PATHWAYS TO SUCCESS FOR MODERATELY DEFINED CAREERS: A STUDY OF RELATIONSHIPS AMONG PRESTIGE/AUTONOMY, JOB SATISFACTION, CAREER COMMITMENT, CAREER PATH, TRAINING AND LEARNING, AND PERFORMANCE AS PERCEIVED BY PROJECT MANAGERS

A Dissertation

by

LILA LENORIA CARDEN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2007

Major Subject: Educational Human Resource Development

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Approved by:

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ABSTRACT

Pathways to Success for Moderately Defined Careers:

A Study of Relationships among Prestige/Autonomy, Job Satisfaction, Career Commitment, Career Path, Training and Learning, and Performance as Perceived by Project Managers. (May 2007)

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New emerging career paths for professionals are often non-linear, dynamic, and boundary-less (Baruch, 2004) and have resulted in undefined professional advancement opportunities for managers and employees in a variety of contexts. Career paths help individuals make meaning in their job contexts and provide avenues to meet intrinsic and extrinsic rewards, including economic and social status (Adamson, 1997; Callanan, 2003). As a result, individual perceptions of career paths may impact job satisfaction, career commitment, and performance.

The purpose of this study was to test a career development model examining the path of relationships amongst autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance for moderately defined career professionals. Based on a systematic categorization of careers, from well defined to less well defined, project managers were determined to have moderately defined careers. The researcher employed a survey resulting in 644 project manager respondents. Path

analysis was effectuated as a modeling technique to determine whether there was a pattern of intercorrelations among variables.

A career development model framing the relationship between project managers' perceptions of their career paths on their respective performance was explored. The direct path relationships included: (a) frequency of participation in training and learning activities was negatively related to performance, (b) career path was positively related to performance, (c) autonomy/prestige was positively related to performance, and (d) career commitment was negatively related to performance. The indirect path relationships included (a) autonomy/prestige was mediated by career commitment and performance; (b) the connection between career path and performance was mediated by frequency of participation in training and learning (c) career path to performance, was mediated by job satisfaction and career commitment, and (d) career path to performance was mediated by job satisfaction, career commitment, and autonomy/prestige.

Study findings supported the tested model and contributed to increased understanding regarding the importance of career paths to individual job satisfaction, career commitment, and performance. Opportunities for new research and implications for individuals and organizations are outlined.

DEDICATION

This dissertation is dedicated to my parents, the late Hoover Carden and Rena Carden, for their love, encouragement, support, patience, and tireless efforts in support of this endeavor.

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CHAPTER I

INTRODUCTION

New emerging career paths for professionals are non-linear, dynamic, and boundary-less (Baruch, 2004) and have resulted in undefined career advancement opportunities for some occupations. According to Cain and Treiman (1981), professionals who work in occupational categories vary widely in their career opportunities as well as attitudes and behaviors. This variation is due to differences in socioeconomic status, prestige, and intrinsic and extrinsic outcomes that are associated with the occupational careers. For example, well defined careers including physicians, accountants and auditors, lawyers, and architects have traditionally been regarded as highly esteemed and are associated with higher socioeconomic status and higher prestige along with higher wages and advanced education (Featherman & Hauser, 1976; Sicherman & Galor, 1990).

Well defined careers have well defined career paths outlining career advancement and career development opportunities including experiences, licenses and certifications, and skills and training (Strategic Skill Initiative, 2005) and, as such, make career opportunities more salient. On the other hand, moderately defined careers including project managers and less well defined careers including clerical workers, sales workers, and unskilled laborers often do not have as many career advancement and career development opportunities. Professionals, who work in moderately defined careers including project managers, often do not have clearly defined career paths and as

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This dissertation follows the style of *Human Resource Development Quarterly*.

such may perceive career advancement opportunities as non-salient (Ganesan & Weitz, 1996).

The lack of career advancement opportunities in careers has been researched as one of the reasons professionals become dissatisfied with their jobs and leave companies (Crawford, 2002). Additionally, career satisfaction and career commitment research are cornerstones for identifying satisfying, successful careers based on professionals' perceptions. Crawford (2002) reported that one of the major reasons moderately defined career professionals leave a company is the lack of a clearly defined career path. According to Parker and Skitmore (2005), continued career development is paramount to job satisfaction and reduced job turnover regardless of experience levels. To that end, the extent to which individuals feel that they have a direction, or purpose (defined as career path) and the influence this perception has on their jobs and career related affects and performances is an important consideration.

Johns (1996) suggested that there are three elements relevant in understanding a career including (a) moving along a professional path, (b) engaging in joint individual and organizational activities, and (c) maintaining a professional identity. Careers and career development activities associated with moderately defined careers have important implications for job attitudes and job behaviors. For example, moderately defined career professionals report that there is not a formal career path to upper management (Joch, 2001). This study examines the path of relationships among variables in a career development model to provide a better understanding about the career development of successful moderately defined career professionals. To that end, the focus of this study

will be on reviewing careers and career development literature to frame the context for examining pathways to success for moderately defined careers.

Careers

Super (1957) explored from a human relations perspective explanations for why people work. He suggested people work to (a) obtain recognition, (b) to obtain independence via autonomy in work roles, and (c) to obtain prestige based on job title and duties. Super (1957) also reported that job satisfaction is important to individuals in that "the desire for pleasant and efficient working conditions is a desire for personal adequacy and for respect from others" (Super, 1957, p. 11). The explanation of why people work serves as an avenue to frame the discussion of careers.

As defined by El-Sabaa (2001), professional careers include "an evolving sequence of work activities and positions that individuals experience over time as well as the associated attitudes, knowledge and skills they develop throughout their life" (p. 2). According to Arthur, Hall, and Lawrence (1989), "careers reflect the relationships between people and the providers of official positions, namely, institutions or organizations, and how these relationships fluctuate over time" (p. 8). A career is useful for planning purposes including succession planning and advancement within the organization using the current talent pool (Adamson, Doherty, & Viney, 1998). The sequence of experiences and changes are embedded within the various job positions and activities that frame a professional's career.

Careers are no longer seen as clearly defined paths that include a series of career

path advancements that include increasing salaries, prestige, socioeconomic status, and security (Hall, 1996). Careers are currently seen as relational and include work challenges, relationships, and experiences with a focus on learning more from behaviors and attitudes. To that end, individuals are encouraged to become more responsible in leading their careers and individuals are encouraged to take responsibility for aligning their competencies with their actions in an effort to build long-term career effects (Lichtenstein & Mendenhall, 2002).

The emergence of these new career structures is due to changing environmental trends of organizations and individuals and organizations have an opportunity to create environments which will retain employees and maximize performance and output. The foundation of the present study is based on the idea that stratifying careers by categories is a framework to better identify career successes defined differently depending on the constituencies. The constituencies vary including (a) how professionals perceive career paths and career development opportunities, (b) how success is perceived by the external environment, and (c) how success is measured by the organizations. Additionally, the career development model will frame the relationships of career path, career attitudes, and career behavior variables in order to support the retention, development, and performance of professionals engaged in moderately defined careers.

Career Categories

Occupations may determine the level of one's future career opportunities and occupations may also determine professional success including prestige, performance level, and income (Cain & Treiman, 1981). Occupations can be categorized in three

major groups including well defined careers, moderately defined careers, and less well defined careers (see Table 1 for Career Categories). The three career categories are defined based on (a) "a period of pupilage or internship, during which students spend a significant amount of time (up to five years) learning their 'craft' from an expert"; (b) "enrollment in a 'professional college' outside the higher-education system"; (c) "a qualifying examination"; (d) "a period of relevant study at a college, polytechnic or university leading to a recognized academic qualification; and (e) "the collection of evidence of practical competence in the form of a logbook or portfolio" (Eraut, 1994, p. 6).

According to Cain and Treiman (1981), professionals working in various career categories "vary widely in their attitudes and behaviors because of differences in the patterns of recruitment to occupations but in part also because of patterns of occupational socialization and intrinsic differences in the nature of the work performed in different occupations" (p. 258). Well defined careers include well defined career paths "that inform professionals about the promotion opportunities that are available at various stages of their career and indicates the sequence of the positions they have to pass through to be promoted into higher level positions" (Ganesan & Weitz, 1996, p. 34) with an emphasis on career development opportunities. Less well defined careers often do not have defined career paths for professionals that include promotion opportunities and career development opportunities for a sequence of positions (Ganesan & Weitz, 1996). Moderately defined careers have somewhat defined promotion opportunities and career development opportunities for a sequence of positions (Ganesan & Weitz, 1996) (See

Table 1 for examples of career categories). This study is framed within the context of moderately defined careers and, as such, the career of project manager is the focal exemplar herein toward understanding the attitudes, behaviors, and career experiences of professionals working in moderately defined careers.

Table 1: Occupations by Career Categories[a]

Well Defined Careers
Physicians, dentists
Other medical and paramedical
Accountants and auditors
Teachers, primary, and Secondary schools
Teachers (college), social scientists, librarians, and archivists
Architects, chemists, engineers, And physical and biological scientists
Technicians
Public Advisors
Judges, lawyers
Profession, technical, and kindred workers not listed
Moderately Defined Careers
Managers including project managers, officials, and proprietors (except farm), no self-employed
Managers including project managers, officials, and proprietors (self-employed) (unincorporated businesses)
Less Well Defined Careers
Secretaries, stenographers, and typists
Other clerical workers
Sales workers
Other craftsman and kindred workers
Government and protective service workers
Members of the armed services
Transport equipment operatives
Unskilled laborers (nonfarm)
Farmers, laborers, and foremen
Other service workers
Farmers (owners and tenants) and managers

a Careers were extracted from a study by Sicherman and Galor (1990).

Project manager. The project manager "is the person responsible for accomplishing the project objectives" (PMI Global Standard, 2004) and is charged with planning, monitoring, staffing, and executing projects (Gilley, Eggland, & Gilley, 2002). As presented in this study, the career of project manager would be considered "moderately defined". Projects are temporary organizations and serve as vehicles for organizing resources and managing the unpredictability of strategic initiatives (Lundin & Soderholm, 1995) in order to add value to the organization. PMI Standards Committee (1996) defined project management as "the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project" (p. 6). A project manager ensures quality is cascaded throughout projects including integration, human resource management, and communications (PMI Global Standard, 2004) by using tools, models, and theories to manage project and human resource activities.

A project manager, as a leader of temporary organizations, has a greater influence in driving successful projects than senior management that champions and sponsors the activities of the entire organization (Mayo, 2000). Jiang, Klein, and Chen (2001) suggested that a project manager's performance impacts project outcomes significantly needs to possess competences, skills, experiences, education, and behaviors that are geared toward successful team execution (El-Sabaa, 2001).

Additionally, the project manager "must have a high tolerance for ambiguity, a good working understanding of basic management principles, consummate 'people'

skills, a general understanding of the various technologies, and a strong desire to be where the action is" (Manley, 1975, p. 182).

Project managers require specific competencies in "planning, controlling, communicating, negotiation, problem-solving, and leading" (Sauer, Liu, & Johnston, 2002, p. 43). The three most identified competencies include work experience, career commitment, and the need to achieve (Sauer et al., 2002). Successful project managers are motivated by their need to achieve project completion and the reputation associated with that completion. Additionally, organizations have practices that support the success of projects including providing the resources for project completion. The organizational practices include (a) developing a supportive organizational structure, (b) developing job descriptions, (c) reporting processes and procedures, (d) defining values and objectives, (e) developing supporting relationships, and (f) conducting human resource management practices (Sauer et al., 2002).

Project managers embrace learning and training and development "because human resource policies and the organization's values encourage them to feel they have a personal stake in helping the organization perform better in the long term" (Sauer et al., 2002, p. 43). Human resource development as a function of open systems includes activities that support opportunities to learn skills and competencies to meet current and future job roles (Werner & DeSimone, 2006). Losey (1999) reported that employee competencies can be developed through human resource activities including work place learning and career development. To that end, a structured career plan to identify what

needs to be developed, when, and how includes education, skills, experiences, and expertise.

Career Development

According to Gutteridge (1986),

> Career development represents the outcomes created by the integration of individual career-planning activities with institutional career management processes. These outcomes may be described in individual terms, such as better self-understanding and the identification of desired career goals, as well as in terms of organizational results, such as reduced turnover of valued employees and better communication of career opportunities to employees (pp. 54-55).

The subprocesses of career planning include job choice, organization choice, job assignment, and self-development. The subproceses of career management include performance and evaluation, career development, training and development, and succession planning (Gutteridge, 1986). Additionally, Gutteridge (1986) identified some indicators of effective career development activities including (a) achievement of individual and organizational objectives and goals, (b) implementation of career paths, (b) improved performances, (c) perceived benefits of career systems, and (d) expression of career attitudes.

Sauer, Liu, and Johnston (2002) recommended, “to develop the organization’s project management capability, it is desirable both to institutionalize the development of individual capabilities and to create learning, which extends beyond the individual project manager’s skills and experience” (p. 44). Career development focuses on the personal and organizational success of professionals (Swanson & Holton, 2001, p. 3) and typical tasks that should be undertaken by organizations in support of professionals and their work experiences over a period of time include (a) administering mentoring

systems, (b) providing performance feedback, and (c) developing a career path (Sauer et al., 2002). More specifically, a clearly defined career path (a) facilitates alignment of competencies with job requirements, (b) sends a message to project managers that the organizations' investment is valued and will be most likely rewarded, and (d) demonstrates there is a clear promotion path.

Career mobility, signaling theory, career motivation, and expectancy theory are discussed below as career development theories most relevant to this proposed study. These theories are used to examine, understand, and frame the experiences, attitudes, and behaviors of project managers. Additionally, the theories discussed herein will be used to explore personal goals as frameworks for outcome expectations that explain the activities and attitudes associated with achieving project management advancement.

Career Mobility

Career mobility suggests that career paths may include intrafirm and interfirm mobility. According to Sicherman and Galor (1990), "Intrafirm career mobility ("promotion") is subject to the employer's decision, where interfirm mobility and its optimal timing are determined by the individuals who choose the optimal quitting time so as to maximize their expected lifetime earnings" (p. 171). Additionally, interfirm mobility is not predictable and is based on schooling, ability, and job experience. The theory suggests that the optimal investment in human capital and the optimal exit time maximizes the anticipated income. Additionally, Jacobs (1983) suggested that it is important to distinguish individuals that exit the organization from individuals that stay in the organization when studying career paths.

Sicherman and Galor (1990) framed career mobility within the context of education and training and the impacts on firm mobility. They contended that "given an occupation of origin, more educated individuals are more likely to move to a higher-level occupation" (p. 178). In the present study, career mobility theory can be used to understand the perceptions and behaviors of moderately define careers as it relates to career paths and training and learning opportunities.

Signaling Theory

Signaling theory is predicated on the idea that employers read potential signals, such as education and certifications, along with the relationship of those signals with productivity as a basis to respond to competitive industry pressures and reward the individuals that initiate the signal (Spence, 1976). More specifically, according to Spence (1976), "employers read education as a signal of productivity, but the content of the signal is determined by the pattern of the investment by individuals, and that in turn is determined in part by the way it is rewarded in the market" (p. 51). In this study, the signaling theory supports the examination of training and learning and certifications as behaviors that will lead to job satisfaction and career commitment that impact performance.

Career Motivation Theory

London (1983) and London and Mone (1987) introduced an integrative model of career motivation including career decisions and career behaviors. The underlying premise of the model is based on prospective rationality and suggests that career decisions and behaviors are predictors of outcomes and expectations. Vroom's (1964)

expectancy theory also supports the prospective rationality principle. The career motivation model (London, 1983) proposes that career motivation is a multidimensional construct that includes individual and situational characteristics.

Individual characteristics include needs, interests, and personality variables and are represented by three domains including career identity, career insight, and career resilience. Career identity includes the extent to which people define and perceive themselves in terms of their professions (London, 1983). Career identity is framed within the context of the work environment and the motivation for advancement along a career path. Career insight includes "the extent to which the person has realistic perceptions of him or herself and the organization and relates these perceptions to career goals" (London, 1983, p. 621). Career resilience includes the motivation not to be disrupted in less than optimal work environment. The disruption can be in the form of career goal barriers, poor peer and management relations, and career path uncertainty. The situation component of the career motivation model includes aspects of the person's work environment. The aspects of the work environment consist of career planning, career development programs, job design, leadership style, and staffing plans and policies.

In this study, career motivation theory supports the idea that individual and environmental factors influence the career development activities of moderately defined careers. The theory includes an examination of the professionals' perceptions about the environment including autonomy/prestige, career paths, and training and learning

activities. Additionally, performance outcomes and career expectations are examined by focusing on job satisfaction, career commitment, and performance variables.

Expectancy Theory

Expectancy theory has been studied within the framework of work and motivation in organizations and is based on predicting professionals' preferences and choices (Mitchell & Beach, 1976; Brooks & Betz, 1990). Expectancy is subjectively perceived probability and expectancy "is defined as a monetary belief concerning the likelihood that a particular act will be followed by a particular outcome" (Vroom, 1964, p. 17). According to Vroom (1964), "Whenever an individual chooses between alternatives which involve uncertain outcomes, it seems clear that his behavior is affected not only by his preferences among these outcomes but also by the degree to which he believes these outcomes to be probable" (Vroom, 1964, p. 17).

Vroom (1964) reported that the five properties of work roles that are related to the motivational aspects of why people work include: to provide financial resources, to release energy, to produce goods and services, to stimulate social interaction, and to obtain social status or prestige. Vroom (1964) also posited that (a) "people prefer tasks and jobs which they believe to require the use of their abilities": (b) "people prefer consistent information about their abilities to inconsistent information"; and (c) "people prefer receiving information to the effect that they possess valued abilities to information" (p. 286). The concept of expectancy suggests "the specific outcomes attained by a person are depended not only on the choices that he makes but also on events which are beyond his control" (Vroom, 1964, p. 251).

Mitchell and Beach (1976) studied occupational preferences and choices within the context of expectancy theory and decision theory. The researchers suggest that organizations need to provide individuals with accurate information about jobs, job opportunities, and job outcomes and as such, facilitate satisfaction and reduce turnover. In this study, expectancy theory can be related to the behaviors, attitudes, and performance of professionals in moderately defined careers. The examination of autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance can be framed within the context of the expectancy theory.

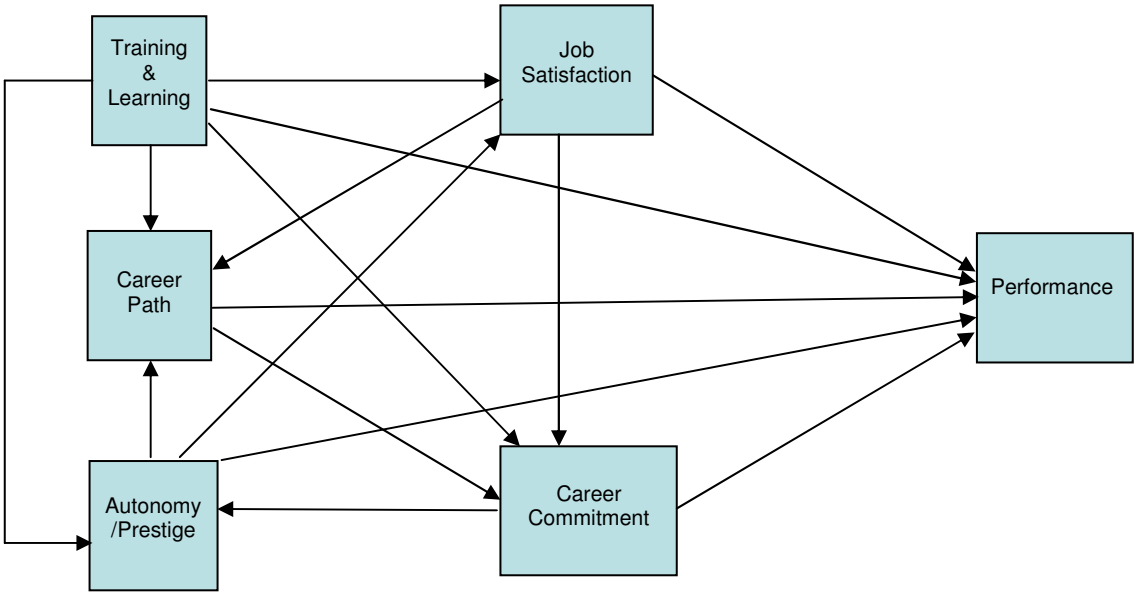
Career Development Model

Career mobility, signaling theory, career motivation, and expectancy theory are discussed herein to provide insight into the career development activities that intersect individual and organizational practices. Career mobility theory and signaling theory are used to discuss career path and training and learning variables, career identity is used to discuss job satisfaction, career commitment, and autonomy/prestige relationships, and expectancy theory is used to discuss performance. Career mobility theory (Sicherman & Galor, 1990) is based on the premise that optimal investment in human capital and the optimal exit time maximizes the anticipated income. Signaling theory (Spence, 1976) implies education, training and learning, and certifications act as signals to organizations to offer competitive salaries to employees. Career motivation (London, 1983, London & Malone, 1987) suggests that career decisions and behaviors are predictors of outcomes and expectations. Expectancy theory posits that the strength of actions is based on the

strength of outcome expectancy and on the value or attractiveness of the outcome (Vroom, 1964).

The researcher developed a model based on the aforementioned. The model suggests relationships amongst autonomy, prestige, perceived career path, learning opportunities, career commitment, job satisfaction, and performance (see Figure 1). Each of the variables included in the model framed for this proposed study is discussed herein.

Figure 1: Career Development Model



Autonomy/Prestige

Autonomy and prestige variables are combined in this study and discussed herein based on a review of the literature by Burton (1976) who suggested that job autonomy needed to be listed as a dimension of prestige. Autonomy is related to "the degree to which the employee feels personally accountable and responsible for the results of the work he or she does" (Hackman & Oldham, 1975, p. 162). Job autonomy has been studied within the context of feelings of accomplishments, personal growth, job satisfaction, and high quality work. Job descriptions that include "variety, autonomy, task identity, and feedback" (Hackman & Oldman, 1976, p. 259) support feelings of accomplishment and personal growth. Positions that include high job autonomy tend to have high job satisfaction, high work productivity, and fewer absences (Hackman & Lawler, 1971).

Prestige evaluations are the outcome of interactions between others and is "shared by and ultimately come from the several groups who learn of those performances and validate any esteem given" (Goode, 1978, p. 18). Treiman (1977) studied the variations of prestige in occupations and noted that "societal differences in the prestige of particular occupations reflect societal differences in their structural position. Occupations are particularly highly regarded where those facilitating these roles exercise unusually great power (except in the case of policemen, where the position is considered legitimate), entail scarce talent or skills or are exceptionally well awarded" (p. 153). Caremeli and Freund (2002) conducted a study to determine the relationship between work and workplace attitudes, including continuance commitment, job

satisfaction, and external prestige. The researchers suggested that affective commitment and job satisfaction are predictors of perceived external prestige.

Career Path

Career path within the context of career planning includes "goal-setting, performance appraisals, training, and continuous career counseling" (Souder, 1983, p. 249). A career path is a guide that results from planning that includes the best ways for an individual to grow personally and professional through a succession of job positions and experiences. Career paths are enacted to identify what characteristics need to be developed, when, and how. Career paths are implemented by providing services that enable employees to (a) plan and choose new jobs, (b) work in various industries, and (c) manage their own careers through life transitions (Herr, 2001). Grunig (1990) suggested that by including more education and knowledge in career plans, public relations professionals will be better qualified to serve as managers.

Nicholson and West (1989) suggested that organizations should review and revise their strategies to improve their performance. More specifically, the organization should attempt to focus on the career transition process, the frequency of the transitions, and the support systems that implement those transitions. Kidd and Green (2006) conducted a longitudinal survey of biomedical research scientists. The researchers reported that career planning was predicted by organizational commitment and job autonomy.

Training and Learning

Organizations can structure support for training and learning in two different formats. Learning can occur during formal education and training programs and learning can occur during project work by observing, coaching, and problem-solving (Sambrook, 2005). Kotnour (2000) reported that performance is positively associated with project knowledge. According to Dingle (1990), organizational support within project management learning includes an understanding of "what do project managers (including would-be project managers) expect to get for what is likely to be a substantial investment of time, effort, and sometimes even their own money?" (p. 40). Most professionals anticipate better jobs, advancement, autonomy, and more job satisfaction. Moderately defined professions, including project manager, look for organizations to support the certifications and training and learning (PMI Global Standard, 2004).

Job Satisfaction

Vroom (1964) posited that job satisfaction has implications for job behavior. For example, "the more satisfied a worker, the stronger the force on him to remain in his job and the less the probability of his leaving it voluntarily" (1964, p. 175). Additionally, job satisfaction was positively related to job performance.

Orpen (1985) studied the determinants of satisfaction and performance among project engineers. A questionnaire was used to collect the data from 125 project engineers working for seven different large industrial companies. The researcher reported that job satisfaction was influenced by the characteristics of the job as well as the perception of the work roles and perceived organizational support.

Scarpello and Campbell (1983) discussed job satisfaction as a "function of the match between the rewards offered by the work environment and the individual's pattern of needs for those rewards" (p. 315). The measures included in the study were job satisfaction and motivation levels including need importance and reward availability. According to Scarpell and Campbell (1983), "Results indicate that individual differences in aspiration levels and different views of career progression help explain current job satisfaction over and above the match of needs and rewards" (p. 315).

Career Commitment

Career commitment as defined by Hall (1971) is the level of motivation to work in a selected profession. Aryee and Tan (1992) studied a hypothesized model of antecedents and outcomes of career commitment using teachers and nurses employed in Singapore as subjects. The researchers found that career satisfaction and career commitment were positively related and that when individuals were allowed to achieve their goals they were more satisfied with their careers. Additionally these researchers found, "career commitment was significantly and positively related to skill development and negatively related to career and job withdrawal intentions but not significantly related to work quality" (Aryee & Tan, 1992, p. 288).

Somers and Birnbaum (1998) tested the relationships of job commitment, career commitment, organizational commitment, and job performance. The researchers suggested that job involvement was related only to performance tied to intrinsic rewarding elements of work. Additionally, career commitment was positively related to overall performance effectiveness.

Performance

According to McCloy, Campbell, and Cudeck (1994), performance includes actions related to individual and organizational goals. More specifically, performance is related to task proficiency in job performance (Somers & Birnbaum, 1998). Performance is multidimensional in that job includes an amalgamation of components that are representatives of jobs and their associated performances. Orpen (1985) reported that performance is influenced by job characteristics, perception of work roles, and perceived organizational support including training and learning.

Vroom (1994) examined studies related to the effects of supervision, groups, job content, salaries, and career paths. The findings included: (a) employees perform more effectively if performance is tied to attaining goals; and (b) employees perform more effectively if rewards include wages, promotions, and social recognition. Additionally, findings included: (a) "level of performance varies directly with the strength of individuals' need for achievement"; (b) "individuals perform at a higher level if they are led to believe the task required abilities which they value or believe themselves to possess"; (c) "persons who are given an opportunity to participate in making decisions which have future effects on them perform at a higher level than those who are not given an opportunity" (Vroom, 1964, p. 267).

Statement of the Problem

New emerging career paths for professionals are non-linear, dynamic, and boundary-less (Baruch, 2004) and have resulted in undefined professional advancement opportunities for careers. Additionally, moderately defined careers often do not have

clearly defined career paths due to the nature of the work performed. Project manager is a profession that is categorized as a moderately defined career, with only 22% of project managers reporting that their companies offer a formal project manager career path (Joch, 2001). According to Joch (2001), professionals working in moderately defined careers are currently interested in obtaining clearly defined career paths and are traversing various organizations seeking to find formalized career strategies.

As organizational needs expand and competition for talented workers increases (Joch, 2001; Judy, D'Amico, & Geipel, 1997), retention of dissatisfied employees has emerged as a significant organizational challenge. Maintaining a realistic and visible organizational career path for employees in moderately defined careers appear to be a critical aspect of retention, job satisfaction, and career commitment. To that end, it is important to consider the variations in perceptions and behaviors as well as job opportunities while designing, developing, and executing career paths so that professionals in moderately defined careers will perceive their career paths as salient.

Purpose of the Study

The purpose of this study is to examine the path of relationships amongst autonomy/prestige, career paths, training and learning, job satisfaction, career commitment, and performance for moderately defined jobs and emerging professions and, specifically, for project managers. According to Adamson et al., (1998), “as planning horizons have shortened, and the future needs of organizations have become less clear both individual employees and organizational representatives are finding it difficult to articulate a definition of career appropriate to changing organizational

circumstances" (p. 251). Hall (1976) has reported that there is a need to generate new definitions of careers and career paths that emphasize the importance of mutual benefit to both organizations and individuals. To that end, knowing what moderately defined career professionals do, "what kind of skills they demonstrate and what is their career path, would seem to constitute a very important step for the selection and development of an effective manager who is equipped to cope with any problems and accomplish unique outcomes with limited resources within critical time constraints" (El-Sabaa, 1999, p. 1).

In order to examine the dynamics associated with moderately defined careers, a project manager career development model was developed to examine the relationships amongst attitudes, perceptions, and behaviors including autonomy/prestige, career paths, learning, job satisfaction, career commitment, and performance. This study will support the field of moderately defined careers including project manager by offering a more in-depth understanding of the perceptions and career development of successful careers in order to support the retention and advancement of moderately defined career professionals.

Research Questions

The researcher investigated the paths of autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance. The study was guided by the hypothesized and revised models, as outlined in Figure 1, and included the following research questions for each model:

1. Is the model which describes the paths amongst the variables – autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance- consistent based on whether or not regression weights indicating the established path in the model was significant?

2. If the model is consistent based on the significance of regression weights, what are the estimated positive, negative, and total relationships amongst the variables?

Operational Definitions

The findings of the study are to be reviewed within the context of the following definitions of operational terminology:

Autonomy: **"**A degree of control of one's own behavior, actions, and activities" (Super, 1957, p. 5).

Career Commitment: The "strength of one's motivation to work in a chosen career role" (Hall, 1971, p. 59).

Career Path: A career path is a direction, or purpose that integrates a series of job positions within a specified period of time (Cappellen & Janssens, 2005).

Hypothesized Model: The hypothesized model is defined as the default model in this study.

Job Satisfaction: Employee's affective reactions to a job based on comparing actual outcomes with desired outcomes (Cranny, Smith & Stone, 1992).

Less Well Defined Careers: Careers that often do not have defined career paths for professionals that include promotion opportunities and career development opportunities for a sequence of positions (Ganesan & Weitz, 1996),

Moderately Defined Careers: Careers that have moderately defined career paths for professionals that somewhat define the promotion opportunities and career development opportunities for a sequence of positions (Ganesan & Weitz, 1996).

Performance: "Behaviors and actions that are relevant to the goals of the organization" (McCloy, Campbell, & Cudeck, 1994, p.493).

Prestige: Prestige is defined as the "the esteem, respect, or approval that is granted by an individual or a collectivity of performers for qualities they consider above the average" (Goode, 1978, p. 7).

Project Management: "The application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project" (PMI Standards Committee, 1996, p. 6).

Project Manager: A project manager leads project management activities to meet project deliverables (PMI Standards Committee, 1996) and is held accountable for the quality of the initiative (Kerzner, 2001).

Training and Learning: Situations in which there are opportunities to change behavior or cognition in order to improve performance on a current or future job (Gilley, Eggland, & Gilley, 2002; Werner & DeSimone, 2006).

Well Defined Careers: Careers that have career paths "that inform professionals about the promotion opportunities that are available at various stages of their career and

indicates the sequence of the positions they have to pass through to be promoted into higher level positions" (Ganesan & Weitz, 1996, p. 34).

Assumptions

1. The respondent chosen to complete the survey is the individual that actually completed the survey.
2. The respondents identify with project manager related positions.
3. The respondents understand the scope of the study and responded objectively and competently.
4. The interpretation of the data accurately reflects the intent of the respondents.
5. The respondents are affiliated with project manager chapters or project manager-related organizations.

Limitations

1. The study is limited to project managers in project management related chapters and project managers in select organizations.
2. The study is limited to the information available in published literature acquired from the literature review and the survey instrument.
3. Findings may be generalized only to the career development activities of project managers.

Methodology

The data for the study will be analyzed from a data set collected by the researcher.

Population

The population included project managers (a) who were members and affiliates of project management related chapters of a professional association; and (b) who work in organizations including an energy enterprise, research and teaching institute, and a training and technical agency. The population of the project management related chapters included approximately 10,000 members and include chapters from Austin, Clear Lake, Coastal Bend, Dallas, Houston, Kansas City – Mid-America, New Orleans, Northwest Arkansas, Pikes Peak, and St. Louis. The population of the organizations that participated in the study included (a) 33 project managers from a global energy enterprise, (b) 39 project managers from a public metropolitan research and teaching institute, and (c) 12 project managers from a training and technical agency.

Instrumentation

The instrument included questions that measured the following variables: demographics, autonomy, prestige, career path, training and learning, job satisfaction, career commitment, and performance. Respondents selected responses to demographic information including: gender; age; title/position; education level; PMI member status; PM certification status; number of years worked in project management; and industry.

Procedures

Project management chapters and organizations were contacted via emails seeking participation in the research study. Additionally, the researcher attended PMI Houston chapter meetings to seek assistance in the research study. Ten project management related chapters and three organizations participated in the study.

After notification from 10 project management related chapters and three organizations of their participation in the study, an information sheet including the survey link was sent to the project management related chapters for distribution to their subscribed mailing lists of project managers in November and December 2006. The information sheet included the purpose of the survey and the approximate time to complete the survey as well as the characteristics of the study including: voluntary participation, anonymous identification, no withdrawal penalties, and no compensation (see Appendix B for the information sheet.) The project managers accessed the survey via a third party's website, sponsored by *Ridgecrest Surveys*.

Data Analyses

Data recorded in a Microsoft Excel spreadsheet and loaded in a statistical analysis software program. The results of the study are reported using appropriate statistical procedures (Mertler & Vannatta, 2002) including path analysis.

Significance of the Study

Flat organizational structures have reduced vertical promotion paths of professionals and there has not been a corresponding shift in lateral and functional manager career interests; thus, there is a need to provide more career development and career path opportunities for moderately defined careers including project managers (Dainty, Raiden, & Neale, 2004). The absence of well-defined career paths is encouraging some veteran professionals to jump to companies (Joch, 2001) that offer career paths or seek different career choices.

Professionals, as defined by career categories, vary in their attitudes and behaviors because of differences in occupational duties, prestige, socioeconomic status, intrinsic, and extrinsic outcomes (Cain & Treiman, 1981). To that end, the career development model in this study focused on the professional attitudes and behaviors in moderately defined careers with an emphasis on project manager careers. A project manager leads project management activities to meet project deliverables (PMI Standards Committee, 1996). Currently, project management is used to execute initiatives in diverse industries including banking, pharmaceutical, consulting, advertising, legal, healthcare, and safety (Kerzner, 2001) and there is a need to examine and develop other pathways in order to meet the career development needs of the aforementioned industries. Therefore, the project manager is held accountable for the management of the initiatives (Kerzner, 2001) and requires specific competencies including work experience, career commitment, and job satisfaction to integrate management and leadership practices throughout project phases (Sauer, Liu, & Johnston, 2001, p. 43).

HRD is focused on developing human resources to improve performance (Swanson, 1995) and generate sustained competitive advantage (Barney, 1991). Organizational systems use human resources to achieve competitive advantages and investment in the professional's role through career development activities including job structure, training and learning opportunities, and job satisfaction serves as a means to "maintain that resource in the future and to retain that resource in the present" (Garavan, et al., 2001, p. 48). Human resource practitioners and senior management can use the

career development model to examine the relationships among autonomy, prestige, career paths, training and learning, job satisfaction, career commitment, and performance to support the development, retention, and productivity of moderately defined career professionals. Additionally, career planning and career opportunities are useful for succession planning and advancement within the organization using the current talent pool (Adamson, et al., 1998). To that end, this study supports careers and career development literature by facilitating the understanding of moderately defined careers toward support of more career opportunities within the aforementioned professions.

CHAPTER II

LITERATURE REVIEW

The literature supporting this study of pathways to success includes a discussion of moderately defined careers with an emphasis on the project manager career field, career development, career paths, job attitudes and beliefs, organizational support for employee learning, and job behaviors. Job attitudes and beliefs are discussed within the context of prestige, autonomy, job satisfaction, and career commitment. These variables are important to understand as they impact performance, recruitment, and retention of project managers within the project management profession.

Careers

As stated by El-Sabaa (2001), "A career is an evolving sequence of work activities and positions that individuals experience over time as well as the associated attitudes, knowledge and skills they develop throughout their life" (p. 2). According to Hall (1971) a career can be defined as "that particular sequence of experiences and personal changes, both unique and common, which a person goes through during the entire course of his life's work" (p. 50). The sequence of experiences and changes are embedded within the various job positions and activities that frame an employee's career.

A career may have many meanings and may act as an avenue to meet economic needs and to provide a framework in which to acquire social status, or personal self-worth (Adamson et al., 1998). The meanings may lead to behaviors that impact job satisfaction, performance, and ultimately retention. Therefore, organizations and

professionals need to jointly work together to ensure individual and organizational success (Cappellen & Janssens, 2005). Nicholson and West (1989) suggested that organizations should attempt to focus on the career transition process, the frequency of the transitions, and the support systems that implement those transitions in order to improve performance.

Lichtenstein and Mendehall (2002) suggested that an outcome of non-linear career paths is a shift from predicting career outcomes to creating career opportunities. More specifically, Lichenstein and Mendehall (2002) recommended "rather than working harder to predict careers that are inherently unpredictable, or explain career choices that are highly dependent on uncontrollable factors, a new approach would emphasize how careers emerge and grow" (p. 26). To that end, careers may have many meanings over time and act as an avenue to meet economic needs, provide a framework in which to acquire social status, or personal self-worth (Adamson, et al., 1998). The meanings may lead to behaviors that impact job satisfaction, performance, and ultimately retention.

Career attitudes, career behaviors, and career success is defined differently. These differences depend on career categories including how professionals perceive career paths and career development activities as avenues to frame attitudes and behaviors. To that end, career categories are discussed herein as a framework for examining and understanding the attitudes and behaviors of moderately defined careers.

Career Categories

Past and current research has focused on rank order categorization of occupation titles (Featherman & Hauser, 1976; Sicherman & Galor, 1990; Treiman, 1977). The professionals who work in the categories vary widely in their attitudes, behaviors, and career opportunities because of differences in regulations, educational levels, certifications, continuing education requirements (Strategic Skills Initiative, 2005), socioeconomic status, prestige, and salaries (Sicherman & Galor, 1990). (See Tables 2 and 3 for Career Categories and Career Categories and Associated information.)

Table 2: Career Categories

	Well Defined Careers [a]	Moderately Defined Careers [a]	Less Well Defined Careers [a]
Regulation	Often Regulated	Often Not Regulated	Often Not Regulated
Schooling	Often Require Graduate and Higher	May Require Undergraduate Degree	Often Do Not Required Undergraduate Degree
Certification	Often Require Certification	May Require Certification	Often Do Not Require Certification
Continuing Education	Often Require Continuing Education	May Require Continuing Education	Often Do Not Require Continuing Education
Socioeconomic Status	Higher	Moderate	Lower
Prestige	Higher	Moderate	Lower

[a] Table 2 information was extracted and modified from Strategic Skills Initiative (1995).

Table 3: Career Categories and Associated Information

Occupation	Duncan Index [a]	Siegel Prestige [a]	Wages [b]	Years of Schooling [c]
Well Defined Careers				
Physicians, dentists	93.247	78.964	8.334	16.84
Other medical and paramedicals	70. 043	54.837	4.762	16.28
Accountants and auditors	76.800	55.900	5.990	15.54
Teachers, primary, and Secondary schools	69.697	58.268	4.587	16.29
Teachers (college), social scientists, librarians, and archivists	78.721	70.518	6.001	16.56
Architects, chemists, engineers, and physical and biological scientists	84.012	65.056	6.717	15.63
Technicians	62.709	52.219	5.315	13.84
Public Advisors	71.733	57.258	4.947	15.01
Judges, lawyers	92.300	75.100	7.311	16.92
Profession, technical, and kindred workers not listed	62.460	50.940	5.650	15.43

Table 3: Continued

Occupation	Duncan Index[a]	Siegel Prestige[a]	Wages[b]	Years of Schooling[c]
Moderately Defined Careers				
Managers, officials, and proprietors (except farm), no self-employed	64.066	51.784	6.177	14.06
Manager, officials, and proprietors (except farm) self-employed (unincorporated businesses)	----- d	------ d	5.629	12.24
Less Well Defined Careers				
Secretaries, stenographers, and typists	61.600	44.955	3.463	13.20
Other clerical workers	44.072	37.464	4.018	12.49
Sales workers	54.277	38.660	4.926	13.75
Foreman not elsewhere classified	49.700	45.300	5.049	11.62
Other craftsman and kindred workers	28.649	37.387	4.224	11.25
Members of the armed services	------ d	------- d	3.858	13.15
Transport equipment operatives	18.488	30.557	3.644	10.85
Unskilled laborers (nonfarm)	8.779	35.698	3.261	10.06
Farmers laborers and foremen	7.387	19.593	2.000	8.53
Other service workers	14.292	22.468	2.814	10.99
Farmers (owners and tenants) and managers	14.676	40.792	2.402	11.91

[a]Extracted from Hauser and Fetherman (1977).
[b]Extracted from Sicherman and Galor (1990). Categorization of wages into well defined, moderately, and less well defined careers in 1990 is consistent with wage categories in 2005 (National Compensation Survey, 2005).
[c]Data extracted from Sicherman and Galor (1990).
[d]Indicates no data available.

Project manager. Project manager, identified in this study as a moderately defined career, includes individuals that: (a) typically have technical backgrounds; (b) are involved in controlling and managing cost and schedules; and (c) are not directly involved in the daily functional activities of an organization (Duarte, Lewis, Hoffman, & Crossman, 1995). Project managers have greater mobility than functional managers across projects and organizations because projects are temporary organizations (Packendorf, 1995; Turner & Müller 2003). To that end, project manager competencies include business skills, project manager skills, interpersonal relationship skills, and political skills (Cage, 2004).

Project managers have been singled out as one of the major factors contributing to projects being delivered on time, within budget and meeting requirements (Kendra & Taplin, 2004). The project manager is the resource that leads project management activities in government, construction, engineering, banking, pharmaceutical, consulting, advertising, legal, healthcare, safety, and manufacturing organizations. According to PMI Standards (1996), "Project management is the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs" (p. 6).

The project manager is charged with planning, monitoring, staffing, and executing projects (Gilley, Eggland, & Gilley, 2002) in order to improve efficiency and performance. Additionally, project managers conduct activities including visioning, reflecting, monitoring, and evaluating. Project managers use history, tools, models, theories, and research to discover a theoretical or scientific basis that guides thinking to

ensure actions are more precise and aligned (Biesta & Burbules, 2003). Thus, project mangers as leaders "should possess knowledge of project planning and design as well as knowledge of how to evaluate learners, programs, and instructors" (Gilley, Eggland, Gilley, 2002, p. 230). This knowledge is obtained through learning, training and development activities, certifications, professional experiences, and career development activities.

Project managers are responsible for coordinating and integrating cross-functional activities that span the project team and project organization (Thamhain, 2004). A project's execution is dependent on the commitments, experiences, and skills of project team members (Lundin & Soderholm, 1995). Project managers (a) need strong communication and interpersonal skills, (b) must be familiar with company operations, and (c) must be technically competent (Kerner, 2001) in order to lead successful project teams. According to Thamhain (1998), the following six drives are associated with high performing project teams: (a) "professionally interesting and stimulating work"; (b) "recognition of accomplishments"; (c) "good interpersonal relations"; (d) "proper technical direction and team leadership"; (e) "qualified project team personnel"; and (f) "professional growth potential" (p. 272). The six drives are related to learning, training and development, and career development activities and focus on the career behaviors and attitudes of the team.

El-Sabaa (2001) collected data from project managers in three stages to study the characteristics and skills of the most effective project managers. The stages included: (a) responses to open-ended questions from 85 project managers from public and private

organizations, (b) development of a questionnaire based on eighteen skill items identified from the open-ended questions, and (c) 126 project managers and 94 functional managers completed the developed questionnaire. The researcher reported that career motives for project managers included teamwork, autonomy, career development, and training and learning. Additionally, El-Sabaa, (2001) reported that "project managers were assuming greater responsibility for planning their career moves and identifying the steps required to achieve them" (p. 4). Because project manager responsibilities are often tied to one or more projects with defined timelines, the within organization career path for a project manager may be unclear. This feature, along with the features identified in Tables 1, 2 and 3 above, frame the moderately defined career construct and are the reasons project managers are the population for this study.

Career Development

The emergence of non-linear careers have created work environments in which individuals are required to take more responsibility in planning and managing their careers (Lichtenstein & Mendenhall, 2002). According to Kram (1996), a relational approach to career development explores the ways individuals learn and grow within the social context of the work environment. The relational approach considers the learning and training as well as the career activities that include career path advancement and work identity. For example, (a) individual conditions include willingness, skills, and competence; and (b) organizational conditions include education and training, coaching, mentoring, and recognition and rewards are inputs to consider when developing multiple developmental relations. Likewise, personal learning outcomes and task outcomes

including individual performance, team performance, and competency acquisition are outputs to the relational approach to career development.

A holistic approach to career development includes a blend of organizations and individuals including compensation systems and career programs that integrate practices that are "commonly associated with the public sphere (technical competence, autonomous action, competitiveness, and linear thinking) and those commonly associated with the private sphere (empathy, enabling, collaboration, trust)" (Hall, 1996, p. 119). For example, career motives for employees include team work, autonomy, people development, and training (El-Sabaa, 2001). To that end, organizations need to find avenues in which to bring individuals together to redesign job descriptions to make them more growth enhancing, interesting, and interactive. Additionally, organizations need to (a) advocate ongoing performance feedback programs; (b) align rewards with performance; and (c) encourage professionals to take ownership of their careers (Werner & DeSimone, 2006). The implication for engaging professionals with moderately defined careers is that professionals will be more likely to take ownership of the process and effectively work to execute the career plans (El-Sabaa, 2001).

Career development is seen as an intervention to ensure employees obtain work skills as well as high motivational levels to fill their full work potential (Herr, 2001). Career development activities align job responsibilities with intrinsic and extrinsic rewards to increase job satisfaction and career commitment (Carmeli & Freund, 2002). Gutteridge (1986) reported

> career development represents the outcomes created by the integration of individual career-planning activities with institutional career management

> processes. These outcomes may be described in individual terms, such as better self-understanding and the identification of desired career goals, as well as in terms of organizational results, such as reduced turnover of valued employees and better communication of career opportunities to employees. (pp. 54-55)

Gutteridge (1986) identified some indicators of career development effectiveness including (a) achievement of individual and organizational objectives and goals, (b) implementation of career paths, (b) improved performances, (c) perceived benefits of career systems, and (d) expressions of career attitudes. Additionally, Kram (1996) suggested that career development planning needs to include diagnosing current career concerns, modeling relational activity, and facilitating action. Kram (1996) also posited that the diagnosis needs to include questions related to (a) current career concerns including competences, values, and job fits; (b) current career concerns about relationships; (c) opportunities for relational contact including education and training, current business challenges, rewards and recognition; and (d) mentoring and coaching. The career development model relationships examined in this study include: autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and job performance. Career mobility, signaling theory, career motivation, and expectancy theory are discussed below to frame the discussion of the career-related variables discussed herein.

Career Mobility

Career mobility theory is predicated on the idea that education and training and learning are related to a higher probability of occupational advancement. Additionally, individuals who are not promoted despite a higher perceived probability of promotion are more likely to exit an organization (Sicherman & Galor, 1990). Career mobility

theory posits that the role and significance of movement within and between careers is related to individual careers, career path advancement, withdrawals, and interfirm mobility (Sicherman & Galor, 1990). Individuals choose their schooling and training and learning based on their perceptions of expected outcomes including career promotions and increased earnings. Schein (1978) identified three avenues for career mobility including (a) increasing acceptance to the profession, (b) lateral movement within job function, and (c) career advancement through hierarchical progression.

Kondratuk, Hausdorf, Korabik, and Rosin (2004) conducted research with professional-level employees to study the link between career mobility and corporate loyalty. The researchers suggested that (a) individuals who experience career mobility are not necessarily less affectively committed to the current organization; (b) job-related factors including new learning, job challenge, and skill variety may account for the increase in affective commitment for individuals who change jobs; and (c) career advancement increases an individual's perception of his or her own competency and as such impacts affective commitment.

Guskey (1966) studied the relationship between career mobility and organizational commitment. Guskey reported that the strength of organizational commitment is positively related to managers with seniority. Additionally, managers with maximum career mobility were more committed to the organization than managers who experienced less than maximum mobility. To that end, individuals become and sustain their membership in organizations in which their personal objectives are met. Sehgal (1983) conducted a study of occupational mobility and job tenure. The researcher

reported that pull factors including better pay and more appealing job opportunities are related to job tenure.

Signaling Theory

Organizational requests for and employee pursuit of education and certifications my both serve as signals providing organizations with a supply of employees that are trained to meet specialization needs within organizations. Signaling theory suggests that employers interpret individual education and certifications as signals in the job market to offer competitive salaries in which to retain employees (Spence, 1976). Spence (1973) also posited that there is a cost to employees engaging in these types of signaling activities. Signaling costs are undertaken if there is a potential for sufficient return such as increased wages, career advancement opportunities, and prestige.

According to Bartlett (2002), credentials as signals "can be viewed as instruments for judging knowledge, skills, and abilities in narrowly defined topic areas, typically based on specific vendors, particular organizational needs, and client-drive preferences" (p. 12). Employees working in organizations that sponsor credentialing programs view credentials as a key factor in obtaining job success and advancement (Bartlett, 2002). Organizational support for learning acts as a signal to individuals regarding present and future value of education and certification (Spence, 1973).

Engers (1987) extended the research on signaling theory and suggested that employers may have difficulty in determining the value of goods whose quality varies among employees. For example, "if low-quality sellers mimic the signal choices of high-

quality sellers, the signal is uninformative" (Engers, 1987, p. 663). To that end, there may be a need for employers carefully consider multiple signals, including productivity..

Career Motivation Theory

Career motivation theory predicts behavior based on actions and the internal and external environmental forces that influence behaviors based on perceived outcomes (London & Mone, 1983). London (1983) and London and Mone (1987) introduced an integrative model of career motivation for professionals including career decisions and career behaviors as predictors of outcomes and expectations. According to Malone (1983), career motivation is "the set of individual characteristics and associated career decisions and behaviors that reflect the person's career identity, insight into factors affecting his or her career, and resilience" (p. 620). Career motivation includes "searching for and accepting a job, deciding to stay with an organization, revising one's career plans, seeking training and new job experiences, and setting and trying to accomplish career goals" (London, 1983, p. 620).

London (1993) examined the relationship between empowerment, supervisor's support of career development, and components of career motivation including career resilience, career insight, and career identity. Employees who were ranked high by their supervisor in career motivation were employers who perceived themselves as being empowered in their jobs and perceived themselves as receiving career development support. Aryee and Tan (1992) developed a model of the antecedents and outcomes of career commitment based on the career motivation theory. They found that (a) organizational opportunity for advancement and development was significantly and

directly related to career paths, (b) job characteristics were significantly and positively related to career motivation, and (c) career goal achievers were more satisfied with their jobs.

Day and Allen (2004) discussed the relationship between career motivation and self-efficacy with protégé career success. They posited that career motivation can be achieved by encouraging employees to engage in career path activities that align their work behaviors with career goals. Additionally, goal setting needs to be conducted and goal status needs to be communicated back to employees. Career motivation has been used interchangeably with career commitment (Carson & Bedeian, 1994) and is supported by numerous studies as identified in career motivation and career commitment research.

Expectancy Theory

According to Vroom (1964), "Whenever an individual chooses between alternatives which involve uncertain outcomes, it seems clear that his behavior is affected not only by his preferences among these outcomes but also by the degree to which he believes these outcomes to be probable" (Vroom, 1964, p. 17). Expectancies are discussed in terms of strengths and range from minimum to maximum strength. Minimum strength subjectively indicates that the act will not be followed by the outcome and is represented by the value zero. On the other hand, maximum strength suggests subjective certainty that the act will be followed by the outcome and is represented by the value one.

Goodman, Rose, and Furcon (1970) studied the relationship between motivation and performance and collected data from 76 employees from a government research laboratory. They found that the expectancy model was a useful predictor of motivational determinants of scientific performance. Mitchell and Beach (1976) studied occupational preferences and choices within the context of expectancy theory and decision theory. They supported the idea that individuals choose occupations that result in the greatest amount of benefits provided the job positions are attainable. Additionally, organizations that provide individuals with accurate information about jobs, job opportunities, and job outcomes facilitate satisfaction and reduces turnover.

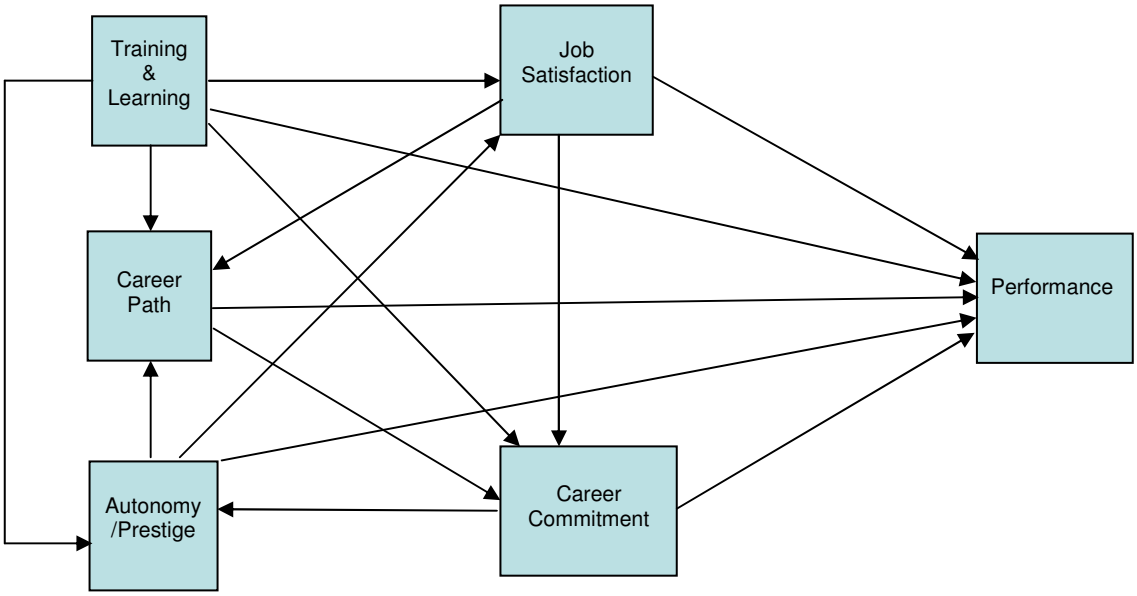
Career Development Model

The identified theories contribute to the framing of the central model for this study (Figure 2 below). In this section, theories associated with the career development model for moderately defined careers, detailed above are outlined and specific detail regarding each variable in the model is provided. Career motivation, career mobility, signaling theory, and expectancy theory are discussed herein to provide insight into the career development activities that intersect individual and organizational practices. Career mobility theory and signaling theory are used to frame career path and training and learning variables, career identity is used to discuss job satisfaction, career commitment, and autonomy/prestige relationships, and expectancy theory is used to frame performance. Additionally, career theories provide a framework for studying career decisions and career behaviors. Career mobility theory (Sicherman & Galor, 1990) is based on the premise that optimal investment in human capital and the optimal

exit time maximizes the anticipated income.

Signaling theory establishes the notion that provision of organization sponsored education, training and learning, and certifications act as signals to employees regarding the organization's valuing of sustained employee progress along career paths toward improved performances. Additionally, individuals may participate in training and education in order to signal their value to organizations. Organizations are likely to align expectations with signals from current and prospective employees and offer competitive salaries to retain or hire them. Career motivation (London, 1983, London & Malone, 1987) suggests that career decisions and behaviors are predictors of outcomes and expectations. Vroom's (1964) expectancy theory posits that the strength of actions is based on the strength of outcome expectancy and the outcome's value or attractiveness.

Figure 2: Career Development Model for Moderately Defined Careers



Autonomy/Prestige

Autonomy and prestige are combined and discussed herein as a variable for the study. The variables were combined based on review of the literature by Burton (1976) who suggested that the discussion of prestige needed to include autonomy. Burton (1976) researched the domains of occupational names by using a cognitive mapping system that referenced a multidimensional scaling system for studying the differences in occupations. Based on the results of the scaling system, Burton (1976) suggested that job autonomy needed to be listed as a dimension of prestige.

Autonomy was introduced as a core job characteristic by Hackman and Oldman (1975) and considered one of the five objective job characteristics that was a foundational component for explaining the job characteristic theory (Turner & Lawrence, 1965). The core job characteristics include skill variety, task identity, task significance, autonomy, and feedback from jobs. The researchers suggested that individuals are more motivated to work when the work is personally meaningful, they feel accountable for the performance outcomes, and they obtain consistent feedback about their performance (Turner and Lawrence, 1965). Researchers suggest that organizational support through job design (Hackman & Oldham, 1975) creates a mediating effect for autonomy and measures (a) individual psychological states, (b) reactions to job and work settings, and (c) readiness to respond to growth-related jobs. Individual task characteristics, including autonomy, are used to integrate organizational practices with individual attitudes and behaviors through career paths. Hackman and Oldman (1975) developed a job diagnostic survey to measure the core characteristics of

a job and included respondents indicating the amount of core competencies in their jobs. Hackman and Oldman (1976) further developed a job characteristics model that posited that core competencies impact the psychological states of workers that in turn impact work outcomes including motivation, job satisfaction, and effective work performance. The researchers reported that individuals who perform jobs that score high on the core competency assessment are more motivated, satisfied, and productive (Hackman & Lawler, 1971).

Autonomy for professional jobs usually includes (a) determining work priorities; (b) selecting, planning, and performing tasks that lead to prescribed outputs; and (c) answering to leadership for attainment of outputs and not the method of work completions (Super, 1957). Autonomy is one of the scales that has been used in the job diagnostic survey as characteristics of jobs and is linked to organizational theory and considered important in understanding organizational commitment, productivity and withdrawal (Mowday 1998; Idaszak & Drasgow, 1987).

James and James (1992) developed a hierarchical dynamic model that focuses on how individuals measure meaning in their work environment. The model includes four-first order factors including role stress, autonomy, leadership support, and work group cooperation. More specifically, autonomy is linked to the assessment of whether the work environment is personally beneficial or personally detrimental to employee. Thus, autonomy is linked to satisfaction with jobs and the amount of authority that the individual has to conduct job duties.

Autonomy has been studied within the context of organizational support including job characteristics (Steers & Spencer, 1977). Stress and Spencer (1977) studied the need for achievement and job descriptions, career commitment, organizational commitment, and performance among 115 managers in a manufacturing firm. The researchers suggested that jobs with great amounts of variety, autonomy, task identity, and feedback are directly related to management commitment and organizational commitment.

Prestige is defined as the "the esteem, respect, or approval that is granted by an individual or a collectivity of performers for qualities they consider above the average" (Goode, 1978, p. 7). Prestige is viewed within the context of social structures. Overall, researchers suggest that people want to perform certain acts or tasks because socialization supports those actions and because those actions or intrinsically or extrinsically rewarded or punished if not completed.

The theories of prestige include two orientations: normative and rational. "Rational-order theories of prestige assume that the individual is guided by the rational motive of maximizing returns, but that society is based on functional prerequisites that determine what rewards are appropriate for the fulfillment of certain essential duties" (Wegener, 1992, p. 255). On the other hand, normative theories frame prestige is a quality shared by members of the same group. An additional theory of prestige was introduced by Treiman (1977) and predicts that prestige will be invariant in complex environments. Treiman posited that propositions including: (a) "the division of labor creates a characteristic hierarchy of occupations with respect to power"; (b) "the power

resulting from control over scarce resources creates the opportunity for, and almost invariably results, in the acquisition of special privilege"; and (c) "power and privilege are everywhere highly valued" (Treiman, 1977, p. 5).

The literature on prestige includes concepts and measurements of prestige, components of prestige as well as a discussion of the consensus and dissensus in occupational prestige scales. Davis (1952) reviewed studies related to prestige rankings of occupations and discussed the problems with those studies. The identified problems of the study included (a) the reviewed studies did not consider the differences in the region and occupational levels of the participants, and (b) participants were more confident when ranking the upper and lower level extreme occupations rather than the middle range of occupations. Davis (1952) further suggested that more research needs to be done to account for the identified problems.

Stehr (1974) focused on the shortcomings of conventional occupational prestige research by providing a possible approach to theoretical and empirical analysis of dissensus. Dissensus is defined as the variation in prestige which is a limitation of the conventional approach and thus "may only have tapped the degree to which the system of social inequality in society is objectified, i.e. communicated to most members of society who reproduce this system in their ranking of occupations which are symbolic of the system of inequality" (Stehr, 1974, p. 425). The newer approach suggests that the relative position of the individual in the participant structure and his or her standards influence the assigned prestige rank. Guppy (1984) reviewed literature and discussed the consensus and dissensus of occupational rankings. Guppy focused on the social

characteristics of the research participants and reported that “dissension within social groups is particularly high among low” (p. 709) social economic status and black participants.

Adler and Kraus (1985) identified an additional dimension of prestige evaluation entitled social standing. Specifically, Adler and Kraus (1985) reported that (a) “knowledge and skills requisite for an occupation is the best single predictor of the prestige assigned to it”; (b) “value to society, as an evaluative dimension, has no predictive value of prestige over and above the other dimensions considered”; and (c) “prestige evaluations are invariant under a wide variety of social conditions” (Adler & Kraus, 1985, p. 36). Wegener (1992) suggested that past literature based prestige on achievement, esteem, honor, or charisma. Additionally, past researchers did not merge social closure and hierarchy of positions into the studies and as such did not address inter-individual variations of prestige raters. Wegener (1992) reported that a merging of the literature of social hierarchy and social closure is needed in order to adequately measure prestige. To that end, prestige within the context of this study is viewed within the rational-order theories because there are individual variations of prestige raters that are guided by unique motivations, attitudes, and behaviors and not predicated on the prestige of project managers as a group.

Career Path

A career path within the context of career planning includes self-assessment, objectives, current and future job positions, and training needs (Souder, 1983). According to Souder (1983), “career planning becomes most effective where a variety of

jobs and pathways are provided by the organization, when the performance requirements for these jobs are made explicit, when the criteria for promotions are spelled out, and where the salary brackets are consistent with this information" (p. 249).

A career path can be viewed through the lens of a project manager as a roadmap to success. More specifically, the project manager is expecting that a particular act or behavior will be followed by a particular outcome (Vroom, 1964). The outcome of success for a moderately defined career professional includes: (a) defining his or her own goals that are related to values, skills, and needs, (b) defining the pathway to the goals, and (c) believing the pathway is attainable (Argyris, 1970). A career path may have many meanings and provides an avenue to meet intrinsic and extrinsic rewards including economic and social status (Adamson, 1997; Callanan, 2003). The meanings may lead to behaviors that impact job satisfaction, performance, and ultimately retention. Therefore, organizations and employees need to jointly work together to ensure individual and organizational success (Cappellen & Janssens, 2005).

Research findings suggested that career paths have important implications for job satisfaction, career commitment, and organizational retention. More specifically, "employees whose career orientations were compatible with their job setting reported high job satisfaction, high career satisfaction, strong commitment to their organizations, and low intentions to leave their organizations" (Igbaria, Greenhaus, & Parasuraman, 1991, p. 151). These findings further suggested that it is important to consider the variations in attitudes and behaviors as well as job opportunities when designing, developing, and executing career pathways for project managers.

Project management as a career path links traditional management functions with technical skills and supports the success of project management by encouraging staff to demonstrate their ability to work with others and make efficient and effective business decisions (Hoske, 1998). Efficient and effective business decisions are supported by providing formal and informal career development opportunities including college and university courses, seminars, computer-based training, and satellite broadcasts. Additionally, a national certification entitled project management professional is available to all individuals that meet the professional job criteria as well as pass an exam (PMI Global Standard, 2004).

Cappellen and Janssens (2005) studied a review of the literature and reported the findings of career paths for global managers. They reported that career paths for global managers consisted of individual, organizational, and global domains including (a) "career competencies, locus of career development responsibility, and the boundary between work and personal life" for individual domains; (b) "staffing and recruiting practices, employment culture, organizational structure and supporting practices, and knowledge systems" for the organizational domain; and (c) "economic drivers, technology, and multi-cultural environment" for the global domain (Cappellen & Janssens, 2005, pp. 351-354). These domains are prevalent in organizational settings and serve to support and enhance career path activities.

Career path researchers also discussed career path strategies (a) as avenues for career advancement, (b) in the context of career path tracking systems, and (c) as implementations of promised and protean career paths. Kuo (2003) studied career

strategies as a means for upward mobility and salary advancement within an organization. Kuo (2003) suggested that (a) managers engage in self-presentation for career opportunities more often than other professionals, and (b) employees' demographics including educational level do not impact their career strategy participation. Additionally, the researcher reported that the adoption of career strategies to develop career paths support career advancement and salary increases.

Reitman and Schneer (2003) examined data to assess whether MBAs in management positions achieve their promised career paths and whether demographics and career factors differ on promised and protean career paths. Reitman and Schneer (2003) reported that (a) managers on promised paths are older than managers on protean career paths; (b) there are no differences in income, level of position, career satisfaction, organization loyalty, or job security between managers on promised paths and managers on protean paths; and (c) women on protean paths are involved in more career advancement opportunities than women on promised career paths (Reitman & Schneer, 2003). Hedge, Borman, and Bourne (2006) extended career path studies to include the design of a career development and advancement system for the Navy. The career strategy of the system included five competencies: "professional development, personal development, leadership, certification, and job performance" (Hedge, Borman, & Bourne, 2006, p. 16). The career development and advancement system provided a roadmap for future job advancement.

Training and Learning

Organizational support of learning includes an understanding of "what do project managers (including would-be project managers) expect to get for what is likely to be a substantial investment of time, effort, and sometimes even their own money?" (Dingle, 1990, p. 40). Most project professionals anticipate a better job, advancement, autonomy, and more job satisfaction. Additionally, research suggests that organizations should support employee training and learning opportunities because of the potential impact to performance. More specifically, Egan, Yang, and Bartlett (2004) conducted a study to explore interactions between organizational learning and individual learning and performance outcomes. Findings suggested that "organizational learning culture and job satisfaction are important in determining employees' motivation to transfer learning and turnover intention" (Egan, Yang, & Bartlett, 2004, p. 295).

Organizations are currently supporting learning skills and abilities that lead to certifications (McDonald & Hite, 2005). Career development certification paths can serve as vehicles to enable employees to develop competencies unique to their profession. Organizational support of learning for certifications include activities related to on-the-job training and time for employees to learn the certification material as well as reimbursement tuition programs (McDonald & Hite, 2005).

The non-traditional approach to learning includes generative leaning (McGill, Slocum, & Lei, 1992) and is focused on continuous implementation and feedback within the context of defining and resolving problems. Organizational support of learning includes practices that "encourage, recognize, and reward those managers whose

behaviors reflect five dimensions: openness systemic thinking, creativity, efficacy, and empathy" (McGill, Slocum, & Lei, 1992, p. 10). More specifically, support includes: (a) commitment to diversity in hiring, development, and job opportunities; (b) recognizing and promoting the importance of relationships for obtaining information, goods and services; (c) growth-related career advancement; (d) reward structures for encouraging non-work contributions to learning; (e) designing, developing, and implementing programs that include learning goals with an emphasis on strategic assessments and audits; and (f) seminars and symposiums in which ideas are shared.

Non-traditional strategic learning promotes learning by changing the organizational environment to align with the organization by designing boundaryless systems to support strategic implementations (Slocum, McGill, & Lei, 1994). More specifically, the organization supports "1) a strategic intent to learn; 2) a commitment to continuous experimentation; and 3) ability to learn from experience" (Slocum, McGill, & Lei, 1994, p. 43). Additionally, non-traditional learning approaches have been explored within the context of integrating individual and organizational goals and focuses on not supporting incomplete learning cycles (Kim, 1993). The framework of the model includes shared mental models that include sharing knowledge to support a more unified, effective individual and organizational action effort.

McDonald and Hite (2005) discussed boundary spanning activities as non-traditional avenues to support informal learning. For example, boundary spanning activities included networks within the organization and outside of the organization. Additionally, career success has been positively linked to networking activities (Eby,

Butts, & Lockwood, 2003). Fisher, Schluter, and Toleti (2005) recommended a learning and training development plan to support career development based on survey and interview results of Sandia Model participants. The plan included identifying project management tools, forming liaisons with other organizations to support cost savings in learning and training opportunities, and estimating learning and training hours. More specifically, the plan suggested managers participate in 10 business days of internal training hours and 20 to 40 average annual hours.

Eraut (1994) suggested that models for supporting professional learning need to include: (a) "an appropriate combination of learning settings (on-the-job, near the job, home, library, course, etc.)"; (b) "time for study, consultation, and reflection"; (c) "the availability of suitable learning resources"; (d) "people who are prepared (i.e. both willing and able) to give appropriate support"; and (e) "the learner's own capacity to learning and to take advantage of the opportunities available" (p. 13).

Job Satisfaction

Job satisfaction includes employee's affective reactions to a job based on comparing actual outcomes with desired outcomes (Smith, 1992). Vroom (1964) defined job satisfaction as "the affective orientation on the part of individuals toward work roles which they are presently occupying" (p. 99). Positive attitudes are associated with job satisfaction and negative attitudes are associated with job dissatisfaction. More specifically, the extent to which individuals like their work roles and work atmosphere impacts commitment, absenteeism, and turnover (Blau, Merriam, Tatum, & Rudman, 2001; Mobley, Griffeth, Hand, & Meglino, 1979).

The importance of organizations considering job satisfaction is that there is a "presumed direct relationship to the short-term goals of cost reduction through increased individual productivity and reduced absences, errors, turnover, and so on" (Smith, 1992, p. 6). Additionally, the impact of job characteristics on job satisfaction has been studied (Orphen, 1985) and the degree to which employees perform standardized tasks has a negative impact on job satisfaction (Hackman & Lawler, 1971). Agho, Price, and Mueller's (1992) research findings supported Hackman and Lawler (1971) in that job satisfaction was moderately related to autonomy, work standardization, and work team cohesion. Porter and Steers (1973) reported that the more an individual's job expectations are met the greater is his or her job satisfaction. Additionally, Porter and Steers (1973) reported on four categories that were important to employee turnover including organization-wide pay and promotion opportunities, work group activities including supervision and work relations, job content including autonomy, and demographics including age and tenure.

Job satisfaction models and research in the 1980s and 1990s focused on discovering the causes of satisfaction and the results of job satisfaction and dissatisfaction including increased productivity and job exit (Fisher & Locke, 1992). Recently, job satisfaction research has been framed in a manner that includes job satisfaction relating to a mixture of job behaviors. For example, Fisher and Locke (1992) developed a choice model that ultimately leads to job satisfaction or job dissatisfaction. The researchers suggested that an individual's job situation is viewed within the lens of personal values and goals and personal values help to determine whether action will be

taken as well as the type of action. Thereafter, the individual reflects upon his or her action and is either satisfied or dissatisfied with the outcome based on whether the action met personal values and expectations.

Super (1957) reported on human relation issues that explained why people work. The explanations provide insight into understanding the motivations and attitudes of employees as individual outcomes including achieving self-satisfaction. People work to (a) obtain recognition, (b) to obtain independence via autonomy in work roles, and (c) to obtain prestige based on job title and duties. Super (1957) also reported that job satisfaction is important to individuals in that "the desire for pleasant and efficient working conditions is a desire for personal adequacy and for respect from others" (Super, 1957, p. 11). Additionally, Hackman and Oldham (1975) reported that job dimension including "skill variety, task identity, task significance, autonomy, feedback from the job itself, feedback from agents, and dealing with others" (p. 164) are positively related job satisfaction and motivation.

Vroom (1964) suggested that job satisfaction was associated with multiple sets of complex variables. The variables are related to the context of the job environment and included: (a) supervisor support, (b) autonomy, (c) integration and similarities between work groups, (d) job functions including specialization, (e) flexibility in executing job duties, (f) execution of knowledge, skills, and abilities, (g) job performance, (h) completion of goals, (i) career paths, and (k) work hour flexibility. Porter (1961) posited that the job environment, including economic and psychological factors, influences job satisfaction. More specifically, job satisfaction was studied as resulting from a person-

environment fit (Porter, 1961). The person-fit concept is based on supply and demand and is related to how many employees are available currently in the environment and how many are needed to meet future demands.

James and James (1992) conducted a study to test a job satisfaction model that measures meaning within the psychological climate in work environments. The psychological climate perceptions including leader support, job stress, autonomy and prestige, and workgroup facilitation were studied. The researchers suggested that psychological climate perceptions are integrated in that they all are related to the work setting being personally beneficial or detrimental (James & James, 1992).

Scarpello and Campbell (1983) discussed job satisfaction as a "function of the match between the rewards offered by the work environment and the individual's pattern of needs for those rewards" (p. 315). The measures included in the study were job satisfaction and motivation levels including need importance and reward availability. According to Scarpell and Campbell (1983), "Individual differences in aspiration levels and different views of career progression help explain current job satisfaction over and above the match of needs and rewards" (p. 315).

Goulet and Singh (2002) investigated the effects of job satisfaction, job involvement, career commitment, need for achievement, and work ethic. The researchers reported that (a) "job involvement, job satisfaction, and organization commitment are positively related to career commitment" (Goulet & Singh, 2002, p. 73); and (b) the need for achievement and career commitment are somewhat positively related to career commitment. Smith (1979) studied the impact of project management on employee job

satisfaction using an instrument to measure current management practices from seven project teams in Garland, Texas. More specifically, Smith (1979) noted that since project management is executed by project team members within a temporary organizational structure that an indirect effect of project team execution is job satisfaction. The researcher suggested that the "public sector may thus anticipate some improvement in employee job satisfaction attendant upon adoption of project teams" (Smith, 1979, p. 350).

Mobley et al., (1979) introduced a conceptual model to differentiate between job satisfaction and the allure of current and future job opportunities. Mobley et al., (1979) reported that there "is a need to consider nonwork values and nonwork consequences of turnover behavior as well as contractual constraints" (p. 493). Zeitz (1990) extended the idea that job satisfaction may not be static but evolving and situational. More specifically, Zeitz (1990) studied a situational perspective of employee job attitudes within a government agency. The researcher suggested "employee perceptions of management climate, mobility possibilities, and personal influence all vary by subcontext and determine the level of work satisfaction" (Zeitz, 1990, p. 419). Additionally, situation-focused rather than age-related explanations appear to be more prevalent for job satisfaction.

Career Commitment

Career commitment as defined by Hall (1971) is the "strength of one's motivation to work in a chosen career role" (p. 59). Greenhaus (1973) defined career commitment broadly and included (a) work attitudes, (b) the relevant importance of

work, and (c) career planning. Occupational commitment (Lee, Carswell, & Allen, 2000) and work commitment (Morrow, 1983) are two other constructs that have been studied and used interchangeable within the commitment literature. External organizational commitment also has been studied as a more specific construct that specifically addresses the commitment to an organization (McElroy, Morrow, & Lacznick, 2001).

Ajzen and Fishbein's (1969) theory of action has been studied as a theoretical basis for explaining the attitudes and behaviors that are aligned with career commitment. The researchers posited that "behavioral intentions for single acts as well as for acts of dichotomous and multiple choice situations were a function not only of attitudes toward the acts but also of normative beliefs with respect to these behaviors" (Afzen & Fishbein, 1969, p. 400). More specifically, Mobley, et al., (1979) suggested that intention to quit is a precursor to turnover behavior. Additionally, Becker and Gibson (1998) studied the theory of action as a framework for predicting the behavior intentions of respiratory care practitioner's in completing their undergraduate degrees via distance education programs.

Researchers in the 1980s and 1990s focused on the integration of career commitment and career withdrawal (Aryee & Tan, 1992; Blau, 1985) and training and learning (Aryee & Tan, 1992). Aryee, Chay, and Chew (1994) reported that career commitment is positively related to skills and training development and negatively related to career exit. Lee, Caswell and Allen (2000) studied occupational commitment and results included (a) occupational commitment was positively related to job involvement and job satisfaction, (b) occupational commitment and organizational

commitment were positively related, and (c) occupational commitment was positively related to job performance.

Bedeian, Kemery, and Pizzolatto (1991) studied career commitment, expected utility of present job, turnover expectations, and turnover of nursing professionals. The researchers suggested that turnover expectations and utility of present job was negative for high commitment subjects and positive for low career commitment subjects. Additionally, Bedian, Kemery, and Pizzolatto (1991) reported that there is a negative relationship between expected utility of the present job for career advancement opportunities and turnover intentions.

Blau (1985) studied the network of career commitment within the context of a large urban hospital. Blau conducted a longitudinal study of a sample of 199 registered nurses. Blau (1985) reported that "being unmarried and having more work experience, as well as perceiving a structured work situation (low role ambiguity and high supervisor initiating structure) lead to stronger career commitment" (p. 287). Additionally, career commitment was negatively correlated with career withdrawal cognitions and not job withdrawal cognitions.

Kidd and Green (2006) conducted a longitudinal survey of biomedical research scientists. Kid and Green (2006) reported that career planning is predicted by organizational commitment and job autonomy. Additionally, equitable treatment was a significant predictor of career resilience and career identity and career resilience and salary were predictors of intention to leave science. London (1993) also studied career resilience as an extension of career motivation. Career motivation, career resilience,

career insight, and career identity" (London, 1993, p. 55) were studied as components of career motivation. London (1993) reported that "career identity may be composed of 2 independent dimensions, work identity and organizational identity, and suggested that individuals who are higher on organizational identity are those who are rated lower on empowerment by their supervisors" (p. 55).

Aryee and Debrah (1993) collected data from technical, professional and administrative/managerial employees in Singapore. They examined a career planning model including career planning, career strategy, career satisfaction, self-esteem at work, and career commitment. Path analysis was used to test the hypothesized relationships and results included (a) "career planning was related to career strategy", (b) "career strategy was related to career satisfaction", (c) "career satisfaction was related to self-esteem at work", and (d) "self-esteem at work was related to career commitment" (Aryee & Debrah, 1993, p. 124). Additionally, career planning, career satisfaction, and career strategy showed significant direct paths to career commitment.

Performance

Performance refers to the end result of role achievement and is associated with productivity (Porter & Lawler, 1968). Performance includes the actions that are related to individual and organizational goals (McCloy, Campbell, & Cudeck, 1994). More specifically, performance is related to task proficiency in job performance (Somers & Birnbaum, 1998) that is aligned with organizational strategies and goals. Vroom (1964) discussed job performance within the context of two assumptions: (a) "the level of performance of a worker on a task is a direct function of his ability to perform that task"

and (b) “the performance of a person is to be understood in terms of his motives (or needs or preferences) and the conditions for their satisfaction in the work situation” (p. 197). Additionally, Vroom (1964) reviewed various studies and concluded that: (a)”the effects on performance of a given increment in motivation are negligible for those low in ability and positive for those high in ability”; and (b) “the relationship between ability and performance varies with the amount of motivation, being negligible for those low in motivation and positive for those high in motivation” (p. 209).

Vroom (1994) examined studies related to the effects of supervision, groups, job content, salaries, and career paths. Vroom suggested that (a) employees perform more effectively if performance is tied to attaining goals; and (b) employees perform more effectively if rewards include wages, promotions, and social recognition. Additionally, Vroom (1994) reported that (a) “level of performance varies directly with the strength of individuals’ need for achievement”; (b) “individuals perform at a higher level if they are led to believe the task required abilities which they value or believe themselves to possess”; (c) “persons who are given an opportunity to participate in making decisions which have future effects on them perform at a higher level than those who are not given an opportunity” (Vroom, 1964, p. 267).

Orpen (1985) studied the determinants of performance among project engineers. The study included a questionnaire to collect the data from 125 project engineers working for seven different large industrial companies. He suggested that performance is influenced by job characteristics, role perceptions, and perceived leader and peer support. Somers and Birnbaum (1998) tested relationships of commitment and job

performance and reported that (a) job involvement was related only to performance and (b) career commitment was positively related to overall performance effectiveness. Carmeli and Freund (2004) suggested that job satisfaction predicted perceived job performance.

Wanous (1978) posited that role clarity influenced job performance. Porter and Lawler (1968) suggested that performance was influenced by attitudes. Porter and Lawler (1968) reported that "performance differences were more likely to be related to attitudes concerned with such things as opportunity for personal growth and development, and opportunity for independent thought and action, than to attitudes concerned with the opportunity to form close friendships or the feeling of security one gets from his job" (p. 149).

Conclusion

According to Cain and Treiman (1981), occupation category professionals "vary widely in their attitudes and behaviors because of differences in the patterns of recruitment to occupations but in part also because of patterns of occupational socialization and intrinsic differences in the nature of the work performed in different occupations" (p. 253). Additionally, new emerging career paths are non-linear, dynamic, and boundary-less (Baruch, 2004) and thus the career development activities focus on career growths for well defined careers including highly technical job positions with an emphasis on qualifications and certifications. On the other hand, moderately defined and less well defined careers often do not have clearly defined career paths due to the nature of the work performed. Career development includes "providing the analysis necessary

to identify the individual interests, values, competencies, activities, and assignments needed to develop skills for future jobs" (Gilley, Eggland, & Gilley, 2002, p. 15). Because of the changing needs of non-linear career paths, career development activities are viewed within the lens of new psychological contracts and include an employee and managerial partnership.

The partnership includes recognizing that career success is defined differently depending on constituencies including (a) "internal—how people see the career development in terms of inner values, goals, aspirations", (b) "external—how career success is perceived by the external environment, such as in terms of status, hierarchy, income and power"; (c) "organizational—in terms of organizational power and influence" measured in terms of organizational performance; and (d) "society level—labour markets, professional development, globalization" (Baruch, 2004, p. 67). The proposed career development model in this study considers the various constituent views of career success including (a) internal measures of job satisfaction and career commitment, (b) external measure of autonomy and prestige, (c) organizational measure including increased individual performance that supports increased organizational performance, and (d) society measures including the training and learning and development activities including career paths that support certifications.

According to Parker and Skitmore (2005), continued career development activities are paramount to job satisfaction and reduced job turnover regardless of the age or experience levels of professionals. Typical tasks that should be undertaken by organizations in support of careers within the context of career development include (a)

supporting human resource planning and management, (b) improving the matching process through career progression to meet individual and organizational goals and objectives including recruitment and selection, training and development, work opportunities, and rewards; and (c) creating opportunities and environments that encourage job satisfaction and career commitment to retain professionals (Schein, 1985).

Career paths include subjective experiences that reflect changing attitudes, satisfactions, decisions, and behaviors (London, 1983; London & Mone, 1987; Weicek & Berlinger, 1989). Additionally, career mobility, signaling of certifications, training and learning, and actions lead by expected outcomes provide standards for work behaviors (Sicherman & Galor, 1990; Spence, 1976; Vroom, 1964). The subjective career path approach focuses on greater responsibility for professionals concerning career strategy and career choices and is defined psychologically in terms of self-gratification, self-esteem, challenges, satisfaction, and job performance. Additionally, signaling and expectancy theory are concerned with career behaviors influenced by abilities and opportunities and ultimately how those behaviors impact career outcomes (Spence, 1973; Vroom, 1964).

The underlying use of the aforementioned theories serve to provide insight into the career development activities that intersect individual and organizational practices in order to minimize job dissatisfaction, increase job performance, and increase retention of moderately defined career professionals. The proposed career development model discussed herein will be used to examine the relationships among autonomy/prestige, career paths, training and learning, job satisfaction, career commitment, and

performance to support the development, retention, and productivity of moderately defined careers with an emphasis on project managers across industries.

A career path model, defined within the context of career motivation (London, 1983; London & Mone, 1987), career mobility (Sicherman & Galor, 1990), signaling theory (Spence, 1973), and expectancy theory (Vroom, 1964) includes inputs and outputs framed within the context of variables. Human resource development (HRD) can be viewed within the context of the social systems model and includes inputs, processes, and outputs (Swanson & Holton, 2001). Likewise, career paths for project managers can be viewed within the context of inputs, processes, and outputs. The inputs are associated with autonomy and prestige as motivators to engage in career path activities including the organizational processes and practices that support learning and training and development opportunities. The career path activities and job responsibilities as inputs may influence outputs including job satisfaction, career commitment, and performance. To that end, moderately defined career professionals with job dissatisfaction and poor performance may include career paths that are not well defined including identified career opportunities.

CHAPTER III

METHODOLOGY

This chapter includes the methodology used to conduct this study. This chapter begins with the research questions and includes a discussion of study variables, research design, data collection procedures, analytical techniques selected, and description of the sample.

Introduction

The researcher examined the relationships among autonomy/ prestige, perceived career path, training and learning, job satisfaction, career commitment, and performance using a data from project manager respondents collected by the researcher. The study was guided by research questions associated with the career development model shown in Figure 3.

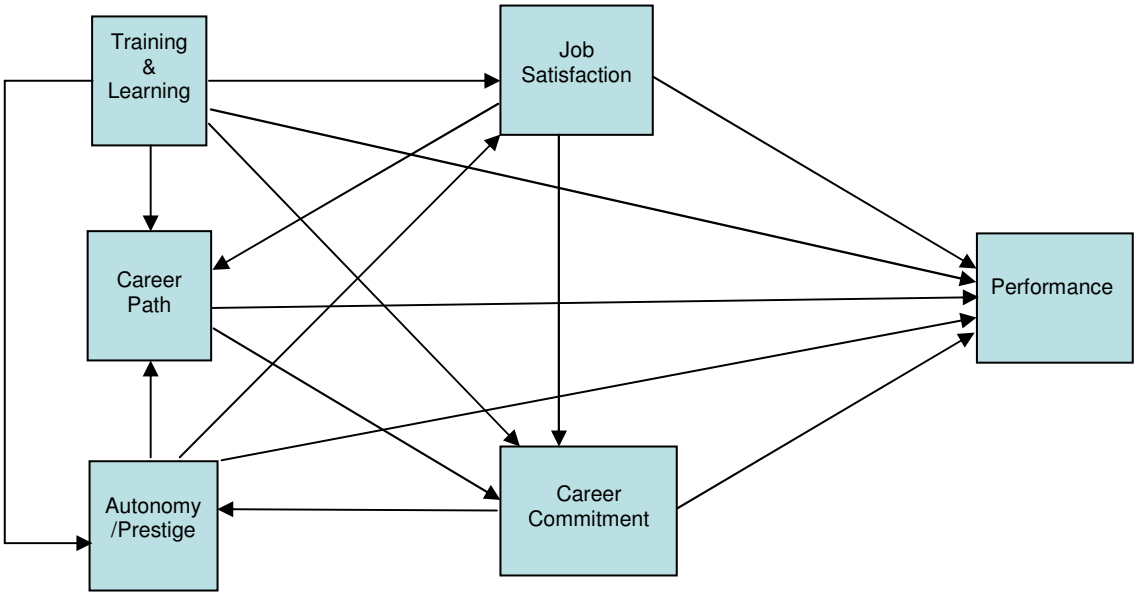
Research Questions

The researcher investigated the paths of autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance. The study was guided by the hypothesized and revised models and included the following research questions for each model:

1. Is the model which describes the paths amongst the variables—autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance- consistent based on whether or not regression weights indicating that the established path in the model was significant?

2. If the model is consistent based on the significance of regression weights, what are the estimated positive, negative, and total relationships amongst the variables?

Figure 3: Career Development Model for Moderately Defined Career Professionals



Note: The hypothesized sign for all relationships is positive (+).

Description of the Instrument

The survey instrument for the current study resulted from an examination of the available literature for each one of the variables. Variables included: autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance.

The survey items the researcher developed will be discussed in more detail in separate variable sections herein.

The survey instrument included a self-reported 27-item instrument for individuals associated with project management related chapters (see Appendix A). The instrument included questions related to demographics, autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance. Participants indicated the extent to which they agreed with autonomy/prestige, career path, training and learning, job satisfaction, and career commitment items on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree." The performance variable included responses on a 7-point scale ranging from "upper 5%, upper 10%, upper 25%, middle 50%, lower 25%, lower 10%, and lower 5%."

Study Variables

The study variables for this research were based on a review of the current project management and career development literature. The variables consisted of demographic variables, job attitude variables, career path variable, training and learning variable, and performance variable (see Appendix A.)

Dependent Variable

The dependent variable in the study was performance.

Performance. According to McCloy, Campbell, and Cudeck (1994), performance is defined as "behaviors and actions that are relevant to the goals of the organization" (p. 493). Performance can be measured in three ways: objective verifiable, performance ratings by someone other than the performer, and self-appraisals and self-ratings (Porter

& Lawler, 1968). In this study, performance was measured by self-ratings and consisted of five self-report items coded on a 7-point scale describing the respondent's perceived level of performance as compared to his or her peers associated with each item (i.e. upper 5%, upper 10%, upper 25%, middle 50%, lower 25%, lower 10%, and lower 5%). The coefficient alpha value for the four-item scale was .873.

Independent Variables

The five independent variables in the study included: autonomy/prestige, career path, learning and training, job satisfaction, and career commitment.

Demographics. Demographic information was collected in the survey including gender, age, title/position, educational level, and industry. Additionally, project management related data was collected including (a) project management institute membership, (b) project management certification, (c) length of project management certification, and (d) years worked in project management.

Autonomy/prestige. Autonomy is defined as "A degree of control of one's own behavior, actions, and activities" (Super, 1957, p. 5). The autonomy item was developed by Oldham and Cummings (1996) as a non-controlling supervisory measure. The autonomy/prestige variable consisted of a four-item self-report measure coded on a 7-point Likert-type scale describing the level of agreement associated with each item (i.e. strongly disagree, disagree, slightly disagree, neither agree or disagree, slightly agree, agree, and strongly agree). Three of the four items were adapted from Oldham and Cummings (1996) four-item measure of non-controlling supervision and included: (a) "my supervisor seems to be around checking on my work", (b) "my supervisor never

gives me a chance to make important decisions on my own"; and (c) "my supervisor leaves it up to me to decide how to go about doing my job" (Oldham & Cummings, 1996, p. 634).

Prestige is defined as the "the esteem, respect, or approval that is granted by an individual or a collectivity of performers for qualities they consider above the average" (Goode, 1978, p. 7). One of the four items used to measure autonomy/prestige included a new dimension of autonomy related to prestige (Burton, 1976). The survey question that was used to measure prestige was adapted from Burton's (1976) question related to how much autonomy the profession allows (i.e. very little autonomy and initiative, little autonomy and initiative, no autonomy and initiative, autonomy and initiative, and a great deal of autonomy and initiative).

The coefficient alpha reliability for the non-controlling supervision was .67. (Oldham & Cummings, 1996). The coefficient alpha reliability for the current four-item variable was .445. The four items were reduced to three items for the current study in order to raise the coefficient alpha reliability. The coefficient alpha reliability for the reduced current three items was .642. Although some researchers view alpha levels of .6 or higher to be acceptable (Flynn, Sakakibara and Schroeder, 1995) the most commonly benchmarked reliability value is .70 (Cortina, 1993). Based on the most common standard, the aforementioned three-item set is substandard. Due to the inadequacy of the autonomy/prestige coefficient alpha reliability, the autonomy/prestige variable was eliminated from post hoc model 2 presented in Chapter V. Non-controlling supervision has been found to be positively correlated with job complexity, creativity, and

performance (Oldham & Cummings, 1996). Oldman and Cummings (1996) reported that "employees exhibited higher performance and lower intentions to quit when their jobs were complex and when their supervisors were described as supportive and noncontrolling" (p. 626).

Career path. A career path is a pathway, direction, or purpose that integrates a series of job positions within a specified period of time (Cappellen & Janssens, 2005). The career path variable consisted of three self-report items coded on a 7-point scale describing the level of agreement associated with each item (i.e. strongly disagree, disagree, slightly disagree, neither agree or disagree, slightly agree, agree, and strongly agree). The coefficient alpha value for the three-item scale was .871.

Training and learning. Training and learning include situations in which there is a "relatively permanent change in behavior, cognition, or affect that occurs as a result of one's interaction with the environment" (Werner & DeSimone, 2006, p. 77). Training and learning consisted of one self-report item completion question asking how many hours of project management related training or learning activities did the respondent participate in within the last year. One item for the use of measuring training and learning was based on reducing the number of overall items in the survey to encourage on-line survey participation.

Job satisfaction. Job satisfaction is defined as employee's reactions to a job based on comparing actual outcomes with desired outcomes (Cranny, Smith & Stone, 1992). Job satisfaction has been found to correlate positively with autonomy, supervisory support, task significance, job involvement, and performance (Agho, et al,

1993, Aryee, Fields, Luk, 1999; Judge, Locke, Durham, & Kluger, 1998; O'Neill & Mone, 1998). The job satisfaction variable consisted of four self-report items coded on a 7-point scale describing the level of agreement associated with each item (i.e. strongly disagree, disagree, slightly disagree, neither agree or disagree, slightly agree, agree, and strongly agree). The four self-report items were adapted based on the six-item scale developed by Agho, Price, and Mueller (1992) who reported a coefficient alpha value for the six-item scale to be .89 and .90 (Agho, et al., 1992; Agho, Mueller, & Price, 1993).

The coefficient alpha value for the four-item scale in this study was .673; however, the coefficient alpha value for the reduced three-item scale was .790. Scoring consisted of adding the responses for the three items and taking the mean score as the total.

Career commitment. Career commitment is defined as the "strength of one's motivation to work in a chosen career role" (Hall, 1971, p. 59). Blau (1989) developed career commitment scales and the variable has been used to examine individuals' commitment toward their occupations and professions (Bedeian & Kemery, 1991; Somers & Birnbaum, 1998). Historically, career commitment has been positively correlated with perceived performance, life satisfaction, and personal sacrifices component of continuance organizational commitment (Cohen, 1999; Reilly & Orsak, 1991).

The career commitment measure consists of five self-report items coded on a seven-point scale describing the level of agreement associated with each item (i.e. strongly disagree, disagree, slightly disagree, neither agree or disagree, slightly agree,

agree, and strongly agree). The five self-report items were selected from a total of seven items developed by Blau (1989) based on the most appropriate items for the project management profession. Reported coefficient alpha values ranged from .76 to .88 (Cohen, 1996; Cohen, 1999; Reilly & Orsak, 1991; Somers & Birnbaum, 1998). Scoring for the present study consisted of adding the responses for the five items and taking the mean score as the total. The coefficient alpha reliability for the five items in the current study was .790.

Research Design

The research design in this study included path analysis. A path analysis design was employed to "estimate causal relations, both direct and indirect, among several variables and to test the acceptability of the causal model hypothesized by the researcher" (Mertler & Vannatta, 2002, p. 14) including job attitudes (autonomy/prestige, job satisfaction, career commitment), career path, training and learning, and performance.

Design Validity

External Validity

According to Pedhazur and Schmelkin (1991), external validity "refers to generalizability of findings to or across target populations, settings, times, and the like" (p. 229). The external threat to validity in the current study includes the choice of a single occupation from which to draw participants and the unknown populations for project related chapters. The choice to use project manager as a single occupation limited the generalizability of the study to members of a selected profession. The

examination of job attitudes and job behaviors may still have implications for other professionals.

Internal Validity

According to Pedhazur and Schmelkin (1991), "internal validity refers to the validity of assertions regarding the effects of the independent variable on the dependent variable" (p. 224). Selection, mortality, and instrumentation reliability are discussed herein. All three are major threats to internal validity.

Selection. The selection process for study participants could be a possible threat. The participant selection process included selecting project management related chapters and organizations willing to participant in the study. An email was sent to a regional contact and he forwarded the email to the Region 6 project manager—voluntary leaders informing them of the study and seeking their participation. Texas is in Region 6 and Region 6 includes the following states: Texas, Arkansas, Louisiana, Colorado, Kansas, and Missouri. Chapters from Texas and the aforementioned region 6 states participated in the study. Additionally, personal contacts in organizations were contacted to request participation in the study. The participant chapters and organizations were non-randomly selected and thus could impact the analysis regarding the model relationships as well as the effects of the independent variables on the dependent variable (Pedhazur & Schmelkin, 1991).

Mortality. According to Pedhazur and Schmelkin (1991), "mortality refers to attrition of people or other units in the course of the study" (p. 227). Mortality may be a potential threat because project managers had the opportunity to choose not to

participate in the study as well as some of the members of chapters may not have received the email invitation to participate in the on-line survey. Potential participants had the opportunity to decline participation by not accessing the link to the online survey after receiving the email invitation. Additionally, some of the chapters' email distributions may not have been updated and some of the chapter members may not have received the email invitation to participate in the study. None of these potential morality threats could have been controlled but may have affected participation.

Instrumentation reliability. Instrumentation reliability was not expected to be a threat because four (autonomy/prestige, job satisfaction, career commitment, and performance) of the six construct items appeared in published literature. The instrument reliability for the current study was .**7**11 and considered reliable because higher than .70 (Cortina, 1993). Instrument reliability was lowered due to a validity threat that reduced the number of responses. A validity threat to the current study instrument was the decision to maintain anonymity and confidentiality of all participants. This decision lead to the lack of coding that would have enabled identification of non-respondents so that follow-up participation emails could have been sent. This potentially could have increased responses to the current survey.

Data Collection Procedures

Project management chapters and organizations that included project management professionals were contacted via email seeking participation in the research study. The researcher attended project management chapter meetings to seek assistance in the research study. Additionally, an email was sent to a regional contact and he

forwarded the email to the Region 6 project manager—voluntary leaders informing them of the study and seeking their participation. Texas is in Region 6 and Region 6 includes the following states: Texas, Arkansas, Louisiana, Colorado, Kansas, and Missouri. Chapters from Texas and the aforementioned Region 6 states participated in the study. Additionally, personal contacts in organizations were contacted to request participation in the study.

After notification from 10 project management related chapters and three organizations of their willingness to participate in the study, an information sheet (see Appendix B) including the survey link was sent to the PMI chapters for distribution to their subscribed mailing lists of project managers in November and December 2006. The information sheet included the purpose of the survey and the approximate time needed to complete the survey as well as the characteristics of the study including: voluntary participation, anonymous identification, no withdrawal penalties, and no compensation. The project managers accessed the survey via a third party's website hosted by *Ridgecrest Surveys*. A follow-up email invitation was sent the week of November 26, 2006 reminding the chapter and organizational contacts that the survey was available through December 31, 2006.

Analytical Techniques Selected

Descriptive statistics were calculated to test assumptions for analytical procedures. Path analysis was effectuated as a modeling technique to determine whether there is a pattern of intercorrelations among variables based on the researcher's hypothesized model (Mertler & Vannatta, 2002). The path model is a diagram relating

independent, intermediary, and dependent variables.

Description of the Sample

The sample for this study was composed of female and male project managers who ranged in age from under 20 to over 65 years of age. The sample included project managers (a) who were members of project management related chapters, and (b) project managers who work in organizations. Although the exact number of individuals who received e-mail invitations to participate in the study is not known due to third party initiation of these invitations, the population of the project management related chapters may have included as many as 10,000 members and included chapters from Austin, Clear Lake, Coastal Bend, Dallas, Houston, Kansas City—Mid-America, New Orleans, Northwest Arkansas, Pikes Peak, and St. Louis. The population of the organizations that participated in the study included (a) 33 project managers from a global energy enterprise, (b) 39 project managers from a public metropolitan research and teaching institute, and (c) 12 project managers from a training and technical agency. The sample size for a given population of 10,000 as suggested by Krejcie and Morgan (1970) is 370 and the sample size for a given population of 15,000 as suggested by Krejcie and Morgan (1970) is 375. The sample for the current study was 644 and exceeded the number needed to represent the population. No significant differences were identified between the large undefined chapter population and the known organization respondents (see Appendix C and discussion in Chapter IV) suggesting homogeneity between groups and low exposure to response bias from chapter respondents (Paulhus, 1991). The response rate for organizations was 77%.

Conclusion

A data set from project manager respondents was used to examine the relationships among autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance. The survey instrument included in this study resulted from an examination of the available literature for each of the study variables. The instrument reliability was .711 and considered reliable because higher than .70 (Cortina, 1993) and exposure to response bias was determined to be minimal (Paulhus, 1991). Descriptive statistics were calculated and path analysis was the modeling technique to determine whether there was a pattern of intercorrelations among variables. Data screening, descriptive statistics, study variable information, and path analysis with an emphasis on the independence model, saturated model, hypothesized model, and the revised model are included in Chapter IV.

CHAPTER IV

RESULTS

This chapter includes two main sections. The first section includes data screening and descriptive statistics as well as study variable information. The second section includes a discussion of path analysis with an emphasis on the independence model, saturated model, hypothesized model, and revised model.

Data Screening and Descriptive Statistics

SPSS software was used to screen the data set. The data were screened for missing and extreme values. There were no missing values in the data set. The values identified as being extreme from the box plots were replaced by the nearest neighbor. The number of replaced extremes in the study was 57.

The sample for this study included female and male project managers who ranged in age from 20 to over 65 years of age. The sample included project managers (a) who were members of project management related chapters, and (b) project managers who worked in a global energy enterprise, a public metropolitan research and teaching institute, and a training and technical agency. Crosstabs in SPSS were effectuated to determine if group composition resulted in non-significant p-values for demographics and study variables for chapters and organizations (Paulhus, 1991; See Appendix C for demographic and study variables information including chi-squares and p-values). The overall finding of the Crosstabs included a non-significant difference in the chapter and organization groups at the $p<.05$ level. The researcher noted the groups were homogeneous and combined the responses from chapters and organizations for a total

sample of 644. Description of the sample included gender, age, title/position, education level, PMI member, PMI certified, how long certified, years worked in PM, and industry.

Table 4 includes descriptive statistics in the form of frequency, percent of participants, and N for the study participants. Most of the participants were male, 40-44 years of age, worked in professions with project manager titles, and achieved an education level of a four year college degree or equivalent. Additionally, most of the participants were PMI members, PMI certified for five to nine years, worked in project management for five to nine years, and worked in the information technology industry.

Table 4: Demographic Information

Demographic Variable	Frequency	Percent of Participants	N
Gender			644
Male	408	.63	
Female	236	.37	
Age			644
Under 20	2	.00	
20-24	1	.00	
25-29	21	.03	
30-34	67	.11	
35-39	104	.16	
40-44	120	.19	
45-49	117	.18	
50-54	108	.17	
55-59	72	.11	
60-64	30	.05	
Over 65	2	.00	

Table 4: Continued

Demographic Variable	Frequency	Percent of Participants	N
Education Level			644
No degree	4	.00	
High school degree or equivalent	7	.01	
	62	.10	
Associate degree or some college or equivalent	288	.45	
	272	.42	
4-year college degree or equivalent	11	.02	
Masters degree or equivalent	0	.00	
Doctoral degree or equivalent	0	.00	
PMI Member			644
Yes	565	.88	
No	79	.12	
PMI Certification			644
Yes	450	.70	
No	194	.30	
How long certified			644
Less than 1 year	194	.05	
2-4 years	90	.10	
5-9 years	276	.31	
10-14 years	70	.26	
15-19 years	13	.13	
20 or more years	1	.15	
Years worked in PM			644
0-2 years	33	.05	
2-4 years	63	.10	
5-9 years	198	.31	
10-14 years	170	.26	
15-19 years	86	.13	
20 or more years	94	.15	

Table 4: Continued

Demographic Variable	Frequency	Percent of Participants	N
Industry	26	.04	644
Aerospace	52	.08	
Business and financial services	41	.06	
Consulting	62	.10	
Engineering	26	.04	
Government	173	.27	
Information technology			
Manufacturing	42	.07	
Utility	34	.05	
Training and education	19	.03	
Other	169	.26	

Table 5 includes study variable frequencies, percent of participants, and N for the variables used in the study. The study variables included autonomy/prestige, career path, training and learning, job satisfaction, career commitment, and performance. Most of the participants reported that (a) in general, project management allows for autonomy/prestige; (b) their organization values project management and that there is a career path within their organization; (c) they are generally satisfied with their job and find real enjoyment in their work; (d) they participated in 5-7 days of training within the last year; (e) they like their career too well to give it up but could go into a different profession which paid the same; and (f) they definitely want a career in project

management but neither agree or disagree that project manager is an ideal profession for life's work.

Table 5: Study Variable Information

Autonomy/Prestige Variable	Frequency	Percent of Participants	N
My supervisor always seems to be around checking on my work.			644
Strongly disagree	176	.27	
Disagree	265	.41	
Slightly disagree	70	.11	
Neither agree or disagree	62	.10	
Slightly Agree	42	.07	
Agree	21	.03	
Strongly Agree	8	.01	
My supervisor leaves it up to me to decide how to go about doing my job.			644
Strongly disagree	214	.33	
Disagree	272	.42	
Slightly disagree	61	.10	
Neither agree or disagree	34	.05	
Slightly Agree	29	.05	
Agree	21	.03	
Strongly Agree	13	.02	

Table 5: Continued

Autonomy/Prestige Variable	Frequency	Percent of Participants	N
My supervisor leaves it up to me to decide how to go about doing my job.			644
Strongly disagree	214	.33	
Disagree	272	.42	
Slightly disagree	61	.10	
Neither agree or disagree	34	.05	
Slightly Agree	29	.05	
Agree	21	.03	
Strongly Agree	13	.02	
My supervisor leaves it up to me to decide how to go about doing my job.			644
Strongly disagree	20	.03	
Disagree	25	.04	
Slightly disagree	28	.04	
Neither agree or disagree	28	.04	
Slightly Agree	80	.13	
Agree	308	.48	
Strongly Agree	155	.24	
Career Path Variable			
My organization values project management (PM).			644
Strongly disagree	14	.02	
Disagree	25	.04	
Slightly disagree	32	.05	
Neither agree or disagree	24	.04	
Slightly Agree	108	.17	
Agree	239	.37	
Strongly Agree	202	.31	

Table 5: Continued

Career Path	Frequency	Percent of Participants	N
There is a career path for project/program management in my organization.			644
Strongly disagree	46	.07	
Disagree	72	.11	
Slightly disagree	52	08	
Neither agree or disagree	49	.08	
Slightly Agree	109	.17	
Agree	184	.29	
Strongly Agree	132	.20	
There is a long term project management career path within my organization.			644
Strongly disagree	61	.09	
Disagree	91	.14	
Slightly disagree	71	.11	
Neither agree or disagree	64	.10	
Slightly Agree	92	.15	
Agree	153	.24	
Strongly Agree	112	.17	
Training and Learning Variable			
Approximately how many hours of PM-related training or learning activities did you participate in within the last year?			644
0 hours	11	.01	
1-4 hours	42	.06	
5-8 hours	55	.09	
2 days	76	.12	
3-4 days	135	.21	
5-7 days	152	.24	
8-14 days	79	.12	
More than 2 weeks	94	.15	

Table 5: Continued

Job Satisfaction Variable	Frequency	Percent Of Participants	N
I am often bored with my job.			644
Strongly disagree	136	.21	
Disagree	231	.36	
Slightly disagree	62	.10	
Neither agree or disagree	59	.09	
Slightly Agree	84	.13	
Agree	50	.08	
Strongly Agree	22	.03	
I am satisfied with my present job.			644
Strongly disagree	19	.03	
Disagree	40	.06	
Slightly disagree	52	.08	
Neither agree or disagree	64	.10	
Slightly Agree	107	.16	
Agree	275	.43	
Strongly Agree	87	.14	
I find real enjoyment in my work.			644
Strongly disagree	6	.01	
Disagree	27	.04	
Slightly disagree	38	.06	
Neither agree or disagree	63	.10	
Slightly Agree	149	.23	
Agree	285	.44	
Strongly Agree	76	.12	

Table 5: Continued

Career Commitment Variable	Frequency	Percent of Participation	N
I like this career too well to give it up.			644
Strongly disagree	15	.02	
Disagree	52	.08	
Slightly disagree	69	.11	
Neither agree or disagree	101	.16	
Slightly Agree	122	.19	
Agree	201	.31	
Strongly Agree	84	.13	
If I could go into a different profession which paid the same, I would probably take it.			644
Strongly disagree	7	.01	
Disagree	22	.03	
Slightly disagree	29	.05	
Neither agree or disagree	112	.17	
Slightly Agree	123	.19	
Agree	270	.42	
Strongly Agree	81	.13	
If I could do it all over again, I would not choose to work in this profession.			644
Strongly disagree			
Disagree	124	.19	
Slightly disagree	265	.41	
Neither agree or disagree	90	.14	
Slightly Agree	83	.13	
Agree	34	.05	
Strongly Agree	31	.05	
	17	.03	

Table 5: Continued

Career Commitment Variable	Frequency	Percent of Participants	N
I definitely want a career for myself in this profession.			644
Strongly disagree	6	.01	
Disagree	17	.03	
Slightly disagree	33	.05	
Neither agree or disagree	124	.19	
Slightly Agree	106	.17	
Agree	253	.39	
Strongly Agree	105	.16	
This is the ideal profession for a life's work.			644
Strongly disagree	14	.02	
Disagree	40	.06	
Slightly disagree	65	.10	
Neither agree or disagree	208	.33	
Slightly Agree	110	.17	
Agree	162	.25	
Strongly Agree	45	.07	

Table 5: Continued

Performance Variable	Frequency of Participation	Percent	N
My overall performance compared to my peers.			644
I'm in upper 5%	165	.26	
I'm in upper 10%	237	.37	
I'm in upper 25%	179	.28	
I'm in middle 50%	60	.09	
I'm in lower 25%	3	.00	
I'm in lower 10%	0	.00	
I'm in lower .05	0	.00	
My ability to get along with others compared to my peers.			644
I'm in upper 5%	199	.31	
I'm in upper 10%	254	.40	
I'm in upper 25%	137	.21	
I'm in middle 50%	51	.08	
I'm in lover 25%	3	.00	
I'm in lower 10%	0	.00	
I'm in lower .05	0	.00	
My ability to complete tasks on time compared to my peers.			644
I'm in upper 5%	202	.31	
I'm in upper 10%	232	.36	
I'm in upper 25%	159	.25	
I'm in middle 50%	50	.08	
I'm in lower 25%	1	.00	
I'm in lower 10%	0	.00	
I'm in lower .05	0	.00	

Table 5: Continued

Performance Variable	Frequency	Percent	N
My quality of performance (as opposed to quantity of performance) compared to my peers.			644
I'm in upper 5%	189	.29	
I'm in upper 10%	260	.40	
I'm in upper 25%	159	.25	
I'm in middle 50%	35	.06	
I'm in the lower 25%	1	.00	
I'm in lower 10%	0	.00	
I'm in lower .05	0	.00	
My actual achievement of work goals compared to my peers.			644
I'm in upper 5%	181	.28	
I'm in upper 10%	258	.40	
I'm in upper 25%	148	.23	
I'm in middle 50%	55	.09	
I'm in the lower 25%	2	.00	
I'm in lower 10%	0	.00	
I'm in lower .05	0	.00	

Path Analysis

A path analysis was effectuated using AMOS software to test the goodness of fit of the hypothesized model including the causal effects among variables (Mertler & Vanetta, 2002). The AMOS software system was used to investigate three models including an independence model, a saturated model, and a hypothesized model. The

independence model represents a model with no paths between variables. The hypothesized model represents the proposed model in the study and is presented herein as the hypothesized model. The saturated model represents a model that includes a direct path from each variable to all the other variables. Additionally, a revised model was tested using AMOS software system and the Sobel Test was used to test whether the mediating variables carry the influence of an independent variable to the dependent variable (Preacher & Leonardell, 2001). The models are represented as path diagrams and include a straight line with an arrow to denote direct relationships between variables. Additionally, a mediating indirect effect is denoted when an intervening variable is between the effects of two variables (Mertler & Vanetta, 2002).

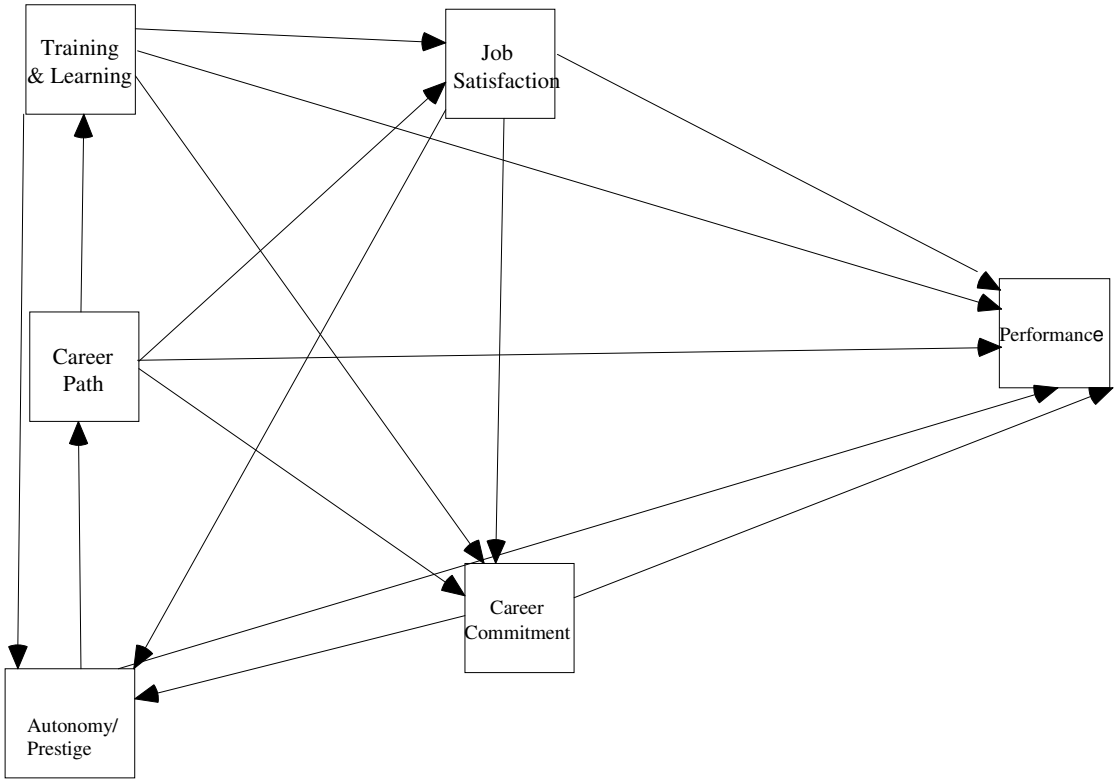
Independence Model

Independence model includes the model with no paths and only shows the study variables. A discussion of the independence model fit is included in the Model Fit Summary section presented herein in Chapter IV.

Saturated Model

A saturated model of the study variables includes direct paths from each variable to all the other variables. A discussion of the saturated model fit is included in the Model Fit Summary section presented herein in Chapter IV. See Figure 4 for the Saturated Model.

Figure 4: Saturated Model

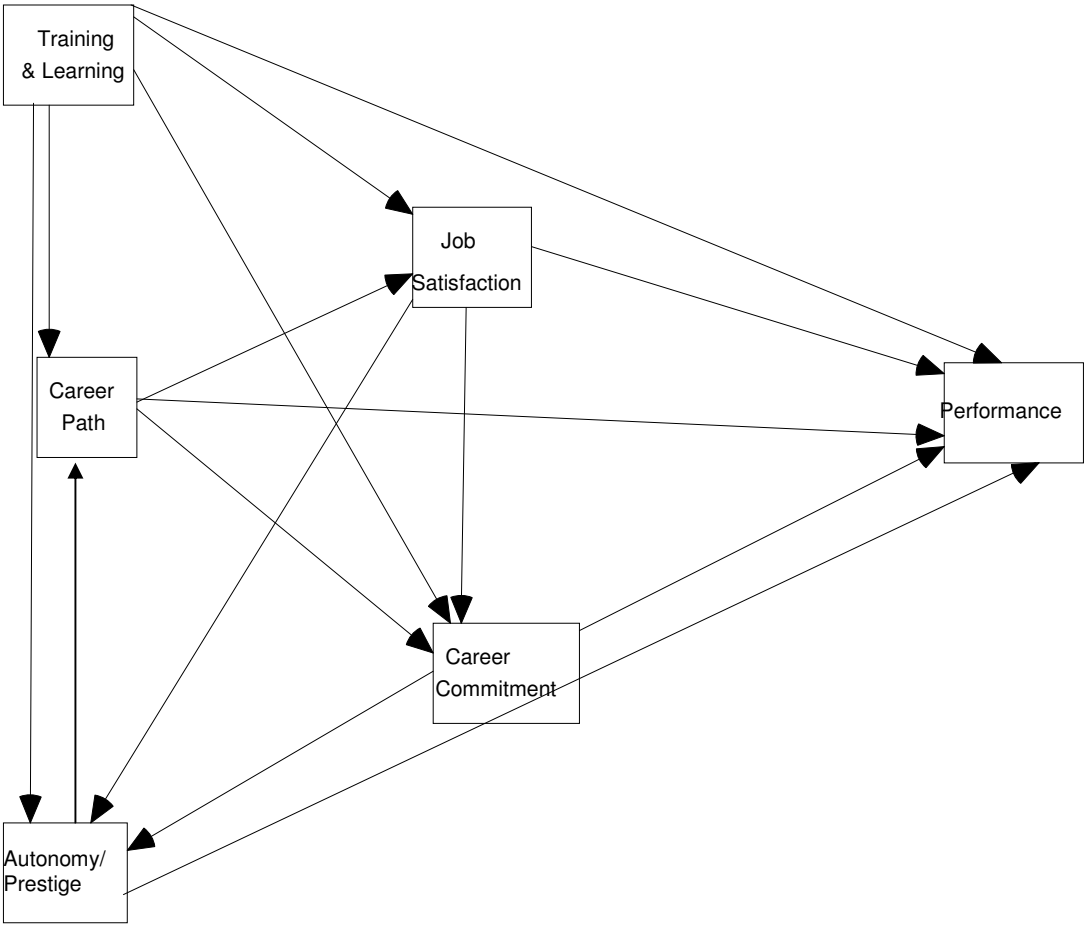


Note: The hypothesized sign for all the relationships is positive (+).

Hypothesized Model

The hypothesized model in this study is the proposed model and is based on a review of the literature. A discussion of the hypothesized model fit is included in the Model Fit Summary section presented herein in Chapter IV. See Figure 5 for the Hypothesized Model.

Figure 5: Hypothesized Model



Note: The hypothesized sign for all the relationships is positive (+).

The results of the revised model are presented in Tables 6 and 7 and discussed herein.

Table 6: Hypothesized Model Regression Weights

			Estimate	S.E.	C.R.	p	
Performance	<---	Training and Learning	-.179	.074	-2.413	.016	/
Performance	<---	Autonomy/Prestige	.237	.064	3.731	***	
Performance	<---	Career Commitment	-.060	.033	-1.803	.071	
Performance	<---	Career Path	.120	.033	3.615	***	
Performance	<---	Job Satisfaction	-.030	.048	-.628	.530	
Career Commitment	<---	Job Satisfaction	.810	.047	17.086	***	
Job Satisfaction	<---	Career Path	.407	.030	13.459	***	
Training & Learning	<---	Career Path	.047	.015	3.059	.002	/
Autonomy/Prestige	<---	Career Commitment	-.068	.020	-3.349	***	
Career Path	<---	Autonomy/Prestige	.079	.101	.786	.432	
Prestige	<---	Training & Learning	.016	.046	.337	.736	
Job Satisfaction	<---	Training & Learning	.019	.074	.249	.803	
Autonomy/Prestige	<---	Job Satisfaction	-.079	.030	-2.675	.007	/
Career Commitment	<---	Career Path	-.048	.040	-1.198	.231	

*** - Indicates that the path is significant at the p<.001 level.
/- Indicates the path is significant at the p< .05 level.

The researched predicted from the hypothesized model that there was a significant positive relationship between (a) training and learning and performance, (b) prestige and performance, (c) career commitment and performance, (d) career path and performance, (e) job satisfaction and performance, (f) career path and job satisfaction, (g) career path and training and learning, (h) career commitment and prestige, (i) career

path and prestige, (j) training and learning and prestige, (k) training and learning and job satisfaction, (l) job satisfaction and prestige, and (m) career path and career commitment.

Of the aforementioned hypothesized model relationships, the following positive and significant relationships were in accordance with the hypothesized model results (a) autonomy/prestige and performance, (b) job satisfaction and career commitment, (c) career path and performance, (d) career path and job satisfaction, and (e) career path and training and learning. More specifically, in the hypothesized model, training and learning was negatively associated with performance (beta= -.179, $p<.05$), autonomy/prestige was positively related to performance (beta= .237, $p<.001$), and career path was positively related to performance (beta=.120, $p<.001$). Additionally, job satisfaction was positively related to career commitment (beta=.810, $p<.001$), career path was positively related to job satisfaction (beta=.407, $p<.001$), and career path was positively related to training and learning (beta=.047, $p<.05$). Career commitment was negatively related to autonomy/prestige (beta= -.068, $p<.001$) and job satisfaction was negatively related to prestige (beta=-.079, $p<.05$).

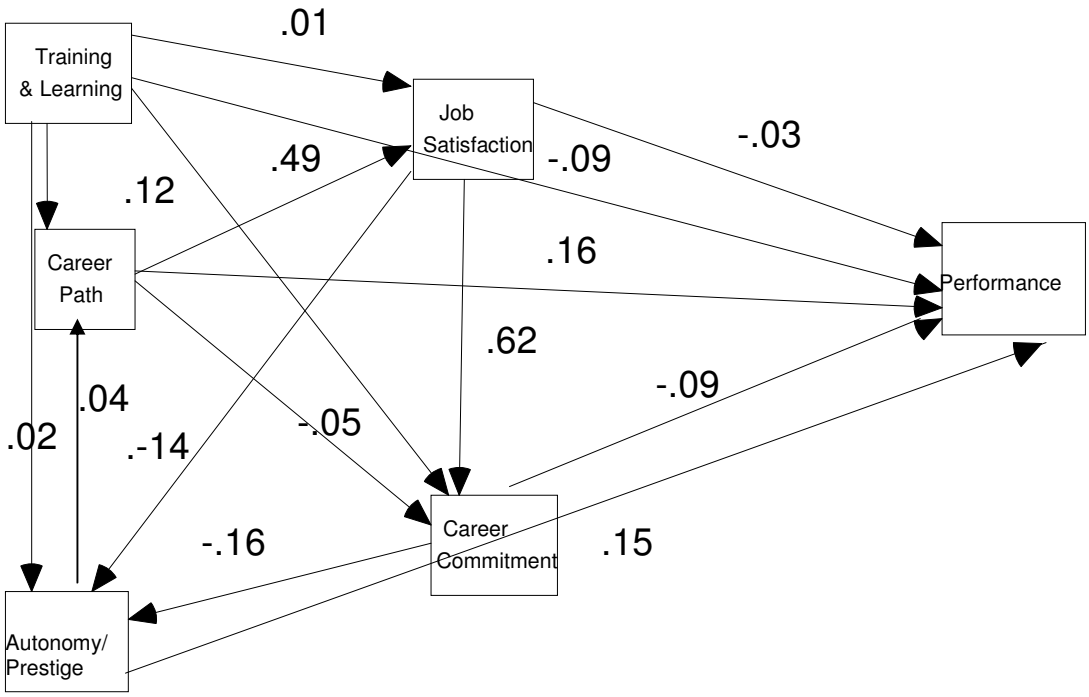
The results of the revised model are presented in Tables 7 and 8 and discussed herein.

Table 7: Hypothesized Model Standardized Regression Weights by Path

			Estimate
Performance	<---	Training & Learning	-.093
Performance	<---	Autonomy/Prestige	.148
Performance	<---	Career Commitment	-.087
Performance	<---	Career Path	.159
Performance	<---	Job Satisfaction	-.033
Career Commitment	<---	Job Satisfaction	.617
Job Satisfaction	<---	Career Path	.486
Training & Learning	<---	Career Path	.120
Autonomy/Prestige	<---	Career Commitment	-.159
Career Path	<---	Autonomy/Prestige	.037
Prestige	<---	Training & Learning	.013
Job Satisfaction	<---	Training & Learning	.009
Autonomy/Prestige	<---	Job Satisfaction	-.141
Career Commitment	<---	Career Path	-.044

The standardized regression weights in Table 7 are associated with the path coefficients in the hypothesized model. Rounded standardized regression weights by paths for the hypothesized model are in Figure 6.

Figure 6: Hypothesized Model with Standardized Regression Weights by Path Rounded from Table 7



Model fit summary. The model fit summary tables (See tables 8 through 9) include data that supports whether the hypothesized model is a good-fitting model. Additionally, there is a discussion of the results of the hypothesized model as compared to the saturated and independence models.

Table 8: Hypothesized Model – CMIN Model Fit Summary

Model	NPAR	CMIN	df	p	CMIN/DF
Hypothesized model	20	2.324	1	.127	2.324
Saturated model	21	.000	0		
Independence model	6	544.022	15	.000	36.268

NPAR is the number of parameters in the model. According to Tabachnick and Fidell (2001), "The number of parameters is found by adding together the number of regression coefficients, variances, and covariances that are to be estimated" and "The number of data points is the number of sample variances and covariances" (p. 691). In the hypothesized model, the number of distinct sample moments was 20 and less than the 21 number of parameters and as such met the condition to proceed with the analysis

per AMOS. In the saturated model, the number of parameters is 21 and in the independence model the number of parameters is 6.

CMIN is the chi-Square (2.324) and p (.127) indicates there was a non-significant chi-square associated with the hypothesized model. The non-significant chi-square indicated that the fit between the reduced model and the data were not significantly worse than the fit between the saturated model and the associated data (East Carolina State, 2006). CMIN/DF is the relative chi-square and indicates "how much the fit of data to model has been reduced by dropping one or more paths" (East Carolina State, 2006, p. 8). In the hypothesized model, the CMIN/DF is 2.324 and larger than the rule of thumb of 2 and indicated that there have been too many paths dropped in the hypothesized model. The CMIN/DF for the independence model is 36.268 and greater than the rule of thumb of 2 and as such is suggesting that the independence model is not a good fitting model.

Table 9: Hypothesized Model - RMR and GFI Model Fit Summary

Model	RMR	GFI	AGFI	PGFI
Hypothesized model	.097	.999	.975	.048
Saturated model	.000	1.000		
Independence model	3.515	.782	.695	.559

The RMR (root mean square residual) is .097 and indicates an average difference between the estimated sample variances and covariances from the observed variances and covariances (Tabachnick & Fidell, 2001). The RMR for the saturated model is .000. Goodness of fit index (GFI) identifies that proportion of the variance-covariance matrix accounted for by the hypothesized model (Tabachnick & Fidell, 2001). The GFI for the saturated model is 1.000 and for the hypothesized model the GFI is .999 and exceeds .9 for a good model. "The fewer the number of estimated parameters relative to the number of data points, the closer the AGFI (adjusted goodness-of-fit) is to the GFI" (Tabachnick & Fidell, 2001, p. 701) and .975 is close to .999. Additionally, the RMR and GFI for the independence model is 3.515 and .782 and is not a good fitting model. Tables 10 and 11 presented herein display model fit summary information.

Table 10: Hypothesized Model - Baseline Comparisons Model Fit Summary

Model	NFI	CFI
Hypothesized model	.996	.997
Saturated model	1.000	1.000
Independence model	.000	.000

The comparative fit index (CFI) is .997 and assesses the fit to other models. CFI

values greater than .95 are considered a good fit model (Hu & Bentler, 1999). Additionally, normal fit index (NFI) evaluates the hypothesized model and values greater than .90 are indicative of a good-fitting model. In the hypothesized model, the NFI is .996 and as such is considered a good-fitting model. The saturated model includes a CFI and NFI that equal 1.000. The independence model includes no paths and as such has a CFI and NFI that equals .000.

Table 11: Hypothesized Model - RMSEA Model Fit Summary

Model	RMSEA	PCLOSE
Hypothesized model	.045	.401
Independence model	.234	.000

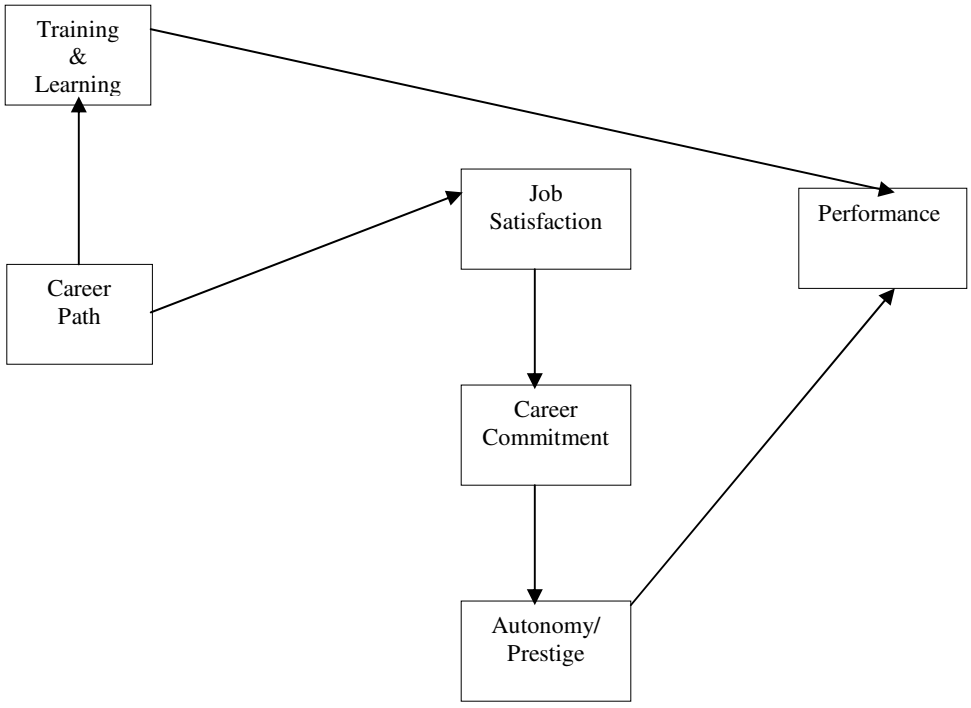
The root mean square error of approximation (RMSEA) estimates the lack of fit of the hypothesized model as compared to the saturated model (Tabachnick & Fidell, 2001). The hypothesized model includes a RMSEA of .045 and is less than .06 and suggesting a good-fitting model as compared to the saturated model (Hu & Bentler, 1999). Additionally, PCLOSE is .401 and is greater than .05 and suggesting a good-fitting model because PCLOSE is not significant. The independence model with no path includes a RMSEA of .234 which is greater than .06 and does not suggest a good fitting

model. PCLOSE is the p value testing the null that RMSEA is no greater than .05 for the default and independence models.

Revised Model

The revised model in this study included (see Figure 7 for Revised Model) 21 sample moments and 14 distinct parameters. The revised model was developed by including significant paths in the model and using the rule of thumb that if the CMIN/DF index exceeded 2 that there were too many paths dropped in the revised model.

Figure 7: Revised Model



Note: The hypothesized sign for all the relationships is positive (+).

The results of the revised model are presented in Tables 12 and 13 and discussed herein.

Table 12: Revised Model Regression Weights

		Estimate	S.E.	C.R.	p	
Job Satisfaction	<--- Career Path	.402	.029	13.869	***	
Career Commitment	<--- Job Satisfaction	.780	.042	18.730	***	
Training & Learning	<--- Career Path	.047	.015	3.072	.002	/
Autonomy/Prestige	<--- Career Commitment	-.100	.016	-6.070	***	
Performance	<--- Training & Learning	-.178	.074	-2.397	.017	/
Performance	<--- Prestige	.241	.063	3.818	***	
Performance	<--- Career Commitment	-.071	.028	-2.511	.012	/
Performance	<--- Career Path	.111	.030	3.657	***	

***Extracted from Hauser and Fetherman (1977).
/- Indicates the path is significant at the p< .05 level.

In accordance with the revised model, career path is positively related to job satisfaction (beta=.402, p<.001) and career path is positively related to (beta=.047, p<.001) training and learning. Job satisfaction is positively related to career commitment (beta=.780, p<.001) and career commitment is negatively related to prestige (beta= -.100, p<.001). Additionally, training and learning is negatively related to performance (beta= -.178, p<.05) and career commitment is negatively related to performance (beta= -.071, p<.05). Prestige is positively related with performance (beta= .241, p<.001) and

career path is positively related to performance (beta=.111, p<.001).

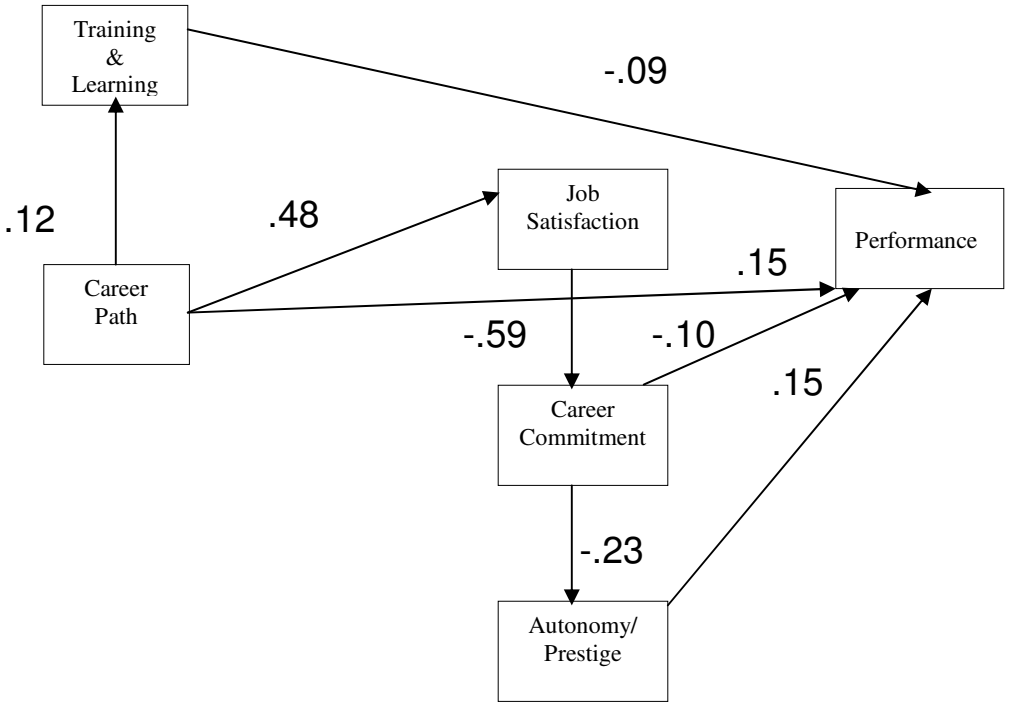
In accordance with the revised model, the researcher conducted the Sobel Test and noted that the indirect effect of the independent variable on the dependent variable via the mediating variable was not significantly different from zero for the following paths (a) career path mediated by job satisfaction to performance; (b) career path mediated by training and learning to performance; and (c) job satisfaction mediated by career commitment to performance. Additionally, the researcher noted that career commitment mediated by prestige to performance was significantly different from zero and thus should be included in the revised model. The three mediating paths to the dependent variables were not removed from the revised model because the CMIN/DF indicator increased from 1.707 to 48.294. The 48.295 CMIN/DF indicator is well above the rule of thumb of 2 and too many paths would be dropped if the insignificant mediating paths were removed from the model. To that end, the revised model is shown herein including all mediating variable paths. The results of the revised model are presented in Tables 13 and 14 and discussed herein.

Table 13: Revised Model - Standardized Regression Weights by Path

			Estimate
Job Satisfaction	<---	Career Path	.480
Career Commitment	<---	Job Satisfaction	.594
V19	<---	Career Path	.120
Prestige	<---	Career Commitment	-.233
Performance	<---	Training & Learning	-.092
Performance	<---	Prestige	.150
Performance	<---	Career Commitment	-.103
Performance	<---	Career Path	.147

The standardized regression weights in Table 13 are associated with the path coefficients in the revised model. Rounded standardized regression weights by path for the revised model are presented in Figure 8.

Figure 8: Revised Model with Standardized Regression Weights Rounded from Table 13



Model fit summary. The model fit summary tables (See Tables 14-15) include data that supports whether the revised model is a good-fitting model. Additionally, there is a discussion of the results of the revised model as compared to the saturated and independence models.

Table 14: Revised Model - CMIN Model Fit Summary

Model	NPAR	CMIN	df	p	CMIN/DF
Revised model	14	11.952	7	.102	1.707
Saturated model	21	.000	0		
Independence model	6	544.022	15	.000	36.268

NPAR is the number of parameters in the model. “The number of parameters is found by adding together the number of regression coefficients, variances, and covariances that are to be estimated” (Tabachnick & Fidell, 2001, p. 691). “The number of data points is the number of sample variances and covariances” (Tabachnick & Fidell, 2001, p. 691). In the hypothesized model, the number of distant sample moments was 21 and greater than the 14 number of parameters and as such met the condition to proceed with the analysis per AMOS. In the saturated model, the number of parameters is 21 and in the independence model the number of parameters is 6.

CMIN is the chi-Square (11.952) and p (.102) indicates there was non-significant chi-square associated with the hypothesized model. The non-significant chi-square indicated that the fit between the reduced model and the data were not significantly

worse than the fit between the saturated model and the associated data (East Carolina State, 2006). CMIN/DF is the relative chi-square and indicates "how much the fit of data to model has been reduced by dropping one or more paths" (East Carolina State, 2006, p. 8). In the hypothesized model, the CMIN/DF is 1.707 and is within the rule of thumb that too many paths have not been dropped because the index does not exceed 2.

Table 15: Revised Model – RMR and GFI Model Fit Summary

Model	RMR	GFI	AGFI	PGFI
Revised model	.272	.994	.982	.331
Saturated model	.000	1.000		
Independence model	3.515	.782	.695	.559

The RMR (root mean square residual) is .272 and indicates an average difference between the estimated sample variances and covariances from the observed variances and covariances (Tabachnick & Fidell, 2001). Goodness of fit index (GFI) identifies that proportion of variance-covariance matrix accounted for by the hypothesized model (Tabachnick & Fidell, 2001). The GFI for a saturated model is 1.000 and the GFI for the revised model is .994 and exceeds .9 for a good model. The GFI for the independence model is .782. "The fewer the number of estimated parameters relative to the number of data points, the closer the AGFI (adjusted goodness-of-fit) to the GFI" (Tabachnick & Fidell, 2001, p. 701) and as such .994 is close to .982. Additionally, the PGFI is .331 for the revised model and indicates a small value and a good-fitting model. The PGFI is .559

for the independence model and indicates a large value and not a good-fitting model. Tables 16 and 17 presented herein display model fit summary information

Table 16: Revised Model - Baseline Comparisons Model Fit Summary

Model	NFI Delta1	CFI
Revised model	.978	.991
Saturated model	1.000	1.000
Independence model	.000	.000

The comparative fit index (CFI) is .991 for the revised model and assesses the fit to other models. CFI values greater than .95 are considered a good fit model (Hu & Bentler, 1992). The CFI for the saturated model is 1.000 and the CFI for the independence model is .000. Additionally, Normal fit index (NFI) evaluates the revised model and values greater than .90 are indicative of a good-fitting model. In the revised model, the NFI is .978 and as such is considered a good-fitting model. The NFI for the saturated model is 1.00 and considered the best fitting model and the NFI for the independence model is .000 and considered not a good fitting model.

Table 17: Revised Model – RMSEA Model Fit Summary

Model	RMSEA	PCLOSE
Revised model	.033	.785
Independence model	.234	.000

The root mean square error of approximation (RMSEA) estimates the lack of fit of the hypothesized model as compared to the saturated model (Tabachnick & Fidell, 2001). The hypothesized model includes a RMSEA of .033 and is less than .06 and suggesting a good-fitting model as compared to the saturated model (Hu & Bentler, 1992). Additionally, PCLOSE is .785 and is greater than .05 and suggesting a good-fitting model because PCLOSE is not significant.

Conclusion

All of the original variables for the proposed career development model were retained in the revised model. Training and learning, prestige, career commitment, and career path explained the relationships to performance. More specifically, (a) training and learning is negatively related to performance, (b) autonomy/prestige is positively related to performance, (c) career commitment is negatively related to performance, and (d) career path is positively related to performance. The revised model presented herein represents the suggested model as defined by this research study and does not suggest that the revised model is the best fit model. Discussions and implications for less well defined professions including project manager are presented in Chapter V.

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter includes a summarization of the current study, discusses the analysis of the data including organizational and individual implications, introduces and discusses two post hoc models, outlines research limitations, discusses future research, and details study conclusions.

Summarization of Current Study

The purpose of the research study was to examine the relationships among job attitudes and job behaviors with an emphasis on relationships among prestige/autonomy, career path, job satisfaction, career commitment, and performance. The study also focused on supporting organizational activities including career paths and training and learning. The analytical technique used in the study was path analysis and direct and indirect path relationships are discussed herein the analysis of data section.

The survey population included project managers (a) who were members and affiliates of project management related chapters; and (b) who worked in organizations including a global energy enterprise, metropolitan research and teaching institute, and training and technical agency. Because invitations to participate in the study were sent by third parties without the researcher's involvement, it is difficult to ascertain the total number of invitations that actually reached prospective participants; however, the population of the project management related chapters may have been as large as 10,000 members and included chapters from Austin, Clear Lake, Coastal Bend, Dallas, Houston, Kansas City – Mid-America, New Orleans, Northwest Arkansas, Pikes Peak,

and St. Louis. The population of the organizations that participated in the study included (a) 33 project managers from a global energy enterprise, (b) 39 project managers from a public metropolitan research and teaching institute, and (c) 12 project managers from a training and technical agency.

Crosstabs in SPSS were effectuated to check to see if group composition resulted in non-significant chi-square for demographics and study variables. (See Appendix C for demographic and study variable information including chi-squares). The overall finding of the Crosstabs included a non-significant difference in the chapter and organization groups at the $p<.05$ level. The researcher noted the groups were homogeneous and combined the responses to include 644 sample responses from chapters and organizations. Description of the sample included: gender; age; title/position; education level; PMI member status; PMI certification status; number of years worked in project management; and industry.

The instrument included questions that were used to measure the following variables: demographics, autonomy/prestige, career path, training and learning opportunities, job satisfaction, career commitment, and performance. Respondents selected responses to demographic information including: gender; age; title/position; education level; PMI member status; PMI certification status; number of years worked in project management; and industry.

Project management chapters and organizations were contacted via emails seeking participation in the research study. Additionally, the researcher attended PMI Houston chapter meetings to seek assistance in the research study. Ten project

management related chapters and three organizations participated in the study. An information sheet including the survey link was sent to project management related chapters for distribution to their subscribed mailing lists of project managers in November and December 2006. The information sheet included the purpose of the survey and the approximate time to complete the survey as well as the characteristics of the study including: voluntary participation, anonymous identification, no withdrawal penalties, and no compensation (see Appendix B for the information sheet.) The project managers accessed the survey via a third party's website, sponsored by *Ridgecrest Surveys*. The analysis of the data included descriptive statistics and path analysis.

Descriptive Statistics

The descriptive data from this study was tabulated and lead the researcher to the conclusion that most of the participants were male, 40-44 years of age, worked in professions with project manager titles, and achieved an education level of a four year college degree or equivalent. Additionally, most of the participants were PMI members, PMI certified for five to nine years, worked in project management for five to nine years, and worked in the information technology industry. The study variables included performance as the dependent variable and autonomy/prestige, career path, training and learning, job satisfaction, and career commitment as the independent variables.

Path Analysis

Path analysis was used to test the fit of the hypothesized model. The results of the path analysis indicated that the fit between the hypothesized model and the data (Chi-Square =2.324 and p-.127) were not significantly worse than the fit between the

saturated model including all paths and the associated data (East Carolina State, 2006) Additionally, the CMIN/DF for the proposed model was 2.324 and larger than the rule of the thumb and indicated that there were too many paths dropped in the hypothesized model.

A revised model was developed and tested by including significant paths in the model and using the rule of thumb that if the CMIN/DF index exceeded 2 that too many paths had been dropped in the model. The CMIN/DF for the revised model was 1.707 and was within the rule of thumb of 2. The results of the revised model are presented in Tables 18 and 19 and discussed herein. The standardized regression weights are associated with the path coefficients in the revised model. Rounded standardized regression weights by path for the revised model are presented in Figure 9.

Table 18: Revised Model Regression Weights by Path

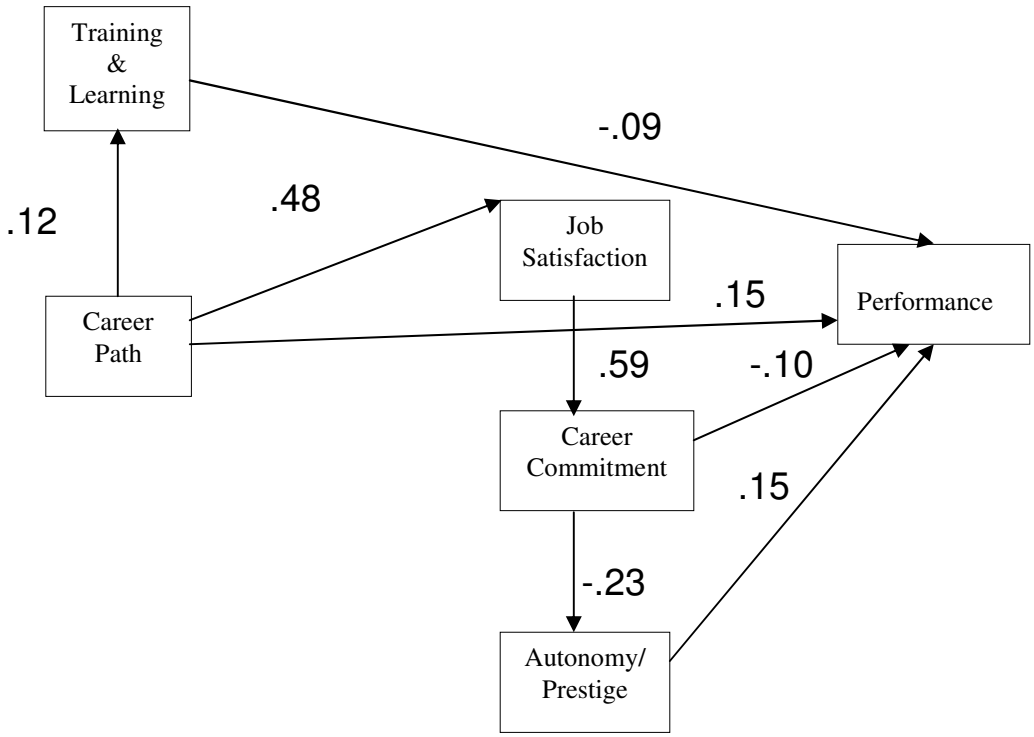
		Estimate	S.E.	C.R.	p	
Job Satisfaction	<--- Career Path	.402	.029	13.869	***	
Career Commitment	<--- Job Satisfaction	.780	.042	18.730	***	
Training & Learning	<--- Career Path	.047	.015	3.072	.002	/
Autonomy/Prestige	<--- Career Commitment	-.100	.016	-6.070	***	
Performance	<--- Training & Learning	-.178	.074	-2.397	.017	/
Performance	<--- Autonomy/Prestige	.241	.063	3.818	***	
Performance	<--- Career Commitment	-.071	.028	-2.511	.012	/
Performance	<--- Career Path	.111	.030	3.657	***	

*** Indicates that the path is significant at the p<.001 level.
/ Indicates that the path is significant at the p<.05 level.

Table 19: Revised Model Standardized Regression Weights

			Estimate
Job Satisfaction	<---	Career Path	.480
Career Commitment	<---	Job Satisfaction	.594
Training & Learning	<---	Career Path	.120
Autonomy/Prestige	<---	Career Commitment	-.233
Performance	<---	Training & Learning	-.092
Performance	<---	Autonomy/Prestige	.150
Performance	<---	Career Commitment	-.103
Performance	<---	Career Path	.147

Figure 9: Revised Model with Standardized Regression Weights Rounded from Table 19



Direct Paths

In the accordance with the hypothesized model, the researcher hypothesized that there were four direct paths including (a) training and learning to performance, (b) career path to performance, (c) autonomy/prestige to performance, and (d) career commitment to performance. The revised model, as the best fit model for this study, included four direct significant paths for the independent variables to the dependent variable including (a) training and learning was negatively related to performance (beta= -.178, $p<.05$); (b) career path was positively related to performance (beta=.111, $p<.001$); (c) autonomy/prestige was positively related to performance (beta= .241, $p<.001$), and (d) career commitment was negatively related to performance (beta= -.071, $p< .05$). Each path is discussed herein in addition to the implications for organizations and individuals for the indicated paths. Although not reiterated throughout the following discussion it is important to recall these findings are in the context of a protean or moderately defined role or career.

Training and learning to performance. In this study, the path between training and learning and performance was negative and significant (beta= -.178, $p<.05$). This significant path suggests that as training and learning increases performance decreases and that individuals are not motivated to participate in training and learning in order to transfer training and learning to performance (London, 1983; London & Mone, 1987). This lack of motivation may be predicated on the idea that career goals are not aligned with work behaviors and that organizations may not be signaling (Spence, 1973) to moderately defined career professionals that training and learning activities are provided

and supported in order to transfer training and learning to performance. Signaling costs theory suggests that employees will participate and transfer learning to performance only if the there is a sufficient return on the costs including wages and career opportunities (Spence, 1973).

The implications to organizations for this path suggest that training and learning activities may need to be planned, designed, and communicated in such a way that learning is supported and transferred to job performance (Egan, Yang, & Bartlett, 2004). Additionally, organizations may need to signal (Spence, 1973) the importance of participating in training and learning and transferring that training and learning to job performance (Hedge, Borman, & Bourne, 2006). More specifically, organizations need to consider the signaling costs to employees to participate in training and learning and provide motivators (London, 1983; London & Mone, 1987) to encourage individuals to transfer training and learning to performance (Spence, 1973). The signaling costs will be undertaken by employees only if there is a sufficient return including various training and learning settings and learning resources as well as rewards associated with participation including wages, career advancement opportunities, and prestige (Eraut, 1994). To that end, organizations may need to recognize and reward individuals for participating in training and learning as feedback to reinforce and encourage positive behaviors including increased job performance.

The implication to individuals for this path is that individuals may need to identify support activities and signals that organizations send as it relates to training and learning and job performance (Bartlett, 2002; Spence, 1973) because organizational

signals may not be directly communicated. Additionally, individuals may need to decide whether participating in the training and learning activities will provide a sufficient return on the costs of participation (Spence, 1973). The benefits and costs of training and learning participation are determined by organizational feedback and rewards as multiple factors may impact continuous learning and the expansion of that training and learning to job performance.

Career path to performance. In this study, the path between career path and performance was positive and significant (beta=.111, p<.001). As moderately defined career professionals perceive that there is a career path their performance will increase. The discussion associated with this path is consistent with the expectancy theory (Vroom, 1964), career mobility theory (Sicherman & Galor, 1990), and motivation theory (London, 1983; London & Mone, 1987) in that moderately defined career professionals are motivated to participate in career path activities expecting that participation in career path activities will lead to expected outcomes including career goal attainment (Adamson, 1997; Callahan, 2003) and increased job performance.

The implications to organizations for this path include organizations working with individuals to design, develop, and communicate career paths that tie performance to career goals (Vroom, 1994) including career mobility (London, 1983; London & Mone, 1987) to motivate individuals to transfer career path activities (Sicherman & Galor, 1990) to performance. Additionally, organizations need to signal (Spence, 1973) to individuals that participation in career path activities will increase performance and goal attainment (Porter & Lawler, 1968).

The implication to individuals for this path is that individuals need to work with organizations to design, develop, and communicate defined career paths. The joint effort will ensure individual expectancies are aligned with individual outcomes (Cappellen & Janssens, 2005) and as such motivate individuals (London, 1983; London & Mone, 1987) to participate in career path activities to increase job performance (Vroom, 1964) and meet career goals as signaled by the organization (Spence, 1973).

Autonomy/prestige to performance. In this study, the path between autonomy/prestige and performance was positive and significant (beta= .241, p<.001). This path suggests that moderately defined career professionals anticipate that the more autonomous and prestigious their job is the better they will perform in their job. This discussion associated with this path is consistent with the career motivation theory that suggests that career identity is framed within the context of the work environment and the motivation for advancement along a career path is perceived to be associated with performance (London, 1983; London & Mone, 1987). Most of the participants in this study reported that, in general, the project management profession allows for autonomy and prestige and that perceived autonomy and prestige increase performance. Additionally, the discussion for this path is supported by the expectancy theory (Vroom, 1964) in that individuals choose careers with job dimensions in which they identify with and as such are motivated (London, 1983) to achieve personal and work outcomes including increased job performance (Hackman & Oldman, 1976).

The implications to organizations for this path suggest that autonomy/prestige and performance need to be aligned in designing career paths and career development

activities in order to increase performance (Porter & Lawler, 1968). Organizations need to consider individuals are motivated to perform if they believe that a particular act will be followed by an expected outcome (Vroom, 1964) and as such increased individual performance may lead to increased organizational performance. Additionally, the implication for organizations is that job design through career planning is considered an important activity in order to improve simultaneously the quality of the work experience and the job performance.

The implication to individuals for this path is that participation in prestigious careers will lead to expected outcomes (Vroom, 1964) including increased job performance that may be attributed to the opportunity for independent thoughts and feelings of security from working in their careers (Porter & Lawler, 1968). To that end, the positive relationship between autonomy/prestige and performance is "reinforcing to the individual, and serves as an incentive for him to continue to try to perform well in the future" (Hackman & Oldman, 1976, p. 256). For example, when individuals do not perform well they may not experience the intrinsic reward that comes from autonomy/prestige in job dimensions and in the future individuals may decide to work harder in an effort to regain internal satisfaction that comes from increased job performance.

Career commitment to performance. In this study, the path between career commitment and performance was negative and significant (beta= -.071, $p<.05$). The longer moderately defined career professionals work in their careers the less they are committed to increase job performance. The discussion for this path is consistent with

the career maturation theory that career maturity predicts longer continuity in the career but not greater success including performance (Savickas, Briddick, & Watkins, 2002). Additionally, the moderately defined career professionals may no longer be motivated to increase performance as professionals may be committed to working in careers in which there are other intrinsic and extrinsic rewards not including performance (Smits, McLean, Tanner, 1993).

The implications to organizations for this path suggest that individuals at different career stages will have different attitudes, motivations, and behaviors including performance levels (Isabella, 1988; London, 1983). Career maturity levels need to be considered when designing career paths and career development activities in order to increase performance (Porter & Lawler, 1968). Organizations need to consider that individuals may be committed to a career but may not be necessarily committed or motivated to increase performance. To that end, organizations may need to tie career continuity to job performance and professionals experiencing career maturation may need different motivators including developing a new career path, reestablishing priorities, and reassessing career experiences (Isabella, 1988).

The implications to individuals for this path suggest that individuals at the career maturation stage of their career may "begin to examine or critically re-examine career progress and success" (Isabella, 1988, p. 346). Additionally, the examination or re-examination may lead to a perceived desire for continued growth and advancement or a perceived desire for status quo in job performance. To that end, the perceived desire for continued growth may not include the desire for increased performance.

Indirect Paths

In accordance with the hypothesized model, the researcher hypothesized that (a) job satisfaction mediated training and learning and performance, (b) career commitment mediated career path and performance, (c) career commitment mediated prestige to performance, (d) career path mediated prestige to performance, (e) career path mediated training and learning to performance, (f) prestige mediated training and learning to performance, (g) training and learning mediated prestige and job satisfaction to performance, and (h) training and learning mediated prestige, job satisfaction, and career commitment to performance. The revised model, as the best fit model for this study, indicated that (a) autnomy/prestige was mediated by career commitment to (beta= -.100, p<.001) to performance (beta= -.071, p<.05); (b) career path was mediated by training and learning (beta=.047, p<.05) to performance (beta= -.178, p<.05); and (c) career path was mediated by job satisfaction (beta= .402, p<.001) and career commitment (beta=.780, p<.001) to performance (beta= -.071, p<.05), and (d) career path is mediated by job satisfaction (beta= .402, p<.001), career commitment (beta=.780, p<.001), and autonomy/prestige (beta= -.100, p<.001) to performance (beta=.241, p<.001).

Autonomy/prestige mediated by career commitment to performance. In this study, autonomy/prestige was mediated by career commitment (beta= -.100, p<.001) to performance (beta= -.071, p<.05). As moderately defined professionals become more committed to their careers they perceive their careers as less autonomous and prestigious and decrease performance. Research supports the idea that affective commitment is a predictor of autonomy/prestige (Carmeli & Freund, 2002). Additionally, commitment

and motivation to perform may be related to a variety of needs, including intrinsic and extrinsic rewards, in order to motivate good job performance (Porter & Lawler, 1968). The more individual needs can be tied to effective performance, the higher will be the motivation to perform effectively.

The implications to organizations for this path include the need to continue to provide incentives to motivate employees to remain committed and increase performance. Career motivation may be achieved when organizations and employees jointly work to design and develop career paths that align work behaviors with career goals (Cappellen & Janssens, 2005). Career path design is a strategy that organizations may execute to simultaneously impact career commitment and performance (Hackman & Oldman, 1976) including task identity and autonomy. The results of this path imply that organizations may need to consider other types of benefits to keep employees committed and motivated to continue to increase performance including job advancements and salary increases. Additionally, organizations may need to signal (Spence, 1973) the importance of maintaining increased job performance and the relation to job prestige, autonomy, and commitment to career goal attainment (Porter & Lawler, 1968).

The implications of this path for employees and managers are that individuals need to participate in career path oriented activities and work with organizations to develop and design programs that will ensure individual success. Success is defined as increased job performance and is not related to task identity and autonomy in this path. More specifically, employees need to work with organizations to ensure individual

motivational factors are aligned with work behaviors in an effort to be motivated to increase performance (Day & Allen, 2002; London, 1983, London & Mone, 1987). Additionally, individuals need to decide whether the benefits of the signal (Spence, 1973), to maintain increased performance, is greater than the costs.

Career path mediated by training and learning to performance. In this study, career path is mediated by training and learning (beta=.047, p<.05) to performance (beta= -.178, p<.05). The discussion of this path suggests that as moderately defined career professionals perceive that there is a career path tied to training and learning they will participate more in training and learning but may not transfer the training and learning to performance. This path is supported by research that suggests that the design of career paths including career development and advancement need to signal (Spence, 1973) training and learning and certifications as career advancement components that support job performance (Hedge, Borman, & Bourne, 2006).

The implication to organizations for this path is that organizations need to support training and learning as a component of career path attainment including various training and learning settings, available training and learning resources, and time for preparing for training and learning and reflection (Eratu, 1994). Additionally, there needs to be a signal to participate in training and learning (Spence, 1973) as an avenue for career mobility (Sicherman & Galor, 1990) in an effort to create incentives for employees that will motivate (London, 1983; London & Mone, 1987) them to transfer learning to increase job performance (Porter & Lawler, 1968) and move into a higher job position.

The implications to individuals for this path suggests that individuals need to prepare for training and learning as career development opportunities and transfer the training and learning to job performance (Eraut, 1994). Additionally, individuals may need to decide whether participating in the training and learning and certification programs will provide a sufficient return on the costs of participation (Spence, 1973). Individuals may view support for credential programs as a key to job success and advancement (Bartlett, 2002) in an effort to be motivated to transfer training and learning as career goal attainment to job performance (London, 1983; London & Mone, 1987). The choice to identify and participate in training and learning is an ongoing process that includes feedback and evaluation and career insight (London, 1983).

Career path medicated by job satisfaction and career commitment to performance. In this study, career path was mediated by job satisfaction (beta= .402, $p<.001$) and career commitment (beta=.780, $p<.001$) to performance (beta= -.071, $p<.05$). As moderately defined career professionals perceive that there is a career path, they will be more satisfied (Aryee & Tan, 1992) and committed in their careers and as such may reduce their performance. This path is supported by research that suggests when moderately defined career professionals meet their career expectations through career path attainment they will be more satisfied and more committed to their careers (Goulet & Singh, 2002). To that end, job satisfaction and career commitment may lead to a decrease in job performance because the motivation to increase performance is no longer salient (Porter & Lawler, 1968) due to goal attainment. Additionally, Aryee and

Tan (1992) reported that there is a negative relationship between career commitment and performance.

The implication to organizations for this path is that career paths may need to include considerations for professional and personal development, training and learning including certifications, and job performance (Hedge, Borman, & Bourne, 2006). Additionally, organizations may need to continue to provide incentives to motivate employees to transfer job satisfaction and career commitment to performance (Smith, 1992). Career motivation may be achieved by organizations working jointly with employees to design and develop ongoing career paths that align work behaviors with career goals (Cappellen & Janssens, 2005) to reduce turnover. According to Sicherman and Galor, (1990), individuals who are not promoted despite a higher perceived probability of promotion are more likely to leave an organization and find the same job position in another organization. Additionally, organizations may need to signal (Spence, 1973) the importance of aligning continued career path attainment with job performance.

The implications to individuals for this path suggest that managers and employees may need to participate in career path activities and work with organizations to increase satisfaction and commitment in their careers and career paths (Goulet & Singh, 2002). The outcome of career success for individuals may include defining the pathway to the goal and believing the goal is attainable (Argyris, 1970). The career paths are associated with intrinsic and extrinsic rewards (Adamson, 1997; Callanan, 2003) that lead to attitudes and behaviors including job satisfaction, career commitment, and performance. Thus, employees need to work with organizations to ensure individual

motivational factors are aligned with work behaviors in an effort to continue career resilience (London, 1983) and to maintain the motivation to increase performance (Day & Allen, 2002; London, 1983, London & Mone, 1987). Additionally, individuals need to perceive that the benefits of increased performance exceed the costs of accepting the organization signal (Spence, 1973) in an effort to obtain more appealing job opportunities to sustain membership in the current organization (Sehgal, 1983).

Career path medicated by job satisfaction, career commitment, and autonomy/prestige to performance. In this study, career path is mediated by job satisfaction (beta= .402, p<.001), career commitment (beta=.780, p<.001), and autonomy/prestige (beta= -.100, p<.001) to performance (beta=.241, p<.001). This path suggests that when moderately defined career professionals perceive that there is a career path they will be more satisfied (Aryee & Tan, 1992) and committed in their careers. However, as moderately defined career professionals become more committed they view their jobs as less autonomous and prestigious and increase their job performance. Research supports the idea that career commitment is not related to work quality (Aryee & Tan, 1992). Additionally, the discussion related to this path suggests that commitment and motivation to perform may be related to a variety of needs, including intrinsic and extrinsic rewards, in order to motivate good job performance (Porter & Lawler, 1968). The more individual needs can be tied to effective performance, the higher will be the motivation to continue to perform effectively.

The implications to organizations for this path include the need to continue to provide incentives to motivate employees to remain satisfied and committed in order to

transfer those feelings to job performance. Career motivation may be achieved when organizations and employees jointly work to design and develop career paths that align work behaviors with career goals (Cappellen & Janssens, 2005). Career path design is a strategy that organizations may execute to simultaneously impact job satisfaction, career commitment, job characteristics, and performance (Goulet & Singh, 2002; Hackman & Oldman, 1976; Porter & Lawler, 1968;). The results of this path implies that organizations may need to consider other types of benefits to keep employees motivated to continue to increase performance including job advancements and salary increases. Additionally, organizations may need to signal (Spence, 1973) the importance of maintaining increased job performance and the relation to career goal attainment (Goulet & Singh, 2002; Porter & Lawler, 1968).

The implications to individuals for this path are that individuals need to participate in career path activities and work with organizations to develop and design programs that will ensure individual success. This success is defined as job satisfaction, career commitment, and performance. More specifically, employees need to work with organizations to ensure individual motivational factors are aligned with work behaviors in an effort to be motivated to continue to increase performance (Day & Allen, 2002; London, 1983, London & Mone, 1987). Additionally, individuals need to decide whether the benefits of the signal (Spence, 1973) to maintain increased performance are greater than the costs.

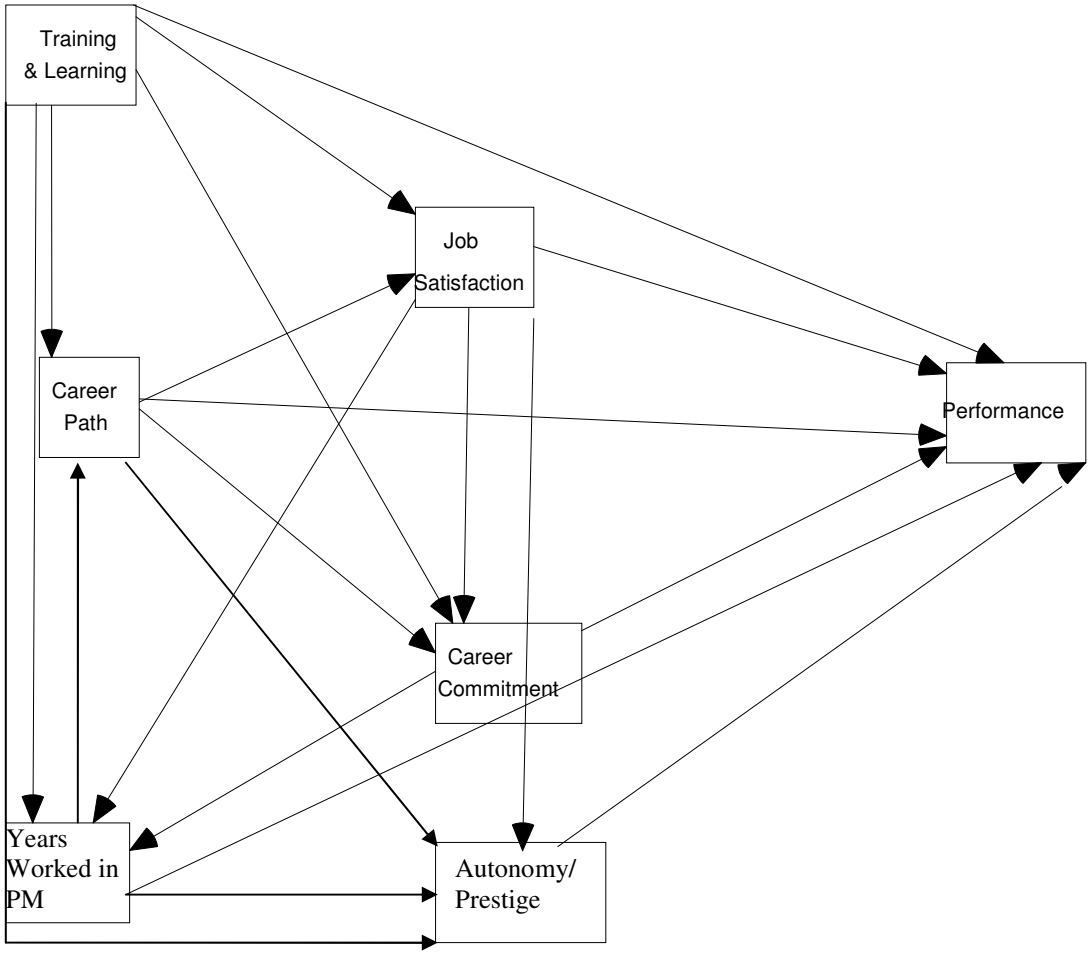
Post Hoc Models

Two post hoc models were developed to further examine the relationships among the variables. Post hoc model 1 included the revised model with years in project management variable added to the model. In the revised model, the path between career commitment and performance was negative and the path between career commitment and autonomy/prestige was negative and as such, the researcher investigated whether adding years in project management further explained the negative relationships. Post hoc model 2 included the following study variables: career path, job satisfaction, career commitment, years in project management, and performance. Autonomy/prestige was not included in the model due to concern for the coefficient alpha reliability of .642 in this study which was less than the benchmark of .700 (Cortina, 1993). Training and learning was also not included in the model due to concern for that the one self-report completion question may have adversely affected earlier analyses.

Post Hoc Model 1

The post hoc hypothesized model 1 was developed to further examine the relationships among career commitment, prestige, and performance. Years in project management was included in the revised model and the post hoc 1 saturated model included direct paths from each variable to all the other variables as presented herein in Figure 10. A discussion of the post hoc model 1 fit is included in the Model Fit Summary section presented herein. The results of the revised model are presented in Table 20 and discussed herein.

Figure 10: Post Hoc 1 Saturated Model - Years Worked in Project Management



Note: The hypothesized sign for all the relationships is positive (+).

Table 20: Post Hoc 1 Model Regression Weights

			Estimate	S.E.	C.R.	P	
Job Satisfaction	<---	Career Path	.408	.040	10.254	***	
Career Commitment	<---	Job Satisfaction	.824	.052	15.935	***	
Career Commitment	<---	Years Worked in PM	-.008	.145	-.057	.955	
Training and Learning	<---	Career Path	.065	.021	3.048	.002	/
Autonomy/Prestige	<---	Years in Worked in PM	-.318	.081	-3.917	***	
Autonomy/Prestige	<---	Career Commitment	-.077	.023	-3.397	***	
Performance	<---	Training and Learning	-.174	.096	-1.805	.071	
Performance	<---	Career Commitment	-.116	.038	-3.084	.002	/
Performance	<---	Career Path	.187	.041	4.543	***	
Performance	<---	Autonomy/Prestige	.336	.080	4.179	***	

*** Indicates that the path is significant at the p<.001 level.
/ Indicates that the path is significant at the p<.05 level.

In the revised model, career commitment was negatively related to performance (beta= -.071, p<.05), and autonomy/prestige was positively related to performance (beta=.241, p<.001). In the aforementioned post hoc 1 model, career commitment was negatively related to performance (bets= -.116, p<.05) and autonomy/prestige was positively related to performance (beta=.336, p<.001).

In the aforementioned post hoc 1 model, years worked in project management to career commitment was not a significant path. However, years worked in project management was negatively related to autonomy/prestige (beta= -.318, p<.001). The researcher suggests that this path indicates that individuals who work in project management for a long period of time feel their job is less autonomous and prestigious.

The discussion for this path is supported by research that indicates affective commitment is a predictor of autonomy and prestige (Carmeli & Freund, 2002).

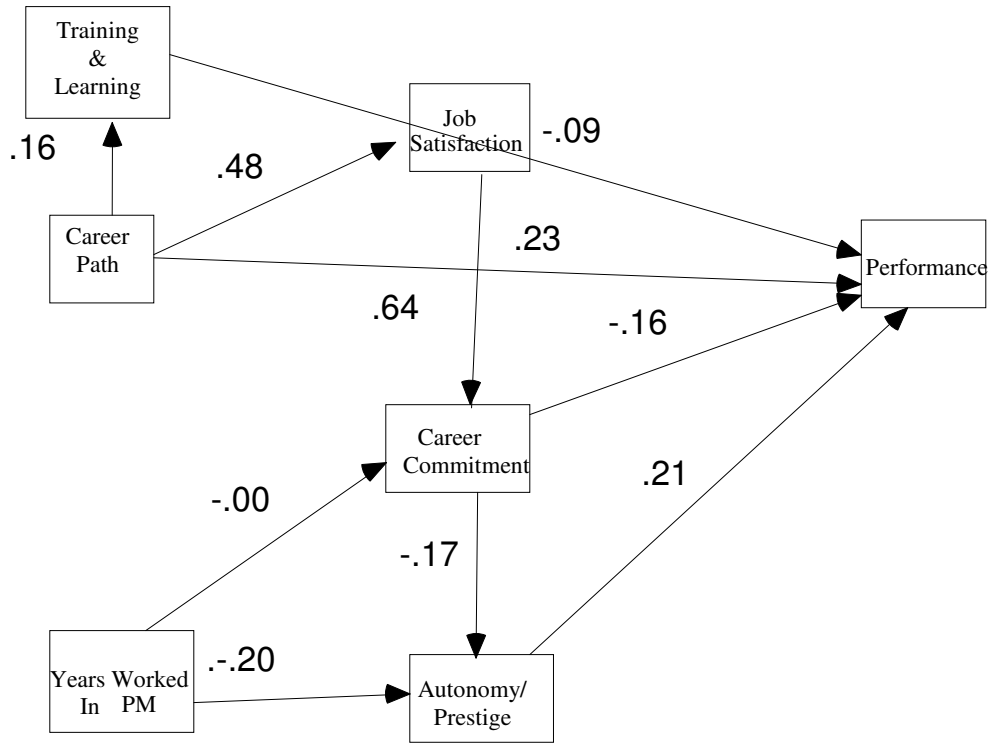
The results of the post hoc model 1 are presented in Tables 21 and 22 and discussed herein.

Table 21: Post Hoc 1 Standardized Regression Weights by Path

			Estimate
Job Satisfaction	<---	Career Path	.475
Career Commitment	<---	Job Satisfaction	.643
Career Commitment	<---	Years in Worked in PM	-.002
Training & Learning	<---	Career Path	.159
Autonomy/Prestige	<---	Years in Worked in PM	-.199
Autonomy/Prestige	<---	Career Commitment	-.173
Performance	<---	Training & Learning	-.091
Performance	<---	Career Commitment	-.163
Performance	<---	Career Path	.239
Performance	<---	Autonomy/Prestige	.210

The standardized regression weights in Table 21 are associated with the path coefficients in Post Hoc Model 1. Rounded standardized regression weights by path for Post Hoc Model 1 are presented in Figure 11.

Figure 11: Post Hoc 1 Hypothesized Model with Regression Weights Rounded from Table 21



Model fit summary. The model fit summary tables (See Tables 22 through 23) include data that supports whether the post hoc model 1 is a good-fitting model. Additionally, there is a discussion of the results of the post hoc 1 hypothesized model as compared to the saturated and independence models.

Table 22: Post Hoc 1 Hypothesized Model – CMIN Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Post Hoc 1 Hypothesized Model	17	30.922	11	.001	2.811
Saturated model	28	.000	0		
Independence model	7	399.570	21	.000	19.027

NPAR is the number of parameters in the model. According to Tabachnick and Fidell (2001), “The number of parameters is found by adding together the number of regression coefficients, variances, and covariances that are to be estimated” and “The number of data points is the number of sample variances and covariances” (, p. 691). In the post hoc model 1, the number of distant sample moments was 28 and greater than the 17 number of parameters and as such met the condition to proceed with the analysis per AMOS. In the saturated model, the number of parameters is 28 and in the independence model the number of parameters is 7.

CMIN is the chi-Square (30.922) and p (.001) indicates there was a significant chi-square associated with the hypothesized model. The significant Chi-square indicated that the fit between the reduced model and the data were significantly worse than the fit between the saturated model and the associated data (East Carolina State, 2006). CMIN/DF is the relative chi-square and indicates “how much the fit of data to model has been reduced by dropping one or more paths” (East Carolina State, 2006, p. 8). In the post hoc 1 hypothesized model, the CMIN/DF is 2.811 and exceeded the rule of thumb of 2 and indicated that too many paths had been dropped in the model.

Table 23: Post Hoc 1 Hypothesized Model – RMR and GFI Model Fit Summary

Model	RMR	GFI	AGFI	PGFI
Post Hoc 1 Hypothesized Model	.353	.987	.966	.388
Saturated model	.000	1.000		
Independence model	3.253	.778	.704	.583

The RMR (root mean square residual) is .353 and indicates an average difference between the estimated sample variances and covariances from the observed variances and covariances (Tabachnick & Fidell, 2001). The RMR for the saturated model is 0. Goodness of fit index (GFI) identifies that proportion of variance-covariance matrix accounted for by the hypothesized model (Tabachnick & Fidell, 2001). The GFI for a saturated model is 1 and the GFI for the post hoc 1 hypothesized model is .987 and exceeds .9 for a good model. The GFI for the independence model is .778. According to Tabachnick & Fidell, 2001, "The fewer the number of estimated parameters relative to the number of data points, the closer the AGFI (adjusted goodness-of-fit) to the GFI" (p. 701) and as such .966 is close to .987. Additionally, the PGFI is .388 for the post hoc 1 hypothesized model and indicates a small value and a good-fitting model. The PGFI is .583 for the independence model and indicates a large value and not a good-fitting model. Tables 24 and 25 presented herein display model fit summary information

Table 24: Post Hoc 1 Hypothesized Model – Baseline Comparisons Model Fit Summary

Model	NFI	RFI	IFI	TLI	CFI
Post Hoc 1 Hypothesized Model	.923	.852	.949	.900	.947
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The comparative fit index (CFI) is .947 for the post hoc 1 hypothesized model and assesses the fit to other models. The CFI value is less than .95 and not considered a good fit model (Hu & Bentler, 1999). The CFI for the saturated model is 1 and the CFI for the independence model is .000. Additionally, Normal fit index (NFI) evaluates the post hoc 1 hypothesized model and values greater than .90 are indicative of a good-fitting model. In the post hoc 1 model, the NFI is .923 and as such is considered a good-fitting model. The NFI for the saturated model is 1.00 and considered the best fitting model and the NFI for the independence model is .000 and considered not a good fitting model.

Table 25: Post Hoc 1 Hypothesized Model – RMSEA Model Fit Summary

Model	RMSEA	PCLOSE
Post Hoc 1 Hypothesized Model	.071	.108
Independence model	.224	.000

The root mean square error of approximation (RMSEA) estimates the lack of fit of the post hoc 1 hypothesized model as compared to the saturated model (Tabachnick & Fidell, 2001). The hypothesized model includes a RMSEA of .071 and is greater than .06 and not suggesting a good-fitting model as compared to the saturated model (Hu & Bentler, 1999). Additionally, PCLOSE is .108 and greater than .05 and suggesting a good-fitting model because PCLOSE is not significant. The independence model includes a RMSEA of .224 which is greater than .06 and does not suggest a good fitting model. PCLOSE is the p value testing the null that RMSEA is no greater than .05 for the default and independence models.

Summary of Post Hoc Model 1

The post hoc 1 model explained the autonomy/prestige path to performance. Moderately defined career professionals that work in project management for a long period of time (a) participate in career paths including training and learning, (b) participate in training and learning, (c) are satisfied and committed to their career, (d) do not feel that their jobs are autonomous or prestigious because of career maturation, and (e) continue to increase their performance as they are motivated by intrinsic and extrinsic rewards not including autonomy and prestige.

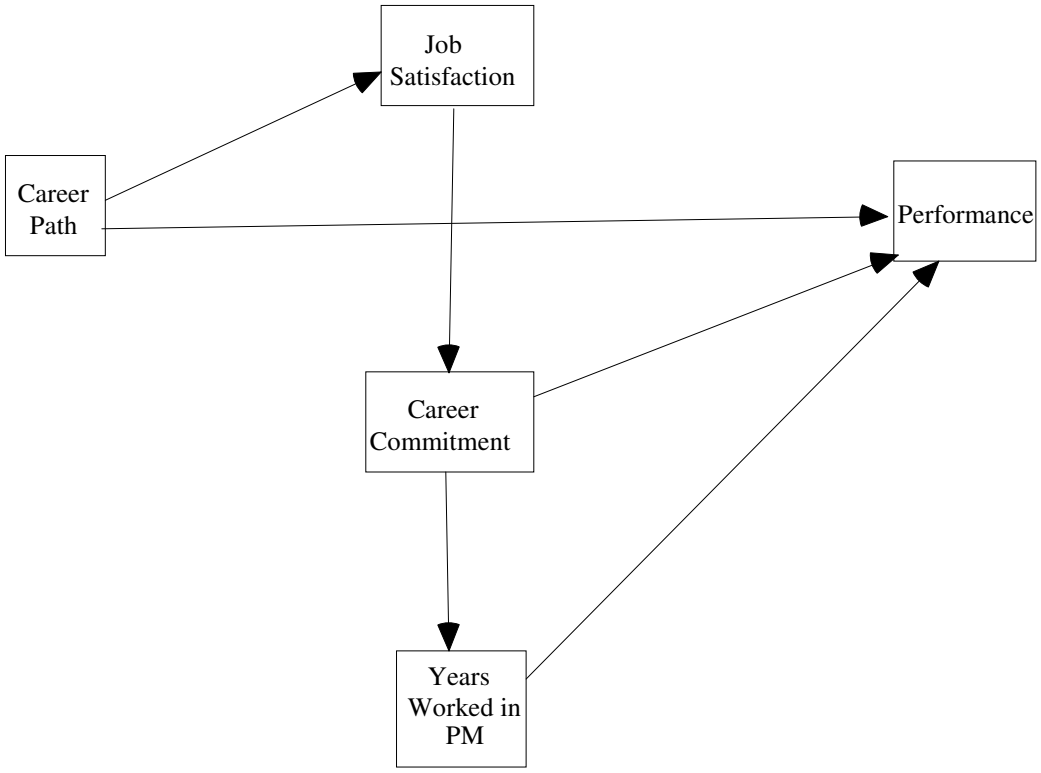
The CMIN/DF indicator for the post hoc 1 model is 2.811 and is above the rule of thumb indicating that too may paths were dropped in the model. Additionally, the CFI and RMSEA indicators suggest that the post hoc 1 model is not a good fitting model.

Post Hoc Model 2

Post hoc model 2 was developed to further examine the relationships among the

study variables. Post hoc model 2 included the following study variables: career path, job satisfaction, career commitment, years in project management, and performance. The post hoc 2 saturated model included direct paths from each variable to all the other variables as presented herein in Figure 12. Instrument reliability for the post hoc model 2 was .720.

Figure 12: Post Hoc 2 Model



Note: The hypothesized sign for all relationships is positive (+).

The results of the revised model are presented in Tables 26 and 27 and discussed herein.

Table 26: Post Hoc Model 2 Regression Weights

		Estimate	S.E.	C.R.	P	
Job Satisfaction	<--- Career Path	.408	.040	10.254	***	
Career Commitment	<--- Job Satisfaction	.823	.052	15.923	***	
Years Worked in PM	<--- Career Commitment	.038	.015	2.620	.009	/
Performance	<--- Career Commitment	-.142	.038	-3.703	***	
Performance	<--- Career Path	.180	.042	4.306	***	
Performance	<--- Years Worked in PM	-.189	.131	-1.444	.149	

*** Indicates that the path is significant at the p<.001 level.
/ Indicates that the path is significant at the p<.05 level.

In the revised model, autonomy/prestige was negatively related to career commitment (beta= -.100, p<.001) and autonomy/prestige was positively related to performance (beta=.241, p<.001). In the aforementioned post hoc 2 model, career commitment was positively related to years worked in project management (beta=-.038, p<.05) and years worked in project management to performance was not a significant path. The researcher suggested that moderately defined career professionals who work in project management for a long period of time decrease their performance due to career maturation (Smits, McLean, & Tanner, 1993). Career maturation considers the time

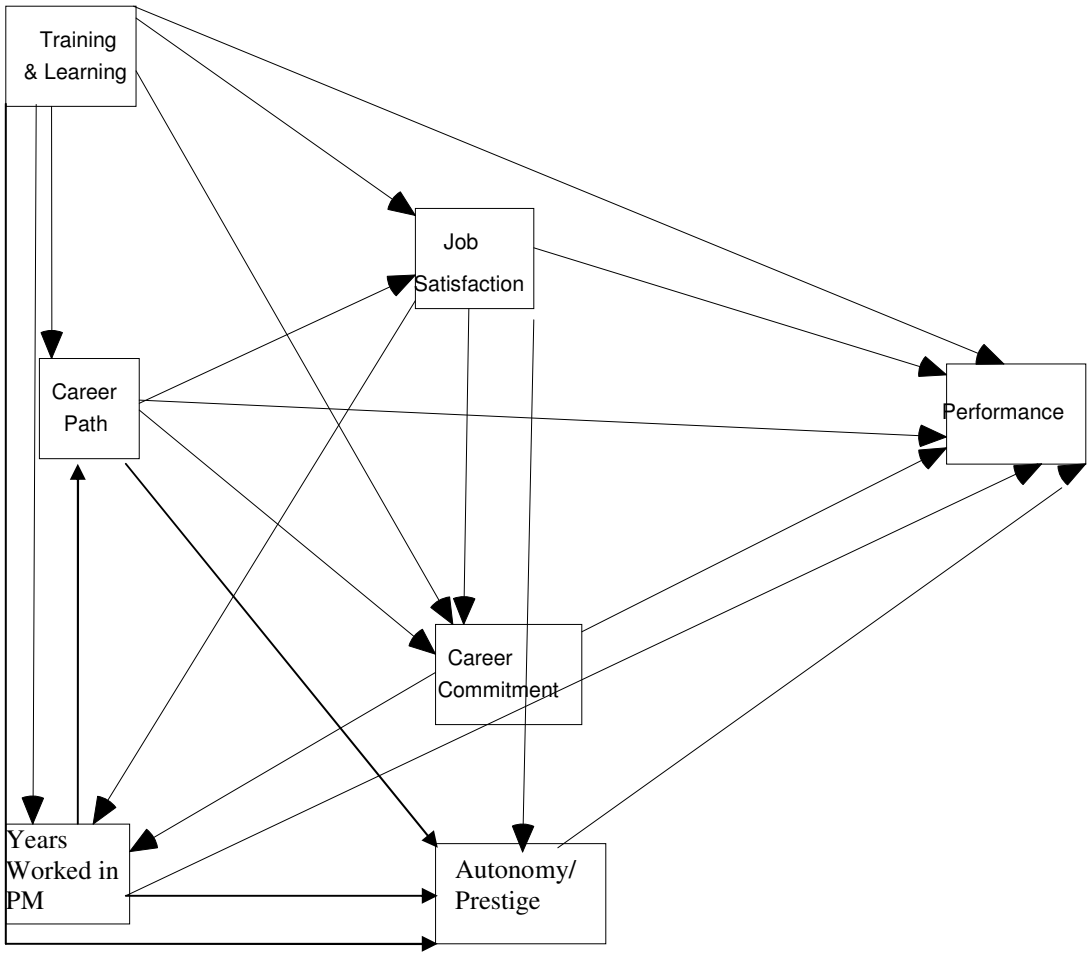
perspective of working in careers and is an important determinant of job behavior including performance (Marko & Savickas, 1998).

Table 27: Post Hoc Model 2 Standardized Regression Weights by Path

			Estimate
Job Satisfaction	<---	Career Path	.475
Career Commitment	<---	Job Satisfaction	.643
Years Worked in PM	<---	Career Commitment	.137
Performance	<---	Career Commitment	-.199
Performance	<---	Career Path	.230
Performance	<---	Years Worked in PM	-.074

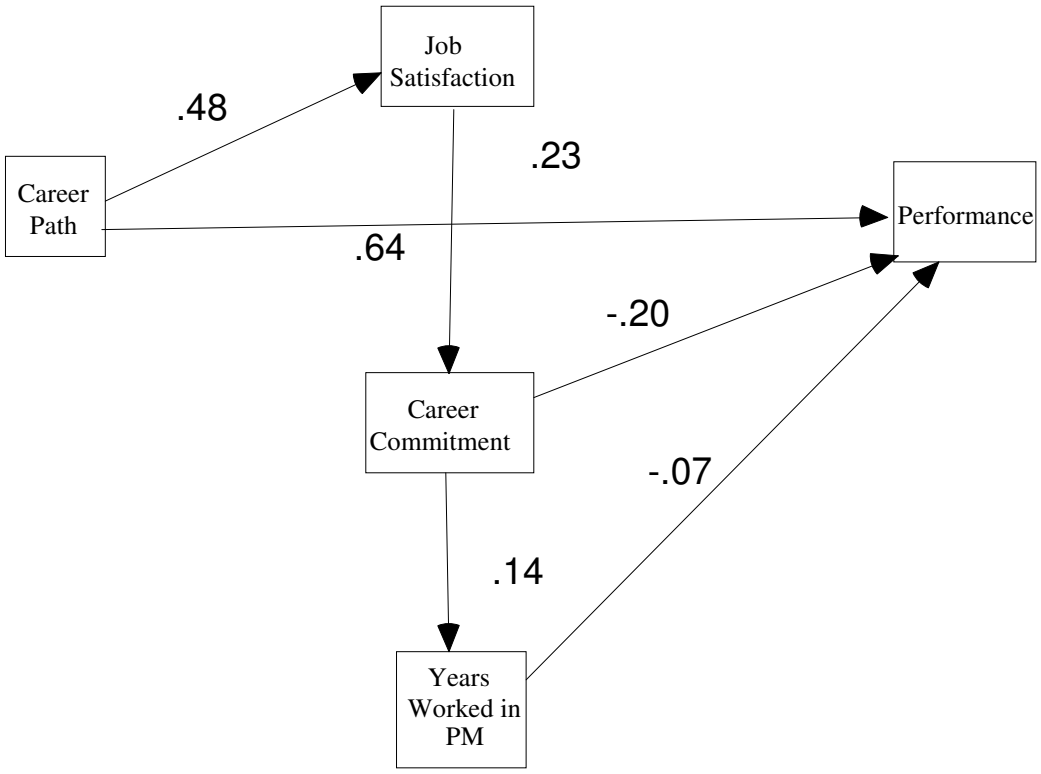
The standardized regression weights are associated with the path coefficients in Post Hoc Model 2. See Figure 13 for the Post Hoc 2 Saturated Model.

Figure 13: Post Hoc 2 Saturated Model



See Figure 14 for Post Hoc 2 with Standardized Regression Weights Rounded from Table 27.

Figure 14: Post Hoc 2 with Standardized Regression Weights Rounded from Table 27



Model fit summary. The model fit summary tables (See Tables 28 through 29) include data that supports whether the post hoc model 2 is a good-fitting model. Additionally, there is a discussion of the results of the post hoc 2 hypothesized model as compared to the saturated and independence models.

Table 28: Post Hoc 2 Hypothesized Model – CMIN Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Post Hoc 2 Hypothesized Model	11	18.801	4	.001	4.700
Saturated model	15	.000	0		
Independence model	5	336.654	10	.000	33.665

NPAR is the number of the parameters in the model. According to Tabachnick and Fidell (2001), “The number of parameters is found by adding together the number of regression coefficients, variances, and covariances that are to be estimated” and “The number of data points is the number of sample variances and covariances” (p. 691). In the hypothesized model, the number of distant sample moments was 15 and greater than the 11 number of parameters and as such met the condition to proceed with the analysis per AMOS. In the saturated model, the number of parameters is 15 and in the independence model the number of parameters is 5.

CMIN is the chi-Square (18.801) and p (.001) indicates there was a significant chi-square associated with the hypothesized mode1. The significant Chi-square indicated that the fit between the reduced model and the data were significantly worse than the fit between the saturated model and the associated data (East Carolina State, 2006). CMIN/DF is the relative chi-square and indicates “how much the fit of data to model has been reduced by dropping one or more paths” (East Carolina State, 2006, p. 8). In the

post hoc 2 hypothesized model, the CMIN/DF is 4.700 and is above the rule of thumb of 2 and indicates there are too many paths dropped in the model.

Table 29: Post Hoc 2 Hypothesized Model – RMR and GFI Model Fit Summary

Model	RMR	GFI	AGFI	PGFI
Post Hoc 2 Hypothesized Model	.486	.979	.923	.261
Saturated model	.000	1.000		
Independence model	4.351	.742	.613	.495

The RMR (root mean square residual) is .486 and indicates an average difference between the estimated sample variances and covariances from the observed variances and covariances (Tabachnick & Fidell, 2001). Goodness of fit index (GFI) identifies that proportion of variance-covariance matrix accounted for by the hypothesized model (Tabachnick & Fidell, 2001). The GFI for a saturated model is 1 and the revised model the GFI is .979 and exceeds .9 for a good model. The GFI for the independence model is .742. According to Tabachnick & Fidell, 2001, "The fewer the number of estimated parameters relative to the number of data points, the closer the AGFI (adjusted goodness-of-fit) to the GFI" (Tabachnick & Fidell, 2001, p. 701) and as such .923 is close to .979. Additionally, the PGFI is .261 for the revised model and indicates a small value and a good-fitting model. The PGFI is .495 for the independence model and

indicates a large value and not a good-fitting model. Tables 30 and 31 presented herein display model fit summary information

Table 30: Post Hoc 2 Hypothesized Model – Baseline Comparisons Model Fit Summary

Model	NFI	RFI	IFI	TLI	CFI
Post Hoc 2 Hypothesized Model	.944	.860	.956	.887	.955
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The comparative fit index (CFI) is .955 for the hypothesized model and assesses the fit to other models. CFI values greater than .95 are considered a good fit model (Hu & Bentler, 1999). The CFI for the saturated model is 1 and the CFI for the independence model is .000. Additionally, Normal fit index (NFI) evaluates the revised model and values greater than .90 are indicative of a good-fitting model. In the post hoc 2 model, the NFI is .944 and as such is considered a good-fitting model. The NFI for the saturated model is 1.00 and considered the best fitting model and the NFI for the independence model is .000 and considered not a good fitting model.

Table 31: Post Hoc 2 Hypothesized Model – RMSEA Model Fit Summary

Model	RMSEA	PCLOSE
Default model	.101	.027
Independence model	.301	.000

The root mean square error of approximation (RMSEA) estimates the lack of fit of the hypothesized model as compared to the saturated model (Tabachnick & Fidell, 2001). The hypothesized model includes a RMSEA of .101 and is greater than .06 and not suggesting a good-fitting model as compared to the saturated model (Hu & Bentler, 1999). Additionally, PCLOSE is .027 and less than .05 and not suggesting a good-fitting model because PCLOSE is significant. The independence model with no path includes a RMSEA of .301 which is greater than .06 and does not suggest a good fitting model. PCLOSE is the p value testing the null that RMSEA is no greater than .05 for the default and independence models.

Summary of Post Hoc Model 2

The post hoc 2 model examined the relationship among career path, training and learning, job satisfaction, career commitment, years worked in project management, and performance. Moderately defined career professionals (a) participate in career paths including training and learning, (b) participate in training and learning, (c) are satisfied and committed with to their careers as they continue to work in project management, and (d) decrease their performance as they work more years in project management.

The chi-square (18.801) and p (.001) indicated there was a significant chi-square associated with the hypothesized model. The significant Chi-square indicated that the fit between the reduced model and the data were significantly different than the fit between the saturated model and the associated data (East Carolina State, 2006). The CMIN/DF indicator for post hoc model 2 was 4.700 and above the rule of thumb of 2 and indicated that there were too many paths dropped in the model. Additionally, the RMSEA indicates that post hoc model 2 was not a good fitting model.

Summary of Implications to Organizations

The implications of this study to organizations suggest that they may need to consider the context of the current work environment and the impact on careers and career development planning and execution. The current career work environment for organizations is relational, emerging, non-linear, boundary-less, and uses signals and motivators to meet organizational needs including performance. Additionally, flat organizational structures have reduced vertical promotion paths of professionals and as such there is a need to provide more career development and career path opportunities (Dainty, Raiden, & Neale, 2004) in an effort to retain employees and promote productivity for organizational success. The career opportunities include career paths that support training and learning and certifications to match individual and organizational needs and provide signals and motivators about the outcomes of career opportunities to keep individuals satisfied, committed, and achieving high performance. In this study, the retention and productivity of individuals are predicated on understanding and considering the feelings, attitudes, and behaviors of moderately

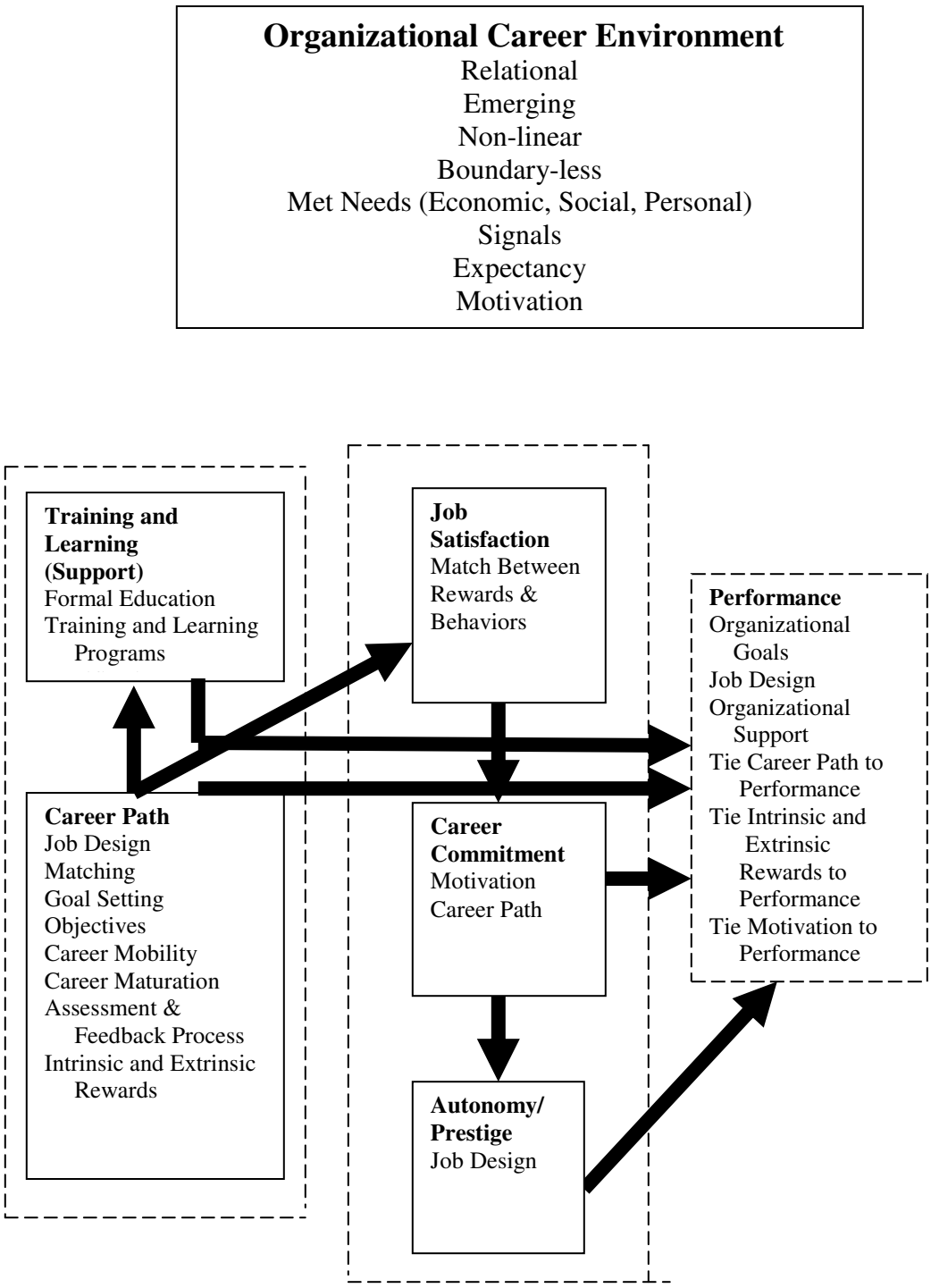
defined career professionals. For example, Mitchell and Beach (1976) reported that organizations need to provide individuals with accurate information (a) about their jobs, (b) about job opportunities, and (c) about job outcomes to improve the matching process through career progression with the end goal of retaining employees and improving organizational performance.

The implications of the revised career development model to organizations is that organizations need to work with employees to plan, design, and communicate ongoing career paths that will motivate moderately defined career professionals to participate in career development activities (including training and learning) by signaling that a particular act will be followed by an expected outcome (Vroom, 1964). Organizations need to consider the number of years that individuals work in a career because individuals in different work stages will have different attitudes, motivations, and behaviors including performance levels (Marko & Savickas, 1998; Savickas, 2001). Additionally, organizations need "to determine what behaviors contribute to performance and the extent to which these behaviors are controlled voluntarily (motivation) or controlled by ability factors" (Mitchell, 1982, p. 83) including skills and abilities. To that end, organizations may need to tie career goal attainment to job satisfaction and career commitment by offering intrinsic and extrinsic rewards for increased job performance including career mobility, prestigious job positions, autonomy in job design, and training and learning activities. Additionally, organizations may need to tie career path to performance and motivation to performance.

Organizations need to ensure the benefits of participating in career path activities including career development activities exceed the costs in an effort to continue to motivate employees to transfer training and learning and other career development activities to job performance. More specifically, organizations may offer benefits for participating in career path activities to promote career motivation including career identity, career insight, and career resilience activities (London, 1983; London & Mone, 1987).

Career identity, career insight, and career resilience are career motivation dimensions related to careers and career development and include (a) career identity activities that support professional development activities including offering skills training and learning resources and job autonomy and prestige through job and career design; (b) career insight activities including regular feedback and assessments and planning and forecasting for identification of career opportunities; and (c) career resilience building including creating environments for continuous training and learning and certification attainment and employee involvement in continuous career path planning and design (London, 1983; London & Mone, 1987). Organizations need to support career motivation dimensions in order to kept employees satisfied and committed in an effort to tie career goal attainment to job performance to focus on individual career success of moderately defined career professionals that ultimately may lead to organizational success through productivity and job retention (See Figure 15 for organizational career environment).

Figure 15: Organizational Career Environment



Summary of Implications to Individuals

The implications of this study to individuals suggest that they may need to consider the context of the current work environment and the impact on careers and career development planning and execution. The current career work environment for individuals is relational, emerging, non-linear, boundary-less, and uses signals and motivators to meet individual needs including career advancement and performance. Additionally, flat organizational structures have reduced vertical promotion paths of individuals and individuals are seeking to find more career development and career path opportunities (Dainty, Raiden, & Neale, 2004). The career opportunities include participating in career path activities including training and learning and certifications to match individual and organizational needs and look for signals and motivators that lead to satisfaction and commitment that reinforces autonomy/prestige about careers and transfers those feelings to performance.

The implications to individuals working in moderately defined career professions suggest that individuals (a) need to become more responsible in leading their careers, and (b) need to take responsibility for aligning competencies with actions in an effort to build long-term career effects (Lichtenstein & Mendenhall, 2002). Careers are no longer seen as unidirectional with clearly defined paths that include a series of career advancements opportunities that include increasing salaries, prestige, socioeconomic status, and security (Hall, 1996). Careers are currently seen as relational and include work challenges, relationships, and experiences with a focus on learning more from behaviors and attitudes in an effort to work in an environment that promotes individual

success. Individual success may include prestige/autonomy, socioeconomic status, salaries, and career mobility and is based on individual perceptions of internal and external environments.

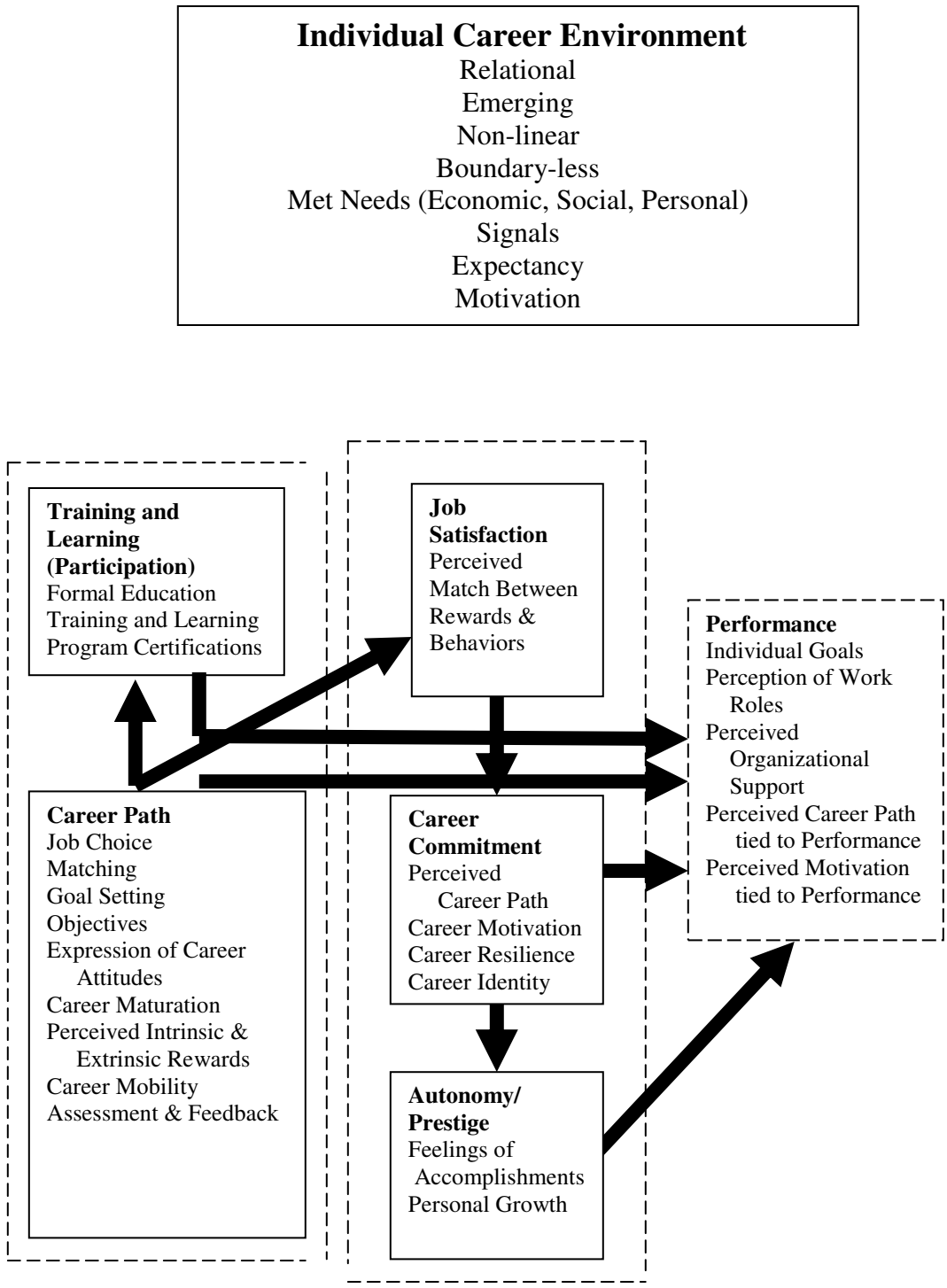
The implications of the revised career development model for individuals are that individuals need to work with organizations to plan, design, and communicate ongoing career paths that will motivate participation in career development activities (including training and learning) by identifying that the benefits of accepting organizational signals exceed the costs of participation (Spence, 1973). The participation is also predicated on the idea that the act of participation will be followed by an expected outcome (Vroom, 1964) including career goal attainment defined as increased job performance, job satisfaction, career commitment, career mobility, prestigious/autonomy in jobs, and salary increases. Individuals need to evaluate the expected outcomes of careers on an ongoing basis as professional and personal environments are emerging continuously and as such influence the definition of success and the motivation to obtain that success. For example, individuals that work in organizations that support credential programs may view credentials as a signal to obtain job success and advancement (Bartlett, 2002). Additionally, individuals in the career maturation stage of careers may need to examine or re-examine career progress and career success. For example, career maturation may predict longer continuity in the career but not necessarily greater success if defined as job performance (Savickas, Briddick, & Watkins, 2002).

Motivation is a multidimensional construct that includes individual and situational characteristics (London, 1983). The motivational factors can include career

maturation as well as career identity, career insight, and career resilience. Career identity, career insight, and career resilience influence attitudes and behaviors as individuals make career decisions and engage in career development activities. For example, (a) career identity activities include participation in career planning and career development activities, obtaining certifications, continuously engaging in skill and competency development, and identifying the benefits and costs to career attitudes and behaviors; and (b) career insight activities include engaging in career counseling that helps to define career success by matching individual goals with organizational opportunities, participating in job assessment and feedback, and seeking to identify future career opportunities through networks and organizational structures by matching individual job positions with organizational positions.

Career resilience is another career motivation dimension. Career resilience building includes participating in ongoing training and learning activities including obtaining certifications and continuous involvement in professional improvement through career paths. Individuals need to participate in career motivation activities and career goal attainment in order to maintain satisfaction and commitment in high performing environments in an effort to maintain and define career success (See Figure 16 for the individual career environment).

Figure 16: Individual Career Environment



Study Limitations

The present study includes study implications related to issues of generalizability and training and learning and performance measures. The sample was restricted in that it included only project managers from PMI chapters and project managers that worked in selected organizations. Participant chapters and organizations were non-randomly selected and thus could impact the analysis regarding the model relationships (Pedhazur & Schmelkin, 1991).

The generalizability of the sample participants is a limitation in the study in that (a) the responses included only one moderately defined career profession, and (b) the mortality of the sample participants may have impacted study participation. The mortality of the participants may have been a threat because (a) some of the project managers may have chosen not to participate in the study, (b) some of the project managers may not have received the email invitation to participate in the on-line survey, (c) potential participants had the opportunity to decline participation by not accessing the link to the online survey after receiving the email invitation, and (d) some of the chapters' email distributions may not have been updated and some of the chapter members may not have received the email invitation to participate in the study.

The measurements for training and learning and performance were limitations in the study. Training and learning was measured by one item and included information related to the number of training and learning hours participated in one year and framed within this study as perceived organizational support for training and learning. Additional items may need to have been added to the survey in order to measure the

perception of project managers as it relates to the perception of training and learning activities. Additionally, performance was measured as a self-report item variable by respondents and as such may not reflect actual job performance.

Recommendations for Future Research

Future research may include similar studies involving other moderately defined careers professions for the purpose of comparing the results of the current study with future studies. Future research may also include a qualitative component to the survey to better study the current study variable relationships and future study variable relationships. The addition of the qualitative study component would also give participants the opportunity to offer feedback and to share issues related to careers and career development within moderately defined careers.

Future research includes examining additional variables that may help to explain the career development model. Some additional variables for future research include personality characteristics, work environment, outside work environment, and additional demographic variables including job title and industry. Future research may also include a replication of the current study to examine another option for measuring performance including supervisor ratings and employee documents. The measurement for performance in this study was a self-report and could have influenced the relationship between performance and other variables in the study. Additionally, future research may include a replication study to examine another option for measuring training and learning other than reporting training hours. The measurement in the current study did not consider the perceptions of project mangers as it relates to training and learning.

Future research may also include studying the effects of the mentor-protégé relationship on career motivation and career development activities. The premise of the research would be based on the idea that career motivation can be achieved by engaging in a mentor-protégé relationship to support the alignment of work behaviors and career goals (Day & Allen, 2002). The mentor-protégé relationship can be examined to determine the influence on job satisfaction and career commitment.

Conclusion

All of the original variables in the hypothesized career development model were retained in the revised model. The direct path relationships included (a) training and learning was negatively related to performance, (b) career path was positively related to performance, and (c) autonomy/prestige was positively related to performance, and (d) career commitment was negatively related to performance. The indirect path relationships included (a) autonomy/prestige was mediated by career commitment to performance; (b) career path was mediated by training and learning to performance (c) career path was mediated by job satisfaction and career commitment to performance, and (d) career path was mediated by job satisfaction, career commitment, and autonomy/prestige to performance.

A holistic approach to careers and career development includes a blend of organizations and individuals including intrinsic and extrinsic rewards and career development activities that integrate practices that are "commonly associated with the public sphere (technical competence, autonomous action, competitiveness, and linear thinking) and those commonly associated with the private sphere (empathy, enabling,

collaboration, trust)" (Hall, 1997, p. 119). For example, career motivation factors for moderately defined career professionals include autonomy/prestige, training and learning, and career paths (S. El-Sabaa, 2001).

Organizations need to find avenues in which to bring individuals together to plan, design, and communicate career paths that send and receive signals related to career mobility, job satisfaction, and career commitment in an effort to support and motivate expected outcomes including increased job performance. Additionally, organizations need to (a) advocate ongoing performance feedback programs; (b) align rewards with performance; and (c) encourage individuals to take ownership of their careers (Werner & DeSimone, 2006).

Moderately defined career professionals that jointly work with organizations to plan, design, and communicate career paths will be more likely to take ownership of the process, effectively work to execute the career plans (El-Sabaa, 2001), retain employment in the organization, and increase performance. The key tasks for moderately defined career professionals that work in temporary, complex environments are finding a good match between job opportunities and job requirements as well as defining career success including career advancement opportunities, autonomy/prestige, increased performance, and opportunities to participate in training and learning. This implies that the moderately defined career professionals think about areas of work and job positions they would like to pursue in a new work ethic with the end goal of increasing job satisfaction and career commitment.

The current work environment, including emerging, undefined, and boundary-less career patterns, will affect increasing numbers of moderately defined career professionals and organizations. Concerned organizations have an opportunity to act in partnership with their employees, creating an environment which will maximize employees' contributions, satisfy and retain the employees, and simultaneously prepare employees for future challenges. The revised model in this study contributed to a better understanding of careers and career development activities by identifying relationships that provide a framework for individuals to align individual career goals with organizational goals in an effort to continuously evaluate career success within organizational environments. Likewise, this study supports organizations by providing signals for developing and planning careers and career development activities that retain and produce professionals that facilitate succession planning, advancement, and retention within the organization in order to achieve competitive advantages through human resource investment (Barney, 1991).

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APPENDIX A

PROJECT MANAGEMENT SURVEY

What is your gender?

□Male
□Female

What is your age?

□Under 20
□20-24
□25-29
□30-34
□35-39
□40-44
□45-49
□50-54
□55-59
□60-64
□Over 65

Select the title/position that best describes your current job.

□CEO/President
□CIO/Chief technology office
□Vice-President
□Director of project/program management
□Project team leader
□Program Manager
□Project Manager
□Other (please specify)

Select the highest level of education that you have obtained.

□No degree
□High school degree or equivalent
□ Associate degree or some college or equivalent
□ 4-year college degree or equivalent
□Masters degree or equivalent
□Doctoral degree or equivalent

Are you a PMI member?

□Yes
□ No

Do you have a project management related certification (e.g., PMP, CAPM, or other)?

□Yes
□No

How long have you been certified?

□ 0-2 years
□ 2-4 years
□ 5-9 years
□10-14 years
□15-19 years
□ 20 or more years

How many years have you worked in project management?

□ 0-2 years
□ 2-4 years
□ 5-9 years
□10-14 years
□15-19 years
□ 20 or more years

What category best reflects the industry focus of your organization?

□Aerospace
□Business and Financial services
□Consulting
□Engineering
□Government
□Information Technology
□Manufacturing
□Utility
□Training and Education
□Other (please specify)

In general, the project management profession allow for which one of the following:

□ Very little autonomy and initiative
□ Little autonomy and initiative
□ No autonomy and initiative
□ Autonomy and initiative
□ A great deal of autonomy and initiative

Approximately how many hours of PM-related training or learning activities did you participate in within the last year?

□ 0 hours
□ 1-4 hours
□ 5-8 hours
□ 2 days
□ 3-4 days
□ 5-7 days
□ 8-14 days
□ more than 2 weeks

Please select your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
My organization values project management (PM).	□	□	□	□	□	□	□
There is a career path for project/program management in my organization.	□	□	□	□	□	□	□
There is a long term project management career path within my organization.	□	□	□	□	□	□	□
My supervisor always seems to be around checking on my work.	□	□	□	□	□	□	□
My supervisor never gives me a chance to make important decisions on my own.	□	□	□	□	□	□	□
My supervisor leaves it up to me to decide how to go about doing my job.	□	□	□	□	□	□	□
I am often bored with my job.	□	□	□	□	□	□	□
I am satisfied with my present job.	□	□	□	□	□	□	□
I like my job better than the average worker does.	□	□	□	□	□	□	□

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
I like this career Too well to give it up.	□	□	□	□	□	□	□
If I could do it all over again, I would not choose to work in this profession.	□	□	□	□	□	□	□
I definitely want a career for myself in this profession.	□	□	□	□	□	□	□
This is the ideal profession for a life's work.	□	□	□	□	□	□	□

For each of the following, please rate where you stand compared to your peers.

	I'm in Upper 5%	I'm in Upper 10%	I'm in Upper 25%	I'm in Middle 50%	I'm in Lower 25%	I'm in Lower 10%	I'm in Lower 5%
My overall performance compared to my peers.	□	□	□	□	□	□	□
My ability to get along with others compared to my peers.	□	□	□	□	□	□	□
My ability to complete tasks on time compared to my peers.	□	□	□	□	□	□	□
My quality of performance (as opposed to quantity of performance) compared to my peers.	□	□	□	□	□	□	□
My actual achievement of work goals compared to my peers.	□	□	□	□	□	□	□

Thank you for participating in the survey.

Please check the box to indicate you would like a report of the findings.

□ I would like a report

If you want a report, please provide your email address.

_____

APPENDIX B

INFORMATION SHEET

PATHWAYS TO PROJECT MANAGEMENT SUCCESS

Thank you in advance for participating in the study, Pathways to Project Management Success. The survey will be available for 60 days and your participation is greatly appreciated. The purpose of the research study is to examine the ways in which organizations create career paths for successful project managers. More specifically, the research project includes questions related to career paths, job satisfaction, career commitment, and performance. The study will support the field of project management by better understanding the career development of successful project managers. The survey will take approximately 5-6 minutes to complete.

Please note the following characteristics of the study:

-your participation is voluntary;
-your identification will remain anonymous;
-the IP address of your computer will not be disclosed to us by the survey provider;
-you can elect to withdraw at any time without penalty;
-there are no positive or negative benefits from responding to this survey;
-there is no compensation;
-the survey will be used for research;
-the results will be printed and kept for 3 years in a locked file and then destroyed;
-the data obtained form the survey may be published.

If you have any questions, you can contact Lila Carden at lcarden@tamu.edu or Dr. Toby Marshall Egan at egan@tamu.edu.

This research study has been reviewed by the Institutional Review Board – Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Ms. Melissa McIlhaney, IRB Program Coordinator, Office of Research Compliance, (979)458-4067, mcilhaney@tamu.edu.

If you agree with the above information, please access the link to complete the survey.

Thank you

APPENDIX C

CHI-SQUARES AND P-VALUES - ORGANIZATIONS AND CHAPTERS

Table 32: Chi-Squares and p-values – Demographic Information

Demographic Variable	Pearson Chi-Square	p-value
Gender		
Male	406	.000 /
Female	236	.000 /
Age		
Under 20	-----	----
20-24	-----	----
25-29	21	.005 /
30-34	67	.000 /
35-39	104	.000 /
40-44	120	.000 /
45-49	117	.000 /
50-54	108	.000 /
55-59	72	.014 /
60-64	30	.002 /
Over 65	----	-----
Title/Position		
CEO/President	----	----
CIO/Chief technology office	4	.250 #
Vice President	17	.059 #
Direct of project/program management	44	.000 /
Project team leader	----	----
Program Manager	110	.000 /
Project Manager	267	.000 /
Project Manager Consultant	47	.000 /
Contractor	----	----
Other	100	.000 /
Education Level		
No degree	----	----
High school degree or equivalent	----	----
Associate degree or some college or equivalent	62	.000 /
	288	.000 /
4-year college degree or equivalent	272	.000 /
Masters degree or equivalent	11	.018 /
Doctoral degree or equivalent		
PMI Member		
Yes	562	.000 /
No	79	.000 /

Table 32: Continued

Demographic Variable	Pearson Chi-Square	p-value
PMI Certification		
Yes	448	.000 /
No	194	.000 /
How long certified		
Less than 1 year	194	.000 /
2-4 years	90	.000 /
5-9 years	276	.000 /
10-14 years	70	.014 /
15-19 years	13	.077 #
20 or more years	----	-----
Years worked in PM		
0-2 years	32	.000 /
2-4 years	63	.000 /
5-9 years	196	.000 /
10-14 years	170	.000 /
15-19 years	86	.000 /
20 or more years	94	.000 /
Industry		
Aerospace	-----	----
Business and financial services	52	.019 /
Consulting	----	.000 /
Engineering	62	----
Government	26	.000 /
Information technology	173	.000 /
Manufacturing	42	.000 /
Utility	34	.000 /
Training and education	19	.000 /
Other	169	.000 /

------ - Indicates no cross tab value.
- Indicates significant chi-square at p<.05 level.
/ - Indicates non-significant chi-square at the p<.05 level.

Table 33: Chi-squares and p-values – Study Variable Information

Autonomy/Prestige Variable	Pearson Chi-Square	p-value
My supervisor always seems to be around checking on my work.		
Strongly disagree	13	.077 #
Disagree	25	.003 /
Slightly disagree	31	.000 /
Neither agree or disagree	24	.042 /
Slightly Agree	108	.034 /
Agree	238	.048 /
Strongly Agree	202	.077 #
My supervisor never gives me a chance to make important decisions on my own.		
Strongly disagree	46	.000 /
Disagree	72	.036 /
Slightly disagree	52	.000 /
Neither agree or disagree	48	.000 /
Slightly Agree	108	.000 /
Agree	182	.000 /
Strongly Agree	132	.000 /
My supervisor leaves it up to me to decide how to go about doing my job.		
Strongly disagree	60	.000 /
Disagree	91	.000 /
Slightly disagree	70	.036 /
Neither agree or disagree	63	.036 /
Slightly Agree	90	.005 /
Agree	151	.000 /
Strongly Agree	1122	.000 /

Table 33: Continued

Career Path Variable	Pearson Chi-Square	p-value
My organization values project management (PM).		
Strongly disagree	176	.000 /
Disagree	260	.000 /
Slightly disagree	70	.000 /
Neither agree or disagree	62	.000 /
Slightly Agree	40	.000 /
Agree	20	.000 /
Strongly Agree	----	.005 /
There is a career path for project/program management in my organization.		
Strongly disagree	211	000 /
Disagree	267	.000 /
Slightly disagree	61	.000 /
Neither agree or disagree	34	.000 /
Slightly Agree	29	.034 /
Agree	21	.048 /
Strongly Agree	13	.077 #
There is a long term project management career path within my organization.		
Strongly disagree	19	.000 /
Disagree	25	.000 /
Slightly disagree	28	.000 /
Neither agree or disagree	28	.000 /
Slightly Agree	80	.000 /
Agree	304	.000 /
Strongly Agree	152	.000 /

Table 33: Continued

Training and Learning Variable	Pearson Chi-Square	p-value
Approximately how many hours of PM-related training or learning activities did you participate in within the last year?		
0 hours	----	.006 /
1-4 hours	----	.000 /
5-8 hours	54	.000 /
2 days	76	.000 /
3-4 days	135	.000 /
507 days	152	.000 /
8-14 days	79	.000 /
More than 2 weeks	94	.000 /

Table 33: Continued

Job Satisfaction Variable	Pearson Chi-Square	p-value
I am often bored with my job.		
Strongly disagree	18	.001 /
Disagree	40	.025 /
Slightly disagree	52	.000 /
Neither agree or disagree	63	.000 /
Slightly Agree	105	.000 /
Agree	272	.000 /
Strongly Agree	86	.000 /
I am satisfied with my present job.		
Strongly disagree	7	.143 #
Disagree	----	----
Slightly disagree	29	.000 /
Neither agree or disagree	111	.000 /
Slightly Agree	121	.000 /
Agree	266	.000 /
Strongly Agree	81	.000 /
I find real enjoyment in my work.		
Strongly disagree	6	.167 #
Disagree	26	.038 /
Slightly disagree	----	.000 /
Neither agree or disagree	63	.000 /
Slightly Agree	146	.000 /
Agree	281	.000 /
Strongly Agree	76	.000 /

Table 33: Continued

Career Commitment Variable	Pearson Chi-Square	p-value
I like this career too well to give it up.		
Strongly disagree	15	.002 /
Disagree	52	.000 /
Slightly disagree	66	.000 /
Neither agree or disagree	100	.000 /
Slightly Agree	121	.000 /
Agree	198	.000 /
Strongly Agree	84	.000 /
If I could go into a different profession which paid the same, I would probably take it.		
	66	.000 /
Strongly disagree	185	.000 /
Disagree	96	.000 /
Slightly disagree	137	.000 /
Neither agree or disagree	70	.000 /
Slightly Agree	54	.000 /
Agree	28	.033 /
Strongly Agree		
If I could do it all over again, I would not choose to work in this profession.		
Strongly disagree	123	.000 /
Disagree	262	.000 /
Slightly disagree	90	.000 /
Neither agree or disagree	80	.000 /
Slightly Agree	34	.000 /
Agree	30	.000 /
Strongly Agree	17	.003 /

Table 33: Continued

Career Commitment Variable	Pearson Chi-Square	p-value
I definitely want a career for myself in this profession.		
Strongly disagree	6	.000 /
Disagree	16	.000 /
Slightly disagree	32	.000 /
Neither agree or disagree	124	.000 /
Slightly Agree	103	.000 /
Agree	250	.000 /
Strongly Agree	105	.059 #
This is the ideal profession for a life's work.		
	13	.013 /
Strongly disagree	40	.000 /
Disagree	64	.000 /
Slightly disagree	206	.000 /
Neither agree or disagree	108	.000 /
Slightly Agree	160	.000 /
Agree	45	.000 /
Strongly Agree		

Table 33: Continued

Performance	Pearson Chi-Square	p-value
My overall performance compared to my peers.		
I'm in upper 5%	----	----
I'm in upper 10%	201	.000 /
I'm in upper 25%	230	.000 /
I'm in middle 50%	155	.000 /
I'm in lower 25%	49	.000 /
I'm in lower 10%	----	----- /
I'm in lower .05	----	-----
My ability to get along with other compared to my peers.		
I'm in upper 5%	188	.000 /
I'm in upper 10%	257	.000 /
I'm in upper 25%	156	.000 /
I'm in middle 50%	34	.000 /
I'm in lover 25%	----	----
I'm in lower 10%	----	----
I'm in lower .05	-----	----
My ability to complete tasks on time compared to my peers.		
I'm in upper 5%	179	.000 /
I'm in upper 10%	254	.000 /
I'm in upper 25%	146	.000 /
I'm in middle 50%	54	.000 /
I'm in lower 25%	----	----
I'm in lower 10%	----	----
I'm in lower .05	----	----

Table 33: Continued

Performance	Pearson Chi – Square	p-value
My quality of performance (as opposed to quantity of performance) compared to my peers. I'm in upper 5% I'm in upper 10% I'm in upper 25% I'm in middle 50% I'm in the lower 25% I'm in lower 10% I'm in lower .05	 188 257 156 34 ----- ----- -----	 .000 / .000 / .000 / .000 / ----- ----- -----
My actual achievement of work goals compared to my peers. I'm in upper 5% I'm in upper 10% I'm in upper 25% I'm in middle 50% I'm in the lower 25% I'm in lower 10% I'm in lower .05	 179 254 146 54 ----- ----- -----	 .000 / .000 / .000 / .000 / ----- ----- -----

------ - Indicates no cross tab value.
- Indicates significant chi-square at p<.05 level.
/ - Indicates non-significant chi-square at the p<.05 level.

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