AN EXPLORATORY FACTOR ANALYSIS EXAMINING TRAITS, PERCEIVED FIT
AND JOB SATISFACTION IN EMPLOYED COLLEGE GRADUATES

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by

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In Partial Fulfillment of the Requirements for

The Degree

Doctor of Education, Ed.D. in Leadership Studies

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This study is an analysis of 24 variables associated with employee attitudes, behaviors and outcomes. A total of 140 college graduates participated in the study. Utilizing exploratory factor analysis (EFA) techniques, the research examined relationships among the following variables: perceived fit, job satisfaction, cognitive ability, vocational personality, academic achievement and gender. Components were extracted using Principal Components Analysis (PCA) and orthogonally rotated resulting in three component solution. A simple, interpretable structure was revealed, demonstrating a strong but differentially related association among three forms of perceived fit and facet level job satisfaction. The person-trait variables in the study were minimally related to perceived fit and satisfaction.
ACKNOWLEDGMENTS

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CHAPTER I

Introduction

The study of person-environment (P-E) psychology examines the interactions between the two domains. Researchers in industrial/organizational (I/O) psychology, organizational behavior (OB) and vocational psychology focus much of their study attempting to understand these interactive dynamics in the context of employment relationships. The person is representative of individual traits, needs, abilities, interests, beliefs and values the employee brings to the job. The environment is representative of the organization, the tasks, requirements, objectives, norms, culture and rewards associated with the workplace. Decades ago, Lewin (1951) postulated that human behavior is a function of the interaction between person characteristics and the characteristics of the environment; in essence, establishing the field of person-environment (P-E) psychology.

The abundance of theory-making and research in the field of P-E psychology has perhaps generated more questions than answers. The interactional and transformational nature of the P-E relationship adds to the complexity of the research. For the most part, researchers have attempted to develop and define constructs, establish measurement methods and then examine the relationship between two or more of the constructs. The goal has been to examine the nature of “fit” as it relates the individuals working in organizations.

Researchers have long pursued this enduring notion of “fit.” A good match or fit of a person with the organization “is viewed as expressing itself in high performance,
satisfaction and little stress in the system, whereas ‘lack of fit’ is viewed as resulting in decreased performance, dissatisfaction and stress in the system” (Pervin, 1968, p. 56). In general, good fit is viewed as having positive outcomes, while poor fit results in negative outcomes.

Schneider (1987, 2001) conceived an alternative perspective on fit proposing an attraction-selection-attrition (ASA) model. ASA theory presents potential negative outcomes that may result from organizational homogenization. Schneider’s ASA theory predicts that poor fit is likely to lead to turnover and that over time the organization develops a homogeneous personality through the selection of individuals who are attracted to the organization and stay. The model postulates that although fit and continuity lead to higher levels of satisfaction, communication, cooperativeness and fewer interpersonal conflicts, strong homogeneity can result in negative consequences such as inflexibility, an inability to adapt and change leading to organizational ineffectiveness.

Cable and DeRue (2002) distinguished three different types of fit. Person-organization (P-O) fit generally refers to the congruence of an individual’s personal values compared to an organization’s culture. Person-job (P-J) fit focuses on the congruence of the individual’s employment skills and the demands of the job. Needs-supplies (N-S) fit refers to the congruence between an individual’s needs and rewards they receive from the job.

Relative to P-J fit, Edwards (1991) defined two distinct conceptualizations. In addition to N-S fit, Edwards distinguishes a second form of P-J fit: demands-ability (D-A) fit. D-A fit refers to the knowledge, skills, and abilities required by the job.
Kristof-Brown, Zimmerman and Johnson (2005) distinguished four types of fit in a meta-analysis examining the interrelationships between the various types of fit. The research supported the uniqueness of four fit constructs: person-job, person-organization, person-group and person-supervisor. The researchers identified a fifth kind of fit; specifically, person-vocation fit, but did not include the construct in the study concluding it is closely related to person-job fit.

P-E fit can also be characterized as supplemental or complementary (Edward, 1991, 2007; Kristof, 1996; Muchinsky & Monahan, 1987). Supplementary fit occurs when the person “supplements, embellishes or possesses characteristics which are similar to other individuals” in the organization (Muchinsky & Monahan 1987, p. 269). Supplemental fit results when individuals perceive they are like others in the organization. According to Edwards (2007), supplementary fit can be characterized as interpersonal similarity. Individuals perceive supplementary fit with an organization when they support the values and activities of the organization (Muchinsky & Monahan, 1987).

Complementary fit occurs when a “weakness or need of the environment is offset by the strength of the individual, and vice versa” (Muchinsky & Monahan, 1987, p.271). Edwards and Shipp (2007, p.212) summarized the concept of complementary fit as the “extent to which the person and the environment provide what the other requires.”

The differences between complementary and supplemental fit are distinct in their relationships to the environment. Supplemental fit conceives the environment as being made up of the individuals in the organizations and thus best represents the concept of P-O fit. Complementary fit considers the individual and the environment as separate
entities. The organization has requirements and demands. The individual has physical and psychological needs. The notion of complementary fit is best conceived as P-J fit and more specifically demands-abilities (D-A) fit and needs-supplies fit (N-S).

These relationships are illustrated below:

Figure 1. Forms of P-E fit.

\[
P-E \quad \text{Supplementary Fit} = P-O \text{ Fit (values)}
\]

\[
P-E \quad \text{Complementary Fit} = P-J \text{ Fit} \quad \text{Needs-supplies}
\]

\[
P-E \quad \text{Demands-abilities}
\]

The majority of fit research has utilized various individual indices such as satisfaction, commitment and citizenship behaviors as outcomes of fit. Much less research has focused on work performance and indicators of organizational effectiveness (Schneider, Kristof-Brown, Goldstein & Smith, 1997). Walsh, Craik and Price (2000) proposed greater integration between the fields of personality, industrial and social psychology.

In summary, “Research on fit continues to be one of the most eclectic domains in management” (Kristof-Brown, Zimmerman & Johnson, 2005, p. 283). Following a review of nearly a century of P-E fit research, Edwards (2008) concluded that the field falls short of meeting the criteria necessary of the development of a strong theory.

Research Statement

This research examined a number of variables thought to be associated with components of perceived P-O fit, perceived P-J fit, and job satisfaction. Other variables included: cognitive ability, achievement, vocational personality and gender.
Assumptions of the Study

There were three assumptions of this study. First, the researcher assumed that participants in the study were a representative sample of the study population. Second, the various instruments used had sufficient reliability and validity. Third, variable variances were randomly dispersed.

General Research Hypothesis

It is believed that there are large sets of inter-correlated variables that describe the internal conceptual structure of P-J fit, P-O fit, and job satisfaction for the college graduate. It is further believed that cognitive ability, academic achievement, vocational personality and gender are related to the three constructs.

Significance of the Study

Little research has been done to compare different operationalizations of fit (Judge, 2007). Lauver and Kristoff-Brown (2001) called for more research to determine how specific types of fit are related to each other and to important outcomes. Kristof-Brown, Jansen and Colbert (2002) suggested that the trend of researchers to isolate fit with single aspects of the organization has “unintentionally compartmentalized our thinking” (p.986). There are few examples of research that examines both P-O and P-J fit in the same study to verify whether employee perceptions of P-O and P-J fit are distinct and have unique relationships with attitudes and behaviors.

A multidimensional model was proposed by Jansen and Kristof-Brown (2006). This approach has emerged as researchers increasingly began to recognize various forms
of fit and the complexity of the interactions with other variables. Jansen and Kristof-Brown’s integrative model incorporated five dimensions of fit: person-organization, person-group, person-vocation, person-job and person-people. The researchers concluded that these dimensions of fit are differentially salient at different points in the employment process: pre-recruitment, recruitment/job search, selection/job choice, socialization and long term tenure. Jansen and Kristof-Brown urged researchers to explore these new paths.

It is apparent that there is little consensus about the comprehensive and interactive nature of P-O fit, P-J fit and job satisfaction. Also, absent is research that examines individual cognitive ability, vocational personality, academic achievement and gender in relation to fit and job satisfaction.

This study provided a unique contribution to current fit research. The study included a previously unstudied data set. It combined participant perceptions of both perceived P-O fit and P-J fit as well as measures of cognitive ability, vocational personality and achievement. Additionally, researchers have shown that job satisfaction is comprised of a number of specific facets that are differentially weighted by individuals for various reasons. This study demonstrated how these facets are related to the variables above. Gender was also included as a study variable to determine if results vary depending on the gender of the study participants.

An exploratory factor analysis to examine these variables has the potential to reveal new, more conceptually valid factors relative to fit and job satisfaction. Thus, this study answered the call by many researchers for the development of stronger P-E theories.
Delimitations

The study population included 536 individuals who graduated from a private, comprehensive university located in the Midwest. Over 6000 students were enrolled at the university. The study population was made up of individuals who graduated with a bachelor’s degree during the years 2000-2003. Five different bachelor’s degrees were granted by the university: Bachelor of Education (BED), Bachelor of Science (BS), Bachelor of Business Administration (BBA), Bachelor of Arts (BA) and a Bachelor of Social Work degree (BSW). The population included individuals who had been in the job market 7-10 years; thus they were in the early stages of their careers. This study was delimited by those who self-selected to participate. Only individuals who were employed full time were included in the study. To qualify for inclusion in the study, all participants needed to have the following information on record and available to the researcher: ACT score, GPA at graduation, ACT vocational interest profile, bachelor’s degree earned, degree major and gender designation.

Definitions and Operational Terms

Achievement: represented by the participant’s GPA at graduation from college.

Cognitive ability: the participant’s ACT score was used to establish a standard measure of cognitive ability.

Vocational personality: defined by the participant’s primary area of vocational interest as indicated by ACT’s Interest Inventory completed when the participant was in high school.

Gender: self-identification as reported on academic records as male or female.
Job satisfaction: operationally defined by The Job Satisfaction Index (JSI).

Perceived fit: operationally defined by the Perceived Fit Scale (PFS).

Summary

Chapter I addressed the problem and primary concern of this study. In essence, this research examined a number of variables and components of fit and job satisfaction that are thought to be inter-related. The assumptions of this study were reviewed, and the general research hypothesis was identified. Significance and delimitations of the study were discussed.
CHAPTER II

Review of Literature

An extensive amount of literature exists under the general heading of P-E theory and research. Collectively the theories have generated over 13,000 citations, averaging almost 900 citations per theory (Edwards, 2008). However, three long standing, broad areas of research are prevalent in the literature: person-job fit; person-organization fit; and job-satisfaction.

Person-Job Fit

Parsons (1909) was among the first to theorize that an individual’s interests and aptitudes were key factors in the process of vocational choice and job satisfaction. The assessment of individual traits, interests and abilities with the intent of appropriately matching workers to jobs was prevalent in the U.S. up through the 1950’s (e.g. Ginzberg, Ginsburg, Axelrad and Herma, 1951; Hollingsworth, 1916; Roe, 1956; Strong, 1943; Super, 1957). The research done during this period combined scientific management with humanistic psychology. Super (1949, p.1) stated, “Each individual has certain abilities, interest, personality traits and other characteristics which, if he knows what they are and how they may be turned into assets, will make him a happier man, a more affective worker, and a more useful citizen

Holland (1959, 1985, 1997) advanced the study of P-E psychology by developing vocational typologies, not only describing person differences but also defining and describing various work environments. Many researchers have over emphasized either
the person or the environmental component of this interaction (Chatman, 1989).

Schneider, Smith & Goldstein (2000, p.81) commented, “With the exception of Holland’s theory of career environments, other perspectives on, and approaches to, the measurement of environments place the environment ‘out there’ and separate from the attributes of people in the environment.

Holland’s (1997) theory of vocational personalities and work environments contains four assumptions:

1. Most persons can be categorized as one of six personality types: realistic, investigative, artistic, social, enterprising, or conventional (RIASEC).
2. There are six model environments: realistic, investigative, artistic, social, and conventional.
3. People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.
4. Behavior is determined by an interaction between personality and environment.

Holland sought to distinguish what personal and environmental characteristics lead to job satisfaction and achievement and what characteristics lead to dissatisfaction and lack of achievement and accomplishment. Murray as cited in Holland (1997) formed the foundation for Holland’s vocational personality types and environment models.

Murray (1938) believed that human action is determined by the pursuit of needs. More specifically, human motivation is the result of the desire to satisfy tension-provoking drives (needs). Murray distinguished between primary biological needs (viscerogenic) and psychological needs (psychogenic). A taxonomy of 27 distinct needs was developed
by Murray. The term press is used by Murray to refer to the environmental factors that facilitate or obstruct a person’s pursuit of a need. A press stimulates a person to act.

The six personality types identified by Holland were briefly described by Gottfredson and Holland (1996). Table 1 provides a summary of Holland’s personality typologies.

Table 1

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Realistic</th>
<th>Investigative</th>
<th>Artistic</th>
<th>Social</th>
<th>Enterprising</th>
<th>Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferences for activities &amp; occupations</td>
<td>Manipulation of machines, tools and things</td>
<td>Exploration, understanding and prediction or control of natural and social phenomena</td>
<td>Literary, musical, or artistic activities</td>
<td>Helping, teaching, treating, counseling, or serving others through personal interaction</td>
<td>Persuading, manipulating, or directing others</td>
<td>Establishing or maintaining orderly routines, application of standards</td>
</tr>
<tr>
<td>Values</td>
<td>Material rewards for tangible accomplishments</td>
<td>Development or acquisition of knowledge</td>
<td>Creative expression of ideas, emotions or sentiments</td>
<td>Fostering the welfare of others, social service</td>
<td>Material accomplishment and social status</td>
<td>Material or financial accomplishment and power in social, business, or political arenas</td>
</tr>
<tr>
<td>Sees self as</td>
<td>Practical, conservative, and having manual and mechanical skills—lacking social skills</td>
<td>Analytical, intelligent, skeptical and having academic talent—lacking interpersonal skills</td>
<td>Open to experience, innovative, intellectual—lacking clerical or office skills</td>
<td>Empathic, patient, and having interpersonal skills—lacking mechanical ability</td>
<td>Having sales and persuasive ability—lacking scientific ability</td>
<td>Having technical skills in business or production—lacking artistic competencies</td>
</tr>
<tr>
<td>Others sees as</td>
<td>Normal, frank</td>
<td>Asocial, intellectual</td>
<td>Unconventional, disorderly, creative</td>
<td>Nurturing, agreeable, extroverted</td>
<td>Energetic, gregarious</td>
<td>Careful, conforming</td>
</tr>
<tr>
<td>Avoids</td>
<td>Interaction with people</td>
<td>Persuasion or sales activities</td>
<td>Routines and conformity to established rules</td>
<td>Mechanical and technical activity</td>
<td>Scientific, intellectual, or abstruse topics</td>
<td>Ambiguous or unstructured undertakings</td>
</tr>
</tbody>
</table>

The Theory of Work Adjustment (Dawis & Lofquist, 1984) postulated a dynamic and continuous interaction between the individual and the work environment. When the work environment is insufficient to fulfill individual needs, the result is reduced satisfaction on the part of the individual. According to Dawis and Lofquist (1984, p. 9)
“The environment and the individual must continue to meet each other’s requirements for the interaction to be maintained.

In a longitudinal study by Saks and Ashforth (1997) perceptions of P-J fit were positively related to job satisfaction, organizational commitment and organizational identification. Perceptions of P-J fit were negatively related to intentions to quit and stress symptoms.

Empirical research by Caldwell and O’Reilly III (1990) showed that P-J fit, defined as the overall match between individual’s strengths and weaknesses relative to job requirements, was positively related to job performance and work attitudes. The investigations were conducted across a wide variety of jobs and organization types.

Person-Organization Fit

Kristof (1996) conceived P-O fit as the compatibility between individuals and organizations when: (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both. Researchers have examined P-O congruence on the basis of values, goals, personality traits, and demographic characteristics. P-O values fit is defined as “the congruence between norms and values of the organization and the values of persons” (Chatman, 1989, p.339). Since Chatman, the majority of studies conducted on P-O fit have used value congruence as the exclusive operationalization of the concept (Kristof-Brown & Jansen, 2007). The construct rests on the premise that organizational and individual values are fundamental and enduring and can be identified and characterized. It is postulated that positive outcomes result when the characteristics of the individual and the organization are similar, e.g. commitment,
continuance, citizenship behaviors, organizational identification, job satisfaction. Conversely, negative outcomes result when there is a mismatch between the values of the individual and the norms and culture of the organization.

O’Reilly, Chatman and Caldwell (1991) demonstrated the importance of congruence between an individual’s values and the organization’s culture. The researchers compared the relative importance of the 54 values as assigned by the study participants to the relative importance of the organization’s values as assigned by key informants with broad experience in the respective organization. The results indicated the existence of distinct individual preferences for organizational cultures and that organizational cultures are interpretable. Further the results showed that P-O fit is a significant predictor of normative commitment, job satisfaction and intent to leave, independent of age, gender and tenure.

A meta-analysis conducted by Arthur, Bell, Villado and Doverspike (2006) indicated that values congruence was strongly related to the work attitudes (.48) and turnover (.38) calculated utilizing sample weighted mean correlations. The researchers concluded that P-O fit is not a good predictor of job performance. Only very weak relationships were found between P-O fit and performance. The sample weighted mean correlation for task performance was .08. The correlation for contextual performance was .17.

In a study by Westerman and Cyr (2004) three measures of fit were used: values congruence, work environment congruence (needs-supplies fit) and personality congruence. Values congruence and work environment congruence were both related to job satisfaction and organizational commitment, but personality congruence was not. All
three fit measures were related to employees’ intent to remain with their employer.

Perceived Verses Objective Measures of Fit

Fit can also be distinguished between objective and perceived measures. Objective fit involves gathering separate descriptive information about the person and the organization, then assessing the level of congruence by comparing the two. Perceived fit is determined by asking the person if they believe they are a fit within the organization and its members (Resick, Baltes & Shantz, 2007). Kristof-Brown, Zimmerman and Johnson (2005) defined perceived fit as when an individual uses cognitive processes to assess the compatibility of the fit between P and E, applying their own weighting of the various aspects. Objective fit, according to the researchers is determined indirectly by comparing P-E variables from sources independent of the individual, for example, supervisors, peers or other credible sources and records.

Perceived measures of P-O fit had higher levels of correlation than objective measures in a meta-analysis done by Verquer, Beehr and Wagner (2003). The study compared perceived P-O fit to three attitudinal variables and found the following mean correlations: job satisfaction (.30), organizational commitment (.34), and intent to turnover (-.20). Respective correlations utilizing objective measures of P-O fit were: .20, .21, and -.13. A meta-analysis by Hoffman and Woehr (2006) found smaller differences between perceived and objective measures in correlations of P-O fit and three behavioral outcomes, i.e. turnover, task performance and organizational citizenship behaviors (OCB). Using objective measures to determine P-O fit, the mean correlations were:
turnover (.27), task performance (.28) and OCB (.26). Respective correlations using perceived measures of P-O fit were: .35, .25 and .21.

**Job Satisfaction**

The job satisfaction construct is made up of two components: one that is cognitive, the perception that one’s needs are fulfilled; and one that is affective which is the feeling that accompanies cognition (Dawis, 2004). According to Locke (1976), job satisfaction is an emotional response culminating from a process of introspection. Locke (1976, p. 1300) stated, “Job satisfaction may be defined (for the present) as a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences.”

According to Cranny, Smith and Stone (1992) most researchers agree that the measure of job satisfaction necessitates that the construct be broken into facets or components that are tied to one or more aspects of the work environment and the job.

A meta-analysis conducted on 312 studies by Judge, Thoresen, Bono and Patton (2001) resulted in an estimated .30 mean correlation between overall job satisfaction and performance. They cited a stronger correlation of .33 utilizing just the data from 103 top-tier journals included in the meta-analysis. Judge, et al. criticized the frequently cited meta-analysis done by Iaffaldano and Muchinsky (1985) who reported a .17 correlation between job satisfaction and performance. According to Judge, et al., Iaffaldano and Muchinsky analyzed the satisfaction data at the single facet level and nearly all the correlations in the overall estimate of .17 involved averaging correlations between a single satisfaction facet and performance. Judge went on to later declare, “After a long period of skepticism, meta-analytic research demonstrated there is a significant
correlation between job satisfaction and performance at work” (Judge & Kammeyer, 2011, p.31).

Organ and Ryan (1995) conducted a meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior (OCB). The 55 studies included in the review indicated a .38 uncorrected, sample weighted correlation between job satisfaction and an aggregate composite measure of OCB dimensions; altruism, generalized compliance, courtesy, sportsmanship and civic virtue.

Researchers have also explored whether job satisfaction is in part dispositional. Judge, Heller and Mount (2002) examined the link between traits from the 5-factor model of personality (Big Five) and overall job satisfaction. The estimated true score correlations with job satisfaction were (.29) for Neuroticism, (.25) for Extraversion, (.02) for Openness to Experience, (.17) for Agreeableness and (.26) for Conscientiousness.

Differences in affectivity may also influence an individual’s level of job satisfaction. Positive affectivity (PA) is a trait or disposition that leads to positive emotions or moods. Individuals who have high positive affectivity have a propensity to experience positive states such as enthusiasm, confidence and cheerfulness. Negative affectivity (NA) reflects individual tendencies to experience aversive emotional states such as fear, hostility and anger (Ilies & Judge, 2003). Positive and negative affectivity are generally assumed to be distinctive individual traits and as such are included in the Big Five personality models (George, 1996). Research by Connelly and Viswesvarn (2000), Ilies and Judge (2003) and Bowling, Hendricks and Wagner (2008) demonstrated that PA was positively related to job satisfaction. Furthermore, the research by Bowling
et al., indicated that PA and NA had differential relationships to job satisfaction at the facet level.

A longitudinal study conducted by Staw, Bell and Clausen (1986) examined the relationship between affective disposition and job attitudes. Measures of affective disposition from early childhood predicted facet job satisfaction and career satisfaction over span of almost fifty years. Previously, Staw and Ross (1985) using National Longitude Survey data found significant consistency in job satisfaction even when individuals changed both their employers and their occupation.

An innovative study conducted by Arvey, Bouchard, Segal and Abraham (1989) used 34 sets of monozygotic twins reared apart from an early age to test the hypotheses that there is a genetic component to job satisfaction. The results of the study led the researchers to conclude that 30% of the observed variance in general job satisfaction was due to genetic factors.

**Instruments**

*Job Satisfaction Index (JSI)*

The Job Satisfaction Index (JSI) was developed by Schriesheim and Tsui (1980) and cited in Tsui, Egan, and O’Reilly III (1992). The instrument contained five, single item questions specific to the following satisfaction facets: nature of the work, supervision, coworkers, pay, and opportunities for promotion. A sixth question solicits the participant’s assessment of his/her overall job satisfaction. The JSI questions are shown in Appendix A. Permission to use and publish the JDI is also included in Appendix A.
**Perceived Fit Scale (PFS)**

The Perceived Fit Scale (PFS) was developed by Cable and DeRue (2002). The instrument contains nine questions to measure three forms of perceived fit: person-organization fit as values congruence, needs-supplies fit, and demands-abilities fit. The nine questions are shown in Appendix B. Permission to use and publish the PFS is also included in Appendix B.

**Summary**

Chapter II reviewed the historical and empirical literature related to the current research. P-E research has a long history. It can be examined at many levels and from the perspective of both the person and the organization (environment). The field of study is complicated by the fact that people and organizations change; often due to the interaction and influence on each other. Numerous person and organizational variables have been studied by researchers. Early studies sought to understand the relationships that may exist between one form of fit and the outcomes resulting from fit or non-fit. Recent researchers have focused more on trying to capture the multidimensional aspects of the domain.

In Chapter II, two instruments were introduced to assess job satisfaction, perceived person-organization fit (values) and perceived person job fit (needs-supplies fit and demand-abilities fit).
CHAPTER III

Research Design

This research employed an ex post facto design guided by theoretical and empirical findings. Kerlinger (1973) succinctly defined ex post facto research as a:

Systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Kerlinger further stated that, “Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependant variables. (p.379)

However, this is not to infer that ex post facto design is not a valid research process. Newman and Newman (1994) pointed out that the most effective use of an ex post facto design is to help identify a small set of variables from a large set of variables related to the dependant variable for future experimental manipulation.

General Research Hypothesis

It is believed that there are sets of inter-correlated variables that describe the internal conceptual structure of person-job and person-organization fit, job satisfaction and that shared relationships also exist relative to individual traits, i.e. cognitive ability, academic achievement, vocational personality and gender for the recent college graduate.
Population

The study population included 536 individuals who graduated from a private, comprehensive university located in the Midwest. Over 6000 students were enrolled at the university. The study population was made up of individuals who graduated with a bachelor’s degree during the years 2000-2003. The population’s ACT mean was 22.2. The GPA mean was 3.30. Additional population demographics are shown in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Attribute</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>347</td>
<td>64.7</td>
</tr>
<tr>
<td>Male</td>
<td>189</td>
<td>35.3</td>
</tr>
<tr>
<td>Minority</td>
<td>12</td>
<td>2.2</td>
</tr>
<tr>
<td>BED</td>
<td>165</td>
<td>30.8</td>
</tr>
<tr>
<td>BS</td>
<td>134</td>
<td>25.0</td>
</tr>
<tr>
<td>BBA</td>
<td>117</td>
<td>21.8</td>
</tr>
<tr>
<td>BA</td>
<td>107</td>
<td>20.0</td>
</tr>
<tr>
<td>BSW</td>
<td>13</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Sampling Procedures

Eligible participants came from the university’s 2000-2003 graduating classes. The theoretical total population included 2059 individuals; however, after examining the existing records, 536 had complete files with all the relevant data. All 536 potential participants were invited to take part in the study. Participation was voluntary. Only those individuals who were currently working full time, completed the study questionnaire and signed a consent form were included in the study.
Data Collection

Demographic data was collected from the existing university records as maintained by the offices of admissions, institutional research, and the registrar. ACT scores, vocational personality types and GPA were gathered from university records. Measures of person organization fit, person job fit and job satisfaction were gathered from the study participants via self-reported questionnaires. All participants had an opportunity to phone or e-mail any questions or concerns.

Instruments

Two instruments were used in this study. They were chosen after an extensive review of the literature. The goal was to find a simple, easy to administer instruments, developed by credible, well published researchers. To encourage a high level of participant responses, it was deemed important that there be a small number of questions focused on the essential components of job satisfaction and fit.

*Job Satisfaction Index (JSI)*

Numerous instruments exist to measure job satisfaction. For example, one of the earliest measures of job satisfaction was developed by Hoppock (1935). Hoppock’s Job Satisfaction Blank (JSB) included just four general questions. Hoppock believed only overall levels of satisfaction could be measured and that individuals uniquely determined what job satisfaction facets were important and assigned varying levels of weight to the facets. Thus, only general, unspecific questions were useful for determining a person’s level of satisfaction (Dawis, 2002).
Hoppock’s position is supported by Wanous, Reichers, and Hudy (1997) who demonstrated that single-item measures of overall job satisfaction correlated highly with multiple-item measures. Research by Nagy (2002) also demonstrated that single item measures of facet satisfaction correlated highly with multiple facet questions utilized in the widely used Job Description Index (JDI). The JDI includes 72 items designed to assess satisfaction with five facets of work: the job itself, supervision, coworkers, pay, and opportunities for promotion (Smith, Kendall & Hulin, 1969). According to Nagy, among the implications for single item job satisfaction measures is ease of administration.

The Minnesota Satisfaction Questionnaire (MSQ) consists of 100 questions and 20 subscales measuring level of satisfaction with ability utilization, achievement, activity, advancement, authority, company policies and practices, compensation, coworkers, creativity, independence, moral values, recognition, responsibility, security, social service, social status, supervision-human relations, supervision-technical, variety, and working conditions (Weiss, Dawis, England & Lofquist, 1967).

This study used the Job Satisfaction Index (JSI) developed by Schriesheim and Tsui (1980) and cited in Tsui, Egan, and O’Reilly III (1992). The instrument contains five single item questions identical to the five JDI satisfaction facets: nature of the work, supervision, coworkers, pay, and opportunities for promotion. A sixth question solicits the participant’s assessment of his/her overall job satisfaction. The instrument has reliability co-efficient of .73 (Tsui, Eagan, & O’Reilly III, 1992).
Perceived Fit Scale (PFS)

In one of the most recent and comprehensive meta-analyses done to date, Kristof-Brown, Zimmerman and Johnson (2005) comment that:

Despite the acknowledgement that multiple conceptualizations of fit exist, there has been surprisingly little research focused on validating multidimensional approaches. The three-dimensional model (P-O value congruence, P-J needs-supplies fit, P-J demands-abilities fit) proposed by Cable and DeRue (2002) is a step toward this type of theory. (p.320)

Analyses conducted by Cable and DeRue supported the hypothesized three factor model. The goodness of fit index, normed fit index and comparative fit index ranged between .92 -.97. Likewise, Hinkle and Choi (2009) analyzing the psychometric properties of the PFS also concluded that the instrument distinguishes the three distinct perceptions of fit. Hinkle and Choi (2009, p. 328) commented, “The PFS evaluates these perceptions with only nine items. While appearing simple in format, it is effective in capturing perceptions that are not easily discernable.

This recent research suggests that the PFS is an appropriate instrument for this study. Cable and DeRue (2002) determined the following reliability co-efficients for the three fit dimensions: P-O fit, .91-.92, N-S fit, .89-.93, D-A fit, .84-.89.

Variable List

Table 3 identifies the variables used in this study and the associated scales:
Table 3

Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0-1 Dummy Code</td>
</tr>
<tr>
<td></td>
<td>0 = Female</td>
</tr>
<tr>
<td></td>
<td>1 = Male</td>
</tr>
<tr>
<td>Achievement (college GPA)</td>
<td>2.00 - 4.00</td>
</tr>
<tr>
<td>Cognitive ability (ACT score)</td>
<td>1-36</td>
</tr>
<tr>
<td>Vocational personality</td>
<td>0-1 Dummy Code</td>
</tr>
<tr>
<td></td>
<td>0 = Interests other than highest</td>
</tr>
<tr>
<td></td>
<td>1 = Highest interest</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>1-5</td>
</tr>
<tr>
<td></td>
<td>1 = Strongly disagree</td>
</tr>
<tr>
<td></td>
<td>5 = Strongly agree</td>
</tr>
<tr>
<td>Perceived fit</td>
<td>1-7</td>
</tr>
<tr>
<td></td>
<td>1 = Strongly disagree</td>
</tr>
<tr>
<td></td>
<td>7 = Strongly agree</td>
</tr>
</tbody>
</table>

Below is the procedure used for collecting and then assigning values to specific operationally defined variables of concern in this study:

1. Gender: The assignment of gender was based on university records maintained by the registrar’s office.

2. Achievement: This variable is represented by the participant’s GPA at graduation from college. This information was available from the university’s registrar’s office. According to Jensen (1998) the evidence for the validity of IQ predicting educational variables is vast. Although the median validity coefficient is .50, Jensen states that the spread of validity is considerable, from close to zero up to about .85. Jenson found the correlation of IQ with grades and achievement tests drops as the education level goes up. For college students, the range is .40 -
.50. Rohde and Thompson (2007) conclude that, “While there is empirical evidence for a strong association between general cognitive ability and academic achievement, there is still anywhere from 51% to 75% of the variance in academic achievement is unaccounted for by measures of general cognitive ability alone” (p.83). This suggests that participant’s college GPAs should be viewed as a distinct variable.

3. Cognitive ability: The participant’s ACT score was utilized to establish a measure of cognitive ability. The ACT is a national college admissions and placement exam taken during high school. The overall ACT score measures what students have learned in high school courses in English, mathematics, science as well a reading proficiency (ACT download). This information came from the university’s admission department. Koenig, Frey and Detterman (2008) found a significant relationship between measures of cognitive ability and ACT scores, concluding that the scores can be used to accurately predict IQ in the general population.

4. Vocational personality: This variable was defined by the participant’s primary vocational interest area based on the results of the ACT Interest Inventory. The 72 question inventory is typically completed at the same time as the ACT academic assessment is taken. The ACT Interest Inventory results provide scores and percentiles relative to six basic vocational interest areas. ACT’s vocational interest areas parallel Holland’s six vocational personalities (Swaney, 1995). For the purposes of this study, the participant’s highest vocational interest percentile was utilized to code the participant’s primary vocational interest area.
5. Job satisfaction: Self reported facet and overall job satisfaction measures were collected from participants by means of a self-administered questionnaire mailed to the homes of participants.

6. Perceived fit: Self reported measures of person-organization fit, needs-supplies fit and demands-abilities fit were collected from participants by means of a self administered questionnaire mailed to the homes of participants.

Questionnaire Development

The primary objective of the questionnaire was to gather data from participants relative to perceived job fit and job satisfaction. University records were used to collect information regarding ACT score, GPA, degree, major, vocational interests, and gender. The research design limited participation to currently employed individuals. It is unknown how many individuals in the population of 536 were currently employed. The pre-notice postcard and study invitation letter that accompanied the survey specified that only currently employed individuals should complete and return the survey.

In addition to the questions regarding perceived job fit and job satisfaction, participants were asked to identify their current job by title and provide a brief description of the position duties as well as the start date of their current job. Participants were also asked to indicate any additional education they may have received beyond their bachelor’s degree. The information relative to job title, job duties, start date, and additional education was not part of the study’s research design, but was solicited from participants for possible future study.
A number of survey methods exist to collect data from study participants, such as face-to-face interviews, telephone interviews, mailed questionnaires, voice and web-based response systems. Mixed methods are also used by researchers. Each method has its advantages and disadvantages. Specific methods may be better suited for certain populations and the type of information being solicited. Sampling considerations, costs, and time factors must also be evaluated by the researcher.

A high level of participation is important. Higher response rates are generally judged to be an indicator of the success of the survey at representing the population of interest which in turn reduces non-response bias (Hox & de Leeuw, 1994).

In this study, a survey mailed to the homes of participants was the only viable method for soliciting information. The population size made face-to-face interviewing impractical. Furthermore university records were incomplete relative to participant telephone numbers and email addresses.

Web-based surveys have become increasingly popular (Shih & Fan, 2008). However, a meta-analysis conducted by Shih and Fan found that in general, mail surveys have a higher response rate than web surveys. The meta-analysis included thirty nine studies with an average sample size of 2616. The unweighted average response rate of mail surveys was 45% compared to 34% for web surveys.

The researchers also concluded that college respondents appear more responsive to web surveys while other respondents, “medical doctors, school teachers and general consumers” appear to prefer traditional mail surveys.

In another study, Kaplowitz, Hadlock, and Levine (2004) found that web surveys achieved comparable response rates to mailed surveys when both were preceded by an
advance notification. Furthermore, the research indicated that web surveys can achieve a comparable response rate to mail surveys if the web version survey is preceded by a notification to participants by regular mail.

The tailored design method (TDM) developed by Dillman (2007) provided the primary guidance for the survey design and the processes used to enhance participation. The TDM focuses on the specific situation and the population of interest. Dillman emphasized that responding to surveys should be viewed as a social exchange. According to Dillman, social exchange theory identifies three critical elements as being critical for prediction an action: rewards, costs, and trust. Rewards do not necessarily need to be tangible. For example, rewards for individuals completing a survey may involve the positive feelings that come from participating in a study believed to have value to the participant or others, or the positive feelings associated with group membership. Costs represent what the participant expects to invest or give up as a result of his/her participation, mainly time and effort. Trust is the expectation that in the long run, the rewards of doing something (survey participation) will outweigh the costs.

The practical application of social exchange theory is summarized by de Leuuw and Hox (2008, p. 246) as follows:

1. Rewards: These may be psychological and material. The respondents are shown positive regard and made to feel that they are important for the study and that their particular opinions are really needed. An individual appeal is made to the respondents and the value of their contribution is explicitly recognized. A special effort is made to make the questionnaire look interesting and pleasant to respond to. An explicit thank you is conveyed, and a token of
appreciation or reward is provided, such as a summary of the results, or an explicit (monetary) incentive. The inclusion of a small token incentive in the mailing is one of the factors that increase response rates in mail surveys. The incentive should be included in the first mailing with the questionnaire because a prepaid incentive evokes the norm of reciprocation more than a promised incentive that may or may not be delivered.

2. Costs: These may be psychological or material; costs in effort, time and money are minimized. The questionnaire is designed to seem easy to complete and the task is made to look small and undemanding, requiring little effort from the respondent. Requests for personal information are minimized. Monetary costs are absent: the questionnaire can be sent back in a special stamped and preaddressed return envelope.

3. Trust: The letter with the questionnaire is explicitly made to look different from the usual advertising materials. Official letterhead is used to identify the study with a legitimate survey organization, such as a university or a government body. Contact information, such as a telephone number and address, underline the legitimacy. Associating the survey with an existing relationship can also enhance the trust relationship, for example when the members of an existing organization are surveyed.

Some research has shown that reminders are one of the best ways to get high response rates (Dillman, 1991 Fox, Crasik & Kim, 1988; Yamarino, Skinner & Childers, 1991). Dillman (2007) recommended up to five contacts with study participants when conducting mail surveys:
1. Pre-notice letter
2. Survey mail out
3. Postcard thank you/reminder
4. Replacement survey
5. Personalized certified letter

A meta-analysis by Anseel, Lievens, Schollaert and Choragwicka (2010) reviewed response rates of quantitative studies published in twelve journals in IO psychology, management, and marketing during the period 1995-2008. The analysis included 2037 surveys containing 1,251,651 individual responses. Response rates were found to vary depending on the respondent type. Response rates were lowest for top executive (35%). Nonworking and non-managerial respondents had the highest response rates, 61.5% and 59.6% respectively. The response rate for managerial respondents was 47.1%. Overall, however, the researchers found that response enhancing techniques such as advance notice, salience, personalization, and sponsorship increased the response rates for all groups.

Contrary to Dillman, this study showed that incentives had a non-significant or a negative effect on response rates for all groups except non-working respondents. Baruch and Holton (2008) also found that use of incentives was not related to response rates.

The questionnaire, introduction letter and participant release form used in this study is shown in Appendix D. Prior to its use, the questionnaire and accompanying introduction letter was pre-tested with 15 university graduate students who were also employed full-time. Only minor revisions were necessary based on the feedback collected from the pilot group, thus confirming that the instructions and questions were
clear and the form design was user friendly. The average questionnaire completion time was 9.6 minutes. All the individuals participating in the pre-test indicated they would likely complete such a questionnaire received in the mail at home.

A three step process was used in the data collection process. First, an announcement postcard was sent to all 536 individuals in the population of interest. Mailing addresses were provided by the university’s alumni office. The announcement postcard is shown in Appendix E. The announcement postcard also served as a way to validate the mailing address list. When a postcard was returned with a forwarding address indicated, the address was updated on the mailing list. Potential participants were eliminated from the mailing list when postcards were returned as undeliverable without a forwarding address.

Questionnaires, accompanied by an introduction letter, participant consent form, ballpoint pen, and pre-addressed postage paid return envelope were mailed 15 days after sending out the announcement postcard. University stationary and envelopes were used to enhance the importance and credibility of the mailing. A blue 3 ½ x 2” post-it note was affixed to each questionnaire. It read, “This questionnaire only takes 8-12 minutes to complete! Enclosed for your convenience is a pen to use and keep as a thank you for your participation.” Research on the use of participant incentives is conflictive, however it was decided that complementary ball point pens would be sent along with the questionnaire. The pens were imprinted with the university’s logo and it was determined that the pens might further enhance the legitimacy of the study. A yellow 3 ½ x 2” post-it note was affixed to each consent form. It read, “Please sign this form and return it with your completed questionnaire.” The materials were sent in a 9 ¼ x 12 ¼” envelope.
Approximately one month later a reminder postcard was sent to individuals who had not returned a questionnaire. The reminder postcard is shown in Appendix F.

The total cost of the data collection process was $2,042.01. Postage and envelopes represented $1,474.93 of the total. The ball point pens cost $223.35 (.42 each). Graphic design and printing charges were $373.73.

Returned questionnaires were inspected for completeness and to assure that the respondents met the participant eligibility requirements. Only fully completed questionnaires from individuals who were employed 35+ hours per week were included in the study. All participants included in the study signed a release form.

Data collected from the questionnaire was entered into an Excel spreadsheet. Upon completion of the data entry process, a random sample representing 10% of the study participants was extracted for review. The database entries from the sample were compared to the corresponding participant’s submitted questionnaire. This analysis indicated the data input to be 100% error free.

Statistical Treatment

In order to test the general hypotheses, a factor analytic solution was employed. Factor analysis is based on the fundamental assumption that some underlying factors, which are smaller than the number of observed variables, are responsible for the co-variation among the observed variables. Exploratory factor analysis (EFA) is used when the researcher does not know how many underlying dimensions there are for the given data (Kim & Mueller, 1978). Researchers in the social sciences make extensive use of factor analysis. A two year review of research found in the PsycInfo database yielded
over 1,700 studies that used some form of EFA (Costello & Osborn, 2005).

Exploratory factor analysis is associated with theory development. Tabachnick and Fidell (2001, p.585) stated, “In exploratory factor analysis the question is: what are the underlying processes that could have produced correlations among these variables.” The value of factor analysis is that it provides a meaningful organizational scheme that can be used to achieve a more parsimonious explanation of the variables (Tinsley & Tinsley, 1987). In factor analysis, although the results are objective, determining the number of components and assigning conceptual meaning to the components is a heuristic process.

Kerlinger and Lee (2000) described four aspects of a factor analysis: data, correlation, factor extraction and factor rotation.

**Data**

The meaningfulness of the components that emerge in factor analysis is dependent on the meaningfulness of the variables. A sufficient sample size relative to the number or variables, the number of participants, and the conceptual relatedness of the variables is necessary in order to interpret the data and make conclusions about the validity and generalizability of the results.

**Correlation**

Producing a correlation matrix is an essential step in the process of conducting a factor analysis. A correlation matrix is a set of correlation coefficients among all the variables being considered in the study. Factoring is not worthwhile unless there are a substantial number of large correlations (Nunnally & Bernstein, 1994).
Factor Extraction

Factor extraction is the method of identifying the components that best characterize a set of variables. Three factor extraction methods are frequently used in factor analysis. They are principal-axis factoring (PAF), principal components analysis (PCA), and the maximum likelihood (ML) method. Of the methods, PCA is the most popular (Conway & Huffcutt, 2003). The researchers reviewed 371 EFA studies published in the Journal of Applied Psychology, Personnel Psychology and Organizational Behavior, and Human Decision Processes during the years 1985-1999. Among the studies analyzed, PCA was utilized by 39.6% of the researchers. PAF was used in 22.4% of the studies. ML was used in 3.8% of the studies.

Similar research conducted by Henson and Roberts (2006) also revealed the prominence of PCA. EFA studies were identified in the following publications: Educational and Psychological Measurement, Journal of Educational Psychology, Personality and Individual Differences and Psychological Assessment. Beginning with articles first published in 1999 and working backwards, the researchers identified 15 EFA studies in each journal for a total of 60 articles. Among the studies that reported the factor extraction method, 56.7% used PCA.

Principal components analysis is intended to simply summarize many variables into a few components (Henson & Roberts, 2006). The goal of PCA is data reduction, reducing a large number of variables to a smaller set of components that account for a large amount of observed variance (Kashy, Donnellan, Ackerman & Russell, 2010). PCA is appropriate if the researcher’s purpose is pure reduction of variables without interpreting the resulting variables in terms of latent constructs (Conway & Huffcutt,
2003). PCA explains all the variance in any particular correlation matrix (Kline, 1994). PCA assumes that there is as much variance to be analyzed as the number of achieved variables and all the variance can be explained by extracted components (Pett, Lackey & Sullivan, 2003).

Tabachnick and Fidell (2001) commented:

Although an almost overwhelmingly large number of combinations of extraction and rotation techniques is available, in practice differences among them are often slight. The results of extraction are similar regardless of which method is used when there are a large number of variables with some strong correlation among them, with the same well chosen number of factors, and with similar values for communality. Further, differences that are apparent after extraction tend to disappear after rotation. (p. 618-619)

Additionally, according to Tabachnick and Fidell, most researchers using factor analysis begin by using principal components extraction. Based on the literature, PCA was used in this study as the method for extracting factors.

**Factor Rotation**

There are two major approaches to factor rotation, oblique and orthogonal. Factor rotation allows the researcher to better interpret the relationships that exist among the factors. For any set of correlations and numbers of correlations, there can be many ways to define the factors and still account for the same amount of covariance in the measures (DeCoster, 1998). Rotations generally result in a more interpretable solution and one that is more likely to generalize to other samples from the same population (Tinsley & Tinsley, 1987). Interpretability results from the emergence of a simple structure. Both
approaches to factor rotation seek to achieve the same results: a simple structure and thus an interpretable solution.

Factor rotation is a process of turning the two reference axes of the factor. These rotations permit a virtual infinity of different solutions. Each rotation of a factor into a new position changes the position relative to the other factors and each new position would give new loadings (Kline, 1994).

In orthogonal rotations, the factors are rotated such that they are always right angles (90 degrees) to each other and the factors remain uncorrelated. This means the correlation between the factors is zero (Kerlingler & Lee, 2000). In orthogonal rotations, it is assumed the generated factors are independent.

In oblique rotations, the factor axes are not held at right angles. Factor axes are allowed to form acute or obtuse angles (Kerlingler & Lee, 2000). Oblique rotations allow correlated factors and more freedom in selecting the position of the factors (Kline, 1994). Tabachnick and Fidell (2007) comment that oblique rotations are difficult to interpret, describe, and report. Different rotations may provide slightly different results; however, the differences are usually not dramatic (Kahn, 2006; Tabachnick & Fidell, 2007). Kahn suggested that researchers may base the choice on the interpretability of the factors.

Nunnally and Bernstein (1994) summarized the relative merits of orthogonal versus oblique rotations by commenting that both are mathematically legitimate and “use boils down to a matter of taste” (p. 501). Regardless of the type of rotation method used, the results will explain the same amount of variance. The authors do express a “mild” (quotations added) preference for orthogonal solutions when conducting an exploratory factor analysis.
Ultimately, factor analysis is a process to examine a set of variables and determine which ones belong together. The variables that are grouped together are called a factor or component, if PCA is used. The rotation of the variables should result in a simple structure. Simple structure is the criterion most commonly used for selecting among solutions in EFA (Fabrigar, Wegener, MacCallum, & Straham, 1999). Thurstone (1947) first established the principles of a simple structure. According to Thurstone, each factor should have a few high loadings and the remaining loadings should be zero or close to zero. Cattell (1978) suggested that simple structure factors are usually simple to interpret because they have only a few high loadings.

In reviewing the literature relative to rotation methods, it appears orthogonal rotations are better than oblique rotations in producing a simple, interpretable factor structure. Because the ultimate goal of factor analysis is to achieve a simple, interpretable structure, in this research study the extracted factors will be rotated using an orthogonal method.

The use of marker variables is recommended as a method to help validate factor structure (Comrey & Lee, 1992; Gorsuch, 1983; Nunnally & Bernstein, 1994; Tabachnick & Fidell, 2001). Marker variables are thoroughly researched variables with known properties. Marker variables help make sense of a largely unknown set of variables (Nunnally & Bernstein, 1994). Marker variables are highly correlated with one factor and load on it regardless of extraction or rotation technique (Tabachnick & Fidell, 2001).
Limitations

Not all those in the study population will agree to participate. Therefore, in addition to sample size considerations, there could be a significant difference between those who chose to participate and those who did not. Likewise, the study participants graduated from a private, Midwestern comprehensive university; and no data was collected to comparatively evaluate the results of this study relative to other universities. Also, this study may not be reflective of working individuals without a bachelor’s degree or those who hold higher degrees. Additionally, the results may not be representative of college educated individuals who are in their mid-to-late career stage.

It is also important to note that the world wide economic recession that began in 2008 has had a significant impact on Midwestern states, where most of the study participants reside. By mid-year 2009, unemployment in a number of mid-west states exceeded 10%. Even for those who had not lost their jobs, many likely had experienced other negative financial consequences, e.g. spouse’s loss of job, pay reductions, home foreclosure or risk of foreclosure, depleted savings. Those who were employed may have accepted a lower level position as the result of a prior job loss.

These economic conditions could have an impact on how study participants respond to the questionnaire. Podsakoff, MacKenzie, Lee and Podsakoff (2003) call this a transitional mood state bias. They said that although positive and negative affectivity are generally considered to be fairly enduring trait characteristics, it is possible that transient mood states may produce artifactual covariance in self-reported measures.
Summary

Chapter III presented the study’s research design and the general hypothesis. Population demographics were presented and sampling procedures were discussed. The instruments used in the study were discussed and the rationale for their selection was explained. The variables were listed and defined. This chapter discussed the data collection, questionnaire development and statistical treatments, while acknowledging the study limitations.
CHAPTER 4

Introduction

This study was designed to explore whether there are sets of inter-correlated variables that describe the conceptual structure of P-J fit and P-O fit and job satisfaction among employed college graduates. A number of person-trait variables were also thought to be related to the three constructs. Exploratory Factor Analysis (EFA) methodology was utilized to analyze the data collected.

Questionnaire Response Rate

The initial study population included 536 individuals who graduated with a bachelor’s degree from a Midwest regional teaching university during the years 2000-2003. The total population included 2059 individuals. However, ACT Assessment College Reports were available for only 536 of the graduates. The report was necessary to identify vocational personality.

A pre-questionnaire postcard announcement was sent to all 536 individuals in the study population. A total of 19 postcards were returned as undeliverable with no forwarding address. Questionnaires were sent to 517 individuals. A total of 157 completed questionnaires were returned. Seventeen (17) of those questionnaires were unusable because the individual was not working, was only working part time, or they did not complete and sign a release form. Useable questionnaires totaled 140. The usable response rate was 27% of the finalized study population. Although this response rate is comparatively low, it is unknown how many individuals in the study population of 517
were not working full time. The questionnaire and cover letter explicitly stated that only
individuals currently working full time should respond. The number of individuals who
did not respond to the questionnaire because they did not qualify as a study participant is
unknown; thus it is not possible to make any valid conclusions relative to the 27%
response rate.

Response rates are commonly viewed as an important measure of validity.
Higher response rates are assumed to minimize non-response bias. However, when
determining validity and the generalizability of the results, it is more important that
respondents be representative of the population being studied (Baruch & Holton, 2008,
Cook, Heath & Thompson, 2000). Krosnick (1999) comments, “it is no longer sensible
to presume that lower response rates necessarily signal lower representativeness” (p.
541).

To determine the representativeness of the study participants compared to the
population, several statistical analyses were conducted. A chi square test indicated there
was no statistically significant difference in the gender of the study participants compared
to non-participants, $X^2 (1, n = 536) = .81, p = .37$.

A chi square goodness of fit test indicated there was no significant difference
between the proportionality of study participants and non participants relative to their
specific bachelor degree, $X^2 (4, n = 140) = 7.77, p = .10$. On a percentage basis,
individuals with a professional degree (BBA, BED and BSW) participated at a higher
level than those with BS and BA degrees.
A t-test comparison of ACT mean scores showed no statistically significant difference between non-participants (M = 22.06, SD = 3.85) and participants (M = 22.69, SD = 3.45), $t\ (534) = -1.710, p = .088$ (two tailed).

Relative to mean GPA, a t-test did indicate a statistically significant difference between non-participants (M = 3.26, SD = .436) and participants (M = 3.40, SD = .363), $t\ (290.15) = -3.637, p = .000$ (two tailed), $d = .34$. The mean GPA for the study participants was higher than that of the non-participants.

Table 4 shows a descriptive comparison of non-participants and participants. Because of the small number of minority participants, this subgroup was not used for further statistical analysis.

Table 4

*Descriptive Comparison of non-Participants and Participants*

<table>
<thead>
<tr>
<th></th>
<th>Non-Participants</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>396</td>
<td>140</td>
</tr>
<tr>
<td>Males</td>
<td>36.4%</td>
<td>32.1%</td>
</tr>
<tr>
<td>Females</td>
<td>63.6%</td>
<td>67.9%</td>
</tr>
<tr>
<td>ACT mean</td>
<td>22.1</td>
<td>22.7</td>
</tr>
<tr>
<td>GPA mean</td>
<td>3.26</td>
<td>3.40</td>
</tr>
<tr>
<td>Minorities</td>
<td>3.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Bachelor of Education</td>
<td>30.0%</td>
<td>32.9%</td>
</tr>
<tr>
<td>Bachelor of Science</td>
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<td>22.1%</td>
</tr>
<tr>
<td>Bachelor of Business Admin.</td>
<td>20.7%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Program</td>
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<td>Bachelor of Social Work</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td>21.5%</td>
<td>15.7%</td>
</tr>
<tr>
<td></td>
<td>1.8%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

**Sample Size Considerations**

In general, larger sample sizes reduce the possibility of sample bias. The larger the sample, the more confidence the researcher can have that the study participants are representative of the population and the data collected will be normally distributed.

When the research design involves the testing of hypotheses, sample size becomes a key component in determining the power of the statistical results. An *a priori* power analysis can be done to calculate the minimum sample size necessary to achieve the desired level of statistical significance.

In conducting a factor analysis, where there is no hypotheses testing, sample size is still an important issue for evaluation. Although there is no method to determine statistical power, researchers have proposed a wide range of recommendations and guidelines regarding adequate sample sizes when conducting a factor analysis.

Nunnally (1978) recommended that at least 10 subjects per variable are necessary to reduce sampling errors. Comrey and Lee (1992) offered the following guidelines for adequate sample sizes: 100 = poor, 200 = fair, 300 = good, 500 = very good, 1000 or more = excellent. Gorsuch (1983) recommended that N should be at least 100.

A review of journal articles utilizing factor analysis offers some comparative insights relative to sample size. Fabrigar, Wegener, MacCallum, and Strahan (1999) reported that 18.9 percent (N = 30) of the articles in the *Journal of Personality and Social*
Psychology and 13.8 percent (N = 8) of the relevant articles in the Journal of Applied Psychology had 100 or fewer subjects.

A number of researchers have concluded that an adequate sample size is dependent on other aspects related to the nature of the data and the factor loadings. MacCallum, Hong, Widaman and Zhang (1999) used a Monte Carlo analysis to demonstrate the importance of the level of communality of the variables and the overdetermination of the factors in producing factor solutions that are adequately stable. The communality for a variable is the variance accounted for by the factors. Overdetermination is the degree to which each factor is clearly represented by a sufficient number of variables. According to the researchers, “Under some conditions, relatively small samples may be entirely adequate, whereas under other conditions, very large sample may be inadequate” (p.86). More specifically the researchers say higher communalities (all greater than .6) and high overdeterminations (each factor having 3-7 high loadings) are important elements in achieving good recovery of population factors even when N is less than 100.

Hogarty, Hines, Kromrey, Ferron and Mumford (2005) expanded on the research by MacCallum et al. (1999) conducting a variety of factor analyses using random samples from a known population of 10,000 samples. The researchers concluded, “Our results clearly call for a reduced emphasis on sample size rules of thumb in favor of additional considerations such as careful selection of variables to be included in the study, high communality of variables and overdetermination of factors” (p.225).

Similarly, Costello and Osborne (2005) concluded that the stronger the data, the smaller the sample can be for accurate analysis. Strong data means uniformly high
communalities with several variables loading strongly on each factor. If strong data does not emerge the researchers say a larger sample may be necessary.

Thoughtful, advance consideration of possible factors and the selection of valid and reliable indicators are significant aspects in the design of a study using exploratory factor analysis. MacCallum et al. (1999) recommended against large batteries of variables. Increasing the precision of the factor analysis design lessens the importance of obtaining large numbers of subjects (Tinsley & Tinsley, 1987).

Although there is no clear consensus among researchers, recently published studies suggest that the adequacy of a sample size is best determined by a post hoc analysis of the data following factor extraction and rotation. In general, strong results relative to communality and factor loadings provide the best indication that a particular sample size is adequate.

In the next section an additional descriptive overview is presented. It includes a breakdown of degree types, vocational personality types, GPA and ACT scores as well as an item by item analysis of the questionnaire responses.

Additional Descriptive Statistics

Among the five undergraduate degree programs offered by the university, 46 majors were represented. This distribution of majors was broadly dispersed. No major represented more than 9% of the total. Early Childhood Education and Marketing majors each represented 9% of the total. Business Management was the next highest with 6% of the study participants graduating with the major.
Table 5 shows the distribution of vocational personality types among participants.

Although the study population included 140 individuals who had a copy of the ACT Assessment College Report in their admission files, vocational interest profiles were indicated on only 124 of the 140 reports.

Table 5

<table>
<thead>
<tr>
<th>Primary Vocational Personality Type</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Artistic</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Conventional</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Realistic</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Enterprising</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Investigative</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>124</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 indicates vocational personality types by gender. Consistent with research by Su, Rounds and Armstrong (2009), Lippa (2005), and Walsh and Betz (2001), females in this study indicate strong interests in social vocations.

Table 6

<table>
<thead>
<tr>
<th>Primary Vocational Personality Type by Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender-N</td>
</tr>
<tr>
<td>Gender %</td>
</tr>
<tr>
<td>Males</td>
</tr>
<tr>
<td>Social</td>
</tr>
</tbody>
</table>
Table 7 shows the participants’ ACT and GPA mean scores, as well as the minimum, maximum, and standard deviation.

Table 7

<table>
<thead>
<tr>
<th>ACT</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>140</td>
</tr>
<tr>
<td>Mean</td>
<td>22.7</td>
</tr>
<tr>
<td>Min</td>
<td>13</td>
</tr>
<tr>
<td>Max</td>
<td>32</td>
</tr>
<tr>
<td>SD</td>
<td>3.45</td>
</tr>
</tbody>
</table>

The questionnaire completed by participants contained two sections. Questions 9 through 14 measured the participant’s level of job satisfaction. Questions 15 through 23 measured the participants’ perceptions of job fit relative to three types of fit—values, needs-supplies, and demand-abilities (skills). Table 8 shows the minimum, maximum, and mean ratings for the job satisfaction questions. Table 9 shows the minimum, maximum, and mean rating for the job fit questions.
Table 8

*Job Satisfaction Questions*

<table>
<thead>
<tr>
<th>N</th>
<th>Q9 Work</th>
<th>Q10 Supv.</th>
<th>Q11 Others</th>
<th>Q12 Pay</th>
<th>Q13 Opp.</th>
<th>Q14 Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>139</td>
<td>139</td>
<td>140</td>
<td>139</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Max</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Mean</td>
<td>4.44</td>
<td>4.00</td>
<td>4.35</td>
<td>3.61</td>
<td>3.60</td>
<td>4.09</td>
</tr>
<tr>
<td>SD</td>
<td>0.74</td>
<td>1.01</td>
<td>0.76</td>
<td>0.99</td>
<td>1.08</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Table 9

*Perceived Fit Questions*

<table>
<thead>
<tr>
<th>Values</th>
<th>Q15</th>
<th>Q18</th>
<th>Q21</th>
<th>Needs</th>
<th>Q16</th>
<th>Q19</th>
<th>Q22</th>
<th>Skills</th>
<th>Q17</th>
<th>Q20</th>
<th>Q23</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>Min</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Max</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Mean</td>
<td>5.33</td>
<td>5.49</td>
<td>5.44</td>
<td>5.47</td>
<td>5.11</td>
<td>5.44</td>
<td>6.01</td>
<td>5.89</td>
<td>5.99</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factor Analysis Results

The first step in conducting a factor analysis is to produce a correlation matrix to determine if the study variables are related and if they are, to what extent. If no correlation exceeds .30 then the use of factor analysis is questionable (Tabachnick & Fidell, 2001). Nunnally and Bernstein (1994) advised that researchers should look for a substantial number of large correlations, but commented, “how large is somewhat arbitrary” (pg. 469). The correlation matrix showing the relationships of all 24 variables
in this study is shown in Appendix G. The correlation matrix yielded a substantial number of large correlations indicating that factor analysis is an appropriate statistical methodology.

Principal Components Analysis was utilized to extract the communalities shown in Table 10. The communality for a variable is the variance accounted for by all the extracted factors. The higher the communality, the more reliable it is an indicator. It is desirable for the mean level of communality to be at least .70 and for communalities not to vary over a wide range (MacCallum, Widaman, Zhang & Hong, 1999). The mean communality for the 24 variables in this study is .75.

Table 10

<table>
<thead>
<tr>
<th>Variable</th>
<th>Initial</th>
<th>Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>1.00</td>
<td>.54</td>
</tr>
<tr>
<td>ACT</td>
<td>1.00</td>
<td>.75</td>
</tr>
<tr>
<td>GPA</td>
<td>1.00</td>
<td>.80</td>
</tr>
<tr>
<td>Investigative</td>
<td>1.00</td>
<td>.88</td>
</tr>
<tr>
<td>Artistic</td>
<td>1.00</td>
<td>.86</td>
</tr>
<tr>
<td>Social</td>
<td>1.00</td>
<td>.70</td>
</tr>
<tr>
<td>Enterprising</td>
<td>1.00</td>
<td>.91</td>
</tr>
<tr>
<td>Conventional</td>
<td>1.00</td>
<td>.85</td>
</tr>
<tr>
<td>Realistic</td>
<td>1.00</td>
<td>.77</td>
</tr>
<tr>
<td>Q9 Work</td>
<td>1.00</td>
<td>.65</td>
</tr>
</tbody>
</table>
Q10 Supv.  1.00   .43
Q11 Others  1.00   .50
Q12 Pay  1.000   .47
Q13 Opp.  1.00   .60
Q14 Overall  1.00   .80
Q15 Values  1.000   .88
Q16 Need  1.000   .80
Q17 Skill  1.00   .74
Q18 Value  1.00   .90
Q19 Need  1.00   .79
Q20 Skill  1.00   .79
Q21 Value  1.00   .89
Q22 Need  1.00   .85
Q23 Skill  1.00   .85

Table 11 shows the total variance explained by each of the extracted components. A component is represented by all the variation in each of the variables. Each variable is standardized with the maximum variance for each as 1.0. An eigenvalue reflects the proportion of variance explained by the component. Kaiser’s Criterion (Kaiser, 1958) specifies that only components with an eigenvalue of 1.0 or greater should be retained for analysis. Kaiser’s Criterion is the default retention method in SPSS. Conway and Huffcut (2003) found that among organizational researchers, Kaiser’s Criterion was the most highly utilized method of identifying the number of components to use in conducting a factor analysis.
Eight components with an eigenvalue of 1.0 or greater explain almost 75% of the total variance. Higher percentages of total variance explained is an indicator that a strong relationship exists among a group of variables under study.

Table 11

*Total Variance Explained*

<table>
<thead>
<tr>
<th>Component</th>
<th>Total</th>
<th>% Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.92</td>
<td>33.00</td>
<td>33.00</td>
</tr>
<tr>
<td>2</td>
<td>1.85</td>
<td>7.71</td>
<td>40.72</td>
</tr>
<tr>
<td>3</td>
<td>1.68</td>
<td>6.99</td>
<td>47.70</td>
</tr>
<tr>
<td>4</td>
<td>1.57</td>
<td>6.55</td>
<td>54.25</td>
</tr>
<tr>
<td>5</td>
<td>1.34</td>
<td>5.60</td>
<td>59.85</td>
</tr>
<tr>
<td>6</td>
<td>1.28</td>
<td>5.33</td>
<td>65.18</td>
</tr>
<tr>
<td>7</td>
<td>1.18</td>
<td>4.92</td>
<td>70.10</td>
</tr>
<tr>
<td>8</td>
<td>1.15</td>
<td>4.79</td>
<td>74.89</td>
</tr>
<tr>
<td>9</td>
<td>0.97</td>
<td>4.04</td>
<td>78.93</td>
</tr>
<tr>
<td>10</td>
<td>0.88</td>
<td>3.68</td>
<td>82.61</td>
</tr>
<tr>
<td>11</td>
<td>0.82</td>
<td>3.43</td>
<td>86.04</td>
</tr>
<tr>
<td>12</td>
<td>0.73</td>
<td>3.05</td>
<td>89.09</td>
</tr>
<tr>
<td>13</td>
<td>0.56</td>
<td>2.33</td>
<td>91.42</td>
</tr>
<tr>
<td>14</td>
<td>0.43</td>
<td>1.82</td>
<td>93.24</td>
</tr>
<tr>
<td>15</td>
<td>0.33</td>
<td>1.38</td>
<td>94.62</td>
</tr>
</tbody>
</table>
The eight components with eigenvalues greater than 1.0 were rotated using Varimax software to generate an orthogonal solution shown in Table 12. Varimax software is the most highly utilized method to produce an orthogonally rotated matrix (Comrey & Lee, 1992; Stevens, 2009; Tabachnick & Fidell, 2001).

It is generally accepted that loadings should be .30 or greater to provide any interpretive value (Comrey & Lee, 1992). A loading is simply the Pearson correlation between the variable and the extracted component (Stevens, 2009). The greater the loading, the more the variable is a pure measure of the component (Tabachnick & Fidell, 2001).

Although no conclusive standards exist, the higher the loading, the greater confidence the researcher can have that a strong relationship exists. Comrey and Lee’s (1992) often cited guideline for interpreting loadings is as follows: .71=excellent, .63=very good, .55=good, .45=fair and .32=poor. Several variables with loadings in the very good to excellent range provide a basis for the researcher to make more definitive
conclusions about the component. All loadings less than .30 were eliminated from the rotated component matrix shown in Table 12.

Table 12

*Rotated Component Matrix*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td></td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPA</td>
<td></td>
<td></td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artistic</td>
<td>.46</td>
<td></td>
<td>-.33</td>
<td>-.52</td>
<td>-.33</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td>-.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.93</td>
<td></td>
</tr>
<tr>
<td>Conventional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.89</td>
</tr>
<tr>
<td>Realistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.81</td>
</tr>
<tr>
<td>Q9 Work</td>
<td>.67</td>
<td></td>
<td>.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10 Supv.</td>
<td></td>
<td>.54</td>
<td></td>
<td></td>
<td>.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q11 Others</td>
<td>.37</td>
<td></td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q12 Pay</td>
<td></td>
<td>.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q13 Opp.</td>
<td>.35</td>
<td></td>
<td>.39</td>
<td></td>
<td>.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q14 Overall</td>
<td>.54</td>
<td></td>
<td>.48</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q15 Values</td>
<td></td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q16 Needs  .57  .58  .35
Q17 Skills  .84
Q18 Values  .89
Q19 Needs  .59  .56
Q20 Skills  .84
Q21 Values  .89
Q22 Needs  .63  .60
Q23 Skills  .89

Component one contains ten variables or 42% of the total variables included in the study. Eight variables load in the good to excellent range. Nine variables, representing 38% of the total variables, load at .30 or higher in component two. Six of the variables load in the good to excellent range. In component three, there are seven loadings representing 29% of the total variables. All the loadings are in the fair range.

Nunnally and Bernstein (1994), Tabachnick and Fidell (2001), and Stevens (2009) advised caution when interpreting components with few variables. According to Stevens (2009), components with at least four loadings greater than .60 or at least three loadings greater than .80 are considered reliable. Applying these guidelines, components 4-8 are deemed unreliable. However, even though components 4-8 are deemed unreliable as components for further analysis, these components are made up of all the person-trait variables included in this study. Thus it can be concluded from the results that the variables relative to gender, cognitive ability, achievement, and vocational personality have almost no relational link to the other variables in the study. In other words, the person-trait variables included in the study are not related to perceptions of job
satisfaction and fit. Based on the results of this initial rotation and the subsequent loadings, the person trait variables do not appear to contribute to the achievement of a parsimonious, meaningful solution.

Although component three falls short of the Stevens (2009) guidelines, the component contains seven loadings, six of which are in the fair range. Four of the six job satisfaction variables also load in this component. These results suggest retaining the job satisfaction variables for further analysis.

The person-trait variables were eliminated and remaining variables were rotated again using Varimax. The result yielded three components with eigenvalues of 1.0 or higher as shown in Table 13. Over 71% of the total variance is explained by the three components.

Table 13

*Total Variance Explained Not Including Person-Trait Variables*

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>% Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.86</td>
<td>52.42</td>
<td>52.42</td>
</tr>
<tr>
<td>2</td>
<td>1.52</td>
<td>10.15</td>
<td>62.57</td>
</tr>
<tr>
<td>3</td>
<td>1.30</td>
<td>8.68</td>
<td>71.25</td>
</tr>
<tr>
<td>4</td>
<td>.86</td>
<td>5.70</td>
<td>76.95</td>
</tr>
<tr>
<td>5</td>
<td>.81</td>
<td>5.39</td>
<td>82.34</td>
</tr>
<tr>
<td>6</td>
<td>.62</td>
<td>4.14</td>
<td>86.48</td>
</tr>
<tr>
<td>7</td>
<td>.52</td>
<td>3.47</td>
<td>89.95</td>
</tr>
</tbody>
</table>
The three component rotated matrix shown in Table 14 reveals an interpretable, simple solution. Each component has a number of variables with high loadings and also a number of very low loadings. There are few significant overlapping variables. Termed crossloading by Costello and Osborne (2005), variables that load at .32 or higher on two or more components warrant additional questioning by the researcher relative to the appropriateness of the variable in contributing to meaningful factorial solution.

Table 14

Rotated Component Matrix Not Including Person-Trait Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q9 work</td>
<td>.24</td>
<td>.59</td>
<td>.45</td>
</tr>
<tr>
<td>Q10 supv.</td>
<td>.53</td>
<td>-.07</td>
<td>.32</td>
</tr>
<tr>
<td>Q11 others</td>
<td>.19</td>
<td>.31</td>
<td>.42</td>
</tr>
<tr>
<td>Q12 pay</td>
<td>.03</td>
<td>-.03</td>
<td>.77</td>
</tr>
<tr>
<td>Question</td>
<td>Component 1</td>
<td>Component 2</td>
<td>Component 3</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Q13 opp.</td>
<td>.12</td>
<td>.23</td>
<td>.68</td>
</tr>
<tr>
<td>Q14 overall</td>
<td>.34</td>
<td>.38</td>
<td>.74</td>
</tr>
<tr>
<td>Q15 values</td>
<td>.90</td>
<td>.25</td>
<td>.12</td>
</tr>
<tr>
<td>Q16 needs</td>
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<td>Q17 skills</td>
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<tr>
<td>Q18 values</td>
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<td>.31</td>
<td>.14</td>
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<tr>
<td>Q19 needs</td>
<td>.46</td>
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<td>Q20 skills</td>
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<td>.76</td>
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<tr>
<td>Q21 values</td>
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<td>.30</td>
<td>.13</td>
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<tr>
<td>Q22 needs</td>
<td>.52</td>
<td>.52</td>
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<tr>
<td>Q23 skills</td>
<td>.12</td>
<td>.91</td>
<td>.14</td>
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</table>

By eliminating loadings less than .30, Table 15 provides a clearer way to focus on the strongest relationships. Two of the three perceived fit variables—P-O fit (values) and D-A fit (skills) load strongly and independent of each other as shown in Table 15. Each fit variable included three questions. The three questions for the values fit variable and the skills fit variable load highest on component one and two respectively. The three values fit questions load at .88, .90, and .90 on component one. The three skills fit questions load at .76, .85, and .91 on component two.
Table 15

*Component Loadings > .30*

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<th>Component</th>
<th>1</th>
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<td>.76 skills</td>
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<td>.53 superv.</td>
<td>.59 work</td>
<td>.60 needs</td>
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<td>.45 work</td>
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<td></td>
<td></td>
<td>.42 others</td>
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</tbody>
</table>

Relative to the needs fit variable, component three has the highest loadings—.53, .55, and .60. However, the needs fit questions are all cross loaded. This may suggest that perceptions of needs fit are more foundational than distinctive. In other words, needs fit may have a universal or even precursory role in its relationship to the other forms of perceived fit included in this study.

Turning to the job satisfaction variable, six facets of job satisfaction were considered in this study. Single questions were used to assess the participant’s level of job satisfaction with the work itself, his/her supervisor, coworkers (others), pay, and opportunities. Lastly, participants were asked to rate their overall job satisfaction.

Component three contains the highest loadings for four of the six job satisfaction facets. Pay loaded at .77, overall satisfaction, .74, and opportunities, .68. These loadings
would all fall into the excellent category per Comrey and Lee (1992). Satisfaction with others (coworkers) loaded at .42, putting it in the fair range per Comrey and Lee. Because component three also contains strong loadings for the three perceived needs fit variables, these results are suggestive of a relationship between perceived needs fit and four of the six job satisfaction facets: pay, overall satisfaction, opportunities, and others (coworkers).

The remaining two job satisfaction facets load in the good range (.55) on components one and two. Satisfaction with the work itself loads at .59 on component two. Component two also contains the highest loadings for the perceived skill fit variable. Satisfaction with the supervisor loads at .53 on component one. Component one also contains the highest loadings for the perceived value fit variables.

Validity

Hypothesis testing is not applicable to an exploratory factor analysis (EFA). Factor analysis is a methodology designed to examine a set of variables thought to be related to the domain or domains under study. Both statistical and heuristic methods are used in an EFA. The goal of EFA is to discover co-variant relationships among a set of variables that can be reduced into distinct, meaningful factors or components for future analysis.

A primary measure of an EFA’s validity is the emergence of a simple, interpretable structure. The rotation of variables should result in each factor having a few high loadings and the remaining loadings should be low (Thurstone, 1947).
The three component solution shown in Table 14 exhibits a simple, interpretable structure. Applying Comrey and Lee’s (1992) guideline for evaluating the strength of a loading, 20% of the variables in component one fall into the very good category (> .63), while 47% are in the poor category (< .32). Likewise, component two has 20% of the variables loading in the very good category and 47% loading in the poor category. Component three also has 20% of the variables loading in the very good category and 40% of the variables in the poor category.

The three component solution accounts for 71.25% of the total variance explained. These results far exceed the average of 52.03% reported by Henson and Roberts (2006) in their meta-analysis of 60 recent EFA studies published in psychological and educational journals.

The study results also confirm known relationships, termed marker items. ACT and GPA are strongly related, consistent with prior research done by Noble and Sawyer (2002) and Coyle and Pillow (2008). The results relative to vocational interests and gender is consistent the previously discussed research done by Su, Rounds and Armstrong (2009), Lippa (2005) and Walsh and Betz (2001).

Summary

Issues relative to questionnaire response rate, sample size and generalizability were addressed in this chapter. Utilizing various statistical measures, it was determined that participants in the study are representative of the larger population of interest. Inferences based on the sample of 140 participants appear to be generalizable to the
larger study population of 536 and other similar populations of employed college graduates.

A surprising study result was that the person–trait variables used in the study were not strongly related to the fit and job satisfaction variables. This suggests that what individuals bring to the workplace in terms of their gender, vocational personality, cognitive ability, and GPA (achievement) is not as important as the organizational experiences and perceptions they develop on the job.

Several measures of validity appropriate to an EFA were discussed in the context of the study results. The study results yielded a simple, interpretable structure. Over 71% of the variance is explained by the three component solution. Known relationships among the study variables were confirmed by the study results.
CHAPTER V

Introduction

This research study was designed to examine the relationships among a number of variables associated with the workplace. The variables included in this study have been shown to be linked in various ways to employee attitudes, behaviors and outcomes. The research is unique in that the variables included have not been studied collectively. The variables represent a number of P-E subdomains: vocational interests, cognitive ability, academic achievement, gender, job satisfaction, and perceived fit (needs, values, and abilities).

Given the uniqueness of the data set and the lack of research utilizing these variables, an exploratory factor analysis was determined to be the most appropriate methodology to examine the possible relationships among the variables.

Summary of Results

A strong relationship was shown to exist between perceived P-O fit (values) and participant’s level of satisfaction with their supervisor. Not so surprising, an equally strong relationship existed between perceived P-J fit (demands-abilities) and participants satisfaction with the work itself. No other job satisfaction facets were strongly related to perceived P-O and P-J fit.

Perceived N-S fit was strongly related to satisfaction with pay, opportunities and overall satisfaction. Perceived N-S fit (needs-supplies) was also moderately related to all three components that emerged from the rotated correlation matrix. The person-trait
variables included in the study did not significantly correlate with the perceived fit and job satisfaction variables.

Discussion

The weak relationship between the person-trait variables (gender, vocational personality, cognitive ability, and academic achievement) and the perceived fit and job satisfaction variables is a surprising result. The study results differ with research by Holland (1985, 1997), Judge, Heller, and Mount (2002), Stow, Bell, and Clausen (1986), and Avery, Bouchard, Segal, and Abraham (1989) who demonstrated that interests, personality, disposition and even genetic factors more linked to job satisfaction, and other attitudinal and behavioral outcomes.

Although these researchers did not use the same person-trait variables and measures as this study, the clear lack of a significant relationship among person-trait variables, fit variables, and job satisfaction variables is puzzling. The highest correlation (-.19) existed between gender and the D-A fit question that read, “My abilities and training are a good fit with the requirements of my job.” A correlation of .18 existed between academic achievement and satisfaction with pay. Satisfaction with pay and the conventional vocational personality type represented the third highest correlation, .15.

Several possible explanations for these low correlations may exist. First, an obvious explanation might be that the person-trait variables used in this study are in fact simply not related to the other study variables in any significant way when analyzed relative to a workplace environment.
For example, the study results could suggest that gender is not a significant distinguishing variable in today’s workplace. The growth of the female workforce coupled with increased enforcement of discrimination laws and changing societal norms relative to women in the workplace may have a minimizing effect on the differences between males and females in the workplace when it comes to perception of fit and job satisfaction.

Likewise in this study, vocational personality type was not significantly linked to job satisfaction and perceived fit. This contrasts with a study done by Judge, Heller, and Mount (2002) examining the relationships between Big Five personality type (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness) and job satisfaction. The researchers found that a statistically significant relationship existed between job satisfaction and three of the Big Five personality types (neuroticism, extraversion, and conscientiousness).

It is possible that vocational personality types and Big Five personality Types differ in some important way. Research by Holland (1985, 1997) demonstrated that job satisfaction is linked to vocational personality type. However, a key component of the theory asserts that is the level of congruence between the work requirements and an individual’s vocational personality type that determines job satisfaction.

For Holland, job satisfaction is an outcome related to the level of congruence. It is not a measure of an individual’s disposition. In that regard, vocational interests and disposition are two distinctly different measures, both related to job satisfaction. Vocational personality is contextual. Big Five personality types are based on inherent individual traits.
Affective disposition is included as a component in the Big Five personality model, and may be a more appropriate variable to examine person-trait differences relative to workplace behaviors and attitudes. Research by Connolly and Viswesvaran (2000), Ilies and Judge (2003) and Bowling, Hendricks and Wagner (2008) demonstrated a strong relationship between affective disposition and job satisfaction.

Dawis and Lofquist’s Theory of Work Adjustment (TWA) provides another possible explanation for the low correlations among the person-trait, perceived fit and job-satisfaction variables. The theory emphasizes the adaptive nature of individuals in the workplace. The workplace is a dynamic environment in which the individual and the employer both seek correspondence. The process is one of mutual adjustment leading to some level of satisfaction on the part of the employee and satisfactoriness on the part of the employer. This dynamic environment postulated by TWA may provide an explanation why the person-trait variables in this study show no significant relationships to perceived fit and job satisfaction. It is possible that although person-trait variables are salient to both job applicants and employers during the recruiting and selection process, those traits take on less importance in explaining the dynamic process of seeking correspondence once employment begins. If that is the case, once an individual is employed, what happens within the workplace becomes a more powerful predictor of attitudes and behaviors than the person-traits that initially brought them into the organization. In other words, these person-trait variables cease to contribute in any significant way to an individual’s perceptions of fit and job satisfaction.

The selection of appropriate person-trait measures is a key challenge in advancing P-E research. It seems clear from the research that individual traits, characteristics,
personality, disposition and even heredity are relevant variables for study. In this study, the selected trait variables were shown not to be significantly related to perceived fit and job satisfaction. That does not necessarily mean that person trait variables are not important in advancing our understanding of the complexities involved. Schneider, Smith and Goldstein (2000) argued that the failure of researchers to recognize individual differences and explore the linkages between an individual’s attributes and organizational phenomena distorts attempts to understand larger aggregate results. The researchers commented, “clearly the nature of organizations cannot be understood without explicating the attributes of the people there” (p.82).

The relationships that emerged in this study relative to perceived fit and job satisfaction are confirmatory of previous research in several ways. The study results confirmed that individuals view facet level satisfaction differentially. Moreover, this study advanced understanding of facet level satisfaction by showing that various job satisfaction facets are differentially related to the three measures of perceived job fit.

The construct validity of the three dimensional perceived fit scale (PFS) developed by Cable and DeRue (2002) was partially confirmed. Principal comments analysis resulted in a three component solution. Each of the three perceived fit dimensions, P-O fit, D-A fit, and N-S fit, loaded separately within the three components. The P-O fit variables and the D-A fit variables all loaded strongly in a different component indicating good construct validity. The correlations ranged from .71-.90. The N-S fit variables loaded in the .46-.55 range, however they were cross loaded across the three components. Due to this cross loading, the results of this study do not fully support the three dimensional construct validity of the PFS instrument.
The cross loading of the N-S fit variables suggests that dimension may be more foundational than distinctive. In other words, perceptions of needs-supplies fit are associated with and influence perceptions of P-O and P-J fit. The cross loading of N-S fit may indicate that although individuals cannot strongly distinguish it as a distinct separate dimension of fit, it is somehow related in a fairly significant way to the other forms of fit. Perhaps N-S fit perceptions act as a gateway or precursor to P-O and P-J fit. It should also be noted that although N-S fit is crossloaded, the strongest N-S fit loadings fall in component three. Component three also contains the strongest loadings for four of the six job satisfaction facets. Satisfaction with pay loaded at .77, overall satisfaction, .74, opportunities, .68, and satisfaction with others (coworkers) loaded at .42.

The strong loading for overall satisfaction is significant in that it is generally viewed as a summative measure of all the other facets. Hoppcock (1935) was among the first researchers to theorize that individuals uniquely determine the importance and weight attached to the various facets of job satisfaction. Facet level job satisfaction is comparative and specific to the facet being measured. However, it is the unique weighting and importance assigned to those facets that result in an individual’s assignment of overall job satisfaction. Job satisfaction is both a cognitive and affective process. Overall satisfaction represents an individual’s cumulative assessment of his/her self and the work environment relative to needs, desires, wants, aspirations and fulfillment. It involves making comparisons, judgments, and determining favorability (Cranny, Smith, & Stone, 1992). When job satisfaction exists, it results in a desirable, pleasurable and desirable emotional state (Locke, 1976).
Recommendations for Future Research

Current research has defined and measured fit in a variety of ways. It can be measured directly or indirectly; it can be measured objectively or subjectively or by means of an individual’s perceptions (Kristof-Brown, Zimmerman, & Johnson, 2005). The dimensionality and measurement of these various forms of fit is problematic for researchers, but recent findings are beginning to illustrate that different forms of fit are differentially related to various attitudes and behaviors and that individual differences and environments are also important contributing variables. This study considered just three forms of fit relative to one outcome, job satisfaction. Although the PFS instrument used in the study had been shown by previous researchers (Cable & DeRue, 2002; Hinkle & Choi, 2009) to have good discriminate validity, results from this study indicated that N-S fit was not a strongly distinguishable fit dimension compared to P-O fit (values) and P-J fit (demands-abilities). It is possible that the simplicity of the questions used in the PFS resulted in a confounding of the responses relative to N-S fit, particularly as it relates to the P-O fit dimensions (values). Murray’s (1938) taxonomy of needs includes items such as order, independence, autonomy, achievement, recognition, and nurturance, all of which could easily be considered values. Dawis and Lofquist (1984) defined values as second order needs. More definitional clarity on what is meant by the term needs as opposed to the term values might help answer the question whether needs are truly a distinct form of fit.

One of the strengths of this study is its generalizability. Statistically the sample of 140 participants is highly representative of the larger population of interest numbering 536. However, both the population and the sample are relatively homogenous, thus
minimizing the variations that may be present in a more diverse set of participants.
Specifically, a study sample that includes a wider range of ages, ethnic diversity, 
occupational diversity, as well as some additional person-trait and socio-economic
variables is recommended in order to more broadly examine other possible correlational
relationships and subsequent emergent factors. Career stage and life cycle theories may
also be applicable and contribute to more fully explaining the results.

Future studies should include measures that characterize the work/organizational
environment. This study focuses exclusively on the person side of the P-E equation. A
person’s level of congruence with his/her work environment is a fundamental aspect of
the P-E theory. How congruence is measured and the impact the level of congruence has
on other P-E variables are continuing issues for researchers.

The results of this study represent a snapshot in time. The questionnaire
responses are representative of how participants felt or thought on that particular day.
But people and organizations are not static. Organizations and individuals change and
adapt. People get new jobs, their personal and financial situations change, bosses come
and go, businesses grow and decline. This study is limited by the fact it measures a
number of variables at just one point in time. A longitudinal design would enable
researchers to assess what variables and conclusions are temporal versus those that are
more enduring.

Lastly, the study results might be further examined from a generational
perspective. The participants in the sample represent a narrow range of ages. Individuals
graduating with a bachelor’s degree in 2000-2003 were likely in their late 20’s and early
30’s when they completed the study questionnaire. Recently, research has suggested that
there are distinguishable differences in attitudes, behaviors and career expectations relative to various generational archetypes, i.e. Traditional, Baby Boomers, Generation X, and Millennials.

Practical Applications

This study has shown that perceived fit and job satisfaction are linked. Demonstrating the relationship between job satisfaction and perceived fit is perhaps one of the most important contributions of this study. Job satisfaction is one of the most widely studied constructs in the fields of industrial/organizational psychology, social psychology, and organizational behavior (Cranny, Smith, & Stone, 1992). The relationship between perceived fit and job satisfaction has obvious importance for practitioners in human resource management. Job satisfaction has shown to be predictive of behaviors important for organizational success such as performance (Judge, Thoreau, Bono & Patton, 2001) and organizational citizenship behaviors (Organ & Ryan, 1995).

P-O Fit

The study demonstrated a strong and distinct relationship between perceived P-O fit (values) and satisfaction with supervisor. These results suggest supervisors at the unit level of the organization are a critical ingredient in any organizational efforts to maximize values congruence. In fact, large scale, top down organizational programs targeting P-O fit, potentially could contribute to perceptions of incongruence where the organizational values professed do not match the values practiced by the employee’s supervisor. Organizations may want to consider establishing performance review criteria and pay plans to recognize and reward supervisors for practicing organizational values.
Likewise, removing supervisors from their positions or even termination of employment should be considered for those individuals who cannot or will not practice fundamental organizational values.

Research has demonstrated that P-O fit is useful as a predictor of work attitudes and more specifically is strongly related to turnover (Arthur, Bell, Villado, & Doverspike, 2006). P-O fit as predictor of turnover is supportive of Schneider’s (1987, 2001) ASA theory of attraction, selection and attrition. In general, ASA theory postulates that certain types of individuals are attracted to and prefer particular types of organizations. Organizations formally or informally select certain types of individuals to join the organization because of their similarity with others in the organization. Attrition occurs when individuals who do not fit leave the organization. The individuals who stay become members in good standing and in turn perpetuate the organization’s norms, values and culture. Good fit has thus been achieved.

According to Schneider, although good fit leads to higher levels of satisfaction, improved communication, cooperativeness and fewer interpersonal conflicts, the negative consequences of strong homogeneity result in inflexibility, and inhibit the organization’s capability to adapt and change, thus leading to organizational ineffectiveness. In short, the consequences of good P-O fit may be dangerous to the long term health of an organization.

Organizations pursuing values based strategy relative to various human resources practices and policies should proceed with caution. From a business perspective, practitioners need to be clear about the consequential advantages and disadvantages of organizational homogeneity.
**P-J Fit**

Even though the strong link between perceived P-J fit and satisfaction with the work itself is not surprising, the failure of an organization to adequately address P-J fit in its selection and promotion process has potentially significant consequences. Because P-J fit is a measure of an individual’s ability to do the work, an organization’s capability to assess P-J fit has a direct relationship to job performance. An individual’s inability to meet the demands of the job thus negatively affects productivity and the individual’s level of job satisfaction. A rigorous assessment of an individual’s ability to meet the demands of the job should be a fundamental part of an organization’s selection and promotion process. To do so, requires that organizations invest time and effort in fully understanding and documenting knowledge, skills and abilities (KSAs) required for successful performance of the job. Selection committees or even hiring supervisors who have just a cursory understanding of the job requirements increase the odds of making poor employment decisions. In the absence of an adequate assessment of demands-abilities fit, the selection process is at risk for overweighting other selection criteria such as P-O fit. Neither the employee nor the organization is going to be well served by hiring or promoting an individual who shares the values of the organization, but cannot do the work.

Lauver and Kristof-Brown (2001) found in their study of 231 employees of a trucking firm (104 office employees and 127 drivers) that perceived P-J fit explained a significant amount of variance in both job satisfaction and intent to quit. However, there was no significant statistical relationship between perceived P-J fit and several objective
measures of task and contextual performance. Thus, interviewing alone is not an effective method to assess actual P-J fit. Selections tools such as tests, realistic work previews, work samples, and assessment centers can help provide a more objective evaluation of P-J fit than simply interviewing candidates. Certain legal requirements need to be considered when developing and utilizing these more objective selection tools.

**N-S Fit**

The study results demonstrated that there are strong relationships between perceived needs-supplies fit, overall job satisfaction, satisfaction with pay and satisfaction with opportunities. The study results also indicate that perceptions of N-S fit are related to perceived P-J and P-O fit. The research design of this study provides no basis for conclusions relative to causal direction. Likewise, no conclusions can be made about which variables are independent and which variables are dependent. Regardless, the study results suggest that perceived N-S fit may play an important role as it relates to the other two fit dimensions and all six facets of job satisfaction.

Cable and DeRue (2002) also found a strong link between job satisfaction and N-S fit in research they conducted. The study included 187 managers holding various positions in a telecommunications firm and results from a multiple firm survey of 258 employed individuals who had graduate with an MBA degree in the past ten years. The researchers conclude, “In general, these results confirm that employees judge satisfaction with their jobs and careers primarily on the basis of the fit between personal needs and rewards that they receive in return for their inputs and not on the basis of shared values with their organization or ability to perform the job” (p. 882). The researchers go on to comment, “our results reveal a serious omission in past research on perceived fit because
needs-supplies fit perceptions may be the primary driver of many important decisions and work attitudes but have not been measured in past research” (p. 882).

Organizations seeking to affect positive outcomes may be well served by being more attentive and deliberate relative to the basic transactional aspects of the employment relationship such as pay and opportunities. Because these two job satisfaction variables are contained in a component that also includes overall job satisfaction and the strongest loadings for perceived N-S fit, an organization’s investment to enhance satisfaction with pay and opportunities may well be worth doing so. Obviously, organizations must consider the practical and economic implications of making such an investment in terms of time and money. However, improved satisfaction with pay and opportunities may be a significant lever for influencing a number of other variables linked to positive employee attitudes, behaviors and outcomes.

Employee Surveys

The regular use of employee “attitude” surveys can provide a useful tool for organizations in assessing levels of perceived fit and job satisfaction. These instruments can be designed so that both aggregate and work unit responses can be analyzed. Surveys are relatively simple to administer and enable managers to evaluate not only the current state of the organization, but if conducted regularly the results can be utilized to monitor changes and trends over time. The data collected from surveys also provides a method to evaluate the results of OD interventions or the significance of other organizational events that may have happened.
Conclusions

In many ways these study results are reinforcing of several long standing P-E theory constructs. First, Needs Theory still plays an important role in understanding human behavior in organizations. Membership in organizations provides individuals with opportunities to fulfill important needs. When there is fit and individuals fulfill their needs, favorable attitudes result such as job satisfaction.

Second, job satisfaction is comprised of facets, corresponding to a number of aspects basic to the workplace. At the individual level these facets are differentially valued and weighted. At an aggregate level, this study further advanced understanding of job satisfaction by demonstrating that certain job satisfaction facets are also differentially related to perceived P-O, P-J and N-S fit.

The person-trait variables used in this study were not related to the perceived fit and job satisfaction variables. Contrary to this study’s results, other research has shown that various individual traits and characteristics are related to employee attitudes, behaviors and outcomes. More analysis of these conflicting results is necessary.

The three components that emerged from the orthogonal rotation of the retained variables resulted in a simple, clear, interpretable structure. The variable loadings were strong and the three component solution explained over 71% of the total variance. These results suggest that further analysis utilizing confirmatory factor analysis methodology and multiple regression techniques is warranted.
References


APPENDIX A

JOB SATISFACTION INDEX
Job Satisfaction Index (JSI)

Responses are obtained on a 5-point Likert-type scale: 1 = *strongly disagree* to 5 = *strongly agree*.

1. I am satisfied with the nature of the work I perform.

2. I am satisfied with the person who supervises me - my organizational superior.

3. I am satisfied with my relations with others in the organization with whom I work - my co-workers or peers.

4. I am satisfied with the pay I receive for my job.

5. I am satisfied with the opportunities which exist in this organization for advancement or promotion.

6. Considering everything, I am satisfied with my current job situation.
RE: Job Satisfaction Index (1980)
Anne Tsui [Anne.Tsui@asu.edu]
Sent: Thursday, October 27, 2011 11:23 PM
To: John Brandon

Dear John,

As long as you cite the source of this scale, you are fine. It remains a presentation paper. We never got around to submitting it to a journal.

Thanks and best wishes.

Anne

From: John Brandon [jbrandcon@ashland.edu]
Sent: Thursday, October 27, 2011 12:07 PM
To: Anne Tsui
Subject: Job Satisfaction Index (1980)

Dr. Tsui,

Back in 2009, you graciously gave me permission to use the Job Satisfaction Index developed by you and C. Schriesheim and initially presented at the 1980 Western Academy of Management meeting. I used the instrument in conjunction with my doctoral dissertation.

My dissertation is now completed. In preparation for publishing my dissertation, the university’s research librarian asked that I find out if there are any copyrights applicable to this instrument.

If you hold the copyright and are willing to grant me permission to publish the instrument, I would be most appreciative. If the copyright is held by someone else, or an organisation, I would appreciate it if you could let me know who to contact.

Thank you in advance for your assistance.

John Brandon
Director, Human Resources
Ashland University
419-289-5034

https://mail.ashland.edu/owa/?ac=Iitm&t=IPM.Note&id=RgAAAAB%F0imDMQoMRJ... 10/28/2011
APPENDIX B

PERCEIVED FIT SCALE
Perceived Fit Scale (PFS)

Responses are obtained on a 7-point Likert-type scale: 1=strongly disagree to 7=strongly agree.

Values

1. The things I value in life are very similar to the things that my organization values.
2. My personal values match my organization’s values and culture.
3. My organization’s values and culture provide a good fit with the things that I value in life.

Needs-Supplies

4. There is a good fit between what my job offers me and what I am looking for in a job.
5. The attributes that I look for in a job are fulfilled very well by my present job.
6. The job that I currently hold gives me just about everything that I want from a job.

Demands-Abilities

7. The match is very good between the demands of my job and my personal skills.
8. My abilities and training are a good fit with the requirements of my job.
9. My personal abilities and education provide a good match with the demands that my job places on me.
RE: three dimension perceived fit scale

Daniel Cable [dcable@london.edu]

Sent: Friday, October 28, 2011 4:36 AM
To: John Brandon

Thanks John

Feel free to use/publish the results from the scale.

Dan

From: John Brandon [mailto:jbrandon@ashland.edu]
Sent: 27 October 2011 17:01
To: Daniel Cable
Subject: three dimension perceived fit scale

Dr. Cable,

In conjunction with my doctoral dissertation, I utilized the three dimension fit scale cited in your 2002 Journal of Applied Psychology article titled, The convergent and discriminate validity of subjective fit perceptions, co-authored by D. Scott DeRue. In preparation for publishing my dissertation, the university's research librarian asked that I find out if there are any copyrights applicable to this scale.

If you hold the copyright and are willing to grant me permission to publish the scale, I would be most appreciative. If the copyright is held by someone else, or an organization, I would appreciate it you could let me know who to contact.

Thank you in advance for your assistance.

John Brandon
Director, Human Resources
Ashland University
419-289-5034
APPENDIX C

HUMAN SUBJECTS REVIEW BOARD APPROVAL
The Graduate School

TO: John Brandon
FROM: Randy Gearhart, Chair
DATE: November 23, 2009
RE: Human Subjects Review Board Approval

The Human Subjects Review Board has approved the research proposal you submitted. You may proceed with the project.

The primary function of the HSRB is to ensure protection of human research subjects. As a result of this mandate, we ask that you pay close attention to the fundamental ethical principles of autonomy, justice, and beneficence when establishing your research proposal. These ethical principles pertain specifically to the issues of informed consent, fair selection of subjects, and risk/benefit considerations.

If you have any questions, please contact me.

Sincerely,

Randy Gearhart
Phone: 419-207-6198
Fax: 419-289-5460
E-mail: rgearhart@ashland.edu
APPENDIX D

INTRODUCTORY LETTER, RELEASE FORM AND QUESTIONNAIRE
March, 2010

Dear AU Graduate,

As a graduate of Ashland University, you are in a position to make an important contribution advancing the understanding of “job fit”. You are among 536 AU graduates selected to participate in a research study I am conducting as part of a doctoral degree program in Leadership Studies. **The study is confined to those AU graduates who are currently working.** If you are currently working, you can help by participating in this study and completing the attached questionnaire. If you are not currently working you do not need to complete the questionnaire.

Vocational psychologists and organizational behavior researchers have long recognized a relationship exists between an individual’s level of job satisfaction and work related behaviors. Additionally, factors such as an individual’s vocational interests and abilities may also be relevant in understanding this interactive relationship.

A better understanding of how these factors are interrelated can be helpful to both individuals and organizations. Both parties benefit when job fit is improved thus leading to a more satisfying and mutually productive employment relationship.

In my many years as a Human Resources Director, I have observed how important it is for employees to be well suited for the work they do. I have also seen the outcomes that result when an employee’s interests, values and capabilities are mismatched with a job’s requirements or the organization’s culture.

As an individual participant, you can be assured of confidentiality. Your name will never be placed on the questionnaire. Your name and questionnaire responses will never be used individually. The responses from all the participants will be collectively summarized and statistically analyzed.

Your participation in this study will be greatly appreciated.

Sincerely,

John R. Brandon
Director, Human Resources
Ashland University
PERMISSION FORM

I give permission to John Brandon to use information from a questionnaire I completed and certain existing Ashland University records specified below. This information will be used to complete a research study.

- Pursuant to the Human Subjects policies at the University, I understand that my name will not be used in the written description of the study results.
- I understand that my Ashland University records, including GPA, degree earned, ACT score, ACT vocational interest profile, information submitted on my AU admissions application form, parents income from financial aid records and other basic demographic data will be used in the study. This information will be aggregated and summarized for the purpose of the study. Specific, individual names will never be reported.
- I understand I may withdraw from this study at any time by informing the researcher that I wish to do so.
- I understand that the study results will not be used for commercial purposes; however the researcher may submit the finished study for presentation at a conference or in a professional journal.

______________________________
Print Name

______________________________            _______________
Signature                          Date
An investigation of person-job fit, person-organization fit and job satisfaction

A research study conducted by
John Brandon, Director of Human Resources at Ashland University

Note: This study is designed to include individuals who are currently employed. If you are not currently employed, you do not need to complete this questionnaire.

If you have any questions about the study, please do not hesitate to call me at 419.289.5034, or contact me at my e-mail address, jbrandon@ashland.edu.
An investigation of person-job fit, person-organization fit and job satisfaction

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you currently employed?</td>
<td>☐ yes ☐ no</td>
</tr>
<tr>
<td>If your response is “no,” then no additional information is required.</td>
<td></td>
</tr>
</tbody>
</table>

For question 2, please be as descriptive and complete as possible.
For example: Don’t simply indicate “teacher” as your job title. Rather be more specific - indicate high school history teacher or special education teacher at the middle school.
As another example: Don’t simply indicate “manager” as your job title. Be more specific by indicating functional areas or major responsibilities. For example, indicate manager of accounting or manager of retail store operations.
Please provide as much clarity as possible... even if the job title you indicate is slightly different from your official title.
The objective is to fully understand the work you do.

2. What is your current job title?                                       | Job Title:                                                               |

3. What type of employer do you currently work for?                     | Type of Employer:                                                       |
For example: public school system, manufacturer, social agency, hospital, retail, financial services, government agency, etc.

4. Briefly describe your primary job duties and responsibilities.        | Duties/Responsibilities:                                                 |
5. Is this job full-time (35+ hours per week)?
   □ yes □ no

6. What month and year did you start your current job?
   Month Start Date:_____________________
   Year Start Date:_____________________

7. Have you completed or are you currently pursuing a graduate degree?
   □ yes □ no

8. If you answered yes to question 7, what graduate degree have you completed or are you currently pursuing?
   Degree: _____________________________
   College/University:__________________

---

Reflecting on your current job only, respond to the following statements.

<table>
<thead>
<tr>
<th>STATEMENTS</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. I am satisfied with the nature of the work I perform.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. I am satisfied with the person who supervises me - my organizational supervision.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11. I am satisfied with my relations with others in the organization with whom I work - my coworkers or peers.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. I am satisfied with the pay I receive for my job.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13. I am satisfied with the opportunities which exist in this organization for advancement or promotion.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14. Considering everything I am satisfied with my current job situation.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Questions continue on back page.
### Reflecting on your current job only, respond to the following statements.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. The things that I value in life are very similar to the things that my organization values.</td>
<td>[1] [2] [3] [4] [5] [6] [7]</td>
</tr>
<tr>
<td>17. My personal abilities and education provide a good match with the demands that my job places on me.</td>
<td>[1] [2] [3] [4] [5] [6] [7]</td>
</tr>
<tr>
<td>20. The match is very good between the demands of my job and my personal skills.</td>
<td>[1] [2] [3] [4] [5] [6] [7]</td>
</tr>
<tr>
<td>22. There is a good fit between what my job offers me and what I am looking for in a job.</td>
<td>[1] [2] [3] [4] [5] [6] [7]</td>
</tr>
<tr>
<td>23. My abilities and training are a good fit with the requirements of my job.</td>
<td>[1] [2] [3] [4] [5] [6] [7]</td>
</tr>
</tbody>
</table>

Put the completed questionnaire in the pre-paid envelope and mail ASAP. Also, be sure to sign the permission form and send it back with the questionnaire.
APPENDIX E

ANNOUNCEMENT POSTCARD
Dear Ashland University Graduate:

Within the next two weeks you will receive a mailing asking you to participate in an important research study. The study will include individuals who graduated from Ashland University with a bachelor’s degree in the years 2000-2004 and are currently employed. This study is designed to investigate the relationship between career interests, job fit and job satisfaction. It is being conducted by John Brandon, Ashland University’s Director of Human Resources.

In conjunction with the study, you will be asked to complete and return a short questionnaire. In the mean time, if you have any questions or want any additional information about the study, feel free to contact me at: jbrandone@ashland.edu or call 419-289-5034.

Thank you.
APPENDIX F

REMINDER POSTCARD
Dear Ashland University Graduate:

Recently you received a questionnaire as part of a research study I am conducting. The study is designed to investigate the relationship between career interests, job fit and job satisfaction. A high level of participation will enhance the validity of the results.

I realize you may not have responded because you are not currently employed. If that is the case, no response is necessary and I apologize for this additional mailing to you.

If you are currently employed and have not responded, I ask that you reconsider participating in this study. Your participation is important. It will contribute to an improved understanding of the factors that lead to a successful and satisfying career for college graduates. The questionnaire is quick and easy to complete.

For those who still have the questionnaire package, you can simply complete the previously sent forms and send them back. If you no longer have the package, please send me an e-mail message and I will get another package to you for your completion. My e-mail address is: jbrandon@ashland.edu

Thank you.
APPENDIX G

CORRELATION MATRIX
## Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>ACT</th>
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<th>Artistic</th>
<th>Social</th>
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## Correlation Matrix

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<tr>
<th></th>
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### Correlation Matrix

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