member group. Please read the statements carefully, and indicate to what extent you disagree or agree with each statement. Circle the number corresponding to you response using the scale below.



(1). I often make suggestions about better work methods to other team members.	1	2	3	4	5
(2). Other members of my team usually let me know when I do something that makes <u>their</u> jobs easier (or harder).	1	2	3	4	5
(3). I usually let other members of my team know when they have done something that makes <u>my</u> job easier (or harder).	1	2	3	4	5
(4). Other members of my team recognize my potential.	1	2	3	4	5
(5). Other members of my team understand my problems and needs.	1	2	3	4	5
(6). I am flexible about switching job responsibilities to make things easier for other team members.	1	2	3	4	5
(7). In busy situations, other team members often ask me to help out.	1	2	3	4	5
(8). In busy situations, I often volunteer my efforts to help others on my team.	1	2	3	4	5
(9). I <u>am willing to</u> help finish work that had been assigned to other members of my team.	1	2	3	4	5
(10). The other members of my team <u>are willing to</u> help me finish work that was assigned to me.	1	2	3	4	5

Part 5 Three Dimensional Scale of Organizational Commitment

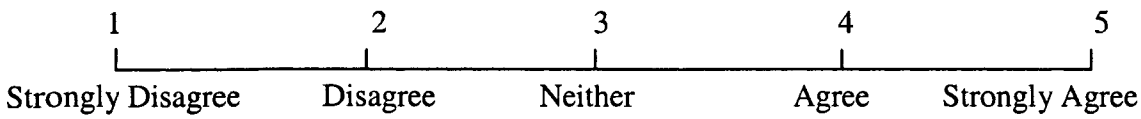
The following statements concern commitment to your organization. Please indicate the degree of your disagreement or agreement with each statement by circling a number from 1 to 5.

1	2	3	4	5
Strongly Disagree	Disagree	Neither	Agree	Strongly Agree

(1). I would be very happy to spend the rest of my career with this organization.	1	2	3	4	5
(2). I enjoy discussing my organization with people outside of it.	1	2	3	4	5
(3). I really feel as if this organization's problems are my own.	1	2	3	4	5
(4). This organization has a great deal of personal meaning for me.	1	2	3	4	5
(5). I feel emotionally attached to this organization.	1	2	3	4	5
(6). One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.	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
(8). I feel that I have too few options to consider leaving this organization.	1	2	3	4	5
(9). Leaving would require considerable personal sacrifice because another organization may not match the overall benefit I have here.	1	2	3	4	5
(10). It would be too costly for me to leave my organization in the near future.	1	2	3	4	5
(11). I believe that a person must always be loyal to his or her organization.	1	2	3	4	5
(12). Moving from organization to organization seems unethical to me.	1	2	3	4	5
(13). If I got another offer for a better job elsewhere, I would not feel it was right to leave my organization.	1	2	3	4	5
(14). I feel a sense of moral obligation to remain with this organization.	1	2	3	4	5
(15). I was taught to believe in the value of remaining loyal to one organization.	1	2	3	4	5

Part 6 Job Satisfaction Scale

The following statements concern your job satisfaction. Please indicate the degree of your disagreement or agreement with each statement by circling a number from 1 to 5.



(1). Generally speaking, I am very satisfied with this job.	1	2	3	4	5
(2). I often think of quitting my job. ®	1	2	3	4	5
(3). I am generally satisfied with the kind of work I do in this job.	1	2	3	4	5

Part 7 Turnover Intention Scale

The following statements concern your turnover intention. Please indicate the degree of your disagreement or agreement with each statement by circling a number from 1 to 5.

1	2	3	4	5
Strongly Disagree	Disagree	Neither	Agree	Strongly Agree

(1). If I have my own way, I will be working for another organization one year from now.	1	2	3	4	5
(2). I frequently think of quitting my job.	1	2	3	4	5
(3). I am planning to search for a new job during the next twelve months.	1	2	3	4	5

Appendix B

Requests and Permissions to Conduct Survey

Letter to Professional Accounting Fraternity Requesting Permission to Survey

Dear Sir:

I am a doctorate student at Nova Southeastern University in Fort Lauderdale, Florida. As part of my dissertation requirement, I am conducting a study in understanding the leader-member exchange relationship and organizational commitment among the accounting professionals.

I would like to request permission from your organization, so that I can conduct a survey on your participating members. The questionnaire is anonymous and short, taking 10-15 minutes to complete. If it is possible, it will be most convenient to personally conduct the survey during one your CPE courses or FICPA member meetings, however is best suitable for you and your members.

Having a MBA degree majoring in accounting from Baruch College, City University of New York, I am also a Certified Public Accountant licensed in New York State, member of the AICPA and Beta Alpha Psi (in college). Because my background is accounting related and teaching in college, I am interested in research topics that will enhance the future development of the profession.

The findings of this study will be delivered to your organization for your reference and may be useful to your members in understanding organizational behavior in the profession. Your participation and support in this academic study is valuable and greatly appreciated. Please let me if there is anything I can do for this arrangement.

Thank you in advance and best regards,

Yaying Mary Chou Yeh

Nova Southeastern University
Candidate for Doctorate in Business Administration

Dr. Barbara R. Dastoor, Ph.D.
Doctoral Programs
School of Business and Entrepreneurship
Nova Southeastern University

Approval E-mail from a Professional Accounting Fraternity to Conduct Survey

To: Yaying Mary Chou Yeh
From: Ilyne Sbar
Subject: Survey Request

My name is Ilyne and I coordinate our CPE seminars with Alex Perdomo. Your letter regarding the survey came to my office.
We would be happy to assist you with your project. Would you be wanting to survey all attendees or just members of our fraternity? Our CPE seminars are open to the public and while we will have a dozen or so fraternity members in attendance, the majority of our 100+ audience is made up of non-member CPAs from the community.
Let me know,

Ilyne
Ilyne Sbar, CPA
Berman, Swichkow, Farbish, Adler & Aldecoa, PA
Tel: 305-665-5303
Fax: 305-665-7161
mailto:isbar@bsfaa.com

E-mail to the Director, Master of Accounting and Taxation Programs Requesting Permission to Survey

From: Yaying Mary Chou Yeh
To: Director, Master of Accounting and Taxation Programs
Cc: Dr. Dastoor, Barbara
Subject: Survey MACC students

Hi, Dr. Moore:

This is Mary Yeh from the DBA program. I am working on staff attitude research for accounting related professionals.

I contacted you a while ago about doing sampling on accounting student for my dissertation under the supervision of Dr. Dastoor, my chair.

I am in campus. Just wondering if I can do survey on the following classes:

8/27-8/28 GMP 5767 AC2
GMP 5764 AC2
GMP 5769 AC2
GMP 5781 AC2
9/10-9/11 GMP 5721 AC1
GMP 5736 AC1
GMP 5717 AC1
GMP 5751 AC1

Thank you for your help in advance.

Mary Yeh

Approval E-mail from Master of Accounting and Taxation Programs Office to Conduct Survey

Hello Professors,

Mary Yeh from the Doctoral Program of Business Administration would like to conduct a survey for her dissertation regarding accounting professional's attitudes and perceptions at work. She will come into the classroom and hand out the questionnaires. The survey will take about 10 minutes. We would appreciate it if you will allow her to do so.

Sincerely,

Michele Ramkissoon

Assistant to the Director- Graduate Accounting Programs

Appendix C

E-mails Requesting Permission to Use Instruments

E-mail Requesting Permission to Use LMX-7 Scale

Dr. Terri A. Scandura (scandura@miami.edu)
Department of Management
School of Business Administration
University of Miami
414 Jenkins Building
Coral Gables, Florida 33124-9145

Dear Dr. Scandura:

This letter is to formally request your permission to use the Leader-member exchange survey instrument (LMX-7 scale) as part of my research. This instrument is referenced in many journals and will serve well in support of my dissertation.

I am presently pursuing a DBA degree in Nova Southeastern University. My major area of research is in LMX, organizational commitment and job attitude.

If you agree, I would greatly appreciate you send a confirmation to:

Mary Yeh
4761 SW 54 Terr.
Davie, Fl 33314

Or via email

Thank you and look forward to your reply.

Sincerely,
Yaying Mary Yeh

E-mail Requesting Permission to Use TMX Scale

Dr. Anson Seers
(aseer@vcu.edu)

Dear Dr. Seers:

This letter is to formally request your permission to use the Team-member Exchange Scale (with 10 items) you developed in 1995 as part of my research. This instrument is referenced in many journals and will serve well in support of my dissertation.

I am presently pursuing a DBA degree in Nova Southeastern University. My major area of research is in LMX, TMX, organizational commitment and job attitude.

If you agree, I would greatly appreciate you send a confirmation to:

Mary Yeh
4761 SW 54 Terr.
Davie, Fl 33314

Or via email:
Yayeh2001@yahoo.com

Thank you and look forward to your reply.

Sincerely,
Yaying Mary Yeh

E-mail Requesting Permission to Use Organizational Commitment Scale

Dr. John Meyer (meyer@uwo.ca)
Department of Psychology
University of Western Ontario
London, ON, Canada N6A 5C2

Dear Dr. Meyer:

This letter is to formally request your permission to use the Organizational Commitment Scale as part of my research. This instrument is referenced in many journals and will serve well in support of my dissertation.

I am presently pursuing a DBA degree in Nova Southeastern University. My major area of research is in LMX, organizational commitment and job attitude.

If you agree, I would greatly appreciate you send a confirmation to:

Mary Yeh
4761 SW 54 Terr.
Davie, Fl 33314

Or via email:
Yayeh2001@yahoo.com

Thank you and look forward to your reply.

Sincerely,
Yaying Mary Yeh

Appendix D

E-mail Permissions to Use Instruments

E-mail Permission to Use LMX-7 Scale

Subject: RE: Permission to use instrument
Date: Sat, 14 Aug 2004 20:30:48 -0400
From: "Scandura, Terri" <tscandur@exchange.sba.miami.edu>
To: "yaying yeh" <yayeh2001@yahoo.com>

Dear Mary,

The LMX-7 is published in an article in the Journal of Applied Psychology, 1984 (Scandura and Graen). You may also find a review by Gerstner and Day, 1997 (Journal of Applied Psychology) helpful. The state that the LMX 7 is the most commonly used measure of Leader-member exchange. The measure is available for basic research.

Good luck with your dissertation research.

Terri

Terri A. Scandura

Professor of Management and Psychology

414 Jenkins Building

School of Business Administration

University of Miami

Coral Gables, FL 33124-9145

(305) 284- 3746 PH

(305) 284-3655 FX

E-mail Permission to Use TMX Scale

Subject: Re: Permission to use instrument
From: "Anson Seers/AC/VCU" <aseers@vcu.edu>
To: "yaying yeh" <yayeh2001@yahoo.com>
CC:
Date: Sun, 15 Aug 2004 15:44:10 -0400

Dear Yaying,

By all means, I am honored for you to use it. Best wishes for success in your work!

Anson Seers
aseers@vcu.edu
804-828-1624

E-mail Permission to Use Organizational Commitment Scale

Date: Mon, 16 Aug 2004 08:42:55 -0400

From: "John Meyer" <meyer@uwo.ca> View Contact Details

To: "yaying yeh" <yayeh2001@yahoo.com>

Subject: Re: Permission to use instrument

Dear Mary,

You are welcome to use our commitment measures in your research. There is no charge as long as they are being used for academic research purposes only.

Best regards,

John Meyer

Appendix E

Exploratory Factor Analysis and Reliability Statistics Output by SPSS 11.5

Part 1 Exploratory Factor Analysis and Reliability Testing for LMX7

Warnings

Only one component was extracted. Component plots cannot be produced.

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
where I stand	3.93	.882	180
understanding	3.69	.934	180
potential	3.91	.961	180
solve problems	3.76	.931	180
bail me out	3.46	.977	180
defend	3.82	.820	180
relationship	3.88	.779	180

Correlation Matrix

		where I stand	understanding	potential	solve problems	bail me out	defend	relationship
Correlation	where I stand	1.000	.626	.599	.497	.406	.524	.509
	understanding	.626	1.000	.590	.530	.357	.578	.557
	potential	.599	.590	1.000	.554	.374	.489	.523
	solve problem	.497	.530	.554	1.000	.536	.499	.500
	bail me out	.406	.357	.374	.536	1.000	.494	.460
	defend	.524	.578	.489	.499	.494	1.000	.615
	relationship	.509	.557	.523	.500	.460	.615	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.892
Bartlett's Test of Sphericity	Approx. Chi-Square	564.575
	df	21
	Sig.	.000

Anti-image Matrices

		here I stan	derstandin	potential	olve problem	ail me ou	defend	elationshi
Anti-image Cova	where I sta	.495	-.143	-.135	-.027	-.052	-.051	-.033
	understand	-.143	.456	-.093	-.077	.050	-.104	-.075
	potential	-.135	-.093	.504	-.121	.009	-.016	-.072
	solve probl	-.027	-.077	-.121	.521	-.186	-.029	-.040
	bail me out	-.052	.050	.009	-.186	.624	-.118	-.078
	defend	-.051	-.104	-.016	-.029	-.118	.491	-.155
	relationshi	-.033	-.075	-.072	-.040	-.078	-.155	.510
Anti-image Corre	where I sta	.899[a]	-.301	-.271	-.054	-.094	-.104	-.066
	understand	-.301	.884[a]	-.194	-.159	.094	-.220	-.155
	potential	-.271	-.194	.899[a]	-.236	.017	-.033	-.141
	solve probl	-.054	-.159	-.236	.890[a]	-.326	-.058	-.077
	bail me out	-.094	.094	.017	-.326	.862[a]	-.212	-.138
	defend	-.104	-.220	-.033	-.058	-.212	.894[a]	-.310
	relationshi	-.066	-.155	-.141	-.077	-.138	-.310	.909[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

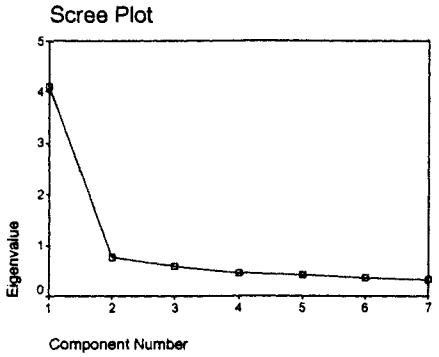
	Initial	Extraction
where I stand	1.000	.610
understanding	1.000	.639
potential	1.000	.601
solve problems	1.000	.588
bail me out	1.000	.437
defend	1.000	.618
relationship	1.000	.608

Extraction Method: Principal Component Anal

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.102	58.595	58.595	4.102	58.595	58.595
2	.759	10.839	69.434			
3	.585	8.361	77.795			
4	.453	6.471	84.265			
5	.410	5.862	90.127			
6	.362	5.177	95.304			
7	.329	4.696	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component
	1
where I stand	.781
understanding	.799
potential	.775
solve problems	.767
bail me out	.661
defend	.786
relationship	.780

Extraction Method: Principal Component Anal

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extractec
The solution cannot be rotated.

Reliability:LMX7

****** Method 2 (covariance matrix) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

Mean Std Dev

1.	LMX1	3.9333	.8818
2.	LMX2	3.6944	.9341
3.	LMX3	3.9056	.9612
4.	LMX4	3.7556	.9313
5.	LMX5	3.4611	.9766
6.	LMX6	3.8222	.8198
7.	LMX7	3.8833	.7787

Correlation Matrix

	LMX1	LMX2	LMX3	LMX4	LMX5
LMX1	1.0000				
LMX2	.6262	1.0000			
LMX3	.5989	.5898	1.0000		
LMX4	.4970	.5302	.5544	1.0000	
LMX5	.4056	.3574	.3740	.5362	1.0000
LMX6	.5244	.5779	.4890	.4989	.4937
LMX7	.5093	.5574	.5225	.4997	.4605

	LMX6	LMX7
LMX6	1.0000	
LMX7	.6149	1.0000

Item-total Statistics

Scale Mean	Scale Variance	Corrected Item-	Squared	Alpha

	if Item Deleted	if Item Deleted	Total Correlation	Multiple Correlation	if Item Deleted
LMX1	22.5222	17.2118	.6860	.5050	.8586
LMX2	22.7611	16.7750	.7007	.5437	.8565
LMX3	22.5500	16.7628	.6762	.4964	.8600
LMX4	22.7000	16.9486	.6773	.4789	.8597
LMX5	22.9944	17.5363	.5525	.3761	.8770
LMX6	22.6333	17.5855	.6910	.5093	.8587
LMX7	22.5722	17.8998	.6834	.4896	.8603

Reliability Coefficients 7 items

Alpha = .8790 Standardized item alpha = .8815

Part 2 Exploratory Factor Analysis and Reliability Testing for TMX

Warnings

Only one component was extracted. Component plots cannot be produced.

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
suggestions	3.73	.892	192
other let me know	3.74	.922	192
I let other know	3.84	.892	192
potential	3.81	.913	192
understanding	3.56	.866	192
switching job	3.92	.846	192
I help out	3.88	.889	192
I often volunteer	3.93	.946	192
other willing to help	3.76	.883	192

Correlation Matrix

	gesti	er let know	other k	otenti	erstan	ching	elp o	n volu	er will o help
Corr suggest	.000	.552	.484	.490	.375	.470	.419	.374	.323
other le	.552	.000	.675	.608	.521	.462	.478	.423	.426
I let oth	.484	.675	1.000	.612	.416	.384	.397	.364	.356
potentia	.490	.608	.612	.000	.538	.447	.358	.390	.457
underst	.375	.521	.416	.538	1.000	.543	.384	.408	.547
switchin	.470	.462	.384	.447	.543	1.000	.529	.529	.513
I help o	.419	.478	.397	.358	.384	.529	.000	.699	.442
I often v	.374	.423	.364	.390	.408	.529	.699	1.000	.468
other wi	.323	.426	.356	.457	.547	.513	.442	.468	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	805.253
	df	36
	Sig.	.000

Anti-image Matrices

		ggestion	her let m know	t other kn	otential	derstandi	vitching jo	help ou	ten volunte	her willin to help
Anti-image Cc	suggestions	.601	-.105	-.052	-.079	.016	-.110	-.048	-.002	.027
	other let me	-.105	.405	-.175	-.073	-.081	-.003	-.061	.005	-.014
	I let other kn	-.052	-.175	.471	-.143	.010	.006	-.025	-.005	.004
	potential	-.079	-.073	-.143	.474	-.103	-.018	.043	-.032	-.067
	understandi	.016	-.081	.010	-.103	.526	-.126	.015	-.015	-.147
	switching jo	-.110	-.003	.006	-.018	-.126	.515	-.074	-.072	-.093
	I help out	-.048	-.061	-.025	.043	.015	-.074	.444	-.240	-.042
	I often volun	-.002	.005	-.005	-.032	-.015	-.072	-.240	.458	-.065
	other willing	.027	-.014	.004	-.067	-.147	-.093	-.042	-.065	.584
Anti-image Cc	suggestions	.925[a]	-.214	-.097	-.148	.028	-.197	-.093	-.004	.045
	other let me	-.214	.885[a]	-.400	-.167	-.176	-.007	-.143	.012	-.029
	I let other kn	-.097	-.400	.872[a]	-.303	.020	.012	-.054	-.010	.007
	potential	-.148	-.167	-.303	.901[a]	-.205	-.036	.094	-.069	-.128
	understandi	.028	-.176	.020	-.205	.897[a]	-.243	.031	-.030	-.266
	switching jo	-.197	-.007	.012	-.036	-.243	.916[a]	-.156	-.149	-.169
	I help out	-.093	-.143	-.054	.094	.031	-.156	.835[a]	-.532	-.082
	I often volun	-.004	.012	-.010	-.069	-.030	-.149	-.532	.843[a]	-.126
	other willing	.045	-.029	.007	-.128	-.266	-.169	-.082	-.126	.919[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
suggestions	1.000	.467
other let me know	1.000	.630
I let other know	1.000	.519
potential	1.000	.568
understanding	1.000	.525
switching job	1.000	.557
I help out	1.000	.514
I often volunteer	1.000	.502
other willing to help	1.000	.474

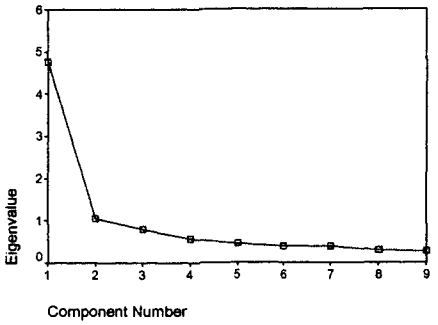
Extraction Method: Principal Component Anal

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.755	52.837	52.837	4.755	52.837	52.837
2	1.049	11.651	64.488			
3	.795	8.831	73.319			
4	.583	6.481	79.801			
5	.449	4.988	84.789			
6	.399	4.434	89.222			
7	.393	4.362	93.584			
8	.298	3.313	96.897			
9	.279	3.103	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix[a]

	Component
	1
suggestions	.683
other let me know	.794
I let other know	.720
potential	.753
understanding	.725
switching job	.746
I help out	.717
I often volunteer	.708
other willing to help	.689

Extraction Method: Principal Component Anal

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extractec
The solution cannot be rotated.

Reliability-TMX 9

****** Method 2 (covariance matrix) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1.	TMX1	3.7292	.8918	192.0
2.	TMX2	3.7448	.9224	192.0
3.	TMX3	3.8385	.8921	192.0
4.	TMX4	3.8125	.9131	192.0
5.	TMX5	3.5625	.8660	192.0
6.	TMX6	3.9167	.8459	192.0
7.	TMX7	3.8750	.8891	192.0
8.	TMX8	3.9271	.9461	192.0
9.	TMX10	3.7604	.8832	192.0

Correlation Matrix

	TMX1	TMX2	TMX3	TMX4	TMX5
TMX1	1.0000				
TMX2	.5520	1.0000			
TMX3	.4844	.6750	1.0000		
TMX4	.4902	.6080	.6118	1.0000	
TMX5	.3745	.5215	.4164	.5379	1.0000
TMX6	.4696	.4625	.3845	.4474	.5432
TMX7	.4193	.4780	.3969	.3579	.3842
TMX8	.3736	.4225	.3644	.3901	.4081
TMX10	.3227	.4259	.3560	.4569	.5468

	TMX6	TMX7	TMX8	TMX10
TMX6	1.0000			
TMX7	.5290	1.0000		
TMX8	.5288	.6986	1.0000	
TMX10	.5128	.4417	.4677	1.0000

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
TMX1	30.4375	27.8285	.5918	.3991	.8795
TMX2	30.4219	26.5279	.7171	.5948	.8690
TMX3	30.3281	27.4886	.6315	.5285	.8763
TMX4	30.3542	27.0048	.6695	.5257	.8731
TMX5	30.6042	27.6435	.6367	.4738	.8759
TMX6	30.2500	27.5707	.6648	.4853	.8738
TMX7	30.2917	27.4852	.6346	.5563	.8761
TMX8	30.2396	27.1674	.6214	.5415	.8773
TMX10	30.4062	27.8341	.5986	.4160	.8790

Reliability Coefficients 9 items

Alpha = .8879 Standardized item alpha = .8880

Part 3 Exploratory Factor Analysis and Reliability Testing for OC 15

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
staying	3.68	1.198	193
discussing outside	3.71	1.089	193
org probel are mine	3.58	1.175	193
personal meaning	3.60	1.086	193
emmotionally attached	3.61	1.099	193
consequences of leavi	3.08	1.177	193
staying is necessity	3.24	1.210	193
few options of leaving	2.83	1.171	193
personal sacrifice	3.33	1.165	193
cost of leaving	3.06	1.162	193
loyal	3.74	1.103	193
unethical	2.56	1.108	193
right to leave	2.65	1.123	193
moral obligation	2.93	1.157	193
value of remaining loya	3.43	1.083	193

Correlation Matrix

		ayin	cuss utsid	pro e mi	rsor eani	motior tache	eque leavi	ying cess	opti eavi	rsor crifi	of lea	oyal	ethic	to le	oblig	alue c ining
Cor	staying	000	608	607	575	.713	.180	034	005	348	.209	405	181	323	.404	.378
	discuss	608	000	448	531	.562	.229	005	096	290	.093	287	101	150	.330	.331
	org pro	607	448	000	765	.779	.254	024	004	275	.203	387	208	304	.402	.386
	person	575	531	765	000	.804	.212	014	066	290	.160	373	230	226	.396	.359
	emmoti	713	562	779	804	.000	.205	024	001	382	.215	486	214	306	.461	.430
	conseq	180	229	254	212	.205	.000	484	471	490	.423	088	130	052	.123	.064
	staying	034	005	024	014	-.024	.484	000	477	372	.427	008	067	143	.005	-.186
	few opt	005	096	004	066	.001	.471	477	000	484	.490	001	090	061	-.002	-.044
	person	348	290	275	290	.382	.490	372	484	000	.623	202	207	173	.292	.138
	cost of	209	093	203	160	.215	.423	427	490	623	.000	139	284	248	.216	.099
	loyal	405	287	387	373	.486	.088	008	001	202	.139	000	296	286	.405	.505
	unethic	181	101	208	230	.214	.130	067	090	207	.284	296	000	520	.483	.393
	right to	323	150	304	226	.306	.052	143	061	173	.248	286	520	000	.634	.382
	moral o	404	330	402	396	.461	.123	005	002	292	.216	405	483	634	1.000	.594
	value o	378	331	386	359	.430	.064	186	044	138	.099	505	393	382	.594	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.842
Bartlett's Test of Sphericity	Approx. Chi-Square	1470.617
	df	105
	Sig.	.000

Anti-image Matrices

		staying	discussing outside	org probe	personal meaning	emmotion attached	consequence leaving	staying is	few option	personal sacrific	cost of leaving	loyal	unethical	right to leave	moral obligation	value of staining
Anti-image	staying	.394	-.163	-.048	.027	-.083	.005	.055	-.001	.035	-.024	-.039	.027	-.068	.014	.004
	discussing	.163	.518	.042	.060	-.025	-.082	-.044	.099	.050	.046	.025	.032	.039	-.026	-.060
	org probe	.048	.042	.312	.112	-.081	-.064	-.009	.004	.043	-.019	.005	.026	-.036	.005	-.028
	personal m	.027	-.060	.112	.280	-.107	-.013	-.009	.042	.001	.004	.020	-.061	.043	-.015	.014
	emmotion	.083	-.025	.081	.107	.205	.024	.027	-.014	.050	.005	-.073	.033	-.011	-.015	-.004
	consequence	.005	-.082	.064	.013	.024	.560	-.172	-.132	.074	-.025	.029	-.037	.075	-.010	-.028
	staying is	.055	-.044	.009	.009	.027	-.172	.566	-.112	.030	-.084	-.073	.035	-.113	.014	.134
	few option	.001	.099	.004	.042	-.014	-.132	-.112	.546	-.124	-.087	.015	.002	-.008	.042	-.041
	personal s	.035	-.050	.043	.001	-.050	-.074	-.030	-.124	.432	-.190	.001	-.006	.055	-.073	.036
	cost of lea	.024	.046	.019	.004	.005	-.025	-.084	-.087	.190	.507	.011	-.083	-.037	.016	-.008
	loyal	.039	.025	.005	.020	-.073	.029	-.073	.015	-.001	.011	.632	-.064	.020	-.013	-.172
	unethical	.027	.032	.026	.061	.033	-.037	.035	.002	-.006	-.083	-.064	.620	-.170	-.058	-.076
	right to lea	.068	.039	-.036	.043	-.011	.075	-.113	-.008	.055	-.037	.020	-.170	.473	-.199	.000
	moral obli	.014	-.026	.005	-.015	-.015	-.010	.014	.042	-.073	.016	-.013	-.058	-.199	.400	-.153
	value of re	.004	-.060	-.028	.014	-.004	-.028	.134	-.041	.036	-.008	-.172	-.076	.000	-.153	.494
Anti-image	staying	.888[a]	-.362	-.136	.080	-.293	.012	.115	-.001	.084	-.054	-.078	.055	-.158	.034	.009
	discussing	.362	.853[a]	.104	.157	-.076	-.153	-.081	.187	.105	.089	.045	.057	.079	-.058	-.118
	org probe	.136	.104	.884[a]	.377	-.321	-.152	-.021	.009	.118	-.048	.012	.058	-.093	.013	-.072
	personal m	.080	-.157	.377	.856[a]	-.446	-.032	-.023	.109	.004	.010	.047	-.147	.118	-.045	.036
	emmotion	.293	-.076	.321	.446	.863[a]	.070	.080	-.042	.168	.015	-.204	.093	-.035	-.052	-.012
	consequence	.012	-.153	.152	.032	.070	.817[a]	-.306	-.239	.151	-.048	.049	-.062	.146	-.021	-.052
	staying is	.115	-.081	.021	.023	.080	-.306	.724[a]	-.202	.061	-.157	-.123	.060	-.218	.028	.254
	few option	.001	.187	.009	.109	-.042	-.239	.202	.790[a]	.254	-.165	.026	.004	-.015	.090	-.079
	personal s	.084	-.105	.118	.004	-.168	-.151	.061	-.254	.824[a]	-.406	-.003	.012	.122	-.175	.078
	cost of lea	.054	.089	.048	.010	.015	-.048	-.157	-.165	.406	.840[a]	.019	-.147	-.075	.035	-.016
	loyal	.078	.045	.012	.047	-.204	.049	-.123	.026	.003	.019	.890[a]	-.102	.037	-.025	-.307
	unethical	.055	.057	.058	.147	.093	-.062	.060	.004	.012	-.147	-.102	.837[a]	-.314	-.117	-.137
	right to lea	.158	.079	.093	.118	-.035	.146	-.218	-.015	.122	-.075	.037	-.314	.753[a]	-.457	.000
	moral obli	.034	-.058	.013	-.045	-.052	-.021	.028	.090	.175	.035	.025	-.117	-.457	.843[a]	-.343
	value of re	.009	-.118	.072	.036	-.012	-.052	.254	-.079	.078	-.016	-.307	-.137	.000	-.343	.836[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

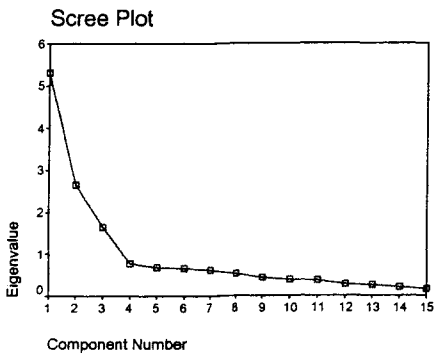
	Initial	Extraction
staying	1.000	.672
discussing outside	1.000	.561
org probel are mine	1.000	.708
personal meaning	1.000	.745
emmotionally attached	1.000	.841
consequences of leavi	1.000	.591
staying is necessity	1.000	.578
few options of leaving	1.000	.642
personal sacrifice	1.000	.659
cost of leaving	1.000	.634
loyal	1.000	.414
unethical	1.000	.623
right to leave	1.000	.658
moral obligation	1.000	.716
value of remaining loya	1.000	.592

Extraction Method: Principal Component Analysis

Total Variance Explained

	Initial Eigenvalues			traction Sums of Squared Loadin			btation Sums of Squared Loading		
Compon	Total	% of Varianc	umulative %	Total	% of Varianc	umulative %	Total	% of Varianc	umulative %
1	5.314	35.424	35.424	5.314	35.424	35.424	3.971	26.471	26.471
2	2.662	17.743	53.168	2.662	17.743	53.168	2.911	19.404	45.875
3	1.657	11.046	64.214	1.657	11.046	64.214	2.751	18.338	64.214
4	.782	5.211	69.425						
5	.689	4.590	74.015						
6	.675	4.502	78.517						
7	.609	4.057	82.574						
8	.538	3.585	86.160						
9	.445	2.965	89.125						
10	.382	2.544	91.669						
11	.367	2.446	94.114						
12	.281	1.871	95.985						
13	.247	1.645	97.630						
14	.205	1.365	98.995						
15	.151	1.005	100.000						

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component		
	1	2	3
staying	.756	-.179	-.260
discussing outside	.626	-.184	-.368
org probel are mine	.775	-.167	-.283
personal meaning	.764	-.220	-.336
emmotionally attached	.844	-.202	-.297
consequences of leavi	.390	.628	-.212
staying is necessity	.145	.746	-.018
few options of leaving	.157	.785	.029
personal sacrifice	.556	.580	-.114
cost of leaving	.439	.657	.098
loyal	.599	-.178	.153
unethical	.480	.052	.624
right to leave	.547	-.013	.599
moral obligation	.698	-.135	.459
value of remaining loya	.616	-.302	.349

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
staying	.786	.081	.216
discussing outside	.746	.043	.057
org probel are mine	.810	.100	.206
personal meaning	.846	.049	.162
emmotionally attached	.882	.089	.236
consequences of leavi	.238	.730	-.039
staying is necessity	-.095	.754	-.025
few options of leaving	-.124	.791	.016
personal sacrifice	.327	.730	.138
cost of leaving	.096	.752	.242
loyal	.435	.007	.474
unethical	.015	.157	.773
right to leave	.100	.117	.796
moral obligation	.330	.057	.777
value of remaining loya	.376	-.119	.661

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

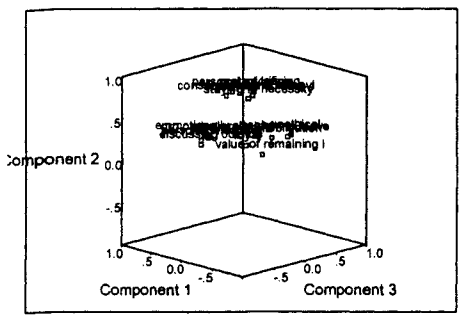
a. Rotation converged in 4 iterations.

Component Transformation Matrix

Component	1	2	3
1	.780	.309	.543
2	-.293	.949	-.119
3	-.552	-.066	.831

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalizatic

Component Plot in Rotated Space



Reliability-AC

****** Method 2 (covariance matrix) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1.	OC1	3.7114	1.1943	201.0
2.	OC2	3.7313	1.0851	201.0
3.	OC3	3.5871	1.1847	201.0
4.	OC4	3.6020	1.1004	201.0
5.	OC5	3.6169	1.1124	201.0

Correlation Matrix

	OC1	OC2	OC3	OC4	OC5
OC1	1.0000				
OC2	.6074	1.0000			
OC3	.5938	.4344	1.0000		
4 C4	.5590	.5046	.7746	1.0000	

4 C5	.6841	.5398	.7861	.8061	1.0000

4##L -4-4a44 4a4##4c4

	4ca##	4ca##	Co###c##d		
	4 4an	Va##anc4	###L -	444a##d	A#-5a
	####L	####L	4o4a4	4 4##L##	####L
	Y4####	Y4####	Co###4a#-n	Co###4a#-n	Y4####
4 C1	14.5373	14.7199	.7138	.5595	.8778
4 C2	14.5174	16.3109	.5932	.4158	.9019
4 C3	14.6617	14.3950	.7663	.6828	.8654
4 C4	14.6468	14.8096	.7873	.7107	.8611
4 C5	14.6318	14.2838	.8523	.7625	.8462

5

4 E 4 4A B 44 44 5 A 4 A 4 5 4 44 - 4 C A 4 E (A 4 4 4 A)

4 44aL4##L Co4##c4n## 5 ##L 4

A#-5a = .8943 44anda4d4-4d ###L a#-5a = .8945

Reliability-CC

****** 4 44-od 2 (co5a44anc4 L a###) w##L4 444d 4-4-54 ana#-4## ******

5

4 E4 4A B44 44 5 A4 A4 5 4 44 - 4 C A4 E (A4 4 4 A)

		4 4an	44d Y45	Ca444
1.	4 C6	3.0758	1.1747	198.0
2.	4 C7	3.2475	1.2151	198.0
3.	4 C8	2.8232	1.1681	198.0
4.	4 C9	3.3283	1.1743	198.0
5.	4 C10	3.0758	1.1704	198.0

Co4444a44bn 4 a4444

	4 C6	4 C7	4 C8	4 C9	4 C10
4 C6	1.0000				
4 C7	.4918	1.0000			
4 C8	.4759	.4816	1.0000		
4 C9	.4897	.3875	.4940	1.0000	
4 C10	.4315	.4472	.4925	.6281	1.0000

444L -4b4a44 4a4444c4

	4ca44 4 4an	4ca44 Va44anc4	Co444c44d 444L -	444a44d	A4L5a
	44444L Y44444d	44444L Y44444d	4o4a4 Co4444a44bn	4 444L44 Co4444a44bn	44444L Y44444d
4 C6	12.4747	13.7633	.6020	.3748	.7918
4 C7	12.3030	13.7656	.5710	.3500	.8012
4 C8	12.7273	13.6511	.6227	.3883	.7858

4 C9	12.2222	13.4732	.6425	.4726	.7800
4 C10	12.4747	13.4892	.6434	.4641	.7798

4 E 4 4A B 44 44 5 A 4 A 4 5 4 44 - 4 C A 4 E (A 4 4 4 A)

4 44aL4L Co44c4n44 5 4L 4

A4.5a = .8227 44anda4d4d 4L a4.5a = .8231

Reliability-NC

****** 4 445od 2 (co5a4anc4 L a444) w4L4 444d 4b4454 ana4.44 ******

4 E 4 4A B 44 44 5 A 4 A 4 5 4 44 - 4 C A 4 E (A 4 4 4 A)

4 4an 44 Y45 Ca444

1.	4 C11	3.7449	1.1030	196.0
2.	4 C12	2.5816	1.1270	196.0
3.	4 C13	2.6684	1.1310	196.0
4.	4 C14	2.9388	1.1575	196.0
5.	4 C15	3.4439	1.0822	196.0

Co444a44n 4 a444

	4 C11	4 C12	4 C13	4 C14	4 C15
4 C11	1.0000				
4 C12	.3139	1.0000			
4 C13	.2977	.5343	1.0000		
4 C14	.4094	.4874	.6386	1.0000	
4 C15	.5078	.4011	.3932	.5990	1.0000

444L -4b4a444a4444c4

	Sca44 M54L 4445b D5454	Sca44 V4444L45 4445b D5454	Co444c44d I45b - To444 Co445444bL	S444454 M444p45 Co445444bL	A4p44 4445b D5454
OC11	11.6327	12.8080	.4789	.2819	.8065
OC12	12.7959	12.1428	.5592	.3434	.7836
OC13	12.7092	11.7868	.6103	.4739	.7680
OC14	12.4388	10.9757	.7158	.5615	.7336
OC15 4	11.9337	11.9802	.6212	.4497	.7651

RELIABILITY ANALYSIS - SCALE (ALPHA)

R5444444445 Co5444445L45 5 45b 5

A4p44 = .8093 S44L44444T54 45b 44p44 = .8088

Part 4 Exploratory Factor Analysis and Reliability Testing for JS

Warnings

Only one component was extracted. Component plots cannot be produced.

Descriptive Statistics

	M5an	Std. D5viation	Anal55i5 N
5ati5fi5d	3.72	1.058	200
thin5 of quitting	3.55	1.321	200
5ati5fi5d with wor5	3.75	1.027	200

Correlation Matrix

		5445454	414n5 o444411n4	5445454 4 411 4 o45
Co4545444on	5445454	1.000	.670	.733
	414n5 o444411n4	.670	1.000	.544
	5445454 4 411 4 o45	.733	.544	1.000

KMO 4n4 B4445445 T554

K4554M5554O54n M5454545 K4S4mK4n4 A4544445.	.686
B4445445 T554K4SK4544445 AKK4K4. C44S44445 44 S41.	271.359 3 .000

An414n445 M444155

		5445454	414n5 K444411n4	5445454 4 411 4 K45
An414n445 CK44411n4	5445454	.359	-.210	-.240
	414n5 K444411n4	-.210	.545	-.053
	5445454 4 411 4 K45	-.240	-.053	.458
An414n445 CK45414K	5445454	.632[a]	-.475	-.591
	414n5 K444411n4	-.475	.759[a]	-.106
	5445454 4 411 4 K45	-.591	-.106	.698[a]

4. M5454455 K4S4mK4n4 A4544445(MSA)

Communaliti55

	In4###	E4###4#bn
5446546 4	1.000	.846
4#4n5 o4444##n4	1.000	.701
5446546 4 4## 4 o4	1.000	.754

E4###4#bn M54#o4: P4#n4p44Compon5n4An4

Total Variance Explained

	In4###4E4#5n4#4#55			E4###4#bn S4m5 o4S4#4#54 Lo4#4n45		
Compon5n4	To4##	% o4V4##n45	C4m4#4#5 %	To4##	% o4V4##n45	C4m4#4#5 %
1	2.301	76.698	76.698	2.301	76.698	76.698
2	.461	15.367	92.065			
3	.238	7.935	100.000			

E4###4#bL M54#o4: P4#L4p44CompoL5L4AL4#5#5.

CompoL5L4M4###[a]

	CompoL5L4
	1
5446546 4	.920
4#4.5 o4444##L4	.837
5446546 4 4## 4 o4	.868

E4###4#bL M54#o4: P4#L4p44CompoL5L4AL4

4. 1 4ompoL5L4 5 54###4#54.

Ro4#4#54 Compon5n4M4###[a]

4. On4 on5 4ompon5n44 45 54###4#54
T45 5o4#4bn 44nno445 4o4#4#54.

Component Score Coefficient Matrix

	Componen4
	1
s44s4#e4	.400
4#4nk o4444##n4	.364
s44s4#e4 4 4## 4 o4k	.377

E4###4#bn Me4#o4: P4#n4p44Componen4An4ys4
Ro4#4bn Me4#o4: V44#n44 4 4## K4#se4No4m44z4
CKmKKnen4S4K4es.

Component Score Covariance Matrix

Component	1
1	1.000

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normaliza
CKmKKnent ScKres.

Reliability

****** Method 2 (covariance matrix) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

		MeaL	Std Dev	Cases
1.	JS1	3.7150	1.0580	200.0
2.	JS2	3.5500	1.3215	200.0
3.	JS3	3.7450	1.0273	200.0

Co44544464L M4444

	JS1	JS2	JS3
JS1	1.0000		
JS2	.6698	1.0000	
JS3	.7327	.5444	1.0000

N L4C5444 = 200.0

In4444m

CL444l544Ln4	M45n	M4n4n5m	M5x4m5m	R5n54	M5x/M4n	V5465n44
.6489	.5444	.7327	.1883	1.3460	.0074	

l44m-4L45LS54444444

S45l4	S45l4	CL4444444			
M45n	V5465n44	l44m-	S4554444	Al445	
4l44m	4l44m	TL45L	M5l4444	4l44m	
D4l44444	D4l44444	CL444l544Ln	CL444l544Ln	D4l44444	

JS1	7.2950	4.2794	.7917	.6412	.6907
JS2	7.4600	3.7672	.6532	.4548	.8455
JS3	7.2650	4.7385	.6866	.5420	.7905

R4L454441L CL444444n44 3 44m4

AL445 = .8365 S45n45444L44 44m 5L445 = .8472

Part 5 Exploratory Factor Analysis and Reliability Testing for TOI

WarKiKgs

OKlv oKe coK poKeKt was eKtracted. CoK poKeKt plots caKKot be produced.

Descriptive Statistics

	M45K	S44. D44654bK	AK5ly444 N
K44 4b4 K4K4v454	2.47	1.328	198
444454K4v 44K4 o44544K	2.40	1.313	198
5445 K44 4b4	2.52	1.289	198

CL444l54Ln M544k

		n44 4L4 n4x4L454	444454n4L 414n4 L44544444h5	5445 n44 4L4
CL444l54Ln	n44 4L4 n4x4L454	1.000	.664	.713
	444454n4L 414n4 L44544444h5	.664	1.000	.782
	5445 n44 4L4	.713	.782	1.000

KMO 5K4 B5444444 T444

K54444-M4L44-Ol44K M4545444 L4S5K 4l4K5 A444554L.		.729
B5444444 T444L4S444444444L	A444LK C44S45544 44 S45.	335.094 3 .000

Anti-image Matrices

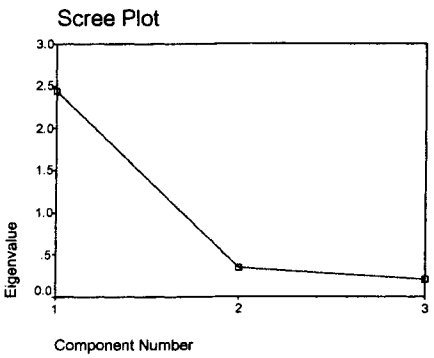
		n44 4b4 n4x4y454	444454n4y 414n4 o44544444h5	5445 n44 4b4
An444n554 Co4544n4	n44 4b4 n4x4y454	.462	-.100	-.161
	444454n4y 414n4 o44544444h	-.100	.366	-.202
	5445 n44 4b4	-.161	-.202	.321
An444n554 Co444l54bi	n44 4b4 n4x4y454	.803[a]	-.243	-.417
	444454n4y 414n4 o44544444h	-.243	.722[a]	-.588
	5445 n44 4b4	-.417	-.588	.683[a]

5. M4545444 o4S5m4l4n5 A444554y(MSA)

TL45LV5445K44 EK4l54K44

CLK4LK4K4	IK445LE454K45l544			EK445444LK S5K4 L4S4554444 LL544K54		
	TL45l	% L4V5445K44	C5K5l5444 %	TL45l	% L4V5445K44	C5K5l5444 %
1	2.440	81.349	81.349	2.440	81.349	81.349
2	.348	11.603	92.953			
3	.211	7.047	100.000			

EK445444LK M444L4: P44K445LCLK4LK4K4AK5lL44l.



CLK 4LK4K4M5444[a]

	CLK 4LK4K4
	1
K44 4L4 K4K4L454	.875
444454K4L 444K4 L44544444	.905
5445 K44 4L4	.925

EK4454444LK M444L4: P44K4445LCLK 4LK4K4AK5I

5. 1 4LK 4LK4K44 4K4454414.

Ro45444 Com4on4n4M5444k[a]

5. Only on4 4om4on4n44 54 4x4454414 T44 4ol54bn 45nno444 4o45444.

Reliability

****** Method 2 (covariance matrix) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1.	TOI1	2.4747	1.3279	198.0
2.	TOI2	2.4040	1.3131	198.0
3.	TOI3	2.5152	1.2893	198.0

CL4441544n M5444k

	TOI1	TOI2	TOI3
TOI1	1.0000		
TOI2	.6638	1.0000	
TOI3	.7133	.7819	1.0000

l44m-4L45LS454444444

	S45l4	S45l4	CL4444444		
	M45n	V5445n44	l44m-	S4554444	Al445
	4l44m	4l44m	TL45L	M5l44l4	4l44m
	D4l44444	D4l44444	CL4441544Ln	CL4441544Ln	D4l44444
TOI1	4.9192	6.0340	.7292	.5377	.8776
TOI2	4.9899	5.8679	.7801	.6343	.8325
TOI3	4.8788	5.8025	.8195	.6789	.7979

Reliability Coefficients 3 items

Alpha = .8847 Standardized item alpha = .8851

Appendix F

Confirmatory Factory Analysis Output by AMOS 5

Part 1 Confirmatory Factory Analysis Results: Three-factor Measurement Model with AC, CC and NC

Notes for Group (Group number 1)
The model is recursive.
Sample size = 202

Variable counts (Group number 1)

Number of variables in your model:	33
Number of observed variables:	15
Number of unobserved variables:	18
Number of exogenous variables:	18
Number of endogenous variables:	15

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	18	2	0	0	0	20
Labeled	0	0	0	0	0	0
Unlabeled	12	25	18	0	0	55
Total	30	27	18	0	0	75

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	120
Number of distinct parameters to be estimated:	55
Degrees of freedom (120 - 55):	65

Result (Default model)
Minimum was achieved
Chi-square = 128.148
Degrees of freedom = 65
Probability level = .000

Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
oc01 <--- ac	1.000				
oc02 <--- ac	.686	.057	12.029	***	
oc03 <--- ac	1.114	.068	16.420	***	
oc04 <--- ac	1.031	.066	15.688	***	
oc05 <--- ac	1.154	.060	19.130	***	
oc06 <--- cc	1.000				
oc07 <--- cc	.498	.059	8.367	***	
oc08 <--- cc	.525	.059	8.945	***	
oc09 <--- cc	.799	.062	12.805	***	

	Estimate	S.E.	C.R.	P	Label
oc010 <--- cc	.664	.063	10.594	***	
oc011 <--- nc	1.000				
oc012 <--- nc	.621	.075	8.269	***	
oc013 <--- nc	.692	.079	8.706	***	
oc014 <--- nc	.967	.080	12.091	***	
oc015 <--- nc	.821	.070	11.668	***	

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
oc01 <--- ac	.802
oc02 <--- ac	.652
oc03 <--- ac	.882
oc04 <--- ac	.895
oc05 <--- ac	.954
oc06 <--- cc	.993
oc07 <--- cc	.590
oc08 <--- cc	.634
oc09 <--- cc	.911
oc010 <--- cc	.794
oc011 <--- nc	.861
oc012 <--- nc	.592
oc013 <--- nc	.660
oc014 <--- nc	.868
oc015 <--- nc	.775

Standardized Total Effects (Group number 1 - Default model)

	nc	cc	ac
oc015	.775	.000	.000
oc014	.868	.000	.000
oc013	.660	.000	.000
oc012	.592	.000	.000
oc011	.861	.000	.000
oc010	.000	.794	.000
oc09	.000	.911	.000
oc08	.000	.634	.000
oc07	.000	.590	.000
oc06	.000	.993	.000
oc05	.000	.000	.954
oc04	.000	.000	.895
oc03	.000	.000	.882
oc02	.000	.000	.652
oc01	.000	.000	.802

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	55	128.148	65	.000	1.972
Saturated model	120	.000	0		
Independence model	15	1577.034	105	.000	15.019

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.438	.934	.879	.506
Saturated model	.000	1.000		
Independence model	.426	.367	.277	.321

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.919	.869	.958	.931	.957
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.619	.569	.592
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	63.148	34.801	99.284
Saturated model	.000	.000	.000
Independence model	1472.034	1347.245	1604.224

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.638	.314	.173	.494
Saturated model	.000	.000	.000	.000
Independence model	7.846	7.324	6.703	7.981

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.070	.052	.087	.037
Independence model	.264	.253	.276	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	238.148	247.661	420.102	475.102
Saturated model	240.000	260.757	636.992	756.992
Independence model	1607.034	1609.629	1656.658	1671.658

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.185	1.044	1.365	1.232
Saturated model	1.194	1.194	1.194	1.297
Independence model	7.995	7.374	8.653	8.008

Part 2 Confirmatory Factory Analysis Results: Two-factor Measurement Model with AC and CC

Notes for Group (Group number 1)
The model is recursive.
Sample size = 202

Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)
Variable counts (Group number 1)

Number of variables in your model:	22
Number of observed variables:	10
Number of unobserved variables:	12
Number of exogenous variables:	12
Number of endogenous variables:	10

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	12	0	0	0	0	12
Labeled	0	0	0	0	0	0
Unlabeled	8	14	12	0	10	44
Total	20	14	12	0	10	56

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)

Number of distinct sample moments:	65
Number of distinct parameters to be estimated:	44
Degrees of freedom (65 - 44):	21

Result (Default model)
Minimum was achieved
Chi-square = 41.213
Degrees of freedom = 21
Probability level = .005

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
oc1 <--- ac	1.000				
oc2 <--- ac	.692	.077	8.938	***	par_1
oc3 <--- ac	1.180	.104	11.337	***	par_2
oc4 <--- ac	1.092	.102	10.658	***	par_3
oc5 <--- ac	1.210	.102	11.849	***	par_4
oc6 <--- cc	1.000				
oc7 <--- cc	.801	.112	7.160	***	par_5
oc8 <--- cc	.927	.125	7.441	***	par_6
oc9 <--- cc	1.153	.145	7.925	***	par_7
oc10 <--- cc	1.162	.137	8.490	***	par_8

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
oc1 <--- ac	.716
oc2 <--- ac	.549
oc3 <--- ac	.834
oc4 <--- ac	.851
oc5 <--- ac	.933
oc6 <--- cc	.689
oc7 <--- cc	.539
oc8 <--- cc	.644
oc9 <--- cc	.791
oc10 <--- cc	.800

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	35	41.136	20	.004	2.057
Saturated model	55	.000	0		
Independence model	10	1095.896	45	.000	24.353

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.094	.963	.899	.350
Saturated model	.000	1.000		
Independence model	.486	.401	.268	.328

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.962	.916	.980	.955	.980
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.444	.428	.436
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	21.136	6.534	43.492
Saturated model	.000	.000	.000
Independence model	1050.896	946.776	1162.415

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.205	.105	.033	.216
Saturated model	.000	.000	.000	.000
Independence model	5.452	5.228	4.710	5.783

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.073	.040	.104	.114
Independence model	.341	.324	.358	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	111.136	115.189	226.925	261.925
Saturated model	110.000	116.368	291.955	346.955
Independence model	1115.896	1117.053	1148.978	1158.978

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.553	.480	.664	.573
Saturated model	.547	.547	.547	.579
Independence model	5.552	5.034	6.107	5.557

Part 3 Confirmatory Factory Analysis Results- Two-factor Model: AC and NC

Notes for Group (Group number 1)
The model is recursive.
Sample size = 202

Variable counts (Group number 1)

Number of variables in your model:	22
Number of observed variables:	10
Number of unobserved variables:	12
Number of exogenous variables:	12
Number of endogenous variables:	10

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	12	0	0	0	0	12
Labeled	0	0	0	0	0	0
Unlabeled	8	12	12	0	0	32
Total	20	12	12	0	0	44

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	55
Number of distinct parameters to be estimated:	32
Degrees of freedom (55 - 32):	23

Result (Default model)
Minimum was achieved
Chi-square = 24.173
Degrees of freedom = 23

Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
oc01 <--- ac	1.000				
oc02 <--- ac	.727	.076	9.609	***	par_1
oc03 <--- ac	1.136	.099	11.455	***	par_2
oc04 <--- ac	1.086	.098	11.066	***	par_3
oc05 <--- ac	1.206	.097	12.465	***	par_4
oc011 <--- nc	1.000				
oc012 <--- nc	.777	.147	5.288	***	par_5
oc013 <--- nc	.916	.185	4.948	***	par_6
oc014 <--- nc	1.245	.184	6.777	***	par_7
oc015 <--- nc	1.024	.147	6.971	***	par_8

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
oc1 <--- ac	.723
oc2 <--- ac	.571
oc3 <--- ac	.823
oc4 <--- ac	.852
oc5 <--- ac	.945
oc11 <--- nc	.707
oc12 <--- nc	.519
oc13 <--- nc	.622
oc14 <--- nc	.834
oc15 <--- nc	.712

Standardized Total Effects (Group number 1 - Default model)

	nc	ac
oc015	.712	.000
oc014	.834	.000
oc013	.619	.000
oc012	.519	.000
oc011	.705	.000
oc05	.000	.941
oc04	.000	.855
oc03	.000	.827
oc02	.000	.581
oc01	.000	.724

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	32	24.173	23	.394	1.051
Saturated model	55	.000	0		
Independence model	10	1099.573	45	.000	24.435

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.040	.977	.946	.409
Saturated model	.000	1.000		
Independence model	.515	.358	.215	.293

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.978	.957	.999	.998	.999
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.511	.500	.511
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	1.173	.000	17.195
Saturated model	.000	.000	.000
Independence model	1054.573	950.268	1166.277

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.120	.006	.000	.086
Saturated model	.000	.000	.000	.000
Independence model	5.471	5.247	4.728	5.802

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.016	.000	.061	.867
Independence model	.341	.324	.359	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	88.173	91.879	194.038	226.038
Saturated model	110.000	116.368	291.955	346.955
Independence model	1119.573	1120.731	1152.656	1162.656

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.439	.433	.518	.457
Saturated model	.547	.547	.547	.579
Independence model	5.570	5.051	6.126	5.576

Part 4 Confirmatory Factory Analysis Results: One-factor Measurement Model for OC with AC

The model is recursive.
Sample size = 202

Variable counts (Group number 1)

Number of variables in your model:	11
Number of observed variables:	5
Number of unobserved variables:	6
Number of exogenous variables:	6
Number of endogenous variables:	5

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	6	0	0	0	0	6
Labeled	0	0	0	0	0	0
Unlabeled	4	4	6	0	0	14
Total	10	4	6	0	0	20

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	14
Degrees of freedom (15 - 14):	1

Result (Default model)
Minimum was achieved
Chi-square = .194
Degrees of freedom = 1
Probability level = .659

Maximum Likelihood Estimates
Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
oc03 <--- ac	1.139	.100	11.409	***	par_1
oc04 <--- ac	1.091	.099	11.017	***	par_2
oc01 <--- ac	1.000				
oc02 <--- ac	.724	.076	9.549	***	par_3
oc05 <--- ac	1.208	.100	12.044	***	par_4

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
oc03 <--- ac	.828
oc04 <--- ac	.859
oc01 <--- ac	.724
oc02 <--- ac	.578
oc05 <--- ac	.940

Standardized Total Effects (Group number 1 - Default model)

	ac
oc05	.940
oc04	.859
oc03	.828
oc02	.578
oc01	.724

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	14	.194	1	.659	.194
Saturated model	15	.000	0		
Independence model	5	669.303	10	.000	66.930

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.004	1.000	.994	.067
Saturated model	.000	1.000		
Independence model	.669	.380	.070	.253

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	1.000	.997	1.001	1.012	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.100	.100	.100
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	.000	.000	4.090
Saturated model	.000	.000	.000
Independence model	659.303	578.175	747.832

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.001	.000	.000	.020
Saturated model	.000	.000	.000	.000
Independence model	3.330	3.280	2.876	3.721

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.143	.731
Independence model	.573	.536	.610	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	28.194	29.056	74.510	88.510

Model	AIC	BCC	BIC	CAIC
Saturated model	30.000	30.923	79.624	94.624
Independence model	679.303	679.611	695.845	700.845

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.140	.144	.165	.145
Saturated model	.149	.149	.149	.154
Independence model	3.380	2.976	3.820	3.381

Appendix G

Structural Equation Model 1 Text Output by AMOS 5

Structural Equation Model 1 (Contains One-factor OC measurement model with AC)

Notes for Group (Group number 1)
The model is recursive.
Sample size = 202

Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)

Observed, endogenous variables

actot
lmxtot
tmxtot
toitot
jstot

Unobserved, exogenous variables

e3
e1
e5
e2
e4

Variable counts (Group number 1)

Number of variables in your model:	10
Number of observed variables:	5
Number of unobserved variables:	5
Number of exogenous variables:	5
Number of endogenous variables:	5

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	5	0	0	0	0	5
Labeled	0	0	0	0	0	0
Unlabeled	7	0	5	0	0	12
Total	12	0	5	0	0	17

Models
Default model (Default model)
Notes for Model (Default model)
Computation of degrees of freedom (Default model)

Number of distinct sample moments:	15
Number of distinct parameters to be estimated:	12
Degrees of freedom (15 - 12):	3

Result (Default model)
Minimum was achieved
Chi-square = 3.216
Degrees of freedom = 3
Probability level = .360
Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
lmxtot <--- tmxtot	.369	.050	7.437	***	
actot <--- tmxtot	.267	.055	4.890	***	
actot <--- lmxtot	.364	.069	5.299	***	
jstot <--- lmxtot	.084	.036	2.326	.020	
jstot <--- actot	.410	.035	11.875	***	
toitot <--- tmxtot	.110	.027	4.123	***	
toitot <--- jstot	-1.026	.051	-19.953	***	

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
lmxtot <--- tmxtot	.465
actot <--- tmxtot	.320
actot <--- lmxtot	.347
jstot <--- lmxtot	.129
jstot <--- actot	.658
toitot <--- tmxtot	.180
toitot <--- jstot	-.870

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e2	32.330	3.225	10.025	***	
e1	15.990	1.595	10.025	***	
e3	15.152	1.511	10.025	***	
e4	4.070	.406	10.025	***	
e5	3.982	.397	10.025	***	

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
tmxtot	.000
lmxtot	.216
actot	.325
jstot	.534
toitot	.672

Matrices (Group number 1 - Default model)

Total Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.369	.000	.000	.000
actot	.401	.364	.000	.000
jstot	.196	.234	.410	.000
toitot	-.091	-.240	-.421	-1.026

Standardized Total Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.465	.000	.000	.000
actot	.481	.347	.000	.000
jstot	.376	.357	.658	.000
toitot	-.148	-.311	-.573	-.870

Direct Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.369	.000	.000	.000
actot	.267	.364	.000	.000
jstot	.000	.084	.410	.000
toitot	.110	.000	.000	-1.026

Standardized Direct Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.465	.000	.000	.000
actot	.320	.347	.000	.000
jstot	.000	.129	.658	.000
toitot	.180	.000	.000	-.870

Indirect Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.000	.000	.000	.000
actot	.134	.000	.000	.000
jstot	.196	.149	.000	.000
toitot	-.201	-.240	-.421	.000

Standardized Indirect Effects (Group number 1 - Default model)

	tmxtot	lmxtot	actot	jstot
lmxtot	.000	.000	.000	.000
actot	.161	.000	.000	.000
jstot	.376	.228	.000	.000
toitot	-.328	-.311	-.573	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	2		-.095	9999.000	461.755	0	9999.000
1	e*	0	12.659		1.511	24.527	19	.777
2	e	0	12.544		.252	4.042	1	.915
3	e	0	9.830		.038	3.225	1	1.062
4	e	0	9.859		.003	3.216	1	1.011
5	e	0	9.456		.000	3.216	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	12	3.216	3	.360	1.072
Saturated model	15	.000	0		
Independence model	5	510.416	10	.000	51.042

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.254	.994	.969	.199
Saturated model	.000	1.000		
Independence model	7.221	.489	.233	.326

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.994	.979	1.000	.999	1.000
Saturated model	1.000		1.000		1.000

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.300	.298	.300
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	.216	.000	8.972
Saturated model	.000	.000	.000
Independence model	500.416	430.121	578.120

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.016	.001	.000	.045
Saturated model	.000	.000	.000	.000
Independence model	2.539	2.490	2.140	2.876

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.019	.000	.122	.561
Independence model	.499	.463	.536	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	27.216	27.954	66.915	78.915
Saturated model	30.000	30.923	79.624	94.624
Independence model	520.416	520.724	536.958	541.958

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.135	.134	.179	.139
Saturated model	.149	.149	.149	.154
Independence model	2.589	2.239	2.976	2.591

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	489	710
Independence model	8	10

Execution time summary

Minimization: .040
Miscellaneous: .420
Bootstrap: .000
Total: .460

Appendix H

Structural Equation Model 2 Text Output by AMOS 5

Structural Equation Model 2 (Contains two-factor OC measurement mode with AC and NC)

Analysis Summary
Notes for Group (Group number 1)
The model is recursive.
Sample size = 202
Variable Summary (Group number 1)
Your model contains the following variables (Group number 1)

Observed, endogenous variables

jstot
lmxtot
toitot
actot
nctot
tmxtot

Unobserved, exogenous variables

e2
e1
e6
e5
e3
e7

Variable counts (Group number 1)

Number of variables in your model:	12
Number of observed variables:	6
Number of unobserved variables:	6
Number of exogenous variables:	6
Number of endogenous variables:	6

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	6	0	0	0	0	6
Labeled	0	0	0	0	0	0
Unlabeled	9	0	6	0	0	15
Total	15	0	6	0	0	21

Models
Default model (Default model)
Notes for Model (Default model)

Computation of degrees of freedom (Default model)
Number of distinct sample moments: 21

Number of distinct parameters to be estimated: 15
Degrees of freedom (21 - 15): 6

Result (Default model)
Minimum was achieved
Chi-square = 5.758
Degrees of freedom = 6
Probability level = .451

Group number 1 (Group number 1 - Default model)
Estimates (Group number 1 - Default model)
Scalar Estimates (Group number 1 - Default model)
Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
lmxtot	<---	tmxtot	.369	.050	7.437	***	
nctot	<---	lmxtot	.178	.064	2.799	.005	
actot	<---	lmxtot	.304	.061	4.966	***	
actot	<---	nctot	.462	.059	7.806	***	
actot	<---	tmxtot	.229	.048	4.791	***	
jstot	<---	lmxtot	.084	.036	2.319	.020	
jstot	<---	actot	.410	.035	11.721	***	
toitot	<---	jstot	-1.026	.051	-20.052	***	
toitot	<---	tmxtot	.110	.026	4.161	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
lmxtot	<---	tmxtot	.465
nctot	<---	lmxtot	.194
actot	<---	lmxtot	.292
actot	<---	nctot	.408
actot	<---	tmxtot	.278
jstot	<---	lmxtot	.129
jstot	<---	actot	.655
toitot	<---	jstot	-.866
toitot	<---	tmxtot	.180

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e2	32.330	3.225	10.025	***	
e1	15.990	1.595	10.025	***	
e5	16.544	1.650	10.025	***	
e3	11.654	1.163	10.025	***	
e6	4.070	.406	10.025	***	
e7	3.982	.397	10.025	***	

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
tmxtot	.000
lmxtot	.216
nctot	.038
actot	.471
jstot	.530
toitot	.672

Matrices (Group number 1 - Default model)

Total Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.369	.000	.000	.000	.000
nctot	.066	.178	.000	.000	.000
actot	.371	.386	.462	.000	.000
jstot	.184	.243	.190	.410	.000
toitot	-.078	-.249	-.195	-.421	-1.026

Standardized Total Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.465	.000	.000	.000	.000
nctot	.090	.194	.000	.000	.000
actot	.450	.371	.408	.000	.000
jstot	.355	.372	.267	.655	.000
toitot	-.127	-.323	-.231	-.567	-.866

Direct Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.369	.000	.000	.000	.000
nctot	.000	.178	.000	.000	.000
actot	.229	.304	.462	.000	.000
jstot	.000	.084	.000	.410	.000
toitot	.110	.000	.000	.000	-1.026

Standardized Direct Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.465	.000	.000	.000	.000
nctot	.000	.194	.000	.000	.000
actot	.278	.292	.408	.000	.000
jstot	.000	.129	.000	.655	.000
toitot	.180	.000	.000	.000	-.866

Indirect Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.000	.000	.000	.000	.000
nctot	.066	.000	.000	.000	.000
actot	.142	.082	.000	.000	.000
jstot	.184	.158	.190	.000	.000
toitot	-.188	-.249	-.195	-.421	.000

Standardized Indirect Effects (Group number 1 - Default model)

	tmxtot	lmxtot	nctot	actot	jstot
lmxtot	.000	.000	.000	.000	.000

	tmxtot	lmxtot	nctot	actot	jstot
nctot	.090	.000	.000	.000	.000
actot	.172	.079	.000	.000	.000
jstot	.355	.243	.267	.000	.000
toitot	-.307	-.323	-.231	-.567	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	2		-.095	9999.000	501.993	0	9999.000
1	e*	0	13.183		1.588	26.948	19	.769
2	e	0	12.765		.243	6.530	1	.923
3	e	0	9.778		.035	5.767	1	1.064
4	e	0	9.306		.003	5.758	1	1.011
5	e	0	9.232		.000	5.758	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	5.758	6	.451	.960
Saturated model	21	.000	0		
Independence model	6	573.391	15	.000	38.226

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.549	.991	.967	.283
Saturated model	.000	1.000		
Independence model	6.730	.487	.281	.348

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.990	.975	1.000	1.001	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.400	.396	.400
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90

Model	NCP	LO 90	HI 90
Default model	.000	.000	9.684
Saturated model	.000	.000	.000
Independence model	558.391	483.799	640.393

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.029	.000	.000	.048
Saturated model	.000	.000	.000	.000
Independence model	2.853	2.778	2.407	3.186

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.090	.718
Independence model	.430	.401	.461	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	35.758	36.841	85.382	100.382
Saturated model	42.000	43.515	111.474	132.474
Independence model	585.391	585.824	605.240	611.240

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.178	.179	.227	.183
Saturated model	.209	.209	.209	.216
Independence model	2.912	2.541	3.320	2.915

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	440	587
Independence model	9	11

Execution time summary

Minimization: .020
Miscellaneous: .260
Bootstrap: .000
Total: .280

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