FAMILY RELATIONSHIP DYNAMICS AND THE CAREER DECISION-MAKING SELF-EFFICACY OF AFRICAN-AMERICAN COLLEGE STUDENTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
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By
Lee Covington Rush, B.A., M.A.

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Dissertation Committee:
Professor Michael Klein, Advisor
Professor Bruce Growick
Professor Susan Jones Sears

Approved by
Professor Michael Klein
Advisor

College of Education
ABSTRACT

The purpose of this study was to measure the relationship between family environmental dynamics and the career decision-making self-efficacy of a homogenous sample of African-American college freshmen. The available population was 320 African-American college freshmen attending a historically Black university in the state of North Carolina. Specific demographic, attitudinal and behavioral variables related to the population of interest were analyzed.

Over all results from the multiple regression models including sample mean estimates, standard error estimates and t-tests indicated that there was a positive linear relationship between African-American college freshmen perceptions of their family environments and their increased career decision-making self-efficacy.

Through the use of multiple polynomial regression analyses, the dependent variables (the five domains of the CDMSE-SF) were analyzed in relations to the independent variables (Family Adaptability and Cohesion Evaluation Scale II) and demographic variables. Partial support was indicated in that positive associations were found between scores on family adaptability measures and scores on the domains of problem solving and occupational information. Partial support was also indicated on the positive associations found
between family cohesion measures and the domains of problem solving, planning for the future, self-appraisal and occupational information. Only one domain, goal selection indicated no effect for either family adaptability or family cohesion. On Goal selection, only the independent demographic variables decidedness or indecision on a college major had effect on the mean.

The data results suggested that there is a positive correlation between students' perceptions of positive family variables of family adaptability and family cohesion and increased career decision-making self-efficacy. Additionally, the overall results support the hypothesized links between supportive or non-supportive family environments and their impact on successful or less than successful negotiations of career development and career behaviors.

The results of this initial investigation should be replicated with a larger non-college bound African-American population and the present results can only be generalized to the population used as a sample.
DEDICATION

“If ye abide in me and my words abide in you, ye shall ask what ye will, and it shall be done unto you”

John 15:7

“Finally, brethren, whatsoever is true, whatsoever is honorable, whatsoever is just, whatsoever is pure, whatsoever is pleasing, whatsoever is commendable, if there is any excellence and if there is anything worthy of praise, think about these things”

Philippians 4:8

This Study is dedicated to General Lee and Gladys Covington Rush

MOM and DAD, because of you there is Me
Because of You, there is Integrity
Because of You, there is Persistence
Because of You, there is Humility
Because of YOU, There Is Love

All My Love,

Your Son
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In remembering always to "Dance With Them What Brung You", for your unconditional love, unwavering support and always being there for me, I extend my love and appreciation to my family and extended family: Conrod and Elizabeth Rush Reid, Casey Townsend, Hon. and Mrs. William Blackwell, Gladys Plowden, Evelyn Covington Sinton, Dr. and Mrs. Benjamin Covington, Alfred and Elsa Covington, Brenda Hudson, Cheryl Ward, Betty Vaughn, Ella Covington, Henrietta Wheeler, Dr. Gloria Harper Dickinson, Gene and Gloria Barsotti, Emogene Stamper, Mary Correll, Dr. Jose Del Pilar, Charlie and Libby Gropp, Frank Goodwine, Dr. Larry Martin, Victor Floyd, Brenda James, Bill Bennett, Joelyn McIlwain, Mary Covington Gaines, Emma Broady, Laura Carter, The
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VITA

April 28, 1947

Born – Washington, D. C.

1968

B. A. Sociology
Livingstone College

1974

M. A. Educational Sociology
New York University

1968-1970

Social Case Worker
New York City Dept. of
Social Services

1970-1985

New York State Dept. of Labor
Labor Services Representative

1985-1995

New York State Dept. of Labor
Workforce Development and
Training Specialist

1996-1999

The Ohio State University
Graduate Teaching Associate

2001

The Ohio State University
Graduate Teaching Associate

FIELDS OF STUDY

Major Field: Education

Specialization: Counseling
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CHAPTER 1

INTRODUCTION

Background

Since the beginning of earliest human history, people have had to work in order to provide for themselves. In earlier millennia, much of what was done in terms of the types of work was dictated by the social and economic exigency of the times, above and beyond the ideas of work preferences, environmental constraints, and the psychological implications of work. The industrial revolution of the 1850’s in the US and Europe was said to have been the turning point in the modern view of work. Zunker (1994) maintained that as a consequence of the working conditions during the industrial revolution, social scientists turned their attention to human behavior and individual differences in relationship to work. Thus, the concept of work and its attendant behaviors became recognized as one of the great domains of human activity...[within which] the adult ability to work is [viewed as] a product of a long series of individually
experienced events and circumstance that occur within an elaborate matrix of socio-cultural demands, expectations, structures, and traditions. (Neff, 1985, pp. 1-2)

It was this contemporary acknowledgment of the multiple variables which support and enhance the successful negotiations of work behaviors and life span career development, which informed the present study. Specifically, this study was designed to determine if a relationship exists between the environmental factors of the family-of-origin on the career decision-making self-efficacy of African-American college freshmen.

In conjunction with and due to the recognition of the importance of work behaviors and career development, career development theories emerged during the mid-20th century. These theories sought and continue to explain work behaviors, career development and the career decision-making process. Among the theories proposed, two evolved which connected the notion of psychological preparedness for work with environmental antecedents. These constructs, career self-efficacy and family-systems theory, in tandem with the research on African-American families, provided the theoretical and philosophical foundations for this study.

The social cognitive theory is the referent theory for the career decision-making self-efficacy paradigm. The family-of-origin concept is subsumed within the broad structure of family-systems theory. Additionally, family-systems
theory, sociological research, family studies research, and African-American family studies research, were the empirical paradigms for extant research on the environmental factors relative to African-American families.

**Career Self-Efficacy and its Environmental Antecedents**

Researchers from both the career self-efficacy paradigm and family-systems theory have addressed the impact of environmental factors of the family-of-origin on an individual’s career development. The career self-efficacy paradigm evolved from the social learning theory of Bandura (1971). Bandura posited that "psychological functioning is a reciprocal interaction between behavior and its controlling conditions" (p. 2). Of main import and emphasis in the social learning theory are the effects/consequences of vicarious experiences, symbolic representations and self-regulation. Social learning theory (SLT) espoused the notion that humans because of their cognitive capacities, have the ability to learn by observation, are capable of self-reflection and can self-regulate and shape environmental influences. Further, SLT asserted that humans learn through a variety of cognitive processes including, direct experiences, modeling, deliberate or inadvertent influence of or by example, and observation. Bandura (1977) defined an efficacy expectation as the "conviction that one can successfully execute the behavior required to produce the outcome" (p. 192). Accordingly, individuals’ expectations of their ability to perform directly affects their initiation of a given behavior, their level of persistence and the degree to which they will persist in the face of obstacles.
Bandura (1986) reframed and relabeled his theory the social cognitive theory, and hypothesized that self-efficacy is acquired through four routes; (1) performance accomplishments; (2) vicarious learning; (3) emotional arousal; (4) verbal persuasion. The interaction of these variables, thus affect a person's judgment regarding performance and initiates either a choice approach behavior or a choice avoidance behavior. Other factors related to self-efficacy and the consequent behaviors, include outcome expectations, (the beliefs one holds regarding the results of performance), environmental supports, and personal capabilities. Maddux (1995) opined it is the mutually interacting influences of cognition, behavior and environmental events, which provide the sources of self-efficacy influence. These three components are termed triadic reciprocal causation and are "perhaps the most important assumptions of social cognitive theory... [thus the theory is] concerned with the effects of cognition on affect, and behavior and the effect of behavior, affect, and environmental events on cognition" (p. 7). Building upon the work of Bandura (1971), Mitchell, Krumboltz and Jones (1979) developed the social learning theory of career selection, followed by Betz and Hackett's (1981), career self-efficacy construct. The cumulative results of this theory building led to the following conclusions regarding the career self-efficacy paradigm:

1. Self-efficacy beliefs are generally predictive of career entry indexes, such as range of perceived options, academic achievement and persistence and career indecision.
2. Self-efficacy precepts also relate to such important work adjustment outcomes as performance and coping with job loss.

3. Results of intervention, experimental analogue, and causal modeling studies demonstrate directional relations between performance and self-efficacy measures.

4. The pattern of relations between self-efficacy and alternative constructs, such as vocational interests and self-esteem, generally support the construct validity of self-efficacy indexed.


Simply stated, self-efficacy is the conviction that one can successfully perform a given behavior or sets of requisite behaviors. The concept of career self-efficacy refers to groupings of career beliefs which directly impact career choice, notions of options (or the lack), and the level of conviction/persistence an individual might bring to the overall career selection/decision-making process. A major component of the career self-efficacy construct centers around the impact of the environmental influences of the family-of-origin, as these influences relate to the development of career linked processes. These processes include career decision-making, career indecision, interests and self-esteem, as well as academic prediction and achievement, along with performance and performance outcomes, in a word, career self-efficacy.
Lent and Hackett (1987) and Lent, Brown and Hackett (1994) discussed at length the impact of environment and environmentally imposed barriers, which may create weak career self-efficacy development as well as limit one's level of future performance. Their position falls under the rubric of contextual determinants viz., opportunity structures. Lent et al., (1994) posited that “opportunity structure may moderate the relations of interests to choice goals and goals to action” (p. 107). These opportunity structures accordingly, are divided into two subgroups, background or distal influences, that precede and shape interests, and proximal influences, made apparent at critical choice junctures. It is however the overlapping elements of specific contextual features that are constant in a person's career development, namely the family-of-origin, in tandem with other social inputs. Similarly, Mitchell and Krumboltz (1984) identified four specific areas of influence that are related to career selection. These categories are: genetic endowment, environmental conditions and events, learning experiences and task approach skills. Within the category of environmental conditions, the link between family-of-origin and career development is evidenced by “the family's values and demands and the social and financial resources it is able to provide [which] affect the individual's educational preferences, skill development and occupational selections” (Mitchell & Krumboltz, 1984, p. 240).
Family-Systems Theory and Career Development

Murray Bowen (1913-1990) is credited with developing the family-systems theory. According to Goldenberg and Goldenberg (1995) his theory provided the nexus between psychodynamically driven approaches oriented toward individual development, and systems approaches, which view the family as a unit for analysis and interventions in family therapy. Family-system theory hypothesized that the family members must be viewed from a multigenerational perspective and that all members of the family are "tied in thinking, feeling, and behavior to that family system and thus individual problems arise and are maintained by relationship connections with fellow members" (p. 364). Of particular note, in this systems perspective, is the proposition that those family members with the strongest affective connections or fusion tend to react most too family stress. Conversely, those family members who possess a greater sense of differentiation and self-independence tend to be more personally functional in terms of general self-efficacy. The aforementioned propositions, family fusion in contrast to family differentiation and independence, are thought to be among the most powerful antecedent environmental influences in the family-of-origin which inform the career decision-making process. Lopez (1989) reported that research focused on the relationship between family dynamics and its emotional interdependencies may function as a hindrance or aid in age appropriate development. Specifically, Lopez and Andrews (1987) suggested that dysfunctional family relationships may negatively affect vocational
development and may also contribute to the emergence of career indecision among young adults. Thus, in examining career development problems from a family-systems perspective one is making an attempt "to account for individual problem behavior within the context of family interrelationships" (Lopez & Andrews, 1987, p. 306). Commenting further, Lankard (1995), proposed that the role of the family in the career decision-making process should focus on family process variables. It is the "family processes of interaction, communication and behavior [that] influence what the child learns about work and work experiences" (p. 2).

This inextricable link between the environmental factors of the family-of-origin and the career development/career decision-making process, as established by empirical research, thus provided the anchors for this study. Roe (1984) was among the earliest researchers to point out the linkage between family-of-origin and career development. In her theory of personality development and career choice, proposition II indicates:

The degree and avenues of development on inherited characteristics are affected not only by experience unique to the individual but also by all aspects of the general cultural background and the socioeconomic position of the family. This proposition takes [into] account not only the fact that individuals' experiences affect which and how far various
inherited characteristics may be developed but also the fact that such factors as race, sex, and the social and economic position of the family are importantly involved. (p. 37)

Again, from the family-systems paradigm, Terkelsen (1980) argued that the purposes of the family include; providing a context that supports the need attainment for its members; a unit that is able to address the developmental and survival needs of the family; a structure that at a given time in history corresponds to the combined and interacting primary needs of the individual members; a sufficient or good enough matching of specific elements to specific needs (human development is contingent on matching structure to need); a family system which adapts and realigns after change. These family-systems constructs not-with-standing, in terms of research on and with non-majority families, Goldenberg and Goldenberg (1996) cautioned that one must attend to and appreciate "what is unique about living as an ethnic minority, the language barriers, the cultural shock, the prejudice and discrimination, the feelings of powerlessness, the suspicion of institutions, the hopelessness, and rage [that may be subsumed within the family system]" (p. 36). With these caveats in mind we examined the final dimensions which framed this research.

**Family-Of-Origin and Career Development within African-American Families**

The family-of-origin construct in earlier permutations simply referred to a household including the husband, wife and children. Recent advances in family-systems research, now recognizes the impact of race and culture on any
discussion of or definition of family-of-origin. Corey (1996) maintained that “culture and ethnicity are so interrelated with family that is hard to know one without the other” (p. 434). In relationship to African-American families, Sudarkasa (1997), among other researchers (e.g. Hill 1993 &1998, Dodson 1997), indicated that in assessing these families, one must include both conjugal and consanguineal ties. Thus, family-of-origin for African-Americans may include a single household, as well as extended family members who are involved in the care, nurturance, and decision-making of the family unit. It is this African-American family subsystem according to Nobels (1997), which provides its members with: "(1) legitimation of beingness; (2) provision of a family code; (3) elasticity of boundaries; (4) provision of information/knowledge; (5) mediation of concrete conditions" (pp. 89-90). It is therefore within the matrix of this African-American family subsystem that the psychological, social, physical, and environmental antecedents of healthy development begin. Taylor, Chatters, Tucker and Lewis (1990) in reporting on the psychological health of African-American adults, contend it is the supportive nature of extended families which has been found to increase both self-esteem and personal efficacy. Among the common values found in this family subsystem are interdependence, mutual aid, resilience, communalism and collective responsibility (White & Parham, 1990).
The recognition and inclusion of this cultural/ethnic specificity, vis-à-vis African-American families, thus provided the context within which to identify variables of the health or dysfunction in terms of career development. What then is the current level of career development with African-Americans?

Among the researchers investigating the career development of African-Americans, Brown (1995) indicated:

The career development of the country’s almost 30 million African-Americans needs urgent attention... their poverty rate is about 31.9% in contrast to the nations 13.5%... their unemployment has run about 2.5 times the rate for Whites for the last two decades... African-Americans are disadvantaged not only economically, but also occupationally. (p. 7)

Brown (1995) is but one of a substantial number of researchers increasingly concerned with the career development of African-Americans. This concern has been fueled, in part, by the 1989 National Career Development Association Survey, which reported that African-Americans more than any other group indicated a need for career planning, a need for assistance in the career decision-making process and a need for increased career development activities (Brown, Minor & Jepsen, 1991). Hines and Boyd-Franklin (1996) posited that the multiplicity of career related factors and barriers for African-Americans are such that, “most no longer believe that the American dream is intended to
include them... [therefore] most perceive work... as essential to psychological and physical survival, a means to an end rather than a source of self-actualization” (p. 76).

In examining extant career development research, Bowman (1995) indicated a glaring lack, vis-à-vis minorities, while Osipow and Fitzgerald (1996) referred to the empirical examination of minority’s career development as in its infancy, further Fouad and Bingham (1995) stated unequivocally that “we lack empirical information about the career behavior of racial and ethnic minority members” (p. 360). Of the research undertaken on African-American’s career development much has either focused on issues of access (Herr & Cramer, 1992), or opportunity structures (Lankard 1995, Schulenberg, Vondracek, & Crouser 1984), or between group differences, i.e. Black and White differences (Parham & Austin 1994, Atkinson & Thompson 1992). More specifically, in regards to the research on the career decision-making of African-Americans, Brown (1995) maintained that this research is “essential virgin research territory” (p.28).

Responding to this critical need for empirical data on the career development issues of African-Americans, in consequence, informed this investigation along with the highly endorsed postulates of the social cognitive-career self-efficacy paradigm (e.g. Chartrand & Rose 1996, Lent, Brown, &
Hackett 1994, Niles & Sowa 1992, Solberg 1998). Atkinson and Thompson (1992) in reviewing research over the last ten years with racial/ethnic groups stated:

[The] social cognitive theory based on the reciprocity of behavior, cognitive and other personal factors, and environmental events as determinants of each other has obvious implications for cross cultural counseling research...this model clearly accommodates cultural and ethnic identity influences as determinants of ethnic minority clients feelings, cognition's and behaviors. (p. 375)

Solberg, Good and Nord (1994) posited that “one reason [career decision-making] self-efficacy holds promise for the study of career development among racial/ethnic minority populations is due to its emphasis on viewing the environment as sharing responsibility for changing individual efficacy expectations” (p. 68). In discussing the impact and possible utility of the career development theories on non-majority populations, Fitzgerald and Betz (1994) suggested the problem has less to do with the theories and more to do with researchers' behaviors. The degree of applicability and usefulness in addressing career concerns of non-majority populations is such “that we simply do not know, mainly because we have not asked” (p. 105). This need for research vis-à-vis the career self-efficacy construct, was further articulated by Leong and Brown (1995) who stated:
Although the role of efficacy expectations has been implicated in the
career behavior of African Americans... much more research is
needed... and if self-efficacy is found to play a major role in career
behavior of multicultural populations, [are] the self-efficacy
expectations... modifiable through career intervention. (p. 155)

Therefore, the multiple issues which provided the impetus and focus for
this study, included the dearth of research, the lack of focus on process
variables (e.g. family-of-origin variables), and the chronicity and
multidimensional aspects of the career development/decision-making problems
experienced by African-Americans.

The remaining sections of this chapter include the statement of the
problem, the research questions relevant to the study, the definitions of terms,
and the limitations of the study, followed by a brief summary.

Statement of Problem

The purpose of this study was to investigate whether a relationship exists
between the dynamics of the family-of-origin and the career decision-making
self-efficacy skills of African-American college freshmen.

Research Hypotheses

There were three major research questions and hypotheses which guided
this study. The independent variables were the scores on the Family Adaptability
and Cohesion Evaluation Scales II (Olson, Bell, & Portner, 1982) along with
demographic variables and the dependent variables were the scores on the Career Decision-Making Self-Efficacy Scale- Short Form (Betz, Klein & Taylor, 1996). The research questions/hypotheses were:

1. Is there a relationship between the family-of-origin relationship measures and the career decision-making self-efficacy measures of African-American college freshmen?

H1: There will be a positive relationship between scores on FACES II and scores on the CDMSES-SF of African-American college freshmen.

2. Does the perception of family adaptability in African-American college freshmen families positively correlate with the students’ career decision-making self-efficacy?

H2: There will be a positive relationship between scores on FACES II adaptability dimensions, and scores on the CDMSE-SF.

3. Does the perception of family cohesion in African-American college freshmen families positively correlate with the students’ career decision-making self-efficacy?

H3: There will be a positive relationship between scores on FACES II cohesion dimensions, and scores on the CDMSE-SF.
Definition of Terms

The following section provides both the constitutive and operational definitions of the main theoretical constructs, terms and instruments used throughout this study.

Family-Of-Origin  
Goldenberg and Goldenberg (1996) refer to family-of-origin as the grouping of a mother, father and siblings found in a nuclear family. Operationally for this study, family-of-origin for African Americans included families in a household as well as extended family members, i.e., both conjugal and consanguineal relations, as defined by Sudarkasa (1997).

Family Environmental Factors  
In the family-systems approach to African-American families, environmental factors may include levels of acculturation, racial identity, family functioning, religious affiliation, use of social support systems, the persistence of stress and the families coping mechanisms, (Hines & Boyd-Franklin, 1996). For this study, family environmental factors were operationalized as the total scores on the two domains of the Family Adaptability and Cohesion Evaluation Scales-FACES II (Olson, Portner, & Lavee, 1982).
Career Self-Efficacy  Operationally for this study, career self-efficacy referred to the relationship to variety of career related tasks, decisions, behaviors and adjustment processes, all found to be influential in determining career development. (Hackett & Betz 1995).

Career Decision  Career decision-making self-efficacy as

Making Self-Efficacy  conceptualized by Betz and Luzzo (1996), refers to an individual’s belief that he or she can successfully complete the tasks necessary in making career related decisions, viz., an individual’s readiness for career decision-making.

Career decision-making self-efficacy for this investigation was operationalized as the total scores on the five domains of the Career Decision-Making Self-Efficacy Scale-SF (Betz, Klein, &Taylor, 1996).

Family Adaptability  From the family-systems perspective, family adaptability is defined as the family’s ability to change its rules, roles, and power structure in response to stress, viz., developmental and/or situational stressors (Edman, Cole & Howard,
1990). In this investigation, family adaptability was operationalized as the total scores on the adaptability domain of FACES II.

Family Cohesion

Family cohesion is conceptualized as the degree of emotional bonding family members share with each other (Anderson & Gavazzi, 1990). Family cohesion in this study was operationalized as the total scores on the cohesion domain of FACES II.

African-American

African-American student in this study, was operationalized as that student who self-identifies as either Black or African-American.

College Freshman

College Freshman was operationalized in this study, as only a first year student, entering college for the first time, and entering directly after high school graduation.

Significance of Study

The need for testing the career self-efficacy construct on African-American college freshmen, was important for several reasons. This construct which provides a nexus between one's psychological preparedness for work with environmental antecedents, may serve as an invaluable tool in identifying career intervention recommendations, applicable for this specific population. As has
been pointed out by Brown (1995), Fitzgerald and Betz (1994), Atkinson and Thompson (1992), research on this paradigm with African-Americans has thus far been very limited. Significantly, African-Americans more than any other group in America, continue to indicate a need for career development, career planning strategies and assistance in the overall career decision-making process (Brown, et al., 1991). Given the technological advances of the new millennium, Hawks and Muha (1991) maintained that many minorities are currently unprepared with the competencies necessary for the new workplace skills. These deficits, which include the “lack of academic preparation, underdeveloped interests and little career planning, can lead to limiting and restrictive career choice patterns” (Hendricks, 1994, pp. 117-118). Additionally, the fact that African-American unemployment has remained twice that for Whites since World War II, and the fact that African-Americans continue to be concentrated in the lowest status positions in industry, government and service occupations (Pinkney, 1993), speaks to the urgent need for appropriate career decision-making self-efficacy skills which then provide the possible nexus for successful occupational skill development.

This study provided an examination of the career decision-making self-efficacy constructs’ applicability with an African-American population. The findings of this study, in conjunction with further research, will help in identifying familial environmental factors, which enhance or diminish the career decision-making self-efficacy of African-American college freshmen.
Limitations of Study

The conclusions and information which resulted from this study, can be assessed most efficaciously, within the context of previous research on the impact of environmental factors of the family-of-origin and its relationship to career decision-making self-efficacy. This specific study dealt only with African-American college freshmen in the state of North Carolina, and therefore the results cannot be generalized to other groups.

Further, as the predictor variables (scores on FACES II) are perceived self-reflections, there was the possibility of respondents giving socially desirable answers. On this point however, Olson (1986) the designer of the scale indicated efforts were made to minimize the impact of socially desirable responses on this instrument. Finally, research has indicated that the career development of African-Americans, may be more problematic than that of the general population, and that the African-American's family sub-system may also differ (e.g. Hill, 1997, Brown, 1995, Taylor et al., 1990). Thus, the interpretations of these results should be assessed from a perspective which allows for and incorporates social and cultural differences.

Summary

This chapter has provided both the general and theoretically specific background, which framed this research investigation along with the research questions. The variables relevant to this study were identified, the definitions for the terms and constructs were provided, both constitutive and operational, and
the significance of this study outlined. In the following chapter the empirical research literature, which supported this study, is comprehensively reviewed.
CHAPTER 2

REVIEW OF LITERATURE

This chapter provides a review of the extant empirical research which supported and framed the theoretical underpinnings of this study. This investigation had as its focus, the career decision-making self-efficacy of African-American college freshmen, as impacted by the relationship dynamics of their families-of-origin. Thus, the theoretical constructs which formed the basis for this study are; (1) the career self-efficacy paradigm; (2) family-systems postulates and career development; (3) African-Americans' career development and the implications of their families-of-origin. The research data, in the aforementioned three areas, were therefore the foci for this review. A comprehensive summary linking the three-section literature review follows at the completion of part three.
Part I - Theoretical Background - Career Self-Efficacy

Theoretical Construct

The career self-efficacy construct, it has been argued, (e.g. Lent & Brown, 1996, Leong and Brown (1995), Lent, Brown, & Hackett, 1994, Solberg, Good, & Nord, 1994, Atkinson & Thompson, 1992) may be particularly useful in explaining the career development of non-majority populations especially “due to its emphasis on viewing the environment as sharing responsibility for changing individuals efficacy expectations” (Solberg et al., 1994, p. 68). Thus, this review of extant literature explicates the construct, as well as provides the rationale for its use as the main theoretical foundation for this study. The questions examined are: (1) what is career self-efficacy ?; (2) what are the career self-efficacy domains that have been the foci of research?; (3) what are the implications and recommendations for further research on the career self-efficacy construct?

In examining the career self-efficacy construct, it is of import to review the antecedent constructs, from which the career self-efficacy paradigm evolved. The research of Bandura (1971), Krumboltz, Mitchell and Jones (1975), and Taylor and Betz (1983) initiated the theory building which would become the career self-efficacy formulation. Lent, Brown and Hackett (1994) provided the conceptual unification of the social cognitive career research in their social cognitive career theory.
Bandura's Social Cognitive Theory

In 1971, Albert Bandura posited the social learning theory. This theory shifted from the contemporaneous learning theories, which had focused on an analysis of human behavior in terms of external influences on responsiveness. According to Bandura (1971) these theories excluded the cognitive processes and capabilities of humans and rather examined human behavior vis-à-vis “response patterns, generally attributed to underlying forces [which] could be induced, eliminated and reinstated simply by varying external sources of influence” (p. 2). The social learning theory, rather, postulated that humans due to their cognitive capabilities, can learn by observation, have the ability to self-reflect and can self-regulate and shape environmental influences. Bandura (1977) defined an efficacy expectation as the “conviction that one can successfully execute the behavior required to produce the outcome” (p. 192). Therefore, individuals’ expectations of their ability to perform directly affects their initiation of a given behavior, their level of persistence and the degree to which they will persist in the face of obstacles. Other factors related to self-efficacy and the consequent behaviors, include outcome expectations, (the beliefs on holds regarding the results of performance), environmental supports, and personal capabilities.

Self-efficacy, according to Bandura (1986), is acquired through performance accomplishments, vicarious learning, emotional arousal and verbal persuasion. Further, it is the interaction of these variables which affect a
person's judgment in terms of performance and initiates either a choice approach behavior or a choice avoidance behavior. Additionally, self-efficacy is conceptualized along three dimensions:

1. Level - the degree of difficulty of the tasks or behaviors that an individual feels capable of performing.
2. Strength - the confidence a person has in his/her performance estimates.
3. Generality - the range of situations in which a person considers him-or herself efficacious (Lent & Hackett, 1987, p. 348).

Interrelated with the levels, strengths and generalities of self-efficacy beliefs, is the impact of environmental events, termed triadic reciprocal causation, (Maddux 1995), which include the mutually interacting influences of cognition, behavior and environmental events. These concepts provided an expanded view of the self-efficacy, and Bandura (1986), reframed the theory as the social cognitive theory. The redefinition postulated self-efficacy as:

People's judgments about their capabilities to organize and execute courses of action required to attain designated types of performances...thus [self-efficacy judgments] are concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses. (p. 319)
Bandura (1995) elaborated further by indicating that efficacy beliefs and performance outcome expectations are separate constructs. While belief systems address one’s capacity to perform, outcomes flow from those beliefs. These outcome expectations include the pleasant or aversive physical effects of a given behavior on the individual, the positive or negative social reactions to an individual’s behavior, and the positive or negative self-evaluative reactions one has to his/her behaviors. Therefore, “a performance is an accomplishment; an outcome is something that flows as a result of an activity” (p. 350). Though beliefs and performance are separate constructs in this theory, personal efficacy beliefs are of paramount import, in that they facilitate knowledge acquisition and regulate motivation. Bandura (1995) framed the primacy of personal efficacy beliefs accordingly:

The self assurance with which people approach and manage difficult tasks determines whether they make good or poor use of their capabilities…insidious self-doubts can easily overrule the best of skills. (p. 353)

**Krumboltz’s Social Learning Theory of Career Selection**

Krumboltz, Mitchell, and Jones (1976, 1979) proposed the social learning theory (SLT) of career selections as an outgrowth of Bandura’s (1971) postulates and in tandem with their discontent with trait and factor theories (Krumboltz 1993). The social learning theory is an attempt to explain the factors involved in an individuals’ occupational and educational choices and changes
over time, as well as the reasons for different occupational preferences. In toto, SLT’s propositions addressed the nature of and factors involved in the career decision-making process. Krumboltz (1979) indicated four factors, which influence the nature of career decision-making:

1. Genetic endowment and special abilities - a person is born with inherited qualities that may limit educational and occupational preferences and skills, [including] race, sex, physical appearance and handicaps, intelligence, musical ability, artistic ability, muscular coordination.

2. Environmental conditions and events - educational and occupational decision-making is influenced to a large extent by factors outside the control of an individual... these environmental conditions and events may be due to human actions (social, cultural, political or economic) or natural forces (location of natural resources or natural disasters).

3. Learning experiences - education and occupational decisions making also influenced by the individual’s past learning experiences... [including] *instrumental learning* [whereby] the individual acts on the environment in such a way as to produce certain consequences... *associative learning experiences*, [i.e.] observational learning in which the individual learns by observing real or fictitious models.
4. Task approach skills - as a result of as yet unexplained interactions between learning experiences, genetic and environmental influences, an individual brings to each new task or problem a set of skills, performance standards and values, work habits, perceptual and cognitive processes, mental sets and emotional responses... thus task approach skills are both factors, which influence outcomes and outcomes themselves.

(pp. 20-25)

Based upon the combination and interaction of genetic endowment, environmental conditions, learning experiences (instrumental and associative) and task approach skills, an individual develops self-observation generalizations. It is these generalizations, which can be true or false, that allow the individual to observe and evaluate his/her past performance and thus make statements about these observations.

In terms of career selection and decision-making the task approach skills inform a persons attitudes and emotions, which may be associated with differing occupational tasks. Further, a person's environment or other cultural factors may either block or provide access to other learning opportunities. Accordingly, as a child the individual gravitates towards tasks they find rewarding and that are encouraged and valued by those they respect. In adulthood the person gravitates towards occupations they believe are best for them, given their particular set of circumstances. Krumboltz (1993) maintained, "what they think is
best for them may or may not be the best in fact... people make assumptions and
generalizations based on their learning experiences, some true some false [yet]
these assumptions guide behavior” (p 147). In the application of SLT, the
counselor’s tasks are multifaceted. The counselor’s duties may include; (1)
assisting the client in identifying their assumptions, which if erroneous, might
serve as blocks to their career development; (2) aid the client in testing the
efficacy of their assumptions; (3) when indicated, provide the client with other
learning experiences, in an effort to change his/her inaccurate assumptions. In
the SLT of career decision-making, one must be cognizant of “the extent to
which emotional assumptions are integrated into career planning and the extent
to which personal problems impinge on the work place” (p. 147).

Taylor and Betz’s Career Decision-Making Self-Efficacy

In addition to Krumboltz’s (1976) use of the social cognitive theory in
addressing career decision-making issues, Betz and Hackett (1981) also
recognized that Bandura’s social cognitive theories relating to self-efficacy,
might be important in informing the theory and research on career development.
Specifically, they postulated that the construct of self-efficacy expectations might
be a valuable concept in explaining women’s career development, particularly
women’s under involvement in several male dominated fields, such as
mathematics, the sciences and engineering. They further postulated that
“differential sex-role socialization provides different types and levels of
Bandura’s four sources of self-efficacy information... and the resulting gender
differences in self-efficacy expectancies influence the career related behaviors and career choices of young women." (p. 280). Self-efficacy expectations were thus perceived as learned and could be modified based on the sources of efficacy information. The four sources of efficacy information, as proposed by Bandura (1977) are: (1) performance accomplishments, which refers to the experiences of performing given behaviors in a successful manner; (2) vicarious learning i.e., learning through modeling; (3) emotional arousal or anxiety in relation to a given behavior; (4) verbal persuasion or encouragement from others. While the self-efficacy construct had been used in clinical treatment and assertiveness training, its applicability in the career domain had yet to be investigated. It was Betz and Hackett’s (1981) initial study, which served as a precursor for what would become the career self-efficacy construct.

The findings of the first study indicated consistent and significant differences between men and women in regard to traditional and non-traditional occupations, vis-à-vis self-efficacy expectations. Betz and Hackett (1981) related:

Perhaps more interesting... was the finding that the observed sex differences were due primarily to females’ divergent perceptions of capability with regards to traditional versus nontraditional occupations... whereas males reported equivalent overall self-efficacy with regard to traditional and nontraditional occupations, the self-efficacy expectations of females were substantially lower in relationship to
nontraditional occupations... since females in this sample were equivalent in ability to the males, it is suggested that the traditionality of the occupation is a more important factor in the self-efficacy expectations of females than of males with equivalent abilities. (p. 408)

Based on this seminal study, Betz and Hackett (1981) hypothesized that the stereotypic female childhood experiences in many ways limited females exposure to the sources of information needed in order to develop a strong sense of self-efficacy in many occupations. Further, the lowering of these career self-efficacy expectations could then delimit the types of careers and occupations considered by women. This research generated a body of subsequent research, testing the career self-efficacy construct on several career development dimensions. Evolving also from Betz and Hackett's original hypotheses, Taylor and Betz (1983) developed an instrument to measure self-efficacy expectations. This instrument, the Career Decision-making Self-efficacy Scale, was based on Crites (1973) career choice competencies, viz., accurate self appraisal, gathering occupational information, goal selection, making plans for the future and problem solving. The purposes of the instrument were “to develop a method for the assessment of self-efficacy expectations with respect to career decision-making tasks...and to examine the relationships of career decision-making self-efficacy expectations to career indecision “ (p. 65). Hackett and Betz (1995) defined career self-efficacy as “self-efficacy in relation to the
wide variety of career related tasks, decisions, behaviors and adjustment processes that are influential in determining career development” (p. 251).

**Lent, Brown and Hackett – Social Cognitive Career Theory**

Self-efficacy as a construct, is conceptualized as situation specific in nature, that is, self-efficacy relates to one’s assessments or judgments regarding one’s *capabilities to perform specific tasks, activities or problems*. The concept also involves content, what one considers engaging, and process, how one makes choices. In an effort to frame the broad area of career development behaviors and the self-efficacy construct, as postulated by Bandura (1971, 1986), Lent, Brown and Hackett (1994), proposed the social cognitive career theory, which focused on the processes related to the development of career interests, career choices and performance vis-à-vis career pursuits. Their theory highlighted self-efficacy beliefs, outcome expectations and personal goals and are explicated in their 12 propositions aimed at integrating previous research and guiding future investigations. Their propositions include the following hypotheses:

1. An individual’s occupational or academic interests at any point are reflective of his or her concurrent self-efficacy beliefs and outcome expectations.

2. An individual’s occupational interests also are influenced by his or her occupationally relevant abilities, but this relation is mediated by one’s self-efficacy beliefs.
3. Self-efficacy beliefs affect choice goals and actions both directly and indirectly.

4. Outcome expectations affect choice goals and actions both directly and indirectly.

5. People will aspire to enter (i.e., develop choice goals for) occupation or academic fields that are consistent with their primary interest areas.

6. People will attempt to enter occupations or academic fields that are consonant with their choice goals, provided that they are committed to their goal and their goal is stated in clear terms, proximal to the point of actual entry.

7. Interests affect entry behaviors (actions) indirectly through their influence on choice goals.

8. Self-efficacy beliefs influence career/academic performance both directly and indirectly through their effect on performance goals. Outcome expectations influence performance only indirectly through their effect on goals.

9. Ability (or aptitude) will affect career/academic performance both directly and indirectly through its influence on self-efficacy beliefs.
10. Self-efficacy beliefs derive from performance accomplishments, vicarious learning, social persuasion, and physiological reactions in relation to particular educational and occupationally relevant activities.

11. As with self-efficacy beliefs, outcome expectations are generated through direct and vicarious experiences with educational and occupationally relevant activities.

12. Outcome expectations are also partially determined by self-efficacy beliefs, particularly when outcomes are closely tied to the quality or level of one's performance. (pp. 91-100)

Part I - Literature Review - Career Self-Efficacy

With an overview of the theory building which culminated in the career self-efficacy construct and the social cognitive career theory, and with a constitutive definition of career self-efficacy, the research on career self-efficacy is examined. The current research on career self-efficacy covers among its domains, career decision and indecision, gender variables, academic achievement and performance and to a lesser extent, racial/ethnic career self-efficacy. These areas were the main foci of this portion of the review.

Career Decision-Making and Indecision

Taylor and Betz (1983) investigated the relations between career decision-making self-efficacy expectations and career indecision. This particular investigation also included the construction of the Career Decision-Making Self-
Efficacy Scale. Subjects were two groups of college students totaling 346. Group I consisted of 68 males and 85 females. Group II consisted of 60 males and 133 females. Career self-efficacy expectations relating to career decision-making tasks were assessed by respondents' confidence in their ability to complete 50 tasks. The tasks were based on 5 career choice competencies. For each competency, 10 behavioral items were judged to reflect competency.

Data were analyzed by means, standard deviations and item total score correlations for each item of the CDMSE. Means, standard deviations and t-tests of the significance of sex differences were obtained for the CDMSE total and sub scale scores and the CDS indecision scores. Pearson product-moment correlations describing the relation among the CDMSE and CDS total and subscale scores were obtained. Stepwise multiple regression analyses of the relationships of career decision-making self-efficacy and verbal and math ability to career indecision were performed separately for Group 1 subjects and Group 2 subjects. An interated principal components factor analysis with varimax rotation was used to investigate the structure of the 50 items of the CDMSE. The results found levels of self-efficacy to be predictive of levels of career indecision, i.e., for students with less confidence regarding their ability to complete decision-making tasks, there were also higher levels of career indecision. Among the conclusions, it was found that "stronger self-efficacy expectations would be a consequence of vocational decidedness as well as an antecedent to vocational indecision" (p. 79). This study did not find gender
differences in the scores, and based on the outcomes of the instrument, the authors suggested the CDMSE may be a means of assessing the general domain of career decision-making behaviors and tasks. The results supported the utility of the career self-efficacy construct in addressing career decision-making and indecision. As a follow up to the Taylor and Betz (1983) investigation, Robbins (1985) conducted a study to assess the construct validity of the CDMSE. The subjects were 92 undergraduate college students, 52% men and 47% women. The results supported the use of the instrument as a measure of generalized self-efficacy for career decision-making.

A study by Taylor and Pompa (1990) further extended the investigation between career decision-making self-efficacy and vocational indecision. Additionally, these authors examined the concepts of career salience and locus of control. The purpose of the study was to further investigate the general global measures of the CDMSE and to examine other variables associated with career self-efficacy. Subjects were 470 undergraduate college students, 202 female and 204 male. Results indicated that the CDMSE seemed to be measuring efficacy expectations over a range of career decision-making behaviors. Further, there was indicated a moderate negative relationship between career decision-making self-efficacy and vocational indecision and a positive correlation between occupational self-efficacy and efficacy of career decision-making tasks. An additional finding, was the moderate and negative relationship found between career self-efficacy and locus of control, which suggests "the
more external an individual's attribution of control over events and consequences in life, the lower the confidence in successful completion of career decision-making tasks" (p. 28). This study found no relations between career self-efficacy and career salience. The study did support the use of the career self-efficacy construct in predicting career and academic indecision.

Luzzo (1993) investigated the value of career decision-making self-efficacy in predicting the career decision-making attitudes and skills of college students. Participants were 233 undergraduate students, 162 women and 71 men. The results supported the theoretical link between a person's confidence in making career decisions and their feelings and subjective reactions regarding the career decision-making process. Specifically, the study found the level of career decision-making self-efficacy is directly associated with an individual's overall attitudes toward career decision-making. In a follow up study, Luzzo, Funk and Strang (1996) conducted an investigation to determine if attributional retraining would increase the career decision-making self-efficacy of a group of college students. This study included 60 undergraduates (41 women and 19 men). The hypothesis was that students with an external career locus of control, who received the attributional retraining, would display higher levels of CDMSE. In this instance, the retraining was conducted by the use of an 8 minute video, designed to verbally persuade the students to attribute past career related failures and concerns to unstable causes, i.e., lack of effort. The results supported the hypothesis. Students who had measured external locus of control
and received the retraining, increased their CDMSE. However, for those participants with measured internal locus of control, the treatment had no effect on their CDMSE. The authors suggested the increased CDMSE for externals may be the result of greater attributional deficits. This study also supported, in part, the previous findings of Taylor and Pompa (1990), vis-à-vis external locus of control and its impact of career decision-making.

In further examining self-efficacy and career indecision, Betz and Voyten (1997) conducted a study to determine the extent to which career decision-making efficacy and outcome expectations relate to career indecision and exploration intentions and, as a corollary, the relationships of efficacy and outcome expectations and level of indecision to exploration intentions. The study included 350 college students (125 men and 220 women). The instrumentation consisted of the Career Decision-Making Self-Efficacy Scale (short form), the Career Decision Scale and the Career Decision making Outcome Expectancies and Exploratory Intentions measures. The findings indicated that higher levels of career decision-making self-efficacy were positively correlated with exploratory intentions and with lower levels of career indecision. Additionally, indecision was positively correlated with career outcome expectations and exploratory intentions. The authors pointed out that this study lends further support to the self-efficacy theory, by demonstrating the relationships between thoughts and behavior, i.e., weak outcome efficacy expectations tend to lessen exploratory behavior. Niles, Erford, Hunt, and Watts
(1997) explored career decision-making self-efficacy in relationship to decision-making styles with 332 undergraduate college students. In addition to the CDMSE Scale, the Decision-Making Inventory was used, which assessed spontaneous versus systematic and internal versus external decision-making styles. In terms of the variables of interest, systematic decision-makers gather information and move logically forward, while spontaneous decision-makers tend to make quick decisions. Internal decision-makers analyze and process information privately and conversely, externals gather information and talk to others prior to decision-making. The authors hypothesized systematic and internal styles of decision-making related to positive career decision-making self-efficacy. The hypothesis was partially supported in that a positive correlation was found between systematic-external decision-making and CDMSE. This study provided insight on yet another variable relative to effective career decision-making self-efficacy, viz., decision-making style.

In order to test some of the assumptions of the social cognitive theory, Luzzo and Day (1999) undertook an investigation to evaluate the effectiveness of completion of the Strong Interest Inventory in combination with evaluative feedback/interpretation sessions on the CDMSE of 79 college freshmen. The hypothesis was that completion of the SII and feedback/interpretation sessions would increase students CDMSE. The hypothesis was confirmed in that participates who completed the SII and who were exposed to feedback and interpretation of results, scored significantly higher on the CDMSE scale than did
those students who only took the SII. Of note in this study, was the application of two of the hypothesized sources of self-efficacy information, i.e., performance accomplishment and verbal persuasion (Bandura, 1986). Thus, the use of feedback/interpretation sessions and persuasion by career counselors, allowed for student performance accomplishment along with the receipt of verbal persuasion. Again, the higher scores on the CDMSE scale, lent support for the assumptions of the theory.

Gender and Career Self-Efficacy

It was, as has been previously identified, the Betz and Hackett (1981) investigation, which initiated the use of the self-efficacy construct, vis-à-vis career development issues and behaviors. The purpose of their study was the investigation of the utility of the self-efficacy construct in explaining and understanding vocational behaviors. The specific focus dealt with women's career development in terms of the nature and range of career self-efficacy in relations to occupational alternatives. Subjects were 134 female and 101 male undergraduate college students. The findings of this study provided evidence of gender differences in self-efficacy in terms of traditional and nontraditional occupations for women. Women were found overall to indicate lower self-efficacy in nontraditional occupations. One caveat existed, in some nontraditional occupations, no gender differences occurred, e.g., physician and lawyer. The authors suggested that women's lower self-efficacy may be linked
to the specific nontraditional job. In the areas of mathematics and engineering, women consistently indicated lower self-efficacy. Of import however, ACT math scores, which were part of the data set, indicated:

A lack of complete correspondence between measured ability and perceptions of ability to successfully pursue various occupations...women's lower self-efficacy with regard to occupations requiring competence in mathematics may be due to lack of experiences of successful accomplishments, a lack of opportunities to observe women competent in math and/or a lack of encouragement from teachers or parents. (p. 409)

This study provided evidence of career self-efficacy differences in terms of gender, and the usefulness of the self-efficacy construct on career development behaviors. Post-Kammer and Smith (1985) designed a study to replicate the Betz and Hackett (1981) study, and to provide further research on gender differences in relation to career self-efficacy. The focus of their study was 57 female and 51 male eighth and ninth grade college bound students. The results indicated that gender differences did emerge among these junior high school students, however, not for several of the traditional occupations. Also, in this study, the self-efficacy differences between boys and girls were less than for the college students in the Betz and Hackett (1981) study. Thus, this lack of
difference forced the question “will sex differences in self-efficacy become more pervasive with age or schooling” (p. 558). This study supported the career self-efficacy construct.

Rotberg, Brown, and Ware (1987) provided a study extending the work of Betz and Hackett (1981) and also included additional variables, which may impact career self-efficacy. The purpose of the study was twofold, to explore the relation of socio-economic status, race, gender, career self-efficacy, career interests and sex role orientation to career choice range in females and males, and secondly, to determine the relation of SES, race, sex role orientation, gender, and career interests to career self-efficacy. The subjects were 152 community college students, consisting of 98 females (72 white and 26 black) and 53 males (46 white and 7 black). A pilot test was conducted for testing the research procedures, approximately 1-year prior to the full study. This study produced mixed results. Career interest was found to be a predictor of career self-efficacy expectations as well as the range of career choice. However, gender was not found to be a significant predictor of the range of perceived career choice, nor did gender predict career self-efficacy expectations. Further, this study indicated that neither race nor SES predicted range of career choice or self-efficacy expectations. In response to these mixed findings, the authors proposed the use of path analysis in future research for exploring these relationships.
Stickel and Bonett (1989) also examined gender differences in terms of career self-efficacy in relation to traditional and nontraditional occupations. Their hypotheses were: (1) that self-efficacy among females, but not males, would be higher for traditional rather than nontraditional female occupations; (2) that women, but not men, would believe they could combine a traditional career and a family, but would be less confident, that they could do so if they pursued a nontraditional career; (3) that females would consider traditional female occupations more frequently, and that men would consider nontraditional occupations more frequently. The participants were 130 college students, 71 female and 59 male. The results, further supported the findings of Betz and Hackett (1981). Females were found to display greater self-efficacy in relation to traditional female occupations and were significantly more confident in combining home and family responsibilities with traditional female occupations. In terms of career self-efficacy and nontraditional occupations, females more frequently considered traditional occupations, when making career decisions and considered nontraditional occupations less so than did men.

Academic Achievement and Performance and Career Self-Efficacy

Another of the domains of extant research relating to career self-efficacy, concerns the construct and its applicability in terms of academic achievement and performance. A study by Lent, Brown and Larkin (1984), had as it purpose, the examination of the hypothesis that efficacy expectations are related to the degree of persistence and success in college major and career choices (Hackett
and Betz, 1981). Specifically, this study investigated the relation between self-efficacy beliefs and academic success and persistence among college students, interested in science and engineering careers. The subjects were 28 male and 14 female undergraduates, enrolled in a career-planning course for students considering science and engineering majors. Prior to data analyses, subjects completed several measures of self-efficacy, the first during the first class and the second, during the eighth and final class. The number of fields the subjects believed they could complete, were summed as the level of self-efficacy scores. Confidence of self-efficacy was assessed using a 10-point scale ranging from completely unsure to completely sure. The strength of the scores for each subject were calculated by dividing the summed strength scores by 15, the total number of major/career fields. Strength ratings were added only for fields that the subjects had checked in the complete column of the questionnaire. These procedures enabled the examination of four aspects of self-efficacy, with respect to science and engineering fields, viz., level and strength of self-efficacy for educational requirements, and level and strength of self-efficacy for actual job duties. The results indicated that both level and strength of self-efficacy for educational requirements were related to academic outcome. Also self-efficacy scores were moderately correlated with academic ability, thus the results were consistent with those found by Betz and Hackett (1981). This study further found the level and strength of efficacy expectations were related to persistence and success in major choice. In terms of gender, this study found no significant
interaction. Lent, Brown and Larkin (1986) provided a follow up study to their 1984 study. The purpose of this subsequent study was to explore the utility of self-efficacy with ability, achievement and interest measures, in relation to perceived career options in technical and scientific fields. Participants were 75 male and 30 female college students, enrolled in a 10-week career planning course, for students interested in science and engineering majors. The results indicated that self-efficacy expectations are related to indices of academic performance behavior, and that self-efficacy contributes significantly to the prediction of technical grades, and persistence, and the range of career options considered. This study further found self-efficacy measures related to past academic achievement and current vocational interests. Multon, Brown and Lent (1991) produced an additional study. Their study conducted a meta-analytic investigation of the relations of self-efficacy beliefs to academic performance and persistence. The authors attempted to incorporate all the appropriate studies focused on self-efficacy beliefs that related to academic performance and persistence outcomes. Secondly, through the meta-analytic method, the authors sought to statistically test the strength of the hypothesized relationships. The methodology for the study included a computer search of databases using self-efficacy as a qualifying term, examining reference lists and the tables of contents of 24 journals. The final set for the study included 39 studies. Studies
were coded and rated for design quality. The overall investigation provided support for the relationship of self-efficacy beliefs to academic performance and persistence.

The relation of self-efficacy to performance was found to vary by students' achievement status, with stronger relations found among low-achieving students than those making normative academic progress. Another finding of the study indicated that high school and college students evidenced stronger effect sizes than elementary students, which according the authors, suggested that older students with their additional experiences, may have a better basis for making accurate self-efficacy appraisals. Multon et al. (1991) concluded, “our findings suggest that self-efficacy beliefs are generally related to academic behaviors in ways that support Bandura’s (1977, 1982, 1896) theory and its extension to educational/vocational behaviors (Hackett and Betz, 1981)” (p. 36).

Racial-Ethnic Groups and Career Self-Efficacy

A fourth domain that has been examined by researchers of the career self-efficacy theory, relates to the career self-efficacy of non-majority populations. Lauver and Jones (1991) carried out a study to extend the career self-efficacy model with an ethnically mixed rural high school population. Their study included a list of occupations known to these students and incorporated ethnic identity, socio-economic status (SES), age, self-esteem and stressful life events as variables of interest. The participants included 43 females and 43 males, who were Native American, 311 females and 276 males, who were
White, and 113 females and 107 males who were Hispanic. All participants were either 9th graders or 11th graders. Measures included a demographic questionnaire, an occupational listing instrument and the Youth Adaptation Response Survey. Student SES was determined by using the prestige level of parents occupations and the Rosenberg Self-Esteem Scale, which measured subjective self-esteem. In this study, a higher proportion than in previous studies of gender differences in perceived self-efficacy and career options was indicated, suggesting differing educational and socialization experiences, these rural high school girls appeared “less constrained than boys in considering cross-gender careers and equal or exceed boys’ efficacy estimates for five of nine predominantly male occupations, [suggesting] that these girls are less bound by tradition than expected” (p. 165). The Hispanic students tended to express high occupational aspirations, but conversely, expressed lower expectations for achievement. The Native-American students generally expressed lower self-efficacy for seven of the occupation in the study, though the authors caution, these differences may not be interpretable beyond the students cultural contexts. No interaction was observed between SES and ethnicity. While the study supports the usefulness of the self-efficacy model, the lower self-efficacy estimates among the Hispanic and Native-American youth, according to Lauver and Jones (1991), indicated the need for additional research with culturally different youth, in an effort to help them “create and realize personally satisfying career plans” (p. 165). In an effort to extend the
research on career self-efficacy among minority populations, Stickel and Bonett (1993) provided a preliminary investigation of the psychometric properties of the Career Attitude Scale (CAS) (Stickel and Bonett, 1989). Among the concerns initiating the authors' investigation, vis-à-vis minority students and their career self-efficacy were a number of limiting social constraints as identified by Spokane and Hawks (1990), which may:

1. Limit consideration of certain careers.
2. Reduce the expectation and the likelihood that a stated aspirations will be attained at the level stated.
3. Increase the number of factors considered when making career choices, and increase the salience of external factors.
4. Increase the need for highly structured interventions to overcome social constraints.
5. Increase the stress levels on all family members, but especially on working women and minority group members. (p. 106)

The investigation was conducted with 71 African-American students, in grades 7 - 8 and 10 - 12. There were no special needs students in the population investigated. The CAS, whose reliability and validity results have been encouraging (Bonett and Stickel, 1992), includes descriptions of 9 traditionally female and 9 traditionally male occupations, adapted from the Occupational Outlook Handbook. Participants were also administered the Coopersmith Self Esteem Inventory and were asked if they planned to attend
college or did not plan to attend college. Data were analyzed by analysis of variance on the total CAS scores, as the traditionally male and traditionally female factors were not indicated. The authors suggested the sample limitations and the broad range of the developmental span of the participants may have influenced the results. In three previous phase studies using the CAS with White college students, traditional male occupational self-efficacy and traditional female occupational self-efficacy was indicated. Stickel and Bonett (1993) opined the possibility that the acquisition of career self-efficacy expectation among African-American students may be different than the acquisition among White students. They further recommend additional research and the development of instruments that adequately measure career self-efficacy among minority populations. Solberg, Good and Nord (1994) specifically addressed the application of the self-efficacy construct with minority populations. They noted that enactive attainments, i.e., performance accomplishments, are hypothesized to be the most powerful sources of self-efficacy information. The power of enactive attainment is such, because it is composed of mastery experiences, thus the successful achievement of performing a targeted behavior, is hypothesized to increase one's self-efficacy in that domain. These mastery experiences may or may not be provided by the individuals' environment. Solberg et al. (1994) stated:

One reason self-efficacy holds promise for the study for career development among racial/ethnic minority populations is due to its
emphasis on viewing the environment as sharing responsibility for changing individuals efficacy expectations. Rather than blaming the individual or culture as responsible for producing career efficacy expectations, Bandura (1986) acknowledges that the environment (e.g., educational system) must provide opportunities for the development of efficacy expectations. (p. 68)

In an application of the social cognitive career theory (Lent et al., 1994), with African-American college students, Gainor and Lent (1998) undertook an investigation to measure math self-efficacy in relationship to racial identity attitudes. 164 African-American freshmen students were given the Math Self-Efficacy scale, along with a Math Outcome scale, A Perceived Sources of Math Self-Efficacy measure, an Interest Inventory and the Racial Identity Attitude Scale. The results indicated a positive correlation between math self-efficacy and outcome expectations with math interest. However, the study found no correlation between math self-efficacy and the various stages of racial identity attitudes. This study, consequently, found support for the general social cognitive career theory in terms of choice behaviors and career-self efficacy, yet the authors suggested that the application of racial identity attitudes and career development may require further testing. The authors posited that racial identity attitudes may be more useful in explaining vocational processes (e.g., decision making) in African-American college students, rather than vocational content (e.g., interests and intentions).
Miranda and Umhoefer (1998) initiated a study which directly related to environmental impact on career self-efficacy among a Latino population, viz., acculturation and language acquisition. The study sought to determine which variables best predicted career self-efficacy in Latino career clients. Their hypotheses were that career self-efficacy among Latino career-counseling clients could be predicted from their English language usage and the acculturation levels of the clients'. The study included 95 Latinos, who voluntarily sought employment and career counseling from a social service agency, over a five-month period. Of the participants, 50 were males and 35 were female, with a mean age for the group at 30.5 years. 97.6% of the subjects were immigrants. Of the original 95 subjects, 85 actually participated in the study. Instruments used were a demographic questionnaire, a self-efficacy measuring instrument, and the American-International Relations Scale (AIRS), which measures within and between group differences, culture-conflict resolution and acculturation options. Data were analyzed by multiple regression analysis. The results indicated that for the Latino clients, career self-efficacy is best predicted based on the level of acculturation and their use of the English language. "Higher acculturation and greater use of the English language in Latinos may contribute to a greater belief in their competence to perform jobs desired regardless of their educational level, length of residence in the U. S. and age" (p. 46-47). Based on the results, the authors suggested that career counseling with Latinos should address the cultural learning and behavioral
adaptation of clients, as well as their development of English language proficiency. Among the cautions the authors indicated related to the interpretations of the data, the group may have self-selected and the measures were self-reports.

Other Related Areas of Research and Inquiry on Career Self-Efficacy

In addition to the research on career self-efficacy and decision-making and indecision, gender variables, academic achievement and performance and career self-efficacy among racial/ethnic groups, several other areas have also been investigated. Blustein (1989) investigated the hypothesis that an overall sense of goal directedness and self-efficacious beliefs regarding career decision-making would be positively associated with exploratory activity in late adolescence and early adulthood. The sample consisted of 106 college students, including 83% White, 7.6% Hispanics, 5.7% African-Americans and 3.7% Asian-Americans. Measures included the Goal Instability Scale, the CDMSE, The Environmental Exploration scale and the Self-Exploration scale. The results of the study indicated that career decision-making self-efficacy provides the most prominent predictor of career exploratory activities, above and beyond goal directedness, thus suggesting that “given a defined set of characteristics, individuals will tend to initiate exploratory activity” (p. 201).

Niles and Sowa (1992) examined the relations among career beliefs and coping styles as reflected through personality hardiness, general self-efficacy, career self-efficacy and occupational choice status. The participants were 181
undergraduate college students. Instruments included the CDMSE, General Self-Efficacy Scale, The Career Beliefs Inventory, and the Personal Views Survey. The findings indicated that occupational choice status significantly correlated with career self-efficacy, though the relationship was low. The results in regards to general self-efficacy, suggested that efficacy expectations resulting from personal mastery experiences are generalizable, i.e., “an individual’s past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations” (p. 19). The variables found to be significant predictors of self-efficacy were motivation, commitment and general self-efficacy. Based on these variables, the author suggested encouraging clients to be actively engaged in their career development processes, which in turn, could foster in them a sense of purpose and commitment, thereby enhanced career self-efficacy.

Klein, Wheaton, and Wilson (1997) in proposing a comprehensive career assessment model for persons with disabilities, included a component of the self-efficacy construct in the evaluative process for disabled clients. Given the received view that a person’s self-efficacy is directly related to their efficacy beliefs, Klein et al. (1997) posed three questions in evaluating the disabled:

1. To what extent are a person’s expectations about self-efficacy related to his or her perceived range of career options?
2. To what extent do disability-related experiences affect level, strength and generality of career related self-efficacy expectations?

3. Can counseling interventions designed to influence career-related self-efficacy change vocational outcomes for persons with disabilities? (p. 207)

The authors then recommended several assessment strategies, and instruments that would aid in the provision of answers to these questions. They conclude, "to the extent that self-efficacy affects the career development of persons with disabilities, it seems reasonable to include self-efficacy as part of a comprehensive evaluation" (207). Similarly, but with a different focus, Conyers, Enright and Strauser (1998) proposed the use of the self-efficacy construct in counseling college students with disabilities. These authors indicated that individuals with disabilities have particular difficulties in college, especially in the areas of adjustment to college life and social isolation. Based upon the four sources of efficacy information, the authors recommend intervention strategies which would enhance the disabled students functioning, ergo, their self-efficacy. In terms of performance accomplishments, it is suggested that rehabilitation counselors might direct the student to campus clubs, organizations and groups that are of interest to the student. Efforts of this sort aid disabled students in integrating into campus life, thereby increasing the feelings of success in his/her ability to socially integrate. Vicarious experiences can be modeled by
introducing the disabled student to other disabled persons who have successfully integrated into the college environment. The authors further suggested that peer groups and support groups could also provide vicarious experiences. These experiences and observations would further support the notion that social integration is not only possible, but can be done successfully. Verbal persuasion would include rehabilitation counselors helping students successfully request accommodations and special treatment, thus reducing the negative attitudes often associated with making requests. Verbal persuasion might also involve assisting the disabled person in becoming familiar with and knowledgeable about ADA and Section 504 of the Rehabilitation Act of 1973.

Emotional arousal could be addressed through systematic desensitization and relaxation techniques. Conyers et al. (1998) summed up the use of the self-efficacy model by indicating, “how students with disabilities negotiate their educational environment can play an important role in their career development” (p. 28).

Part II – Family Systems Theory and Career Development

Theoretical Construct

The family, according to Satir (1967) is critical in the development of the individual as it is the intervening variable between the society and the person, and as such, the family as a system “is the main learning context for individual behavior, thoughts and feelings” (p. 27). Thus, the evolution of family psychology moved from the position of looking at the individual family member
and his or her specific problems/behaviors, to viewing the family as a dynamic system, greater than the sum of its parts. Family-systems theory according to Goldenberg and Goldenberg (1996) found its evolution in the general systems theory as postulated by Bertalanffy (1968). Bertalanffy (1968) referred to this system as a “general science of wholeness...holistic, organismic, gestalt, etc., [in] which all [modern sciences] must think in terms of systems of elements in mutual interaction” (pp. 37 & 45). This approach purported, that the component parts of a system are of less importance than the interrelations of the components, and that in order to fully understand how a system works, one must comprehend how the components function as a total system. The use of this systems analysis, in the study of the family, consequently, provided the theoretical construct whereby individual behavior is assessed within the context of family as a whole and the “family becomes the entity of analysis...an entity that seeks stability or homeostasis in the face of environmental vagaries...[and] at other times must change its structure (morphogenesis) to better adapt to internal and external demands” (Worden, 1994, p. 3). This paradigmatic shift, significantly broaden the scope for analyzing individual behaviors within a wide array of process variables framed in the family, including hypotheses related to an individual’s career development processes. Further, in this systems perspective, the family is conceptualized as open system evolving over the life cycle of the family in a socio-cultural context. Gladding (1992) summarized many of the main constructs proposed in the family systems paradigm, including:
A. Nonsummativity: The need to examine the patterns within a family rather than the actions of any specific member, i.e., the family is greater than the sum of its parts.

B. Equifinality: The same origin may lead to different outcomes, and the same outcome may result from different origins, thus the focus is on family interactional patterns rather than specific events/conditions.

C. Communication: All behavior is seen as communicative. Thus, one must attend to the message content and how the message is understood.

D. Family Rules: A family’s functioning is based on both explicit and implicit rules. These rules are predictable, and are referred to as the redundancy principle.

E. Morphogenesis: The ability of the family to modify its functioning to meet the changing demands of internal or external factors, e.g., instead of talking more family members may need to try new ways of behaving.

F. Homeostasis: Similar to biological organisms, families have a tendency to remain in a steady, stable state of equilibrium unless otherwise forced to change. At times homeostasis can
be advantageous in helping a family achieve life cycle goals, but often it prevents the family from moving on to another stage in its development. (pp. 401-402)

Adjoining constructs which informed the theory building of family-systems are those of differentiation of the self and family boundaries. Bowen (1978) who is said to have coined the term family systems, proposed that within a family, an emotional system exists and this (emotional) system produces “at the highest level... differentiation between emotional and intellectual functioning [and at the lowest level a state that is] so fused... intellectual functioning is submerged in emotionality” (p. 424). These postulates proposed that for healthy family functioning to exist, each member must be sufficiently individuated in order to grow and mature. When this individual differentiation does not occur, the individual loses his/her identity and becomes fused in the families’ identity and is consequently unable to make informed, mature decisions, ergo, family dysfunction and over cohesiveness. Thus, for effective family and individual growth a balance must be attained between separateness and togetherness.

Goldenberg et al. (1996) addressed the importance of boundaries within the family system. Boundaries are conceptualized as the flexibility or lack within the family subsystem. “Clearly defined boundaries between the subsystems within a family help maintain separateness and at the same time emphasize belongingness to the overall family system” (p. 194). This concept identified the two extremes of boundary crossing as enmeshment or disengagement.
Enmeshment occurs when family members are over involved and over engaged in each other lives, whereby individual autonomy is stifled. The other extreme, disengagement, takes place when the members of a family function as separate and autonomous entities, with limited personal engagement, and as a consequence, the family experiences poor communications, emotional support for its members is lacking and family members feel isolated. This form of family functioning is also deemed as family dysfunction. Worden (1994) posited that either extreme, enmeshment or disengagement “inhibit effective problem solving in families and hamper individual members’ growth…because the members are unable to balance their strivings for autonomy and their need to belong” (p. 18).

The propositions of family systems theory, particularly those directly related to an individuals healthy growth and development (e.g., family functioning in a socio-cultural context, and the dimensions of self differentiation, family enmements and family disengagement) have also become postulates related to the career development process.

Part II – Literature Review - Family Systems Theory and Career Development

Precursors of Empirical Investigations

Among the extant literature on family systems theory and career development, one of the most highly referenced authors is Bratcher (1982), who proffered an analysis, which conceptually linked family systems research and the career selection process. This analysis began with the family systems view of the family as a functioning system with operating principles, rules, myths,
homeostasis (the tendency for balance), and boundaries. From these family system constructs, Bratcher (1982) proposed several family–career links, including the impact of family boundaries, which can influence personal autonomy and concomitantly the career decision-making. Family rules and family values were linked to career development, in terms of their possible imposition and overt influence on the career selection processes. In postulating the utility of family systems theory as a method of assessing career development and intervention, Bratcher (1982) commented:

*Family systems theory allows the [career] counselor to take into account the hidden yet powerful influences of the family that affect the client’s ability to consider many career options... the counselor’s ability to think systematically may be the only key available to the client who is unconsciously bound by forces in the family from which the client needs to be freed in order to select and pursue a career that can provide independence and autonomy as well as satisfaction and fulfillment.* (p. 91)

Zingaro (1983), similar to Bratcher (1982), provided another conceptual argument for the utility of the family systems theory approach with career development issues. Specifically, in focusing on the career-indecisive young adult, the author posited, that the root of the difficulty may lay in the family-of-origin. Using the family systems construct of family enmeshment i.e., “the quality of connectedness [in a family] is such that attempts on the part of one member to change elicits... resistance on the part of others” (p. 26). Zingaro (1983)
maintained that persons involved in this type family system may have difficulty as adults differentiating themselves from their families. Consequently this lack of resolution, vis-à-vis identity-role confusion tasks, negatively affects the individuals self-concept, decision-making ability and career development. It is suggested that career counselors, in working with indecisive adults, may need to help the client understand their family system, understand his/her part in that system and teach the client to observe his/her emotional reactions to the system. This approach Zingaro(1983) postulated, will help guide individuals to higher levels of differentiation and as a corollary, more efficacious self-concepts, which then positively affect their decision-making skills and career development.

In responding to the growing dialogue related to family influence on vocational development, Schulenberg, Vondracek and Crouter (1984) set out to examine the multiple issued involved. From the contemporaneous literature, they concluded that most of the research had focused on outcomes rather than process variables and that there had been a failure to view the family in the context of a functioning whole. Other conclusions, based on their review of the literature included; support for the impact of a families socio-economic status on the vocational development process; racial/ethnic background as an important variable in the career development process; family configuration as a significant indicator of vocational outcomes; parental employment as salient in vocational socialization (fathers to sons and daughters, research on the mother's impact was lacking); and, family interactions patterns, while conceptually linked to
career development, were in need of empirical research. The authors summarized by opining, “it appears that a focus on family processes related to parental employment, parent-child relationships, socialization practices and perhaps family interaction patterns is a fruitful domain within which to explain vocational outcomes and to identify processes” (p. 139). Following upon the work of Bratcher (1982), Zingaro (1983), and Schulenberg et al. (1984), Lopez and Andrews (1987) proposed that career choice or indecision could be “conceptualized, not as an individual achievement or personality trait but rather as the outcome of a larger set of transactions between the person and the family” (p. 304). They then framed their argument, in relationship to the interrelatedness of the developmental tasks the adolescent must master, including, identity formation, psychological separation and career decision-making. Thus, from this family systems perspective, the family must undergo a transformation of family functioning, in order that the adolescent successfully negotiate the requisite developmental tasks. They further proposed, that this intra-family transformation, as a consequence, promotes the adolescent’s appropriate separation and individuation, which then corresponds with effective career decision-making.

**Empirical Investigations**

Lopez (1989) in extending the research on family systems and career development tested a model for predicting college students vocational identify, which incorporated current family dynamics along with the variables of trait
anxiety and academic adjustment. The study consisting of 299 undergraduate college students found support for the proposed model. The results indicated that family dynamics, trait anxiety and academic adjustment contributed to the variance of vocational identity measures. Specifically, conflictual independence from the mother, was the predictor of vocational identity with men and conflictual independence from the father, was the predictor of vocational identity for women. Additionally, trait anxiety and academic adjustment in both men and women, were found to contribute to the variance of their vocational identity.

Based on this study, conflictual family dynamics are shown to be important variables in students vocational identity development. A yet more construct specific study was undertaken by Kinnier, Brigman and Nobel (1990) in their examination of 604 undergraduate and graduate college students. They hypothesized that the family-of-origin dynamic of enmeshment is correlated with career indecision. The hypothesis was supported, with triangulation correlated negatively with the symptom index and individuation correlated positively with family cohesion.

Blustein, Walbridge, Friedlander and Palladino (1991) conducted an investigation, in part, to follow upon the research of Lopez (1989) and Kinnier et al. (1990). They tested the hypothesis that college students with difficulties in psychological separation from their parents would evidence career indecision along with deficits in career decision-making self-efficacy. Additionally they tested the hypothesis that perceptions of psychological separation and parental
attachment, would be positively correlated with the career commitment process. The results of this study were mixed. The first hypothesis was not supported, in that no significant relationship was found between psychological separation from parents and career indecision or career decision-making self-efficacy. In this instance, the authors questioned the use of the measure used to assess career decision-making and suggested in light of other research, it remains “conceivable that psychological separation may be linked to the collateral developmental process of establishing a vocational identity” (p. 42). The second hypothesis was supported, to the extent that the results indicated psychological separation and parental attachment were indicators of career commitment. On the basis of this study, in tandem with previous studies, Blustein et al. (1991) asserted that career counselors would be wise too attend family relations issues, especially in the areas of family support and family conflict, when working with career uncommitted students.

Penick and Jepsen (1992) further extended family and career research with their study examining the relationship between family members' perceptions of family function and adolescents' career development. This study consisted of 215 students in the 11th grade and their parents. The students were administered the Family Functioning Scale, the Career Planning Involvement Scale and the Vocational Identity Scale and the parents were given the Family Functioning Scale. The results indicated that family members perceptions of the family unit's interactions (system maintenance), explained the positive
scores on the student’s vocational identity measures and family relationship
dimensions also predicted vocational identity measures. Family enmeshment
and family disengagement scores were found to be negatively correlated with
Career Planning Involvement scores for students. Thus, this study found
support for the hypothesized link between family functioning and career
development issues. In continuing this line of research, Whiston (1996) tested
three hypotheses; that career indecision will be significantly related to family
relationship dimensions; that career decision-making self-efficacy will be related
to familial personal growth dimensions; and that career decision-making self-
efficacy will be related to familial system maintenance dimensions. The findings
indicated that career indecision was related to the family relationship dimension
of systems maintenance, but only in women. However, career decision-making
self-efficacy was significantly related to familial personal growth dimensions.
This study, therefore, found support for only the second hypothesis. Given
these contradictory findings, and in juxtaposition with previous research which
supported the family-career link, the author suggested incorporating a case
study-qualitative design to further explore the family-career connection.

Using another perspective, Kettersson and Blustein (1997) examined the
relationship of parent and adolescent attachment in the career exploration
process. This study was framed by the attachment theory as articulated by
Ainsworth (1989), who maintained that through the attachment relationships with
the parents, the infant, child, adolescent and adult finds “the experience of
security and comfort” (p. 711). The authors hypothesized that higher levels of attachment to parents are associated with higher levels of self-exploration, environmental exploration and nontraditional exploration. 137 undergraduate college students were administered the Inventory of Parent and Peer Attachment, the Environmental Exploration Scale and Self-Exploration Scale. Results indicated a positive correlation between attachment relationships to parents and to the students’ self and environmental exploration (career exploration). The nontraditional exploration hypothesis was not supported. The second hypothesis, not-with-standing, this study, similar to previous studies, found concurrence with the family-career development construct. Based on the results of this study, Ketterson et al. (1997) recommend that counselors examine the familial support systems of students reluctant to engage in the career exploration process. The authors further proposed that in those instances where students (or regular clients) find their parental relationships are severely impaired, the counselor should encourage the counselee to use indigenous social support networks as they “work through the psychological consequences of their painful family-of-origin experiences” (p. 176).

In an effort to further explore the links between family and career behaviors based on family systems theory, Amundson and Penner (1998) undertook the use of the Parent Involved Career Exploration Counseling Process (PICE) model, which included eight secondary school students and six of their parents. This model involved parents observing their children
completing career exploration activities during a 60 to 90 minute session, which was a portion of an ongoing career exploration process. The PICE evaluation component was completed six months following the session through a qualitative methodology, which included interviews with both the parents and their children. The interviews were framed in a manner, which allowed the participants to interpret their experiences. The results indicated that seven of the eight students experienced a positive shift in their career perspective, half the students felt more understood by their parents, two parents reported changing some aspects of their roles with their children, one parent became more patient with their child’s career struggles and one parent shifted from pushing his child in a specific career direction. The authors, while cognizant of the limitations of this model (with only one session involving both parent and child), none-the-less, suggested that this model has a “potentially catalytic effect...[and] in interpreting these events a [family] systems perspective seems particularly helpful” (pp. 142-143).

Part III – African-Americans’ Career Development and the Implications of Their Families-Of-Origin

Theoretical Constructs and Literature Review

Contemporaneous career development theories, in their present constructs, may not be applicable to the career development of African-Americans, so posited, Brown (1995), Cheatham (1990), Griffith (1980), Hackett, Lent and Greenhaus (1991), Helms and Piper (1994), June and Pringle (1977),
Kimbrough and Salomone (1993), Osipow and Fitzgerald (1996), Tinsley (1994). Further, both Hackett et al. (1991) and Tinsley (1994) indicated that research on African-American career development came to a virtual stop from the 1970’s through the 1980’s, and Brown (1995) attested to the urgent need for career development constructs relative to African-Americans. Thus, among the career related literature there has been a number of recommendations and theoretical postulates, relative to African-American career development, which were reviewed, along with the theoretical constructs relative to African-American families.

June and Pringle (1977), in reviewing the works of Roe, Super and Holland, concluded that none of these career development theorists incorporated the influence of race as a significant factor in their theories, though they credit Roe with stressing that “the importance of the family-of-origin [in one’s career development] is becoming increasingly understood as a very major factor, and this system includes race, religion and socio-economic circumstances” (p. 19). The authors proposed that for career development theories to become applicable to non-majority populations, theorists must begin to use the internal frame of reference of the non-majority person, in their research and theory construction. Griffith (1980) framed his argument on the notion that differential opportunity structures and other social environmental constraints have a major impact on the career development of Blacks. As a consequence of these environmental factors, the assumptions of free agency in
career development theories, makes them ineffective in explaining Black’s
career development. Cheatham (1990) in offering the Africentric model of
African-Americans’ career development, opined that current career theories and
instruments do not incorporate the following:

1. African-Americans’ experiences with structural or racial
discrimination.

2. Culturally influenced perceptions of the meaning of work.

3. The differential availability of career information and guidance.

4. Economics and labor market forces that affect African-
Americans differentially. (p. 339)

In outlining the Africentric model, particular attention is focused on the
role played by family background, career information and culture on the career
development process. Thus, the Africentric model maintains that the cultural
values, attitudes and beliefs of African-Americans are based on their African
origins. To that end, the Africentric model includes culture specific (emic)
information, and acknowledges the differences " between an African-American
client's psychological dynamics and behaviors, and those behaviors that are
products of obligatory, grudging accommodation to normative, majority culture
(i.e., Eurocentric) structures" (p. 336). Cheatham (1990) conceptualized this
model as a strategy for change, and proposed that it is necessary to understand
the prerequisites set forth in order to effectively attend the career development
of African-Americans.
Another focus on African-Americans career development emanated from the Nigrescence Theory proposed by Cross (1994). The term Nigrescence refers to the process of becoming Black, and the model postulates that African-Americans, as a consequence of their experiences with racism and oppression, move through psychological stages of racial identity development. In the original Cross (1994) model, the stages are:

1. Pre-change identity, [wherein the person] accords little salience to race out of denial (self-hatred).

2. Encounter, something may happen to cause them to feel they have been miseducated.

3. Transition stage, [where in] the old identity and the emerging identity do battle.

4. New identity becomes internalized...group centered identity (Black nationalism).

5. Secure identity, their identity becomes secure enough that they can have intense involvement...with persons not generally associated with their group...[at this stage] they revisit their innermost psychological core—their personal identity—that links them to all human beings. (p. 122)

Using this Nigrescence construct for further theory building, Helms and Piper (1994) and Parham and Austin (1994) proposed links with this model and the career development of African-Americans. Helms and Piper (1994) opined
that for racial identity to be a factor in an individual’s vocational behavior the
construct of racial salience, [defined as] “the extent to which a person conceives
(correctly or incorrectly) of race as a significant definer of one’s work options”
(p. 129) has to be included. Thus from this perspective, the stage or an
individual’s level of racial identity status, may inform their career decision-
making processes, perceptions of the accessibility of occupations, occupational
identity development and the level and degree of their job satisfaction or
dissatisfaction. The authors concluded that racial identity status, vis-à-vis
career development of African-Americans, may be a significant variable in
analyzing situations where race is salient (to the individual) both internally and
externally. Parham and Austin (1994) further supported the importance of racial
identity status as a “interpretive lens through which to view the personality
dynamics of African-Americans... and in the vocational context... in helping to
reevaluate the factors which influence vocational behavior” (p. 145). They then
outlined the areas of vocational behavior which may be impacted by one’s level
of racial identity status, including; attitudes and values (i.e., collectivistic
orientation, supportive, interdependence, affective, relationship oriented, orally
expressive); perceptions of opportunity structures; occupational stereotyping and
self-segregation; the career decision-making process; and employability factors.
Parham et al. (1994) urged vocational psychologists and career development
theorists to include these racial identity constructs in their theory building, but also to work towards ameliorating environmental factors which negatively impact African-Americans career development.

In commenting on the present state of career development theories and non-majority populations, Osipow and Littlejohn (1995) reported, “At present there is no single theory of career development that solely addresses the issues pertinent to ethnic groups...existing theories (as defined) do not deal with relevant aspects of minority existence” (pp. 256 & 260). One important aspect, which has been minimally investigated, particularly in relationship to African-Americans career development, is that of the African-American family-of-origin. Brown (1995) maintained that some research suggests. African-American parents have a stronger influence on their offspring’s career choices than do White parents. We thus, considered the theoretical constructs reflecting on African-American families.

Allen (1978) in reviewing the literature on Black family studies concluded that three models were the basis of most research. The most widely used, structural-functional approach, conceptualized the family as a social system and had its focus on the family system’s internal and external relationships. Studies using this approach tended to be historical and cross-cultural in nature and assigned socio-economic positions as behavioral determinant. Consequently, Black families were grouped as either respectable (middle class) or non-respectable (lower class). The result of this construct found African-American
families dysfunctional, disorganized and matriarchal. The second approach, interactional-situational, found its focus on the interpersonal family relationships, including the dyads of husband-wife, parent child, along with individual traits in combination with factors related to socialization and personality development. This construct assessed the family only in terms of these interactional processes, to the exclusion of external, socio-historical contexts. Thus Black families were "treated as autonomous entities, apart from the social, economic, historical and political contexts in which they are located and which largely determine their internal relationships" (Allen, 1978, p. 123). The third construct, the developmental, was found to incorporate elements of both the structural-functional and the interactional approaches, thus the Black family was assessed longitudinally, structures and processes viewed in relationship to social-historical contexts, and family configurations interpreted via economic, social and political exigency. Allen (1978) then proposed the use of this developmental approach as one possible research strategy “for enhancing our understanding of Black family structures and processes in this society” (p. 117).

In tandem with methodological concerns, Nobels (1978) addressed the theoretical framework for defining African-American families. Specifically, based on the sui generis nature of African-Americans’ location in Eurocentric-America, research on the Black family must of necessity be framed in an Africanity construct. This proposed construct, consequently, allows researchers to:
Recognize that it is the combined continuation of an intrinsic African value system and its reaction to the cultural imperatives of the wider American cultural milieu which determines the special features observable in black families...the observable outcomes therefore must be interpreted in terms of (1) the African nature or basis for behavior and (2) the American conditions which influence the development and/or expressions of such behavior. (p. 685)

Nobles (1978) further recommended four (4) main features and six (6) special characteristics which define Black families. These features and characteristics, Nobles (1978) argued, should form the conceptual paradigms from which research on African-American families should proceed. The propositions included:

1. The traditional black family is a unique cultural form enjoying its own inherent resources and/or features.

2. The family performs important social and psychological functions.

3. Some of its features may be situational (i.e., caused by the pressures of the moment) or adaptational.

4. In periods of crises or at ceremonial times, the African nature of the family is most visible, and provides needed emotional and economic support for its constituent members. (p. 687)
Among the special characteristics which should inform the research on African-American families, Nobles (1978) enumerated:

1. They are comprised of several individual households, with the family definition and lines of authority and support transcending or going beyond any one household unit which comprises the family.

2. They are structurally expanding and diminishing in response to external conditions (elasticity).

3. They have child centered system (the general organizational purpose of the family focuses on, if not requires, the presence of children).

4. They have a close network of relationships between families not necessarily related by blood (family networking).

5. They have flexible and interchangeable role definitions and performance (in childrearing a clear distinction is maintained between role definition (sex-linked) and role performance (sexless).

6. They have multiple parenting and interfamilial consensual adoptions. (p. 687)

With the propositions offered by Allen (1978) in terms of methodology for research and with an expanded definition of the African-American family, what then of the current research on the African American family? Taylor,
Catterson, Tucker and Lewis (1990) provided a decade review. They conclude, four major trends are identifiable vis-à-vis research on the African-American family:

1. There was phenomenal growth in the quantity and quality of efforts to examine the nature of black family life, as well as the manner in which black families were regarded in the social scientific community.

2. Conceptually, research displayed a greater appreciation for the relationship between macro-level and micro-level influences in relation to black family phenomena.

3. There is a more balanced depiction of black family life...[reflecting] an appreciation for variability in the status of black families overall, as well as within particular social strata...as a result, a more precise understanding emerged concerning the operation of relevant causative factors for particular family phenomena and the specific consequences for individual families.

4. The past decade saw the establishment of black families within the legitimate body of family research...[however] the raison d'être of research on black families was not to explore basic questions of family functioning, but to explain black families in comparison to white middle-class families. (p. 1009)
With this enhanced research and research methodology, what conclusions have been now drawn regarding the functioning of contemporaneous African-American families? Hill (1993, 1997 & 1998), framed his analysis of research on a holistic construct “which is a solutions perspective which involves identifying factors at the societal, community, family and individual levels that enhance the resiliency of African-American families to overcome and to resolve the major problems and challenges confronting them” (Hill, 1998, p. 18). Among the factors yet negatively impacting Black families are; structurally discriminatory societal forces and social policies, e.g., raises in the eligibility age for Social Security and restrictive adoptions policies; the economic setbacks between 1970 and 1990, which increased Black economic and family instability; the shift to decentralized block grants, which transformed social programs for the poor, often with deleterious effects, e.g., AFDC, food stamps, and the WIC (women, infants and children) program.

These stressors not-with-standing, Hill (1998) found five attributes of Black families which function for the survival, stability and advancement of these families. These attributes are; a strong achievement orientation, a strong work orientation, the flexibility of family roles, the maintenance of strong kinship bonds and strong religious orientation. Hill (1998) conceptually, locates these strengths or attributes under the notion of resilience, which is characterized “not as a fixed attribute of the individual, but as a protective mechanisms that affect
the individual’s response to risk or stressful situations, ... [i.e.] resilience mechanisms and processes” (p. 19). Several recent empirical studies spoke directly or indirectly to these African-American family strengths.

Hughes and Demo (1989) in a study to examine the determinants of personal self-esteem, racial self-esteem and personal efficacy, used data on 2,107 African-Americans ages 18 and older to test the hypothesis that black self-esteem is largely a product of interpersonal relations in the family and community. A second hypothesis was that personal efficacy among Blacks is dependent on the experiences of efficacious activity and thus, are related to dimensions of institutional inequality. The results supported both hypotheses. The African-American family, friendships, and religious involvement variables were the strongest predictors of self-esteem. Racial self-esteem was correlated with ethnicity, racial ideology, system-blame, interracial contact, quality of family life and friendship relationships. The strongest predictor of personal efficacy was found to be social class, viz., one’s location in the social order. The authors commented, “our findings strongly suggest that the apparent anomaly of high self-esteem coexisting with low personal efficacy among Black Americans is understandable when we take account for the fact the inequality has little effect on black self-esteem but is an important determinant of personal efficacy” (p. 154). Kane (1998) in a cross-cultural investigation sought to compare differences in the perceptions of the families-of-origin among African-American, Asian-American and Hispanic-American college students. Participants included
84 African-Americans, 65 Asian-Americans and 153 Hispanic-Americans, and the instrumentation included a demographic questionnaire along with the Family-of-Origin scale. Results indicated African-Americans scored their perceptions of their families significantly higher than the two other groups, on the scale of autonomy and its sub-scales, clarity of expression, respect for others, and on one intimacy sub-scale, range of feelings. African-Americans were also found to score higher than Hispanics on the second major scale, intimacy and on one of its sub-scales, empathy. No significant differences were found between the scores of the Asian-Americans and Hispanic-Americans students. The author proposed that this study, in reflecting African-American perceptions of higher levels of autonomy and empathy in their families, suggests, “that African-Americans are encouraged to develop a more direct communication style, freer self-expression, greater respect for differing opinions, [and] greater awareness of others feelings among family members” (p. 102), than are Asian-Americans or Hispanic-Americans. Wilson and Constantine (1999) investigated 94 African-Americans college students on the variables of racial identity, self-concept and perceived family cohesion. Measurements included the Black Racial Identity Attitude Scale (RIAS-B), the Tennessee Self-Concept Scale (TSCS), and the Family Adaptability and Cohesion Evaluation Scales (FACES III). The basic hypothesis was that racial identity attitudes are related to one’s view of self and one’s perceived experience of family cohesion. The result found a significant negative relationship between pre-encounter racial attitudes and self-concept
and a significant negative relationship between encounter racial attitudes and self-concept. Further, the study found internalized racial attitudes (the highest level of racial identity status) significantly positively related to self-concept. On the family cohesion variable, internalized racial attitudes were positively correlated with family cohesion and family cohesion was positively correlated with self-concept. The results suggested that perceived family cohesion may contribute to both an awareness and comfort in one's ethnicity as well a higher degree of self-esteem (self-concept). Taken together, these studies supported Hill's (1998) propositions regarding the strengths found within the context of the African-American family.

Summary and Discussion

It could be argued, the evolution and development of the career self-efficacy construct, and the social cognitive career theory, could not have occurred at a more propitious time. Faced with the technological challenges of the new millennium, in tandem with the changing demographics of the workplace, strategies that seek to enhance the career development of the American citizenry are ripe for application. These constructs, as reviewed in Part I, were found to be reliable measures and assessment tools in relation to career related behaviors including, career decision-making and indecision, gender variables, academic achievement and performance. Further, these theories have been measured in terms of vocational identity, career exploratory behaviors and career adjustment issues, and locus of control variables. Many, if not most of
the areas of career self-efficacy and social cognitive career research are in need of additional research, especially in their application with non-majority populations, particularly with African-Americans’ career development.

Part II of this review established the links between family-system theory and career development, especially in the family interactional process areas. Thus, the family-of-origin has been found to be a powerful variable in terms of the career decision-making and indecision processes vis-à-vis the development of healthy individuation and autonomy, verses the lack thereof. Family enmeshment and conflictual family processes, based on the literature, were found to negatively impact the career processes, including problem solving, vocational identity development, and career exploration. Conversely, family attachment and cohesion appear to enhance the overall self-development and consequently the broad area of career development self-efficacy. Yet again, the application of this family-systems paradigm with African-Americans’ career development, on these family process variables, is found lacking in much of the contemporary research.

Part III addressed and reviewed the literature on career theories relative to African-Americans and the nature of extant research regarding African-Americans, and their families-of-origin. The review suggested a lack of applicability of many career theories in relationship to African-Americans career development and the problematic nature of the research that has been initiated on African-Americans and their families. Specifically, much of the research has
failed to incorporate enic variables related to the social location of Blacks in America, the research has been comparative in focus (e.g., Blacks with Whites), the Black family's strengths have been ignored or diminished and framed as dysfunctional or disorganized, and the Black family has not been examined in terms of its internal normative processes in conjunction with external social exigencies.

This study, consequently had as its theoretical foundation, the career self-efficacy/social cognitive career constructs, because these constructs interface the psychological, social and environmental components of an individual, in assessing his/her career development processes. These constructs provided an inclusive empirical paradigm, within which to investigate the environmental factors of the families-of-origin on the career decision-making self-efficacy of African-American college freshmen. Brown and Brooks (1984) succinctly capture the philosophy and raison d'etre which buttressed this investigation:

Career development is a lifelong process...each person undertaking this process is influenced by a great number of factors, including family, personal values and aptitudes and social context...because of the centrality of work in most peoples lives, it is important that we strive to understand the career development process and how it can be influenced to benefit individuals as well as the greater society. (p. xv)

The following chapter has as its focus the methodological implementation of this study.
CHAPTER 3

METHODOLOGY

This chapter discussed the following topics: (1) the population selected for participation and inclusion in this study, (2) the sample, (3) the method of data collection, (4) the instrumentation, (5) research questions, predictor and criterion variables, (6) statistical procedures, (7) the limitations of this study.

The purpose of this study was to investigate if there was a relationship between the environmental factors of the family-of-origin and the career decision-making self-efficacy skills of African-American college freshmen. The objectives of this study were:

1. To identify the relationship dynamics in the family-of-origin of African-American college freshmen.

2. To identify the career decision-making self-efficacy measures of African-American college freshmen.

3. To identify the relationship dynamics of the family-of-origin which positively correlate with the students' career decision-making self-efficacy measures.
4. To identify the relationship dynamics of the family-of-origin which negatively impact the students’ career decision-making self-efficacy measures.

Population

The population for this study were all first time African-American college freshmen in the state of North Carolina. The accessible population were African-American college freshmen attending North Carolina Agricultural & Technical State University, with a fall 1999 enrollment of 1,541 freshmen. North Carolina Agricultural & Technical State University is a member institution of the North Carolina State University system, located in Greensboro, N. C. The university had a total enrollment of 7,344 students for fall 1998, with undergraduates comprising 6,367 students. Of the fall 1998 registrants, 6,555 or 89% were African-American, 537 or 7.3% were White-Americans, 24 or 0.3% were Native-American, 75 or 1.0% were Asian-American, 31 or 0.4% were Hispanic-American and 129 or 1.8% were non-resident aliens. In this study, the use of college freshmen attending a Historically Black College/University was deliberate, for two main reasons. Researchers (e.g., Allen, 1978, Allen & James, 1998, Brown, 1995, Hill 1997 & 1998, Taylor, Chatters, Tucker, & Lewis, 1990) have continued to address the need for intra-group research on African-Americans, rather than cross racial comparisons, in an effort to more accurately assess intra-group differences among African-American populations, particularly on variables related to family life. Secondly, Pindehughes (1982) and Jackson,
McCullough and Burin (1988) have posited that a racially homogeneous environment for African-American college students, may function as a less stress producing environment, than would a bicultural college environment. Thus, stressors related to functioning in a bicultural environment, were hopefully diminished by assessing students in a predominantly homogeneous environment.

Sample

A power analysis on FACES III and CDMSE was performed to determine the sample size needed to provide sufficient power to detect correlations for the principle research questions. The analysis indicated that if the correlation between the FACESIII sub-scale and the CDMSE sub-scale is as small as .2, the power to detect this correlation was 89% with a population sample of $n = 200$ and a significance level set at $\alpha = .05$. Thus, the number of 275 subjects was considered adequate for the intended purposes. Subsequent to the power analysis, it was determined that FACES II and CDMSE-SF would be used, both with improved reliability and validity.

Method of Data Collection

First time African-American college freshmen were recruited through prior arrangements with their classroom instructors (through the office of the vice chancellor for student affairs). With instructors’ permission, instruments were distributed, completed and collected during class time. Of the freshmen classes made available, all members of the class were included in the sample. A
professional educator was hired to assist in the distribution, provision of instructions and collection of survey data. The use of this professional educator, who was trained using the script and instructions information, i.e., standardized methods, also helped in controlling for data collector characteristics and data collector bias.

The questionnaire packet entitled the Student Information Survey, consisted of the following: (1) a consent letter explaining the purpose of the study, indicating the anonymity of respondents, and explaining the monetary incentive; (2) instructions for completing the instruments; (3) a demographic questionnaire; (4) the Career Decision-Making Self-Efficacy Scale-SF; (5) the Family Adaptability and Cohesion Evaluation Scale II; (6) a blank standard envelope.

As an additional incentive to minimize non-response bias, all participants were invited to self-address their names and addresses on the blank envelope. Upon completion and collection of all data, four envelopes were randomly drawn, and each of the four students received a $25.00 cash prize.

Instrumentation

Two instruments and a demographic questionnaire were used in this study. The Family Adaptability and Cohesion Evaluation Scale II (FACES II) and the Career Decision-Making Self-Efficacy Scale - Short Form (CDMSE-SF) were
used, because they are directly relevant to the two constructs being measured and because of their validity and reliability. See appendix A for samples of FACES II, the CDMSE-SF scale, and the demographic questionnaire.

FACES II (Olson, Bell, & Portner, 1982, 1992) is a 30 item self report inventory, developed to measure two central dimensions of family behavior, cohesion and adaptability. Participants respond to the items using a 5 point Likert-type scale ranging from (1) = almost never to (5) = almost always, and there are 16 items assessing family cohesion and 14 items assessing family adaptability. The instrument takes 10-15 minutes to complete. Cohesion “assesses the degree to which family members are separated from or connected to their family...the continuum on the cohesion scale is disengaged, separate, connected and enmeshed” (Tutty, 1995, p. 86). Adaptability refers to the degree to which a family is flexible and able to change, “the ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress...on this dimension families can be chaotic, flexible, structured or rigid” (Tutty, 1995, p. 88). According to Olson (1991) the author of the instrument, FACES II represents linear dimensions of perceived family functioning, with high scores representing balanced types and low scores representing extreme types (i.e., problem families).
Reliability - Olson et al. (1992) reported the internal reliability for cohesion, \( r = .87 \) and for adaptability, \( r = .78 \). Test retest estimates were good with cohesion \( r = .83 \) and adaptability \( r = .80 \) (over a four to five week period).

Validity – Olson et al. (1986) report face and content validity, very good, the correlation between scales cohesion and adaptability \( r = .25-.65 \), correlation with social desirability and cohesion and SD \( r = .39 \), and with adaptability and SD \( r = .38 \). In terms of concurrent validity there “is good evidence of a linear relationship... that is, other instruments which measure constructs similar to cohesion and adaptability correlate higher with FACES II”, (Olson et al. 1992, p. 7). One final point, in terms of the use of this instrument with non-majority populations. Olson (1986) has maintained that FACES is culturally relevant to different ethnic groups because the hypothesis upon which the instrument was built reflects this diversity. That is, the family serves as its own norm base, and as such, “if normative expectations of families support behavior extreme on one or both dimensions, families will function well as long as all family members are satisfied with these expectations” (p. 341).

The Career Decision-Making Self-Efficacy Scale –Shot Form (CDMSE-SF) (Betz, Klein & Taylor, 1996) is a 25 item scale covering 5 career choice competencies (domains). Each competency contains 5 items, on a 5 point, Likert type scale. Respondents indicate the degree of confidence they have in their ability to successfully complete each task, ranging from 1 no confidence, to 5 complete confidence. The scale measures a person’s self-efficacy expectation
as they directly apply to career decision-making tasks. The five career choice competency areas are: accurate self-appraisal, gathering occupational information, goal selection, making plans for the future and problem solving.

Reliability – Betz et al. (1996) reported internal reliability ranged from .73 to .83, for the 5 item sub-scales and yielded an alpha of .94 for the 25 item total score with a test-retest reliability of .83 (over a 6 week period). Robbins (1985) found internal item consistency for all sub-scales was high with $\alpha = .88$.

Validity - Robbins (1985) found that the concurrent validity of the CDMSE is moderately related to a persons self-esteem (median $r = .53$) and moderately related to both career decidedness and vocational identity. Fukuyama, Probert, Neimeyer, Nevill and Metzleer (1988) reported substantial evidence of CDMSE concurrent and predictive validity, and Taylor and Popma (1990) concluded that the CDMSE is a viable predictor of career and academic indecision. Betz and Luzzo (1996) reported, in terms of construct validity, the CDMSE has been shown related to career indecision, career exploratory behaviors, career certainty, vocational identity, career maturity and motivation, and conclude that evidence for the instrument’s validity “is solid and varied in the nature of criterion variables examined” (p. 417).

The demographic questionnaire included: respondents gender, age, parental education, occupation and income (if known), parental marital status or single parenthood, number of siblings, number of relatives living in household, number of relatives considered as extended family living in close proximity (e.g.,
grandparents, uncles, aunts, first cousins etc.). Additional demographic information ascertained included: respondents high school GPA, respondents high school track (academic or non-academic), type of high school attended (public or private), if respondent was on scholarship or the work study program, if respondents had participated in a pre-college preparation program, and if the respondent had declared a college major or was undecided on a major at the time of college entry.

Research Questions and Predictor-Criterion Variables

The purpose of this study was to investigate whether a relationship exists between the family-of-origin relationship dynamics and the career decision-making self-efficacy of African-American college freshmen.

Research Hypotheses

There were three major research questions and hypotheses which guided this study, with an alpha level of .05 (commonly used in educational research), and a confidence level of 95%. The independent or predictor variables were scores on the Family Adaptability and Cohesion Evaluation Scale II (FACES II), (Olson, Bell & Portner, 1982, 1992) and the dependent or criterion variables were the scores on the Career Decision-Making Self-Efficacy Scale-SF (CDMSE-SF), (Betz, Klein, & Taylor, 1996). The research questions/hypothesis were:
1. Is there a relationship between the family-of-origin relationship dynamics measures and the career decision-making self-efficacy measures of African-American college freshmen?

H 1: There will be a positive relationship between scores on FACES II and scores on the CDMSE-SF of African-American college freshmen.

2. Does the perception of family adaptability in African-American college freshmen families positively correlate with career decision-making self-efficacy?

H 2: There will be a positive relationship between scores on FACES II adaptability dimensions, and scores on the CDMSE-SF.

3. Does the perception of family cohesion in African-American college freshmen families positively correlate with career decision-making self-efficacy?

H 3: There will be a positive relationship between scores on FACES II cohesion dimensions, and scores on the CDMSE-SF.

**Independent or Predictor Variables**

Based on the review of literature in the area of family-system theory and career development, environmental characteristics of the family-of-origin which impact career development were identified. These independent variables were
measured by FACES II, and are defined and based on Olson’s et al. (1985), Circumplex Model of Marital and Family Systems. The two main variables were:

1. Family adaptability (change) – The family’s ability to change its rules, roles and power structure in response to stress, either developmental and / or situational stressors.

2. Family cohesion – The degree of emotional bonding family members share with each other.

**Dependent or Criterion Variables**

Based on the literature review, in the area of career self-efficacy and social cognitive career theory, five domains were identified which encompass career decision-making self-efficacy. These dependent variables will be measured by the CDMSE-SF and are defined by Taylor and Betz (1983). The five domains were:

1. **Self-appraisal** – Assessment of the hypothetical person’s assets and liabilities in relation to career success and satisfaction (knowing yourself).

2. **Occupational information** – Knowledge of job duties and tasks, employment trends (knowing about jobs).

3. **Goal selection** – Choosing the most realistic occupation for a fictitious individual (choosing a job).

4. **Planning** – Logical steps to career goals (looking ahead).
5. Problem solving – Problem solving in career decision-making

(what should they do).

**Statistical Procedures Applied**

The research design for this study was correlational in that the degree of
the relationship(s) between the independent variables, (scores on FACES II) and
demographic variables, will be correlated with the dependent variables (scores
on the CDMES-SF). Frankfort-Nachmias and Nachmias (1992) indicated that
one advantage of correlational research is that these studies can be performed
in natural settings. In the correlational method, there is no manipulation of
variables.

According to Ary, Jacobs and Razavieh (1996), correlational research is
basically straightforward. Based on the variables of interest, the researcher is
inquiring about the existence of a relationship between variables. The design is
such that scores are obtained from each participant on each variable of interest,
and these pairs of scores are then correlated. The result is a correlation
coefficient, which indicates the strength of the linear relationship between the
variables of interest. Beyond the variables of interest, in studies that test
relationships, there is the possibility that the relationships might be explained by
something other than the data, i.e., other variables, alternative explanations,
subject characteristics. These alternatives would be threats to internal validity.
Thus, it was necessary to control for these extraneous variables. In this study, subject characteristics were controlled by the inclusion of a demographic questionnaire.

Data were analyzed by the use of the statistical method of multiple linear regression:

\[ Y = \alpha + b_1 X_1 + b_2 X_2 + \ldots + b_N X_N \]

where

- \( Y \) = criterion to be predicted
- \( \alpha \) = constant
- \( b_1, \ldots, b_N \) = regression weight for each predictor
- \( X_1 \) to \( X_N \) = score on each predictor

This method allowed the researcher the ability to “assess the relationship between two variables while controlling for the effect of other [variables] and describes the extent of linear relationships between the dependent variable and a number of other independent (or control) variables” (Frankfort-Nachmias, et al., 1992, pp. 413-414). If data had warranted, a log linear statistical analysis would have been used, rather than multiple regressions. The variables on the demographic questionnaire were categorical variables, thus, in order to incorporate them in the multiple regression equation, “they [were] recorded as binary variables, referred to as dummy variables, e.g., females 1 and males 0” (Ary et al., 1996, p. 409).
Limitations of This Study

This study has limitations. The independent variables, based on FACES II, are self-report ratings. Therefore, respondents were required to recall their perceptions of their family environments. There was the risk that some passage of time could have confounded participant’s memories, i.e., alter or correct participant’s perceptions of family idiosyncrasies or change the accuracy of memory. Further, as FACES II reports perceptions of an individual's family in particular, there was the possibility of respondents giving socially desirable responses. Though, with this caveat in mind, Olson (1991) indicated an attempt was made to minimize socially desirable responses, reporting the “correlation between adaptability and social desirability was \( r = .38 \) and the correlation between social desirability and cohesion \( r = .39 \)” (p. 7).

The sampling method used was convenience cluster sampling, thus all members in a given class were included in the sample.

This study was limited to African-American college freshmen attending North Carolina Agricultural &Technical State University. Consequently, the findings are generalizable only to African-American college freshmen attending North Carolina Agricultural and Technical State University.

In the following chapter (4), the results of this investigation are presented as they relate to the research questions posed.
CHAPTER 4

AN ANALYSES OF THE DATA AND FINDINGS

The purpose of this study was the investigation of the family-of-origin relationship dynamics on the career decision-making self-efficacy of African-American college students. Specifically, this study tested measurements of the environmental factors of the family-of-origin on career decision-making self-efficacy measurements of African-American college freshmen. Concurrently, this study further assessed the applicability of the social cognitive career theories on a homogenous sample of the African-American population.

In applying the measurements and in assessing the social cognitive career theories, three specific research questions were posed which this investigation sought to answer:

1. Is there a linear relationship between environmental factors of the family-of-origin measures and the career decision-making self-efficacy measures of African-American college freshmen?
2. Does the perception of family adaptability in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?

3. Does the perception of family cohesion in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?

In answering the research questions posed, this chapter presents the research results in two parts. Part I describes in tabular form the descriptive statistics for the sample source and demographic variables used in the data analyses. Part II presents the inferential statistical analyses. These statistical analyses incorporate demographic variables and test results and are presented through scatter plots and multiple polynomial regression models. The Statistical Program for Social Sciences (SPSS-PC), Math Soft Inc. (S-PLUS), and the Statistical Analysis System (SAS), were used in the statistical analyses. An a priori alpha level of significance at .05 was established for the analyses.

**Part I: Descriptive Statistics**

**Sample Source and Reliability Estimates**

In April 2000, during the spring semester, this investigator obtained permission from the Institutional Review Board (see appendix C) of the North Carolina Agricultural & Technical State University, to conduct the data testing and collection among freshmen students. North Carolina Agricultural & Technical State University is a historically Black college with a total enrollment
of 7,500 students including 1,541 freshmen for the 1999-2000 school year. The Associate Dean for the School of Arts and Sciences recommended that a representative and available sample of first time freshmen would be found in the mandatory freshmen English classes. Twenty-seven (27) classes were subsequently made available to the researcher. Collectively, the classes included freshmen English sections, honors freshmen English sections and freshmen English composition sections. An additional class of freshmen who were undecided on a major was also included in the sample.

Methodologically, the sample selection for this study was to have been cluster random sampling (Ary, Jacobs & Razavieh, 1996) and required random cluster selection and the use of all subjects in a given cluster, i.e., class. While all subjects in each cluster were used, due to the fact that specific freshmen classes were made available to the researcher, the sampling is a convenience cluster sampling. According to Allison (1999) “although it is acceptable to use such convenience samples, you must be very cautious in generalizing the results to other populations” (p. 9). A full discussion on the generalizability of the results is covered in Chapter 5. Thus, from those classes made available, and with the instructors prior permission, the testing instruments were distributed, completed and collected, during the time allotted. This process was repeated until the appropriate sample numbers were met (see Chapter 3 for the a priori power analysis and a complete discussion on methodology). In an effort
to control for data collector characteristics and data collector bias, a local professional educator was hired and trained in a standardized script of instructions for the participants.

Instrumentation included a two part demographic questionnaire, and two measurement scales, the Family Adaptability and Cohesion Evaluation Scale II (FACES II), Olson, Bell and Portner (1982, 1992) and the Career Decision-Making Self-Efficacy Scale-Short Form (CDMSE-SF), Betz, Klein and Taylor (1996). See appendix A for the Student Information Survey packet which includes; (1) the verbal consent request script; (2) the demographic questionnaire; (3) FACES II; (4) CDMSE-SF.

According to Thorndike (1982) the reliability of an instrument is concerned with its “stability, consistency or reproducibility” (p. 233). Further, larger group averages tend to yield stable reliability measures or internal consistency estimates. Generally, reliabilities of .50 or .60 were considered adequate, though currently, reliabilities of at least .70 are considered adequate as per Ponterotto (1996). Both FACES II and the CDMSE-SF are Likert-type scales and for these type scales, Cronbach’s alpha is the formula of choice for computing reliability coefficients. The computer program SPSS provided the Cronbach’s alphas, all exceeding .76 on an n of 320. These substantial reliability estimates suggest that the items on the scales are measuring the same underlying construct for the sample population. See Table 1.
Family Adaptability and Cohesion Evaluation Scale II

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion</td>
<td>.8637</td>
</tr>
<tr>
<td>Adaptability</td>
<td>.7745</td>
</tr>
<tr>
<td>Career Decision-Making Self-Efficacy-Short Form</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Appraisal</td>
<td>.8013</td>
</tr>
<tr>
<td>Occupational Information</td>
<td>.8058</td>
</tr>
<tr>
<td>Goal Selection</td>
<td>.7862</td>
</tr>
<tr>
<td>Planning</td>
<td>.8954</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>.7607</td>
</tr>
</tbody>
</table>

Table 1: Cronbach's Alpha Reliability Coefficients.

Demographic Variables

The instrument distribution and data collection for this study was convenience cluster sampling, therefore every person in each cluster, i.e., class, was invited to participate in the study. The total number of Student Information Survey packets distributed and collected was 348. The population of interest for this investigation was limited to first time African-American college freshmen, thus, others participating in the cluster sampling were separated out, prior to the data analyses. Of the 348 respondents, 320 (92%) met this study’s specifications. An age limit was set at 23 years and there were 9 respondents (2.6%), indicating their ages at 24 years or above. Racial classifications other than African-American included: (1) Caucasian-American, 8 respondents
(2.3%); (2) Asian-American, 2 respondents (.6%); (3) Native-American, 1 respondent (.3%); (4) Hispanic-American, 1 respondent (.3%). There were 4 respondents (1.1%) indicating non-freshman status and 3 respondents (.3%) who did not complete the instruments. See Table 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American freshmen</td>
<td>320</td>
<td>92%</td>
</tr>
<tr>
<td>Age 24 or above</td>
<td>9</td>
<td>2.6%</td>
</tr>
<tr>
<td>Caucasian-American</td>
<td>8</td>
<td>2.3%</td>
</tr>
<tr>
<td>Asian-American</td>
<td>2</td>
<td>.6%</td>
</tr>
<tr>
<td>Native-American</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>Hispanic-American</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>Non-Freshmen</td>
<td>4</td>
<td>1.1%</td>
</tr>
<tr>
<td>Incomplete Instrument</td>
<td>3</td>
<td>.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>348</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Initial Population Demographics N 348.

The sample size for this study was 320 respondents, holding constant African-American ethnicity, first time freshmen status, and age 23 or less. The n of 320 represents a 92% response rate for the total population. Of the sample 180 (56%) were female and 140 (44%) were male. The ages ranged from 17 years to 23 years. See Tables 3 and 4.
<table>
<thead>
<tr>
<th>Gender</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>180</td>
<td>56%</td>
</tr>
<tr>
<td>Male</td>
<td>140</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 3: Gender.

<table>
<thead>
<tr>
<th>Age In Years</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>158</td>
<td>49%</td>
</tr>
<tr>
<td>19</td>
<td>144</td>
<td>45%</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>4%</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 4: Age In Years.

**Individual Respondent Variables**

High school grade point averages (GPA) ranged from 1.6-4.00 (on a 4 point system). The largest number of respondents, 44 (15%) had GPA's from 2.9-3.00, 41 (14.4%) had GPA's from 3.5-3.6 and 40(14%) had GPA's from 2.7-2.8. See Table 5 for the complete list of frequencies and percentages. On the question of academic or non-academic high school track, 289 (90%) were on an
academic track and 31 (10%) were on a non-academic track. 272 (85%) had decided on a college major and 48 (15%) were undecided on a college major.

See Tables 6-7.

<table>
<thead>
<tr>
<th>Grade Point Average</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 - 1.9</td>
<td>4</td>
<td>1.4%</td>
</tr>
<tr>
<td>2.0 - 2.1</td>
<td>13</td>
<td>4.6%</td>
</tr>
<tr>
<td>2.3 - 2.4</td>
<td>13</td>
<td>4.6%</td>
</tr>
<tr>
<td>2.5 - 2.6</td>
<td>21</td>
<td>7.4%</td>
</tr>
<tr>
<td>2.7 - 2.8</td>
<td>40</td>
<td>14%</td>
</tr>
<tr>
<td>2.9 - 3.0</td>
<td>44</td>
<td>15%</td>
</tr>
<tr>
<td>3.1 - 3.2</td>
<td>30</td>
<td>10.5%</td>
</tr>
<tr>
<td>3.3 - 3.4</td>
<td>31</td>
<td>11%</td>
</tr>
<tr>
<td>3.5 - 3.6</td>
<td>41</td>
<td>14.4%</td>
</tr>
<tr>
<td>3.7 - 3.8</td>
<td>20</td>
<td>7%</td>
</tr>
<tr>
<td>3.9 - 4.00</td>
<td>28</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>285</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Based on the 285 GPA's reported

Table 5: High School GPA's on 4-Point System.

<table>
<thead>
<tr>
<th>Type High School Track</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Track</td>
<td>289</td>
<td>90%</td>
</tr>
<tr>
<td>Non-Academic Track</td>
<td>31</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>320</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6: High School Track.
<table>
<thead>
<tr>
<th>Decidedness</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decided</td>
<td>272</td>
<td>85%</td>
</tr>
<tr>
<td>Undecided</td>
<td>48</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>320</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 7: Decidedness on College Major.

**Respondents' Family Related Variables**

In terms of siblings, of the 315 respondents reporting, 36 (11%) indicated having no siblings and 279 (89%) indicated affirmatively. Of the 279 with siblings, 109 (39%) indicated all siblings resided in the same household while 170 (61%) indicated their siblings resided in different homes. In addition to parents and siblings, 54 (17%) had other relatives residing in their homes. On the question of extended family members living in close proximity to respondents nuclear families' homes, 232 (73%) had extended family members living close by and 88 (27%) did not. When asked if extended family members were consulted on major nuclear family decisions, 177 (55%) of the respondents indicated affirmatively and 143 (45%) indicated extended family members were not consulted. See Tables 8-12.
<table>
<thead>
<tr>
<th>Siblings</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of Siblings</td>
<td>279</td>
<td>89%</td>
</tr>
<tr>
<td>No Siblings</td>
<td>36</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>315</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Based on 315 reporting sibling status

Table 8: Sibling Status.

<table>
<thead>
<tr>
<th>Residence</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>All In Same Household</td>
<td>109</td>
<td>39%</td>
</tr>
<tr>
<td>Residing in Different Households</td>
<td>170</td>
<td>61%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>279</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Based on 279 reporting sibling residence.

Table 9: Sibling Residence.

<table>
<thead>
<tr>
<th>Relatives In Household</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of Relatives</td>
<td>54</td>
<td>17%</td>
</tr>
<tr>
<td>No Additional Relatives</td>
<td>266</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>320</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 10: Relatives in Household (Other than Parents and Siblings).
Proximity

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended Family Living Near</td>
<td>232</td>
<td>73%</td>
</tr>
<tr>
<td>No Extended Family Living Near</td>
<td>88</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>320</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 11: Proximity of Extended Family Members' Homes.

Relatives Consultation

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relatives Consulted</td>
<td>177</td>
<td>55%</td>
</tr>
<tr>
<td>Relatives Not Consulted</td>
<td>143</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>320</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 12: Relatives Consulted on Major Nuclear Family Decisions (Aunts, Uncles, Grandparents).

**Part II: Findings**

**Section I**

The presentation of the findings has been organized by the research questions. An *a priori* level of significance at .05 was set for all analyses. Data for hypothesis one were analyzed with linear regression models including Pearson correlation coefficients and significance probabilities, and with multiple regression models for the analysis of variance tables, measured with sample
mean estimates, standard error estimates and t-tests. Procedures were
performed using the Statistical Program for Social Sciences (SPSS-PC) and
Math Soft Inc. (S-PLUS).

Research Hypothesis 1 and Findings

1. Is there a linear relationship between environmental factors of
   the family-of-origin measures and the career decision-making
   self-efficacy measures of African-American college freshmen?

H1: There will be a positive relationship between scores on
   FACES II and scores on the CDMSE-SF of African-American
   college freshmen.

Table 13 provides the estimated Pearson correlation coefficients denoted
by \( r \), and \( p \)-values for the test that the correlation equal zero. Cohesion and
adaptability (FACES II) are the independent or predictor variables and the five
domains of the Career Decision-Making Self-Efficacy Scale (Short Form)
(CDMSE-SF) are the dependent or criterion variables. According to Hulbert
(1998) in using the Pearson correlation coefficient \( r \), as an inferential statistic,
(rather than a descriptive statistic) for hypotheses testing, "if \( r \) is greater in
absolute value than its critical value, we reject \( H_0 \)" (p. 389). With a sample size
\( n = 320 \) -2 degrees of freedom, .113 is the critical value as identified in the
values of \( r \) table (Isaac & Michael, 1995). All \( r \)-values are greater than their
critical values at the 5% level of significance. All \( p \)-values are less than .05.
Hence, the findings in Table 13, allow for the rejection of the null hypothesis, that the correlation = 0, and finds support for the alternative hypothesis, that the correlation > 0. Table 13 also provides evidence which helps in avoiding a Type I error. Specifically, the findings indicate a correlation between the two domains of FACES II, cohesion and adaptability (the independent variables) and the five domains of the CDMSE-SF (the dependent variables) as measured on African-American college freshmen. These findings also suggest in part, some tentative evidence of the applicability of the career decision-making self-efficacy measurement with an African-American population.

<table>
<thead>
<tr>
<th>FACES II Domains</th>
<th>cohesion</th>
<th>adaptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDMSES (SF) Domains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Appraisal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r-values</td>
<td>0.16162</td>
<td>0.13257</td>
</tr>
<tr>
<td>p-values</td>
<td>0.0037</td>
<td>0.0177</td>
</tr>
<tr>
<td>Occupational Info.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.17665</td>
<td>0.13511</td>
</tr>
<tr>
<td></td>
<td>0.0015</td>
<td>0.0156</td>
</tr>
<tr>
<td>Goal Selection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.17143</td>
<td>0.15288</td>
</tr>
<tr>
<td></td>
<td>0.0021</td>
<td>0.0061</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.17637</td>
<td>0.16698</td>
</tr>
<tr>
<td></td>
<td>0.0015</td>
<td>0.0027</td>
</tr>
<tr>
<td>Problem Solving</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.21909</td>
<td>0.18091</td>
</tr>
<tr>
<td></td>
<td>&lt;.0001</td>
<td>0.0012</td>
</tr>
</tbody>
</table>

Note: Top line displays correlation coefficient \( r \) (an estimator of \( \rho \)), r-values (all greater than > .113 critical value). Second line displays p-values, p-values (all less than < .05).

Table 13: Pearson Correlation Coefficients, N = 320. Probability > |t| Under H0: \( \rho = 0 \).
Table 14 provides the means and standard deviation scales for the CDMSE-SF and FACES II. The analysis of variance tables 15 and 16, provide the estimated coefficients for the multiple polynomial regression model, standard error estimates and t-tests. The findings indicate that all t-values are greater than 1.960, which is the critical value of t, when n = 320 with 318 degrees of freedom at alpha = .05, for a two sided test. All the associations between the independent variables (FACES II) and the dependent variables (CDMSE-SF domains) are statistically significant. A standard deviation change in either cohesion or adaptability results in a change of approximately .5 in the career decision-making scores. These changes are analyzed by dividing the standard deviation by the mean estimate on a given dependent variable. For example, the scale standard deviation for self-appraisal is 3.12675 (Table 14) divided by the self-appraisal estimated mean of 0.5054, on cohesion (Table 15) = 6.1866838. Thus, a standard deviation change on cohesion increases the self-appraisal score by approximately one/sixth. The standard deviations associated with all the career decision-making scores (Table 14) are all larger than 3, again this change represents approximately one/sixth of a standard deviation increase in these scores.
Consequently, Tables 14, 15, and 16 provide support for H1, because there is indicated, a statistically significant, positive linear relationship between scores on FACES II and scores on the CDMSE-SF of African-American college freshmen. The observed increases in the career decision-making scores at .5, and their implications are discussed fully in Chapter 5.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Means</th>
<th>Standard Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Appraisal</td>
<td>320</td>
<td>21.08438</td>
<td>3.12675</td>
</tr>
<tr>
<td>Occupational Info</td>
<td>320</td>
<td>20.98125</td>
<td>3.33965</td>
</tr>
<tr>
<td>Goal Selection</td>
<td>320</td>
<td>20.67188</td>
<td>3.27743</td>
</tr>
<tr>
<td>Planning</td>
<td>320</td>
<td>20.87813</td>
<td>3.31910</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>320</td>
<td>20.00313</td>
<td>3.44459</td>
</tr>
<tr>
<td>Cohesion</td>
<td>320</td>
<td>58.60938</td>
<td>10.23244</td>
</tr>
<tr>
<td>Adaptability</td>
<td>320</td>
<td>45.30625</td>
<td>7.94653</td>
</tr>
</tbody>
</table>

Table 14: Means and Standard Deviations for Scales CDMSE-SF and FACES II.

<table>
<thead>
<tr>
<th>Label</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>DF</th>
<th>t Value</th>
<th>Pr &gt;</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Appraisal</td>
<td>0.5054</td>
<td>0.1730</td>
<td>318</td>
<td>2.92</td>
<td>0.0037</td>
<td>0.1649</td>
<td>0.8458</td>
</tr>
<tr>
<td>Occupational Info</td>
<td>0.5899</td>
<td>0.1843</td>
<td>318</td>
<td>3.20</td>
<td>0.0015</td>
<td>0.2273</td>
<td>0.9526</td>
</tr>
<tr>
<td>Goal Selection</td>
<td>0.5619</td>
<td>0.1811</td>
<td>318</td>
<td>3.10</td>
<td>0.0021</td>
<td>0.2056</td>
<td>0.9181</td>
</tr>
<tr>
<td>Planning</td>
<td>0.5854</td>
<td>0.1832</td>
<td>318</td>
<td>3.20</td>
<td>0.0015</td>
<td>0.2249</td>
<td>0.9458</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>0.7547</td>
<td>0.1885</td>
<td>318</td>
<td>4.00</td>
<td>&lt;.0001</td>
<td>0.3839</td>
<td>1.1255</td>
</tr>
</tbody>
</table>

Note: p-values (all less than <.05). t-values (all greater than > 1.960, critical t)

Table 15: Analysis of Variance – Cohesion (Parameter Estimates).
<table>
<thead>
<tr>
<th>Label</th>
<th>Estimate</th>
<th>Error</th>
<th>DF</th>
<th>t Value</th>
<th>Pr &gt;</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Appraisal</td>
<td>0.4145</td>
<td>0.1738</td>
<td>318</td>
<td>2.39</td>
<td>0.0177</td>
<td>0.07257</td>
<td>0.7564</td>
</tr>
<tr>
<td>Occupational Info.</td>
<td>0.4512</td>
<td>0.1856</td>
<td>318</td>
<td>2.43</td>
<td>0.0156</td>
<td>0.08615</td>
<td>0.8163</td>
</tr>
<tr>
<td>Goal Selection</td>
<td>0.5011</td>
<td>0.1816</td>
<td>318</td>
<td>2.76</td>
<td>0.0061</td>
<td>0.1437</td>
<td>0.8584</td>
</tr>
<tr>
<td>Planning</td>
<td>0.5542</td>
<td>0.1835</td>
<td>318</td>
<td>3.02</td>
<td>0.0027</td>
<td>0.1932</td>
<td>0.9153</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>0.6232</td>
<td>0.1900</td>
<td>318</td>
<td>3.28</td>
<td>0.0012</td>
<td>0.2494</td>
<td>0.9969</td>
</tr>
</tbody>
</table>

Note: p-values (all less than <.05). t-values (all greater than > 1.960, critical t)

Table 16: Analysis of Variance -- Adaptability (Parameter Estimates).

Section II

This portion of the data analyses answers the research hypotheses two and three. An a priori level of significance at .05 was set for all analyses. Multiple polynomial regression models were developed which allow for the effects of family-of-origin scales to be tested in a model that also accounts for the effect of other variables. Thus, in addition to the independent family perception variables measured by FACES II, African-American college freshmen's individual and family demographic variables are accounted for in this model as independent variables. The dependent variables are the five domains of the CDMSE –SF.

One additional note of explanation, in general, multiple regression analysis has as its focus linear relationships between variables. Frankfort-Nachmias and Nachmias (1992) indicate that multiple regression and correlation methods:
Comprise a technique for assessing the simultaneous effect of several independent variables on the dependent variable under study...[wherein] a prediction rule is estimated that evaluates the extent of change produced in the dependent variables by an independent variable, holding other relevant independent variables constant. (p. 423)

It is also possible to analyze nonlinear relationships, such as curvilinearity, within the framework of multiple regressions. One methodology by which nonlinearity is accounted for is through the use of multiple polynomial regression models, which are the models used in this portion of the analyses. Polynomial regressions are “simply models with integer (whole number) powers of X” (Allison, 1999, p. 156). Thus, a polynomial regression representing a curvilinear relationship with one curve or bend would be represented by an independent variable X, raised to the second power, termed a quadratic relationship. Cohen and Cohen (1975) further indicate, that the use of the polynomial regression model “is a good general fitting function for most behavioral science data when curvilinearity exists... [this analytic methodology] has the virtues of simplicity, flexibility and general descriptive accuracy” (pp. 230-231). When presenting multiple polynomial regression models, Allison (1999) recommends that in addition to drawing conclusions “based on the signs and values of the coefficients, the most reliable and complete method is to graph the estimated regression equation” (p. 161). Consequently, the multiple
polynomial regressions are presented in combination with scatter plots. All analyses were performed by the statistical program Statistical Analysis System (SAS) and Math Soft Inc. (S-PLUS).

Hypotheses two and three were analyzed in the following manner. There were five domains of the dependent variables, based on the CDMSE-SF, viz., problem solving, planning (for the future), goal selection, self-appraisal and occupational information. Each of these dependent variables was analyzed in the multiple polynomial regression models to determine the nature and degree of the relationship between these dependent variables and the independent variables, scores on FACES II, viz., cohesion, adaptability and additional family demographic variables.

**Research Hypotheses 2 and 3 and Findings**

2. Does the perception of family adaptability in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?

H2. There will be a positive relationship between scores on FACES II adaptability dimensions, and scores on the CDMSE-SF.

3. Does the perception of family cohesion in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?
H3: There will be a positive relationship between scores on
FACES II cohesion dimensions, and scores on the CDMSE-SF.
Table 17 provides the multiple polynomial regression table on the
dependent variable problem solving. The table includes standardized (Beta)
coefficients, standard error estimates (Beta), p-values and t-values. All t-values
are greater than 1.960, which is the critical value of t, when n = 320 with 318
degrees of freedom at alpha = .05. These t-values therefore suggest, that the
mean problem solving increases with adaptability and cohesion.

The R-square or coefficient of determination for this regression is
0.094822, indicating that 9.5% of the variation on the mean problem solving is
explained by the independent variables (adaptability, cohesion and Grade Point
Average). The findings indicate that high family cohesion (Beta > 0) is
associated with high mean problem solving. Specifically, the mean problem
solving increases with cohesion in a quadratic fashion, after controlling for GPA
and adaptability. Mean problem solving also increases with GPA (Beta > 0).

Conversely, the mean problem solving decreases with adaptability (Beta -
2.38), except for those students with GPA’s greater than 2.77, for whom, mean
problem solving increases with adaptability (Beta > 0). This suggests that
students with higher GPA’s (2.77 and above) tend to score higher on means
problem solving and higher on family adaptability, thus, the detection of an
interaction between higher GPA, high family adaptability and high mean problem solving. This finding also suggests that students with lower GPA’s, tend to score lower mean problem solving, and lower adaptability scores.

Therefore, on the dependent variable problem solving, support is found for H2 and H3. Specifically, H2 relates to the positive relationship between the perception of family adaptability and career decision-making self-efficacy scores. The analysis indicates a positive association between the high mean problem solving and high family adaptability scores for African-American college freshmen who also have Grade Point Averages (an independent variable) above 2.77. On H3, relating to family cohesion and a positive relationship with career decision-making self-efficacy scores, the findings indicate a positive association between high family cohesion scores and the high mean problem solving scores.

| Parameter         | Beta Estimate | Standard Error Beta | t-Value | Pr > |t| |
|-------------------|---------------|---------------------|---------|------|---|
| Intercept         | 17.37370997   | 1.13722211          | 15.28   | <.0001 |
| adaptability      | -2.38323303   | 1.05468048          | -2.26   | 0.0246 |
| cohesion          | 0.72238116    | 0.28864996          | 2.50    | 0.0129 |
| GPA               | 0.71857675    | 0.36548402          | 1.97    | 0.0502 |
| cohesion 2        | 0.39408486    | 0.15143815          | 2.60    | 0.0097 |
| adaptability & GPA| 0.86162362    | 0.34242933          | 2.52    | 0.0124 |

Note: R-Square = 0.094722

Table 17: Dependent Variable: Problem Solving.
Polynomial Regression Model

\[ X_1 = \text{adaptability} \quad \quad Y_1 = \text{problem solving} \]
\[ X_2 = \text{cohesion} \]
\[ X_3 = \text{GPA (Grade Point Average)} \]

\[ Y_i = \mu + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_2^2 + \beta_5 X_1 X_3 + \varepsilon_i \]

The multiple polynomial regression model follows the same general outline as a straight-line model, where the residuals \( \varepsilon_i \) are assumed too have independent normal distributions with mean 0 and variance \( \sigma^2 \). Note that \( \beta_4 = .39 > 0 \), hence the mean problem solving increases quadratically with cohesion. The effect of adaptability is modified by GPA: \( \beta_1 X_1 + \beta_5 X_1 X_3 \)

\[ = (\beta_1 + \beta_5 X_3) X_1 \].

When GPA is greater than \( > 2.77 \), the rate of increase with adaptability is \( (\beta_1 + \beta_5 X_3) = (-2.38 + .862.77) > 0 \).

![Problem Solving vs. Adaptability](image)

**Figure 1**
Note. The lowess curves (a scatter-plot smoothing technique) suggest a slightly increasing linear relationship.

Figure 2

Table 18 provides the multiple polynomial regression table and findings on the dependent variable planning (for the future). The table includes standardized (Beta) coefficients, standardized error estimates (Beta), p-values and t-values.

The R-square for the regression is 0.096871, indicating that 9.7% of the variation on the mean planning is explained by the independent variables (cohesion, having decided or not decided on an undergraduate major and to a lesser extent adaptability). Specifically, the findings show that the mean planning increases with higher scores on family cohesion in general (Beta
Further, the findings indicate that those students who have decided on an undergraduate major, have overall higher scores on the mean planning (Beta coefficient 1.61). However, cohesion scores on the mean planning has less effect on this group of students. For those who have decided on a major, the rate of increase on cohesion for the mean planning is 1.97-1.62 = .35. Conversely, for those students who have not decided on an undergraduate major, the rate of increase on cohesion, for the mean planning is 1.97-1.62*0X2 = 1.97X2.

On the mean planning, the coefficient for the independent variable adaptability, suggests a positive association between the mean planning and adaptability (Beta > 0). However, adaptability in this model is not statistically significant, (t-value = 1.11 and p-value = 0.2662).

Thus, on the dependent variable planning (for the future), support is not indicated for H2, while H3 is supported. Specifically, on H2, relating to a positive relationship between family adaptability scores and career decision-making self-efficacy scores, the findings indicate a positive (Beta > 0) though statistically insignificant association between the mean planning scores and family adaptability scores. On H3, relating to a positive relationship between family cohesion scores and career decision-making self-efficacy scores, the analysis indicates a positive and meaningful association between the high mean planning scores and high family cohesion scores. Further, the effect of family
cohesion scores on the mean planning score, are also related to the level of
decidedness on an undergraduate major (independent variables) for these
African-American college freshmen.

| Parameter                  | Beta Estimate | Standard Error Beta | t-Value | Pr > |t| |
|----------------------------|---------------|---------------------|---------|------|---|
| Intercept                  | 19.28325021   | 0.47774088          | 40.36   | <.0001 |
| adaptability               | 0.28243383    | 0.25355776          | 1.11    | 0.2662 |
| cohesion                   | 1.97212096    | 0.55668080          | 3.54    | 0.0005 |
| undergrad-major2           | 1.60910656    | 0.50382626          | 3.19    | 0.0015 |
| cohesion2                  | 0.21694475    | 0.13186361          | 1.65    | 0.1009 |
| cohesion*undergrad-major2  | -1.62391782   | 0.54855977          | -2.96   | 0.0033 |

Note: R-Square = 0.096871

Table 18: Dependent Variable: Planning.

Polynomial Regression Model

\[ Y_i = \mu + \lambda I_{major} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_2^2 + \gamma I_{major} X_2 + \epsilon_i \]

The multiple polynomial regression model follows the same general
outline as a straight-line model, where the residuals \( \epsilon_i \) are assumed too have
independent normal distributions with mean 0 and variance \( \sigma^2 \). For those who
have decided on their undergraduate major, \( I_{major} = 1 \), the slope associated with
cohesion $X_2$ is $\beta_2 X_2 + \gamma_{\text{major}} X_2 = (\beta_2 + \gamma_{\text{major}})X_2 = (1.97 - 1.62)X_2 = .35 X_2$. For those who have not decided on their undergraduate major, $I_{\text{major}} = 0$, the slope associated with cohesion $X_2$ is $(\beta_2 + \gamma_{\text{major}})X_2 = (1.97 - 1.62*0)X_2 = 1.97X_2$.

Figure 3
Planning vs. Adaptability

Note. The lowess curves suggest a slightly increasing linear relationship.

Figure 4

Table 19 provides the multiple polynomial regression table and findings on the dependent variable goal selection. Included are standardized (Beta) coefficients, standardized error estimates (Beta), p-values and t-values.

The R-square for the regression is 0.077470, indicating that 7.7% of the variation on the mean goal selection is explained by the independent demographic variables (having decided or not having decided on an undergraduate major). Specifically, the findings show that the mean goal selection is highest for those students who have decided on an undergraduate major (Beta 2.005). On the mean goal selection, the coefficient for the
independent variable, not having decided on a major, while positive (Beta > 0), is not statistically significant, t-value 1.29, thus < 1.96 and p-value = 0.1989, thus >0.05.

The effect of adaptability and cohesion, on the mean goal selection, were not detected in the multiple polynomial regression model. Hence, on the dependent variable goal selection, support is not indicated for H2, though the Beta >0 on adaptability, the effect is statistically insignificant in terms of a relationship between family adaptability scores and career decision-making self-efficacy scores. H3 is also not supported, as related to family cohesion scores. The most important variable effecting the mean goal selection, is the independent demographic variable having decided on an undergraduate college major.

| Parameter               | Beta Estimate | Standard Error Beta | t-Value | Pr > |t| |
|-------------------------|---------------|---------------------|---------|------|---|
| Intercept               | 18.93540759   | 0.46096370          | 41.08   | <.0001 |
| adaptability            | 0.01715197    | 0.41271505          | 0.04    | 0.9669 |
| undergrad/major2        | 2.05532808    | 0.49914554          | 4.12    | <.0001 |
| adaptability*undergrad/major2 | 0.58842560 | 0.45703300          | 1.29    | 0.1989 |

Note: R-Square = 0.077470.

Table 19: Dependent Variable: Goal selection.
Polynomial Regression Model

\[ X_i = \text{adaptability} \quad \quad Y_i = \text{goal selection} \]

\[ I_{\text{major}} = 1 \quad \text{for those decided on their undergraduate major} \]
\[ = 0 \quad \text{for those undecided on their undergraduate major} \]

\[ Y_i = \mu + \lambda I_{\text{major}} + \beta_1 X_i + \gamma I_{\text{major}} X_i + \varepsilon_i \]

The multiple polynomial regression model follows the same general outline as a straight-line model, where the residuals \( \varepsilon_i \) are assumed to have independent normal distributions with mean 0 and variance \( \sigma^2 \). For those who have decided on a major, the mean goal selection is highest, \( \text{Beta} = 2.055 \).

![Graph showing Goal Selection vs. Cohesion](image)

Figure 5
Goal Selection vs. Adaptability

Note. The lowess curves suggest a slightly increasing linear relationship.

Figure 6

Table 20 provides the multiple polynomial regression table and findings on the dependent variable self-appraisal. Included are standardized (Beta) coefficients, standardized error estimates (Beta), p-values and t-values.

The R-square for the regression is 0.91547, indicating that 9.2% of the variation on the mean self-appraisal is explained by the independent variables (cohesion, having decided or not having decided on an undergraduate major and adaptability). Specifically, the findings indicate that high family cohesion (Beta > 0) is associated with high mean self-appraisal. The mean self-appraisal is also higher for those students who have decided on an undergraduate major.
Further, for those students who have decided on a major, the effect of cohesion on the mean self-appraisal, is less distinct (1.261-.796*1 = .45). Conversely, for those students who have not decided on an undergraduate major, the mean self-appraisal increases more steeply with cohesion ($\beta_2 X_2 = 1.261 X_2$). This suggests that family cohesion is less important, on the mean self-appraisal for students who have decided on a major, and more important, on the mean self-appraisal, for those students who have not decided on a major.

The findings also indicate an effect on the mean self-appraisal with family adaptability, though in this instance, the effect is sloped down (Beta -0.334 and p-value < .05). This suggests that the independent variable adaptability has less effect on the mean self-appraisal for those students with higher scores on cohesion and for those who have decided on an undergraduate major.

Therefore, on the dependent variable self-appraisal support is not indicated for H2, relating to a positive association between family adaptability scores and career decision-making self-efficacy scores. However, in this instance, there is a linear downward sloped effect for adaptability on the mean self-appraisal, suggesting the possibility that on this variable, high scores on family cohesion and decidedness on an undergraduate major diminish the importance of family adaptability scores. H3, relating to a positive association between family cohesion scores and career decision-making self-efficacy scores is supported by this analysis.
| Parameter                  | Beta Estimate | Standard Error Beta | t-Value | Pr > |t| |
|---------------------------|---------------|---------------------|---------|------|---|
| Intercept                 | 19.78160401   | 0.46811657          | 42.26   | <.0001 | |
| cohesion                  | 1.26144265    | 0.52651875          | 2.40    | 0.0172 | |
| undergrad/major2          | 1.43613123    | 0.48023686          | 2.99    | 0.0030 | |
| adaptability              | 0.10941248    | 0.23990576          | 0.46    | 0.6487 | |
| cohesion2                 | 0.41361711    | 0.14549776          | 2.84    | 0.0048 | |
| adaptability2             | -0.33454678   | 0.14681698          | -2.28   | 0.0234 | |
| cohesion*undergrad/major2 | -0.79600255   | 0.51887725          | -1.53   | 0.1260 | |

Note: R-Square = 0.091547

Table 20: Dependent Variable: Self-Appraisal.

**Polynomial Regression Model**

\[ Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1^2 + \beta_4 X_2^2 + \gamma I_{\text{major}} X_2 + \epsilon \]

\( X_1 = \text{adaptability} \quad \quad \quad \text{Y} = \text{self-appraisal} \)
\( X_2 = \text{cohesion} \)
\( I_{\text{major}} = 1 \) for those decided on their undergraduate major
\( = 0 \) for those undecided on their undergraduate major

The multiple polynomial regression model follows the same general outline as a straight-line model, where the residuals \( \epsilon \), are assumed to have independent normal distributions with mean 0 and variance \( \sigma^2 \). Mean Self-appraisal increases with cohesion in a quadratic manner, \( \beta_4 = 0.41 \) (\( P = .0048 \)). Consequently, cohesion is more important for those with high scores on cohesion because of this quadratic term. The effect of cohesion is less pronounced for those who have decided on an undergraduate major \( I_{\text{major}} \).
\[ \beta_2 X_2 + \gamma_{\text{major}} X_2 = (\beta_2 + \gamma_{\text{major}}) X_2 = (1.261 - .796 \times 1) X_2 = .45 X_2. \] After accounting for the effect of the other variables, there is a quadratic effect of adaptability.

**Figure 7**
Note. The lowess curves suggest a slightly increasing linear relationship.

**Figure 8**

Table 21 provides the multiple polynomial regression table and findings on the dependent variable (obtaining) *occupational information*. Included are standardized (Beta) coefficients, standardized error estimates (Beta), p-values and t-values.

The R-square for the regression is 0.090880, indicating that 9.1% of the variation on the mean occupational information is explained by the independent variables (cohesion, adaptability, and having decided or not having decided on an undergraduate major). Specifically, the overall mean occupational information increases in a linear manner with the independent variable cohesion.
(Beta >0, t-value >1.96, and p-value < .05). However, the most important
variable on the mean occupational is decidedness on an undergraduate major,
which increases the mean occupational information (Beta 1.95). Having
decided on an undergraduate also increases cohesion on the mean
occupational information at (1.82 – 1.56*1 = .26).

On the independent variable adaptability, the mean occupational
information increases with adaptability, particularly for those students who have
decided on a major (.998 +1.366*1 = .368). However, for those students who
have not decided on a major, the mean occupational information decreases with
adaptability (Beta -.998 ).

Thus, H2, relating to a positive association between the independent
variable adaptability and career decision-making self-efficacy scores is partly
supported by the analysis. Family adaptability scores increase with the mean
occupational information for those students who have also decided on an
undergraduate major, but adaptability scores decrease on the mean
occupational information for those students undecided on a undergraduate
major.

H3, relating to a positive association between family cohesion scores and
career decision-making self-efficacy scores is supported by the findings.
| Parameter                      | Beta Estimate | Standard Error Beta | t-Value | Pr > |t| |
|-------------------------------|---------------|---------------------|---------|------|---|
| Intercept                     | 19.33042110   | 0.46765983          | 41.33   | <.0001|
| undergrad/major2              | 1.95399767   | 0.50569224          | 3.86    | 0.0001|
| cohesion                      | 1.82116562   | 0.65976806          | 2.76    | 0.0061|
| adaptability                  | -0.99793143  | 0.53403482          | -1.87   | 0.0626|
| undergrad/major2*cohesion     | -1.56199685  | 0.71640578          | -2.18   | 0.0300|
| undergrad/mlmajor2*adaptblt   | 1.36652272   | 0.60774464          | 2.25    | 0.0252|

Note: R-Square = 0.090880

Table 21: Dependent Variable: Occupational Information.

Polynomial Regression Model

\[ Y_i = \beta_0 + \gamma_{1} I_{\text{major}} + \beta_1 X_1 + \beta_2 X_2 + \gamma_{1} I_{\text{major}} X_1 + \gamma_{2} I_{\text{major}} X_2 + \epsilon_i \]

The multiple polynomial regression model follows the same general outline as a straight-line model, where the residuals \( \epsilon_i \) are assumed to have independent normal distributions with mean 0 and variance \( \sigma^2 \). Note the mean occupational information increases with cohesion linearly, \( \beta_2 = 1.82 \) (P = 0.0061).

The mean occupational information decreases with adaptability for those unsure about their undergraduate major \( \beta_1 X_1 = -0.998 X_1 \), and increases with adaptability for those who have decided on an undergraduate major \( \beta_1 X_1 + \gamma_{1} I_{\text{major}} X_1 \)

\[ = (\beta_1 + \gamma_{1} I_{\text{major}}) X_1 = ( \beta_1 + 1.336 X_1 = -0.998 + 1.336) X_1 \]

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Figure 9

Occupational Information vs. Cohesion
Summary

This chapter has provided the data analyses and findings on the three research questions posed in the statement of the problem. Chapter 5 summarizes the analyses, and the findings of this study, as well as the conclusions that may be drawn from this study. Chapter 5 also identifies the limitations of the study, and recommendations for future research on the family-of-origin dynamics and their nexus with career decision-making behaviors.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this investigation was basically twofold; to further test the applicability of the career decision-making self-efficacy construct on a homogeneous sample of African-Americans, in this instance African-American college freshmen; and to measure the relationship between family-of-origin dynamics and the career decisions-making self-efficacy measures of African-American college freshmen.

Specifically, three research questions and hypotheses were framed which this study sought to answer:

1. Is there a linear relationship between environmental factors of the family-of-origin measures and the career decision-making self-efficacy measures of African-American college freshmen?

H1: There will be a positive relationship between scores on FACES II and scores on the CDMSE-SF of African-American college freshmen.
2. Does the perception of family adaptability in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?

H2: There will be a positive relationship between scores on FACES II adaptability dimensions and scores on the CDMES-SF.

3. Does the perception of family cohesion in African-American college freshmen families positively correlate with the students' career decision-making self-efficacy?

H3: There will be a positive relationship between scores on FACES II cohesion dimensions and scores on the CDMSE-SF.

In answering the general and specific questions posed, this chapter contains three sections. The first section provides a summary of the methodology; the second section presents the conclusions based on the data analyses, in combination with the theoretical constructs which framed the study; the final section consists of recommendations for future research.

Summary Of Methodology

Population of Study

The subjects of this study were 320 African-American college freshmen, attending a historically Black College in North Carolina, during the spring semester in the year 2000. All subjects were entering college for the first time at ages twenty-three or below.
The research design for this study was convenience cluster sampling, thus the results of this study can only be generalized to African-American college freshmen attending North Carolina Agricultural & Technical State University. Twenty-seven (27) freshmen classes were made available to the researcher and in total, three hundred and forty-eight (348) students participated by receiving and returning the Student Information Survey, which included; (1) a consent letter explaining the purpose of this study, indicating the anonymity of the respondents, and explaining the monetary incentives; (2) instructions for completing the instruments; (3) a demographic questionnaire; (4) the Career Decision-Making Self-Efficacy Scale-Short Form; (5) The Family Adaptability and Cohesion Evaluation Scale II; (6) a blank standard envelope. Upon collections and review of the Survey Packets, it was determined that three hundred and twenty (320) of the respondents met the specifications for this investigation (see Chapter 3 for a detailed explanation).

**Significant Demographic Variables**

The demographic variables indicated that 56% (180) of the subjects were female, and 44% (140) were male, with 49% age 18, 45% age 19, and the remaining 6% ranging in age from 17 to 23. The other demographic variables that had an *effect as independent variables* in the multiple polynomial regression analyses, included high school Grade Point Averages and decidedness or indecision on an undergraduate college major. On the 285 participants reporting GPA's, 82% (234) indicated their GPA's at 2.77 and above, while 18% (51)
indicated that their GPA’s were below 2.77. Of the 320 subjects, 85% (272) had decided on an undergraduate major and 15% (48) were undecided on an undergraduate major.

**Statistical Procedures**

In answering the research questions posed, the independent variables were the scores on FACES II and responses on the demographic questionnaire. The five domains of the CDMSE-SF served as the dependent variables. An a posteriori computation (computer program SPSS) determining the Cronbach alphas for both FACES II and CDMSE-SF, found that the domains on both scales had reliability estimates of .76 and above. These substantial estimates suggested that the items on the scales were measuring the same underlying construct for the sample population. Research hypothesis one (H1) was analyzed with linear regression models including Pearson correlation coefficients and significance probabilities, and with multiple regression models including sample mean estimates, standard error estimates and t-tests. For these analyses, the computer programs SPSS and S-Plus were used. Research hypotheses two and three (H2-H3) were analyzed with multiple polynomial regression models, including standardized (Beta) coefficients, standard error estimates (Beta), p-values, t-values and R-squares. These analyses were performed by the computer program SAS. For each of the polynomial regression models, scatter plots were also developed by the computer program S-Plus, which used a scatter plot smoothing technique referred to as *loess.*
This methodology does not impose a linear relationship on data, but rather, allows the data points to change and can therefore, “summarize the relationship between the variable as a response and as [a] predictor [variable]...[and can be] viewed as non-parametric estimates of the regression function for a simple additive model” (Hastie, 1992, p. 253).

Summary of Theoretical Constructs and Research Findings

Research Question 1 - Discussion of Findings

Research question one sought to determine if a positive linear relationship existed between the environmental factors of the family-of-origin measures, and the career decision-making self-efficacy measures of African-American college freshmen. Concurrently, research question one provided a test of the applicability of the career decision-making self-efficacy construct with a homogenous sample of African-Americans.

With an n = 320 - 2 degrees of freedom, the estimated Pearson correlation coefficients indicated that all r-values were greater than their critical values (.113) at the 5% level of significance and all p-values were less than .05, thus support for the alternative hypothesis, that the correlation > 0. Further, the analysis of variance tables for both adaptability and cohesion indicated through t-tests, that a statistically significant positive linear relationship was found between the independent variables, scores on FACES II (family adaptability and family cohesion) and scores on all the domains of the dependent variables CDMSE-SF. Specifically, a standard deviation change in either family
adaptability scores or the family cohesion scores resulted in an increase of approximately one/sixth or .5 on all the career decision-making self-efficacy scores. While the size of this increase was relatively small, the importance may lay in the fact that taken together, these increases occurred consistently across all the five domains of the CDMSE-SF. Hence, research question one was supported in that a positive linear relationship was found between African-American college freshmen perceptions of their family environments and their increased career decision-making self-efficacy.

These findings were anticipated by the investigator and were consistent with the postulates of the career decision-making self-efficacy construct, the social cognitive career theory, and the proposed family/career linkages as identified in family-systems theory. However, this researcher had anticipated a larger effect size on the correlations for this research question as well as on research questions two and three. One of the issues that may have had some implications involves measurement instruments that effectively capture family relational variables particularly with non-majority populations. Osipow and Fitzgerald (1996) suggested that some research has been “hampered by a lack of valid instruments to measure such concepts as … needs, values and family environment” (p. 335). Among some recent researchers who have used family relational or cultural measures in concert with career behavior measures, concerns have been voiced in regards to the continued need to refine and develop instruments which fully capture various contextual variables, e.g.
Holmes (1996), Hall (1997) and Paul (1998). Another reason this investigator expected stronger correlations on these family variables, was based on the research relating to African-American family life and the postulates of high levels of family cohesion and elasticity of boundaries (which can be interpreted in terms family adaptability) as articulated by Allen and James (1998), Dodson (1997), Hill (1997 & 1998), Nobels (1997) and White and Parham (1990). Notwithstanding these issues, the findings on research question one were found to be statistically significant with a positive linear relationship, and had concurrence with the theories upon which that were framed.

From the family-systems paradigm, Bratcher (1982), Zingaro (1983), and Lopez and Andrews (1987) all hypothesized a link between family constellation functioning and processes and various career related behaviors and development. Lopez et al. (1987) pointed out:

The young adult's choice or indecision can be conceptualized... as the outcome of a larger set of transactions between the person and the family... [and to understand this concept] one must first understand the relationship of career decision making to family development. (pp. 304-305)

In a similar vain, Schulenberg et al. (1984) proposed that the “family is one context in which (vocational) development occurs, and the family context serves to mediate [this] influence” (p. 139). From this family-system perspective, Penick and Jepsen (1992), Whiston (1996), and Amundson
and Penner (1998) found various elements which supported the connection between career behaviors and the family environment or parental engagement.

In terms of the career decision-making self-efficacy constructs, Hackett and Betz (1995) pointed out the lack of research on ethnicity and career self-efficacy [and the limited] investigations of the interactions between self-efficacy and important environmental variables (p. 270). Similarly, in discussing the research on the social cognitive career theory (SCCT) Lent, Hackett and Brown (2000) opined that most of the investigations have:

Focused on SCCT's cognitive-person variables alone, in isolation from important environmental (e.g., social, cultural, and economic) variables that are assumed to influence both the cognitive-person variables and other aspects of career behavior. (p. 36)

Consequently, there was limited extant research upon which to assess the first research question. Specifically, on the variables of interest, viz., the career decision-making self-efficacy African-Americans in relationship to their family dynamics, identifiable similar studies were found wanting. These limitations not-with-standing, the findings of a statistically significant positive linear relationship between the family environmental measures and the career decision-making self-efficacy measures of African-American college freshmen was consistent with the theoretical postulates.
Betz and Hackett (1981) and Taylor and Betz (1983) in articulating the career self-efficacy construct and Lent, Brown and Hackett (1994&1996) in proposing the social cognitive career theory, indicated components which hypothesized the impact of environmental contextual variables, particularly those of the family as these familial influences effect career related behaviors. Thus, the implications of finding a positive relationship between a contextual variable, in this instance family environmental dynamics, and career decision-making self-efficacy or career behavior of African-American college students, again appeared consistent with and supported by these theories.

Of the research on African-Americans, vis-à-vis family relations and career behavior, Hackett and Byars (1996) addressed the hypothesized connection between the family variables of communications, encouragement and persuasion as it impacts the career development of African-American women. This portion of their analysis was framed in the context of Bandura’s (1977 &1986) verbal persuasion component of the four sources of self-efficacy. Paul (1998) examined the cultural factors related to the career behaviors of African-American students. The findings supported both the use of the social cognitive theory with African-American students as well as the significance of specific social (communalism) and environmental variables (family support) on their career behaviors in terms of math self-efficacy, the selection of science related majors, and/or the selection of non-scientifically oriented majors. Fisher and Padmawidjaja (1999) investigated the parental influence on the career
development of African-American and Mexican-American college students. They found further evidence of the links between family variables (encouragement, availability, guidance, advice, acceptance and autonomy) and enhanced career related behaviors.

In reference to testing the applicability of the career decision-making self-efficacy construct on an African-American population, similar to Paul (1998), Hill (1998) in a study linking the social cognitive theory to the career development of African-American and Euro-American college students, found support for applicability of the construct with the African-American students. Gainor and Lent (1998) in a study that examined the social cognitive career theory in relationship to math self-efficacy and racial identity attitudes among African-American college students, also found evidence of the applicability of this construct. Consequently, the findings on research question one in tandem with the studies of Paul (1998), Hill (1998) and Gainor et al. (1998), seemed to indicate the utility of the career decision-making self-efficacy construct and the social cognitive career theory with an African-American population.

From a slightly different perspective, additional support for the current findings related to the positive linear relationship between family variables and career decision-making self-efficacy, can be extrapolated from the research on the attachment theory and career development, to the extent that this research deals with familial relationship patterns and career development. These relationships were investigated by Blustein, Walbridge, Friedlander and

Research Questions 2 and 3 – General Discussion

Research questions two and three proposed that there would be found positive relationships on the independent variables family adaptability and family cohesion (FACES II) with the dependent variables, the five domains of the CDMSE-SF for African-American college freshmen. The analyses also included responses from a demographic questionnaire, which if significant would be accounted for as independent variables. Through multiple polynomial regression analyses each dependent variable (the five domains of the CDMSE-SF) was analyzed in relations to the independent variables (FACES II and demographic variables) to determine the nature and degree of the their relationships (correlation).

For purposes of discussion the two main independent variables, based on FACES II were the constructs of family adaptability and family cohesion. From the family-systems perspective family adaptability was viewed as the “ability of a marital or family system to change its power structure, role relationships and relationship rules in response to situational and developmental stress” (Olson, Bell, & Portner, 1992, p. 1). From the same perspective, family cohesion was identified as the degree to which emotional bonding takes place in the family-system. Barber and Buehler (1996) conceptualized family cohesion as
representing "positive supportive interaction among family members that is positively and linearly related to individual and family functioning" (p. 434). Thus, in assessing the impact of family cohesion and family adaptability on career decision-making self-efficacy of African-American college students, this analysis is located in what Lent et al. (1994 & 2000) referred to as contextual/environmental influences. From the social cognitive career theory, it is hypothesized that contextual or environmental factors can either enhance or place barriers on the career development processes. Specifically, Lent et al. (2000) posited that environmentally supportive variables "can facilitate the formation and pursuit of individuals' career choice" (p. 42). From this perspective, cohesive family patterns and adaptive familial patterns would be conceptualized as contextual variables that enhance the career process and behaviors.

Research Questions 2 and 3 - Discussion of Findings

Problem Solving Domain

The first dependent career decision-making self-efficacy domain analyzed was problem solving, which in the context of career decision-making referred to ones' sense of what you should do. With R-square = 0.094822, the polynomial regression indicated that 9.5% of the variation on the mean problem solving was explained by the independent variables family adaptability, family cohesion and grade point average. From the analysis, it was noted that high family cohesion was positively associated with high mean problem solving, that high family
adaptability was associate with high mean problem solving for those students with GPA's above 2.77, and that those students with GPA's below 2.77 tended to score lower on the mean problem solving and lower on family adaptability.

The finding that high family cohesion was associated with high mean problem solving was as anticipated and is consistent with both theory and research. The finding that higher mean problem solving was associated with higher family adaptability for those student with higher GPA's is interesting, in that this finding in some ways conformed to previous studies on self efficacy and academic achievement e.g., Lent, Brown, and Larkin (1984, 1986, 1989). Lent et al. (1994) in Proposition 8 of their social cognitive career theory hypothesized that "there would be a positive relationship between self-efficacy beliefs and career/academic performance" (p. 100). Thus on the problem solving domain, there was the suggestion that antecedent supportive contextual variables were aligned with stronger career self-efficacy and higher academic performance. This could be accounted for in that those students from families with the most supportive and flexible environments, were also those with higher career self-efficacy skills, and higher GPA's. Conversely, those students from homes with less perceived familial adaptability, were also those with lower GPA's and lower career self-efficacy skills. This finding could also be framed in the context of Bandura's (1977) sources of self-efficacy, particularly verbal persuasion (which can be conceptualized as family support) and performance accomplishments, i.e. "enhanced self-efficacy tends to generalize to other situations" (p. 197).
Planning for Future Domain

The second dependent career decision-making self-efficacy domain analyzed was planning (for the future), which referred to logical steps to career goals. With $R^2 = 0.096871$, the multiple polynomial regression indicated that 9.7% of the variation on the mean planning was explained by the independent variables family cohesion, having decided or not having decided on a major, and to a lesser extent adaptability. From the analysis it was noted that the mean planning increased with higher perceived family cohesion and mean planning also increased for those students who had decided on an undergraduate major. This finding was as anticipated and was consonant with both the family/career hypotheses and career development theories. However, the lack of a statistically significant effect for family adaptability on the mean planning was not anticipated by this researcher, (though the coefficient on adaptability suggested a positive association, $\beta > 0$). One might reasonably conjecture that the effect of family cohesion and decidedness on a major on the mean planning diminished the importance of adaptability for these students.

Of particular interest was the association between higher mean planning and decidedness on a major and indecision associated with lower scores on the mean planning. These findings were especially relevant in that they concurred with the seminal research of Taylor and Betz (1983), along with the studies of Niles and Sowa (1992), Taylor and Popma (1992), among others. These researchers all found correlations between the strength of career decision-
making self-efficacy and decidedness and correlations between career
indecision and lower career self-efficacy. These findings were also consistent
with Bandura’s (1995) position, in terms of performance accomplishments
flowing from efficacy beliefs. From this context, it could be hypothesized that on
this variable, those students with higher career self-efficacy had engaged their
self-efficacy through the activity of deciding on a major, while those students
displaying diminished career self-efficacy (viz., negative evaluation) displayed
this through their indecision.

Goal Selection Domain

The third dependent career decision-making self-efficacy domain
analyzed was goal selection, which referred to choosing the most realistic
occupation for a fictitious individual (choosing a job). With R-square =
0.077470, the multiple polynomial regression indicated that 7.7% of the variation
on the mean goal selection was explained by the independent demographic
variables, having decided or not having decided on an undergraduate major.
From the analysis it was noted that the mean goal selection was highest for
those students who had decided on a major, and there was no effect on the
mean goal selection for the independent variables family cohesion or family
adaptability.

This finding was unanticipated by this researcher, and at first glance
seemed contradictory to the theoretical postulates. However, upon closer
inspection, on this domain this finding may have been particularly revealing in
terms of the strength career self-efficacy beliefs, vis-à-vis decidedness. This variable goal selection related specifically to ones’ ability and self-efficacy at the skill of selecting a job. Consequently those African-American freshmen who had decided on a major, it could be argued, already had in place “the conviction that [they could] successfully execute the behavior required to produce the outcome” (Bandura, 1977, p. 192). It might be further hypothesized that the antecedent contextual variables of import to the career decision-making processes, i.e. supportive familial environments, had been so firmly internalized that the effect of these variables, at this point in time were consequently undetectable. Thus while this finding did not conform to the family-system analyses on the independent variables of cohesion and adaptability, the finding may have none-the-less mirrored the career self-efficacy construct and as Taylor et al. (1983) suggested, “students who are more decided may be so because they have actually completed some the necessary tasks” (p. 79).

Self-Appraisal Domain

The fourth dependent career decision-making self-efficacy domain analyzed was self-appraisal, which referred to assessment of the hypothetical person’s assets and liabilities in relation to career success and satisfaction (knowing yourself). With R-square = 0.91547, the polynomial regression indicated that 9.2% of the variation on the mean self-appraisal was explained by the independent variables family cohesion, decidedness or indecision on a college major, and family adaptability. From the analysis, it was noted that family
cohesion was positively associated with higher mean self-appraisal and the mean self-appraisal was also higher for those students who were decided on an undergraduate major. These findings were anticipated and were consistent with both the career-decision-making self-efficacy constructs as well as the postulates of the family-system/career theories. The interesting finding was that the mean self-appraisal decreases in a linear fashion with family adaptability for those students who have not decided on a college major. This finding while counter to what was anticipated, could be viewed as indicative of the relationships between antecedent contextual factors, career decision-making self-efficacy and consequent career related behaviors. It could be hypothesized, that this finding had some resonance in both in the family-systems and self-efficacy constructs. Specifically, Lopez and Andrews (1987) stated that “a family systems perspective attempts to account for individual problem behavior [viz., career indecision] within the context of family interrelationships” (p. 306), while Bandura (1995), articulated the position that personal efficacy beliefs facilitate knowledge acquisition and regulate motivation. Thus, on this self-appraisal variable (knowing yourself in relation to career success and satisfaction), lower familial elasticity of boundaries could be viewed as negatively impacting career development skills, which in turn could diminish and hamper these students in learning about and deciding upon a major.
**Occupational Information Domain**

The fifth dependent career decision-making self-efficacy domain analyzed was occupational information, which referred to one's knowledge of job duties, tasks and employment trends. With R-square = 0.090880, the polynomial regression indicated that 9.1% of the variation on the mean occupational information was explained by the independent variables family cohesion, family adaptability and decidedness or indecision on a college major. Similar to previously discussed career self-efficacy domains, the mean occupational information increased in a positive linear manner with family cohesion and positively with family adaptability, which was anticipated by this researcher and was consistent with theory. However, the increase on the mean occupational information with family adaptability, was only indicated for with those freshmen who had decided on a major. This finding reaffirmed previous findings in this study, vis-à-vis career indecision, and lower career decision making self-efficacy, and was consonant with the findings of previous researchers including Taylor et al. (1983) who commented, “students who are less confident in their ability to complete the tasks and behaviors required for effective decision making are more likely to report being vocationally undecided” (p. 79).

**Conclusion Based on Data Analyses**

The findings on hypothesis one, relating to a positive relationship between career decision-making self-efficacy measures and family relationship dynamics measures, was supported and was consistent with the research on
career decision-making self-efficacy, social cognitive career theory research, family-systems, career development research, and the postulates of African-American family studies, in terms of African-American familial patterns of cohesion and adaptability. Hypothesis two was partially supported in that positive associations were found between family adaptability measures and the CDMSE-SF domains of problem solving (with GPA above 2.77) and occupational information (with decidedness on a college major). Hypothesis three was partially supported in that positive associations were found between family cohesion measures and the CDMSE-SF domains of problem solving, planning, self-appraisal, and occupational information. Only one CDMSE-SF domain, goal selection, indicated no effect for family adaptability measures or family cohesion measures. On this goal selection domain, only the independent demographic variables, decidedness or indecision on a college major had effect on the mean.

Therefore, the findings were in large measure anticipated by this researcher and were generally consistent with the constructs upon which this study was framed.

Implications of Findings

A growing cadre of researchers have proposed that the use of career decision-making self-efficacy construct and the social cognitive career theory might have particular import in assessing, identifying, and addressing the career behaviors of non-majority populations and women, e.g., Lent et al. (1994 &
2000), Solberg (1998), Fitzgerald and Betz (1994). These researchers have cited among the reasons for this supposition, the degree to which these constructs include variables related to the contextual factors of the persons' environments and the extent to which these factors play a major role in the development of career related behaviors. Numerous researchers have also lamented the limited research on African-Americans' career development, and the need to test the self-efficacy constructs on this population, along with the need to the measure within group differences on homogenous sample of African-Americans, e.g., Osipow and Fitzgerald (1996), Bowman (1995), Parham and Austin (1994). Consequently, from the proposals of these researchers in combination with family-systems and African-American family studies researchers, this researcher in this study, sought to measure career decision-making self-efficacy in relationship to contextual factors (viz., family relationship dynamics) on a homogeneous sample of African-Americans, in this instance African-American college freshmen.

Based on the findings of this study, it could be hypothesized that the career decision-making self-efficacy/social cognitive career theories had applicability with this population. Further, it could be hypothesized that higher perceived family cohesion, had the most efficacious impact on the career-decision-making self-efficacy of this sample population. Additionally, the findings suggested a less significant impact for perceived family adaptability, on the career decision-making self-efficacy of these African American college
freshmen. In combination with family cohesion and to a less degree family adaptability, it could also be hypothesized that the other most important demographic variables on the career decision-making self-efficacy of these students was decidedness on an undergraduate major and having earned a higher high school grade point average.

Thus from a conceptual perspective, it could be argued, that this intra-group sample of African-American college freshmen’s career behaviors were positively or negatively impacted by the nature of their familial relationship dynamics or family contextual factors. The impact of these familial patterns then informed their self-efficacy (which is thought to generalize to other areas) in a manner which either propelled them towards higher grades and better career decision-making behaviors, or conversely, created deficits in their sense of self-efficacy, which then led to lessened academic performance and diminished career related behaviors.

Propositions Emerging From Data Analyses

The findings of this initial investigation appear to have some concurrence with the postulates upon which the study was based. Thus the implications of these findings and their relevance in the provision of career counseling, assessment, interventions, and future research are proffered as follows:

1. In addressing career problems and career indecision among African-American college freshmen, as a starting point, it is important to include an assessment of their familial
relationships and the degree to which these relationships
provided or were absent emotionally supportive environments.

2. The significance of these family contextual factors are such,
because with this population, the knowledge and examination of
these relationship patterns can provide potentially invaluable
information in terms identifying sources from which the
problematic career behaviors may have originated.

3. In addition to assessing familial patterns in relationship to career
related problems, it is equally important that the counselee
articulates his/her perceptions and interpretations of these
patterns and their effects on them.

4. In career counseling with African-American college freshmen, it
is important to note, that the intra-group differences displayed in
this study are similar to the patterns identified in studies with
majority college students, in terms of career decision-making
self-efficacy as an indicator of career indecision or decidedness.
Thus while race / ethnicity and the world-view of the counselee
is an extremely important variable that must frame the
counseling intervention, in the specific context of the career self-
efficacy construct, racial / ethnic differences per se, may play a
less pronounced role in relationship to career decision-making
self-efficacy.
5. In providing career development assistance with African-American college freshmen, in the context of career self-efficacy, it is important to examine their academic performance, since there appears to be a link between diminished academic performance and career decision-making self-efficacy.

6. In assisting African-American college freshmen with career related problems, to the degree that is possible, an assessment / analysis of their general self-efficacy may provide linkages and insight into the origins from which the career difficulties may have evolved.

7. In relationship to future research, it is vitally important that this study is replicated with a larger random sample of African-Americans. It is additionally important that the variables of interest be examined with a non-college sample. For example, there are federally funded U.S. Department of Labor Job Placement Offices in every state and major city in the U.S. A researcher could conceivably locate a large sample of non-college bound African-Americans to base a study on in such a place.

8. In addition to using the social cognitive theory as a frame of reference, it is equally important that career development researchers initiate studies framed on other career theories.
with non-majority populations. These populations, especially
African-Americans, Hispanic-Americans and large portions of
Asian-Americans, remain in dire need of relevant career
development counseling and intervention. The need for this
research remains.

9. Adding this researcher’s voice too that of others, it is
particularly important for this type of research, that the
instruments to measure contextual factors continue to be
refined and developed, so that the full scope of these variables
can be identified and measured.

General Discussion

The origin of this study was informed by this researcher’s concerns with
and interest in the career development behaviors and highly referenced career
difficulties found among the African-American population in the United States.
Having studied the postulates of family-systems / career development theories,
provided this researcher an initial frame within which to consider career related
behaviors. Upon further study of the postulates of the career decision-making
self-efficacy construct and the social cognitive career theory, this researcher
thus set out to examine these constructs on an African-American population.
Given the sui generis location and circumstances of African-Americans in
American culture, it was particularly important for this researcher that the theoretical underpinning for this study was based on African-American family studies and research.

This researcher is hopeful that the findings of this seminal study, which identified variables that significantly impact the career development and decision-making of African-American college freshmen, provides a step in formulating effective career development strategies for this population. The sample for this study was a convenience cluster sample, therefore the findings can only be generalized to African-American college freshmen attending North Carolina Agricultural and Technical State University.
APPENDIX A

PROSPECTIVE PARTICIPANT LETTER,
STUDENT DEMOGRAPHIC QUESTIONNAIRE,
FAMILY ADAPTABILITY AND COHESION EVALUATION SCALE II, AND
CAREER DECISION-MAKING SELF-EFFICACY SCALE-SF
PROSPECTIVE N. C. A & T S. U. STUDENT PARTICIPANTS:

- We are requesting your voluntary participation in a research study, investigating family relationship dynamics and their effects on the career decision-making processes of African-American college freshmen. This study will require 275 participants and each participant will need approximately 45 minutes to complete the three instruments.

- Your participation in this research, and the consequent results, may help provide additional career counseling intervention techniques applicable with future college freshmen and particularly African-American college freshmen.

- Additionally, each participant has an opportunity to win one of four $25.00 cash prizes.

- Your voluntary participation or non-participation will in no way reflect upon the class or subject grade you are currently studying in this room.

- Your participation will be completely Confidential and Anonymous and in No Way will you be identified.

IF YOU AGREE TO PARTICIPATE:

- Do Not Put your name on any of the three (3) instruments and follow the instructions as given. The instruments are: the Career Decision-making Self-Efficacy Scale; the Family Adaptability and Cohesion Evaluation Scale; the Demographic Questionnaire.

- You will note, attached on the top of your packet, a Blank Envelope. If you would like to participate in a drawing for $25.00, (twenty-five dollars) fill in your name and address (here at the college) on the envelope. As you exit this class, you may deposit your envelope in the Box provided. Upon the collection of All Packets, from all the participants in this study, the researcher will have someone shakeup the box and Randomly pull Four (4) Envelops from the box. Each of the four (4) selected envelopes (self-addressed by you) will receive $25.00 in cash (twenty-five dollars).

- Your participation in this study is greatly appreciated.
STUDENT DEMOGRAPHIC QUESTIONNAIRE

INSTRUCTIONS: Please do not put your name on this questionnaire or any of the other survey materials. Your responses will be completely anonymous and confidential. Answer all questions as honestly as possible. Your participation is greatly appreciated.

A. Questions related to you

Gender (circle one number) 1. Male 2. Female
Age__________ Race__________ High-school GPA__________
Are you a Freshman?(circle one number) 1. Yes 2. No
Is the 1999-2000 school year your FIRST time attending college? (circle one number) 1. Yes 2. No
High-school track (circle one number) 1. Academic 2. Non-Academic
Type high-school attended (circle one number) 1. Private 2. Public
Are you receiving a scholarship ?(circle one number) 1. Yes 2. No
Are you on a work study program ? (circle one number) 1.Yes 2. No
Other than work study, do you have a job ? (circle one number)1. Yes 2. No
Did you participate in a Pre-college preparation program ? (circle one number) 1. Yes 2. No
Have you declared a Major? (circle one number) 1. Yes 2. No
If you answered Yes, do you believe you will remain in that major? (circle one number)
Are you undecided about a Major? (circle one number) 1. Yes 2. No

B. Questions related to your family

Number of siblings you have______

160
Do all your siblings reside in the same household? (circle one number)
1. Yes    2. No

Other than your siblings and parents, do other relatives reside in your household? (circle one number)  1. Yes    2. No    How Many Others? ____________

Do you have relatives (e.g. Aunts, Uncles, Grandparents, Cousins) living in homes near your family's home? (circle one number)  1. Yes    2. No.

Are your relatives (e.g. Aunts, Uncles, Grandparents, Cousins) consulted when your immediate family is making important decisions? (circle one number)
1. Yes    2. No

If Yes, which relative(s)? (circle the number(s) of those who are consulted on important family decisions)

What is the educational level of those family members consulted? (circle the number(s) of the appropriate categories).

What is your Mother's educational level? (circle one number)
1. Less than high school    2. High school    3. High school and technical training    4. College but no degree    5. A college degree

What is your Father's educational level? (circle one number)
1. Less than high school    2. High school    3. High school and technical training    4. College but no degree    5. A college degree

Family income (circle one number) 1. $10,000 or less  2. $10,000-24,999  3. $25,000-39,999  4. $40,000-54,999  5. $55,000 plus
FACES-II Family Version

1. Family members are supportive of each other during difficult times.
2. In our family, it is easy for everyone to express his/her opinion.
3. It is easier to discuss problems with people outside the family than with other family members.
4. Each family member has input regarding major family decisions.
5. Our family gathers together in the same room.
6. Children have a say in their discipline.
7. Our family does things together.
8. Family members discuss problems and feel good about the solutions.
9. In our family, everyone goes his/her own way.
10. We shift household responsibilities from person to person.
11. Family members know each other’s close friends.
12. It is hard to know what the rules are in our family.
13. Family members consult other family members on personal decisions.
14. Family members say what they want.
15. We have difficulty thinking of things to do as a family.
16. In solving problems, the children’s suggestions are followed.
17. Family members feel very close to each other.
18. Discipline is fair in our family.
19. Family members feel closer to people outside the family than to other family members.
20. Our family tries new ways of dealing with problems.
21. Family members go along with what the family decides to do.
22. In our family, everyone shares responsibilities.
23. Family members like to spend their free time with each other.
24. It is difficult to get a rule changed in our family.
25. Family members avoid each other at home.
26. When problems arise, we compromise.
27. We approve of each other’s friends.
28. Family members are afraid to say what is on their minds.
29. Family members pair up rather than do things as a total family.
30. Family members share interests and hobbies with each other.
CAREER DECISION-MAKING SELF-EFFICACY SCALE
(SHORT FORM)

INSTRUCTIONS: This scale contains twenty-five tasks dealing with future decision-making. Please rate each item according to the amount of confidence you have in yourself accomplishing that task. You may rate yourself on a scale from 1 to 5 by circling the most appropriate number.

<table>
<thead>
<tr>
<th>Confidence</th>
<th>Very Little</th>
<th>Moderate</th>
<th>Much</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>At All</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:

1. Find information in the library about occupations you are interested in.  
   1  2  3  4  5

2. Select one major from a list of potential majors you are considering.  
   1  2  3  4  5

3. Make a plan of your goals for the next five years.  
   1  2  3  4  5

4. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.  
   1  2  3  4  5

5. Accurately assess your abilities.  
   1  2  3  4  5

1. Select one occupation from a list of potential occupations you are considering.  
   1  2  3  4  5

2. Determine the steps you need to take to successfully complete your chosen major.  
   1  2  3  4  5

3. Persistently work at your major or career goal even when you get frustrated.  
   1  2  3  4  5

9. Determine what your ideal job would be.  
   1  2  3  4  5

10. Find out the employment trends for an occupation over the next ten years.  
    1  2  3  4  5

11. Choose a career that will fit your preferred lifestyle.  
    1  2  3  4  5

12. Prepare a good resume.  
    1  2  3  4  5

163
<table>
<thead>
<tr>
<th>No Confidence At All</th>
<th>Very Little Confidence</th>
<th>Moderate Confidence</th>
<th>Much Confidence</th>
<th>Complete Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

13. Change majors if you did not like your first choice. 1 2 3 4 5
14. Decide what you value most in an occupation. 1 2 3 4 5
15. Find out about the average yearly earnings of people in an occupation. 1 2 3 4 5
16. Make a career decision and then not worry about whether it was right or wrong. 1 2 3 4 5
17. Change occupations if you are not satisfied with the one you enter. 1 2 3 4 5
18. Figure out what you are and are not ready to sacrifice to achieve your career goals. 1 2 3 4 5
19. Talk with a person already employed in the field you are interested in. 1 2 3 4 5
20. Choose a major or career that will fit your interests. 1 2 3 4 5
21. Identify employers, firms, institutions relevant to your career possibilities. 1 2 3 4 5
22. Define the type of lifestyle you would like to live. 1 2 3 4 5
23. Find information about graduate or professional schools. 1 2 3 4 5
24. Successfully manage the job interview process. 1 2 3 4 5
25. Identify some reasonable major or career alternative if you are unable to get your first choice. 1 2 3 4 5
APPENDIX B

CDMSES-SF PERMISSION LETTER

FACES II PERMISSION LETTERS

HUMAN SUBJECTS REVIEW LETTER
From: Lee Covington Rush <rush.47@osu.edu>
Subject: Re: CDMSE
Cc:
Bcc:

2/15/00 -0500, you wrote:

Dr. Betz,

I am a former student of yours [career psy. lab] and I am currently working on my dissertation [in Counselor Education], which will be an investigation of the family-of-origin relationship dynamics and the career decision-making self-efficacy of African American college freshmen. I wish to use your Career Decision-Making Self-Efficacy scale [long form], though I cannot locate the publisher. Can you provide me the information so that I may order the scales? I will also officially write you seeking your permission, if that is appropriate.

My Thanks,

Lee Covington Rush
rush.47@osu.edu

At 11:50 AM 2/16/00 -0500, you wrote:

Hi Lee..great to hear from you...and yes I remember you!!

Yes you have my permission to use the scale..here are the terms by which that is done..let me know what you would like to do!!

Best wishes,

Nancy

Department of Psychology
Ohio State University
Columbus, OH 43210
614-292-4166 (phone)
Nancy E. Betz, Professor
Dear Lee:
First, if you have not already begun your study, you should use FACES II
which has higher reliability than FACES III which is shorter and designed for
clinical work with families.

The reliability listed for CAP is based on FACES II and it is from one of our
larger studies. The reliability can vary by .10 to .20 based on the sample size
and other characteristics.

FACES IV will not be available until summer of 2000.

Best wishes,

David Olson

P.S. For future inquiries, you can email us at FIP@lifeinnovations.com

You can also visit our website at: www.lifeinnovations.com for more info
about the Family inventories and an order form.
PERMISSION TO USE FACES II

I am pleased to give you permission to use FACES II in your research project, teaching or clinical work with couples or families. You may either duplicate the materials directly or have them retyped for use in a new format. If they are retyped, acknowledgment should be given regarding the name of the instrument, the developer’s name and the University of Minnesota.

In exchange for providing this permission, we would appreciate a copy of any papers, theses or reports that you complete using FACES II. This will help us to stay abreast of the most recent developments and research regarding this scale. We thank you for your cooperation in this effort.

In closing, I hope you find FACES II of value in your work with couples and families. I would appreciate hearing from you as you make use of this inventory.

Sincerely,

[Signature]
David H. Olson, Ph.D.

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<td>Coping &amp; Stress Profile</td>
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Mr. Lee Covington Rush  
Wellness and Human Services  
School of Physical Activity and Educational Services  
283 Arps Hall  
Ohio State University  
1945 North High Street  
Columbus, OH 43210-1120  

Refer to: IRB # 00-0000-H20  

Dear Mr. Rush:

As required by University policy I have given your anonymous survey protocol for a project entitled “Family relationship dynamics and career decision-making” (IRB# 00-0000-H20) audit review. I agree that your proposal is exempt from 45 CFR 46 as no surveys will be administered to minors. As per A&T’s Multiple Project Assurance (M-1389) with the Office for Protection from Research Risks (OPRR) of the Department of Health and Human Services, all exempt research must be conducted in accordance with the Belmont Report (DHEW Publication No. (OS) 78-0012) which requires voluntary, informed consent from research subjects. You should be aware that any changes in your protocol must be submitted to the IRB before they are implemented. Likewise, any problems or complaints involving human subjects must be promptly reported to the IRB.

Thank you for your cooperation on this matter and best wishes on your project.

Sincerely,

[Signature]

David W. Aldridge, IRB Chairperson

cc: Ms. Mary Atkinson, Assistant Vice Chancellor for Research  
Dr. Sullivan A. Wellborne, Jr., Vice Chancellor for Student Affairs  
Dr. Michael Klein, Ohio State University
LIST OF REFERENCES


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