

CAREER DECISION-MAKING: IMPLICATIONS FOR EMERGING ADULTS'  
CAREER IDENTITY DEVELOPMENT

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CAREER IDENTITY DEVELOPMENT

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CAREER DECISION-MAKING: IMPLICATIONS FOR EMERGING ADULTS'  
CAREER IDENTITY DEVELOPMENT

Kate Joanna Stringer

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Kate Joanna Stringer, daughter of Maureen A. (Hanagan) Stringer, was born August 2, 1984, in Seoul, South Korea. She graduated from Benjamin Russell High School as Salutatorian in 2002. She attended Auburn University in Auburn, Alabama where she graduated with honors with a Bachelor of Science in Human Development and Family Studies in December 2005 and a Master of Science in Human Development and Family Studies in December 2007.

## THESIS ABSTRACT

### CAREER DECISION-MAKING: IMPLICATIONS FOR EMERGING ADULTS' CAREER IDENTITY DEVELOPMENT

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Identity exploration in the areas of work and love is theorized to be salient in emerging adulthood, and therefore, commitments often are delayed (Arnett, 2000). The exploration that takes place during adolescence and emerging adulthood sets the foundation for identity commitments made during emerging adulthood and adulthood. Identity commitments have been found to be important for emotional adjustment, well-being, and satisfaction (Berzonsky, 2003; Meeus, Iedema, Maassen, & Engels, 2005; Peronne, Áegisdóttir, Webb, & Blalock, 2006). The question the current study aims to answer is “To what extent do factors related to family processes and career decision-making influence engagement in career identity development?” Four hundred ninety one students at a 4-year university and a 2-year community college completed surveys that examined positive family functioning, parental support for career, work experience,

career decision self-efficacy, vocational identity, priority for career, and career identity development (i.e., identification with career and career exploration in depth). It was predicted that career decision-making would mediate the relationship between career identity development and parental support for career and positive family functioning. Two moderated relationships also were anticipated. Gender was predicted to moderate the relationship between anticipated priority for career and career identity development; educational pathway (2-year terminal, 2-year continuing, 4-year transfer, and 4-year university) was predicted to moderate the relationship between career decision-making and career identity development. Structural equation modeling was used to examine the predicted model. Results showed that a trimmed model, which excluded vocational identity and positive family functioning, fit well for the full sample, as well as both 2-year groups, and the 4-year university group. Career decision self-efficacy partially mediated the relationship between parental support for career and career identity development, and career decision self-efficacy fully mediated the relationship between relevant work experience and career identity development for the full sample. Moderation was not supported; however, the pattern of results suggested that the career identity development process may vary somewhat for different groups of emerging adults.

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## I. INTRODUCTION

Emerging adulthood is theorized to be a time of identity exploration in the career domain. This, in part, is due to the institutionalized moratorium (Cote, 2006; Erikson, 1968) of the college context. College students are allowed to change their major areas of study and are not expected to commit to long-term employment during emerging adulthood (Arnett, 2000). Approximately 25% of freshmen are undecided about their majors (Lunneborg, 1975; Rogers & Westbrook, 1983; Whiston, 1996), which is a reflection of the delay in making decisions about career roles that has been found to be characteristic of many emerging adults (Mortimer, Zimmerman-Gemback, Holmes, & Shanahan, 2002). Mortimer et al. (2002) conducted a qualitative study that examined the career decision-making process of a sample of 23 to 25-year-old individuals. Forty-eight percent had received at least some college. Interviews revealed that the process of making decisions about career has changed in recent years due to delay (e.g., finishing college in four years or more prior to career entry, later marriage) and postponement (e.g., making a temporary work commitment until something else happens or clarity occurs). This study suggests that individuals took their time exploring their career options and supports Arnett's (2000) description of emerging adulthood.

Tanner's (2006) notion of recentering, the process of changing from the status of partially dependent adolescent to the status of more fully independent young adult, is consistent with the notion that emerging adulthood is a time of exploration. Because the

recentering process may vary in length, the amount of time for exploration before making commitments varies. As a result, the quality of identity commitments may vary (Marcia, 1983; Schmitt-Rodermund & Vondracek, 1999).

Research has suggested that identity commitments are important to individuals' well-being and emotional adjustment (Berzonsky, 2003; Meeus, Iedema, Maassen, & Engels, 2005). More specifically, identity commitments in the career domain have been found to be positively associated with stability in career choices and satisfaction with work (Kidd & Green, 2004; Perrone, Áegisdóttir, Webb, & Blalock, 2006), and identity exploration in the career domain is particularly salient during emerging adulthood (Arnett, 2006). Vondracek (1995) asserts that individuals can experience self-realizations through vocational careers. These self-realizations can be equated with identity commitments. Experiencing self-realization through a vocational career is likely to happen when one decides on a career and makes that decision based on his or her vocational identity (i.e., interests, abilities, talents, and personality).

Studies have suggested that career decision self-efficacy is positively related to career identity commitment (Brown & Lavish, 2006; Lucas, 1997) and work commitment (Chung, 2002). Career indecision also has been shown to be negatively associated with career identity commitment (Creed & Patton, 2003). Vocational identity has been associated with commitment to work and importance of career (Matula, Huston, Grotevant, & Zamutt, 1992).

Another influence on career identity commitment is “other” role commitments (e.g., family identity commitments; Stryker, 1991). According to identity theory, identity commitments are organized into a salience hierarchy. Therefore, someone who has career near the top of his or her hierarchy would regard career as important to his or her identity. Research has supported the presence of a salience hierarchy in that the relationship between career commitment and family commitment was negative among college students, especially for females (Friedman & Weissbrod, 2005; Matula et al., 1992). Matula et al. (1992) found that the females who had developed vocational identities and viewed career as important were less likely to be involved in a romantic relationship; and in a review of the work and family commitment literature Bielby (1992) noted that wives viewed themselves as less job involved than their spouses, and women were more identified with their family roles compared to paid work roles, but men showed the opposite pattern. But gender differences did not hold up when focusing on the women who had higher educational attainment and work statuses relative to other women in the study. In fact, a recent study of college educated men and women showed that there was a positive relationship between family commitment and career commitment for both men and women (Perrone et al., 2006), and another study suggested that women regarded both family and career as important to their identities, and more important than men did (McElwain, Korabik, & Rosin, 2005). In summary, college student studies that have examined present commitment to family and career have suggested a negative association between career and family identity commitment. However, when individuals are actually in their career and family roles, both career and family may be important to their

identities. Previous literature suggests that gender may moderate the relationship between priority for career and career identity development because career identity development for women, more than men, may depend on having priority for career. This is suggested because gender role theory suggests that men are more likely to regard career as salient because it is part of the societal expectations place on men and is part of being a good husband and father (Grandey, Cordero, & Crouter, 2005). For women, work and family roles are more likely to compete (e.g., Friedman & Weissbrod, 2005; Matula et al., 1992). The current study aims to fill this gap in the literature. Studies have not examined anticipated career identity commitments of college students.

Family systems theory provides the framework for most research on family and parental influences on career decision-making and career identity commitment among emerging adults. Family systems theory asserts that family functioning influences individual development, and family functioning includes cohesion, expressiveness, and conflict (Lopez, 1987). In studies of emerging adult samples, cohesion and expressiveness have been found to be positively associated with vocational identity and career decision self-efficacy (Hargrove, Creagh, and Burgess 2002; Johnson, Bulbotz, & Nichols, 1999; Penick & Jepsen, 1992). Family conflict has been shown to be a negative predictor of vocational identity (Johnson et al., 1999; Penick & Jepsen, 1992). In contrast, one study (Whiston, 1996) found no associations between career decision-making and family functioning. These mixed findings indicate that more research needs to be conducted on the role of family functioning in the career decision-making of emerging adults. Research also has suggested that family functioning is associated with identity

commitment (Berzonsky, 2004; Grotevant & Cooper, 1986). Positive family functioning supports the adolescent individuation process proposed by Grotevant and Cooper (1986). Separateness facilitates adolescents' identity formation and enables adolescents to be more autonomous from their parents.

In the area of parental support, the association with identity commitment and career decision making is more straightforward. Research has shown that parental support for career (Alliman-Brissett, Turner, & Skovholt, 2004; Blustein et al., 2002) and general support from parents (Constantine, Wallace, & Kindaichi, 2005; Hargrove et al., 2002; Leal-Muniz & Constantine, 2005; Lucas, 1997; Penick & Jepson, 1992) are positively associated with identity commitment and having the confidence to handle and make decisions about career.

Having work experiences that are relevant to career choice is an example of career identity exploration. This type of exploration has been shown to be associated with being ready to make decisions about career (Ohler, Levinson, & Barker, 1996). Most research that has examined work experience and career decision-making has been conducted on Australian samples (Creed & Patton, 2003; Creed, Prideaux, & Patton, 2005; Earl & Bright, 2003). Most research that has examined work experience in American samples has looked at work experience in late adolescence (i.e., volume of hours worked) and associations with academic achievement, school misconduct, and drug and alcohol use (for a review, see Stone & Mortimer, 1998). Quality of work and mental health outcomes also have been addressed in the extant literature (Mortimer & Staff,

2004). Very little research, however, has been conducted on quality of work experience and its association with career decision-making in American samples.

An influence on the relationship between career decision-making and career identity commitment has been suggested by empirical findings indicating differences in the career identity commitment of career technical graduates and 4-year university students (Danielson, Lorem, & Kroger, 2002; Osgood, Ruth, Eccles, Jacobs, & Barber, 2005). These studies have suggested that though career technical students may have chosen a career, career is not necessarily central to their identities. The degree to which individuals are able to explore their careers may play a role in the quality of identity commitments in the career domain (Marcia, 1983; Schmitt-Rodermund & Vondracek, 1999). Because a career technical degree sets one on the path for a very specific type of work, the level of exploration may be lower than when one has four or more years to complete a bachelor's degree at a 4-year university. The current study seeks to explore the period of emerging adulthood for individuals who are enrolled in 2-year institutions, as well as 4-year institutions by examining and comparing their career decision-making and career identity development.

### *Summary*

Research has shown that identity commitments are important to individuals' well-being, adjustment, and satisfaction. According to Vondracek (1995), self-realization may be achieved through commitment to a vocational career, and career identity commitment has been associated with other identity commitments, parental support, family functioning, and career decision-making. In turn, career decision-making has been

associated with parental support and positive family functioning (i.e., high cohesion and expressiveness, low conflict). Career decision-making also has been associated with having work experience that is related to the current career choice. Because having work experiences that are related to the current career choice can serve as a form of identity exploration, it is predicted that relevant work experiences also will be associated with career identity commitment.

### *Hypotheses*

The primary purpose of the current study was to investigate career identity development in emerging adulthood by examining the associations between career identity development and career decision making, family functioning, parental support for career, priority for career, and career-relevant work experience. Given the findings in extant research in the area of career identity commitment and career decision-making, the current study offers the following model and hypotheses (see Figure 1):

*H<sub>0</sub>1: Career identity development will be positively predicted by current career decision-making (i.e., career decision self-efficacy and vocational identity), previous relevant work experience, positive family functioning, parental support for career, and priority for career.*

*H<sub>0</sub>2: Career decision self-efficacy and vocational identity (career decision-making) will mediate the relationships between career identity development and relevant work experience, as well as previous positive family functioning and parental support for career.*

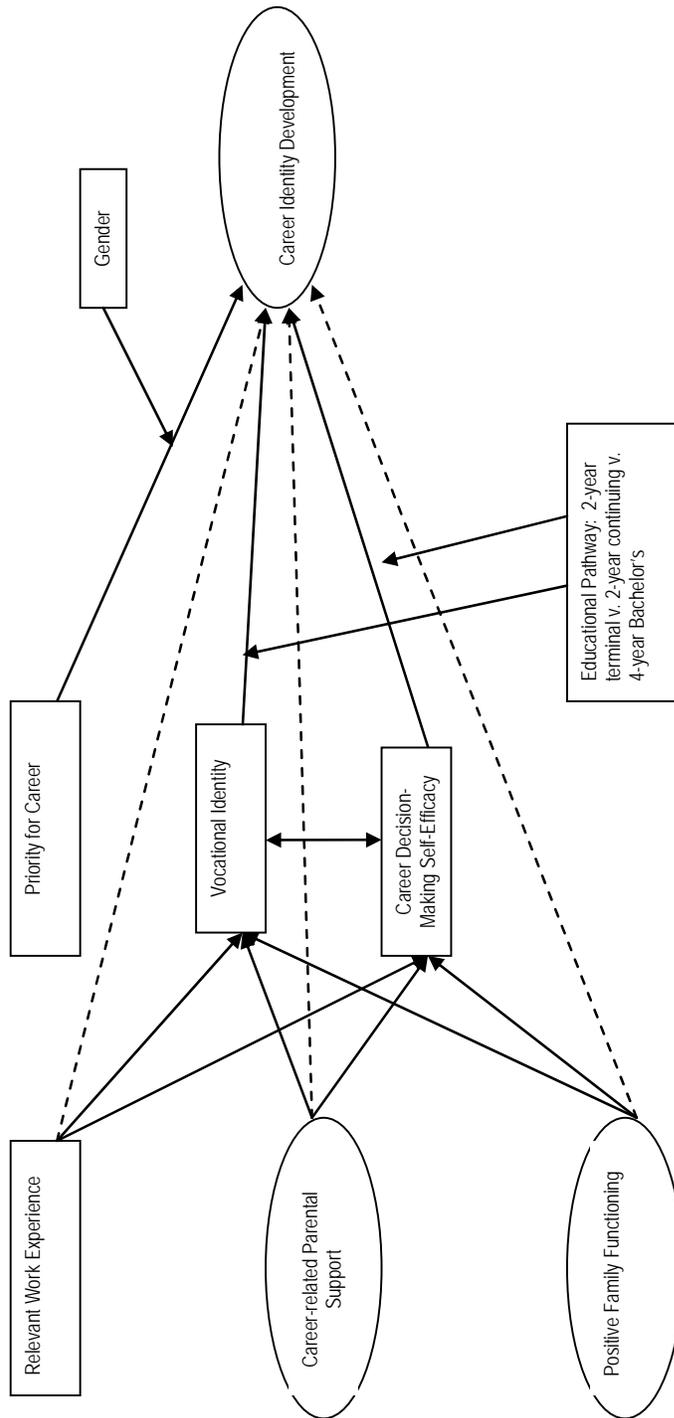
H<sub>0</sub>3: *Educational pathway will moderate the relationships between career decision self-efficacy and vocational identity and anticipated career identity development.*

- a) *There will be a strong, positive relationship between career decision self-efficacy and vocational identity and career identity development for 4-year students.*
- b) *There will be no relationship or a weaker relationship between career decision self-efficacy and vocational identity and career identity development for 2-year students.*

H<sub>0</sub>4: *Gender will moderate the relationship between priority for career and career identity development.*

- a) *The path from priority for career to career identity development will be stronger for females than males.*

Figure 1. Hypothesized Model for the Current Study.



## II. LITERATURE REVIEW

The emerging adulthood literature describes the context in which career identity commitments are being formed. Given that career identity development is the outcome of interest in the current study, research on identity commitment, more generally, and then on career identity commitment, more specifically, is covered first. An examination of the literature that connects career decision-making with career identity commitment follows. Next, influences on the career decision-making process are reviewed. Finally, moderating influences on the relationship between career identity commitment and career decision-making will be discussed.

### *Emerging Adulthood*

Emerging adulthood has been conceptualized as a unique period in the life span. This period spans roughly the ages of 18-25 years and is characterized as a time of identity exploration, instability, and self-focus (Arnett, 2001/2006). Identity exploration is theorized to be salient in emerging adulthood, and therefore, commitments often are delayed. The exploration that takes place during adolescence and emerging adulthood sets the foundation for commitments made during emerging adulthood and adulthood. Erikson (1968) considered college students to experience an institutionalized moratorium, in that college provides a context for exploration before moving into adult roles and making identity commitments. Context of development is an important factor when considering influences in emerging adulthood. Much of the research addressing emerging

adulthood has been conducted using 4-year college student samples. If emerging adulthood is a specific stage of the life cycle, it is important to understand how different contexts (e.g., 4-year college, 2-year college) affect development and adjustment during this period. If all individuals ages 18 to 25, across educational pathways experience this period as a time of exploration, Arnett's conceptualization is supported. But, more empirical work is needed that examines young adults who are not 4-year university students. The current study aimed to help fill this gap in the literature by examining emerging adults who are on different educational pathways.

Tanner (2006) proposed that recentering, or the "transition from dependent adolescents to independent young adults," (p. 22) is the primary developmental task of emerging adulthood. In other words, adolescents typically are more dependent upon their parents while living with them than are emerging adults, especially those emerging adults who no longer reside with their parents. Recentering is linked to separation-individuation from parents and ego development. The recentering process may be shorter or longer depending on the context of emerging adulthood development (e.g., 2-year versus 4-year college context). Therefore, the amount of identity exploration may vary according to amount of time available to explore. As a result of the variation in exploration quality, commitment strength may vary. Strong identity commitments are theorized to "provide people with a sense of purpose and direction, and they can serve as the frame of reference within which behavior and feedback is monitored, evaluated, and regulated" (Berzonsky, 2003, pp. 132-3). In other words, things which are important in defining who one is give meaning to one's behaviors.

### *Identity Commitment*

Identity commitments have been found to be important to the emotional adjustment, well-being, and satisfaction of individuals (Berzonsky, 2003; Meeus et al., 2005; Peronne et al., 2006). In a Dutch sample of 1303 males and 1511 females that was divided into groups of early adolescents (ages 12-14,  $n = 527$ ), middle adolescents (ages 15-17,  $n = 748$ ), late adolescents (ages 18-20,  $n = 658$ ), and young adults (ages 21-24,  $n = 881$ ), Meeus et al. (2005) found that parental support predicted emotional adjustment better than quality of identity commitments in early and middle adolescence. However, in late adolescence and young adulthood, emotional adjustment was better predicted by quality of identity commitments rather than parental support. This suggests that the formation of identity commitments is salient in late adolescence and young adulthood. These results also support Tanner's (2006) notion of a recentering process in which individuals' development takes place independently from their parents.

In a sample of over 300 participants (60% female, 40% male) of primarily Caucasian, 18 to 24 year olds, Berzonsky (2003) examined the association between identity commitment and well-being. The Identity Commitment Scale (ICS) has an internal reliability of .71 and 2-week test-retest reliability ( $n = 94$ ) of .89; the ICS has correlated with self-esteem, personal resilience, and optimism (Berzonsky, 2001). Well-being was measured in terms of depression, the perceived ability to set, pursue, and achieve goals, and one's approach to dealing with stressors.

Results showed that those with strong identity commitments had less depressive symptoms, perceived themselves as able to set, pursue, and achieve goals, and perceived stressors as challenges that could be handled.

Peronne et al. (2006) examined career and family identity commitments and their relationship to satisfaction with career and family in a sample of 40 male and 114 female college graduates who were employed full-time and married. Of the 154 participants, 23% had no children. Ages ranged from 25 to 60 ( $M = 40$  years,  $SD = 8.10$ ). Findings showed that work and family commitment were modestly and positively correlated, and that career identity commitment was positively associated with career satisfaction and that family identity commitment was positively associated with family satisfaction for both men and women. However, work-family conflict was negatively related to family satisfaction, but not work satisfaction

Expanding on Marcia's (1966/1983) identity status paradigm, Luyckx, Goossens, and Soenens (2005) explored two dimension of exploration and two dimensions of commitment. Exploration in breadth is characterized by exploration of more than one option or choice. Exploration in depth is characterized by "an in-depth evaluation of one's current, already existing, committed choices" (Luyckx, Goossens, & Soenens, 2006a, p. 367). Commitment making is characterized as making a choice or deciding on one option within a particular domain. Identification with commitment is conceptualized as the "level of commitment as such, the degree to which adolescents' identify with and feel certain about their choices" (Luyckx et al., 2006a, p. 367).

Luyckx and colleagues (2005) examined identity statuses based on these four dimensions, rather than two dimensions, and their relationships with measures of adjustment and personality in a sample of 638 (85.3% female, 14.7% male) 17 to 22 year old university students in Belgium. Previous research showed that the identity statuses that were committed (i.e., achievement and foreclosure) were better adjusted than the other two statuses (Marcia, 1983) and showed greater organization, persistence, and motivation in goal-directed behavior (i.e., conscientiousness) (Clancy & Dollinger, 1993). Results of Luyckx et al. (2005) supported the differentiation of the four identity statuses based on four rather two dimensions. Exploration in depth was differentiated from and negatively related to exploration in breadth, in that exploration in depth was associated with evaluating and strengthening identity commitments. The two committed statuses, achievement and foreclosure, showed different levels of identification with commitment and exploration in depth. The foreclosure status showed moderately high scores, while the achieved status showed high scores. Those highest in exploration in depth and identification with commitment were high in adjustment and conscientiousness, as well as openness to the unknown. The results suggest that making identity commitments is positively associated with being able to meet the academic demands of attending university and dealing with the interpersonal experiences in the university context. These results also support previous research that found that identity commitment was positively associated with well-being indicators (see Berzonsky, 2003; Dollinger et al., 1996; Marcia, 1983).

Luyckx et al. (2006a) used a developmental contextualist perspective of identity formation in a longitudinal study to examine two related identity cycles, the commitment formation cycle (exploration in breadth and commitment making) and the commitment evaluation cycle (exploration in depth and identification with commitment) in a 4-year university sample. The sample consisted of a normative progression group, which was students who moved onto their sophomore year, and a reorientation group, which was students who repeated their freshman year or changed majors. A developmental contextualist perspective assumes that development is occurring within a context (e.g., school, family) that affects development. The longitudinal sample consisted of 402 (357 females, 45 males) freshman students, whose mean age was 18 years and 7 months ( $SD=7.1$  months). The sample was mainly middle class and Caucasian. The Ego Identity Process Questionnaire (EIPQ; Balistreri, Busch-Rossnagel, & Geisinger, 1995) was used to measure the commitment-formation cycle. Cronbach's alpha for the commitment making subscale and the exploration in breadth subscale was .76. Validity has been established in a sample of Belgian emerging adults (Luyckx, Goossens, Beyers, & Soenens, 2006), and convergent validity has been established for the English and Dutch versions (Berman, Schwartz, Kurtines, & Berman, 2001; Luyckx et al., 2006b; Schwartz & Durham, 2000). The commitment-evaluation cycle was measured using the Utrecht-Groningen Identity Development Scale (U-GIDS; Meeus & Dekovic, 1995). Cronbach's alphas for the identification with commitment subscale was .83, and .67 for the exploration in depth subscale. Concurrent and construct validity has been demonstrated (Meeus, Oosterwegel, & Vollebergh, 2002).

Results indicated that commitment making and exploration in breadth were negatively related. Identification with commitment, exploration in depth, and commitment making were positively related. By the end of the second year in college, exploration in breadth and identification with commitment were negatively related. Mean scores over the four time periods indicated that commitment making, exploration in breadth, and exploration in depth significantly increased over time. Identification with commitment, however, significantly decreased over the first two years of college for normative-progression group, and exploration in breadth increased. This suggests that for the normative-progression group, college provides a context for exploration and that freshmen and sophomores may have been re-evaluating their current commitments. Analyses showed that in the reorientation group, an increase in commitment making was accompanied by a decrease in identification with commitment and exploration in depth. This may be because these individuals had to reevaluate their commitments when they changed their majors or had to take the same courses again.

Overall, results show that commitment-formation cycles (exploration in breadth and commitment making) and commitment-evaluation cycles (exploration in depth and identification with commitment) are related. Also, increases in commitment making were associated with increases in identification with commitment (Luyckx et al., 2006a). This suggests that as individuals become decided and certain, their choices become more important to their identities.

The decrease in identification with commitment in both groups suggests that as time progressed, students felt less connected to and less certain of their current identity

commitments (indications of the influence of the institutionalized moratorium that the four-year college context provides). This study did not account for the quality of the decisions that were made. Examination of career identity commitment from Vondracek's self-realization through vocational careers perspective, would suggest that it may be beneficial to examine how certain individuals are about the decisions they make and if their decisions are in line with their goals, interests, talents, and personalities. Also, this study did not differentiate the domains (e.g., close relationships, career, school) in which commitments and exploration were made. Separating the content domains in which commitment and exploration occur also may be beneficial because identity associated with career may be more or less developed and more or less important to individuals' identities than are close relationships.

*Career identity commitment.* As emerging adults who are attending college explore their options, they make decisions about their majors and careers (i.e., identity commitments). Some will go on to experience identification with their commitments. Vondracek (1995) expressed identification with identity commitments as "self-realization" (p. 92). In the study of career development, career identity commitment is defined as "self-realization through a vocational career" (p. 86). For the current study's purpose career is defined as one's educational and work path. This means that one's career provides self-fulfillment to the individual. Vondracek asserts that

"exploration leads to commitment which, in turn, enhances the salience of a given identity domain, such as vocational identity. When a highly salient vocational identity is well-integrated into the overall identity structure of the individual, the

individual may be able to experience both a sense of personal uniqueness and a sense of sameness and continuity through his or her vocational identity” (pp. 85-6).

Vondracek proposes that self-realization through a vocational career depends “upon the person’s ability to also experience achievement and competence in relation to the personal values and goals that are represented by his or her vocational identity” (p. 86). In other words, developing a career identity in which the career is core in defining who one is, is preceded by choosing a career in which one can achieve and is competent and is in line with one’s goals and values. Based on this perspective, a career that is chosen based on knowledge of who one is is more likely to lead to a well developed career identity than a career that does not reflect who one is. The current study is guided by Vondracek’s (1995) developmental-contextual perspective on achieving self-realization through vocational careers.

#### *Factors Influencing Career Identity*

*Priority for career versus family identity commitment.* Matula et al. (1992) examined the relationships among vocational identity, work versus marriage importance, commitment to work, and dating status in a sample of 223 college students in a large public Southwestern university. The sample included 167 women (84 freshmen and sophomores and 83 juniors and seniors) and 56 men (23 freshmen and sophomores, 33 juniors and seniors). The mean age was 19.9 years, and ages ranged from 17 to 23 years. Vocational identity was measured using the Vocational Identity Scale. Importance of career versus marriage was measured using one item from the Work and Family

Orientation questionnaire (Helmreich & Spence, 1978). Commitment to work was measured by asking women to indicate their intentions to work (3-point scale ranging from little commitment to work to high level of commitment to work). Men did not complete this item for themselves since this study was primarily focused on gender roles, and given the assumptions about gender roles, it was assumed that men would work. Dating status also was measured using questions about current dating status and the type of relationship he or she had (i.e., not involved, uncommitted, or committed).

Significant relationships among career importance, commitment to work, and vocational identity were found. For women, career importance was positively related to commitment to work. Vocational identity was positively related to commitment to work for female freshmen and sophomores. For freshmen and sophomore men, there was a negative relationship between vocational identity and work commitment. Because this was not true for junior and senior men, the authors concluded that this result suggested that freshmen and sophomore men were still formulating their vocational identities. Though the relationship was not significant for junior and senior men, there was a positive association between vocational identity and commitment to work. Results also suggested that the clearer a female's vocational identity and the more important her career was, the less involved she was in a romantic relationship. Overall, results suggested that women who were committed to work also rated career as more important than marriage. The results for men were not as clear because there were no significant findings between work commitment and importance of work versus marriage.

This may be because some men perceived a work/family conflict while others did not. Also statistical power may be an issue because there were only 56 men as compared to 167 women.

Findings from another study supported the negative relationship between work and family commitment. Friedman and Weissbrod (2005) examined the relationship between work and family commitment and the relationship between decision-making status and work. The sample consisted of 95 (46 males, 49 females) college juniors and seniors. They were ages 19 to 23 ( $M = 21.1$ ,  $SD = 0.97$  for men;  $M = 20.9$ ,  $SD = 0.987$  for women). The majority (65%) of the sample was Caucasian. The Life Role Salience Scale (LRSS; Amatea et al., 1986) was used to assess work and family commitment levels. Commitment as measured by the LRSS refers to the salience or importance of a specific role to one's identity. The marital, parental, and homecare role scales were combined to assess family commitment levels ( $\alpha = .89$ ). The occupational role commitment had a Cronbach's alpha of .72. Work decision-making status was measured using one item: "In terms of your deciding on a career/work path, which of the following is true?" Responses ranged from "I have made a decision," "I have thought a lot about career/work but have not made a decision," and "I have not yet thought a lot about career/work."

Results showed that there were no gender differences for mean levels of work and family commitment; however, there was a significant negative correlation between work commitment and family commitment for women. This correlation was different from men's view of work and family commitment. Though not significant, men showed a positive correlation between work and family commitment. Results suggested that for

women, high levels of work commitment indicate lower levels of family commitment, but for men, there was no significant relationship between work and family commitment for men. Also, work commitment was significantly and positively related to work/career decisional status for both men and women. This supports the hypothesis that thinking a lot about one's work/career and/or having made a decision about one's work/career is positively related to being committed to one's work role.

The work/family interface literature also supports the hypothesis that gender may moderate the relationship between anticipated career and family identity commitments. In a study of 160 male and 160 female professional adults who were employed fulltime, McElwain et al. (2005) found that women had higher levels of work interfering with family than men. This suggests that women regarded both work and family as important. However, men did not indicate that work interfered with family, which indicates that family and work may not be equally important for men or they may define the interface of work and family roles differently than women do. In contrast, in a sample of 40 male and 114 female college graduates, Perrone et al. (2006) found that work and family commitment were positively related and that there were no gender differences. When asked to evaluate their commitments to roles as workers and as family members using the Salience Inventory (SI; Super & Nevill, 1986), commitment to work was positively associated with commitment to family; however work-family conflict was negatively associated with family satisfaction but not work satisfaction. The lack of gender differences found in this study may be due to the small number of males in the study (means and standard deviations were not reported separately for men and women).

From an identity theory perspective (Stryker, 1991), role commitments are organized into a salience hierarchy. The salience hierarchy is determined by the individual's commitment level to certain roles, and therefore, how salient the roles are to the individual's identity. If being applied to career identity, identification with career commitment would occur when career is one of the highest identities in his or her salience hierarchy. Resultantly, commitments to other roles, such as family would likely be lower than commitment to career. Research that has examined the relationship between career commitment and family commitment among college students suggests that career commitment and family commitment may be competing forces, especially for women (Friedman & Weissbrod, 2005; Matula et al., 1992). The negative relationship between career commitment and family commitment has been found for college women but not for college men, even though no gender differences for family commitment were found (Friedman & Weissbrod, 2005). The work/family interface literature also suggests that work and family are often competing forces. For example, high commitments at work often are associated with low commitments at home for men (Barnett, 1998). However, men may have strong family identity commitments that are expressed in their roles as providers, which may make it likely that men may regard career and family/marriage as important to their identities. The work/family interface literature also suggests that women may experience work interfering with family more than men. This could be because professional women regard their careers as just as or more important than their families and relationships to their identities. Because of these differences

between men and women, it seems that gender may moderate the relationship between career identity commitments and family/relational identity commitments.

*Parental support and family functioning.* Parental support has been found to be associated with identity commitment (Leal-Muniz & Constantine, 2005; Lucas, 1997; Sartor & Youniss, 2002). Leal-Muniz and Constantine (2005) examined career identity commitment in a sample of Mexican American college students. Perceived parental support positively predicted career commitment and negatively predicted tendency to foreclose prematurely on career options. Parental support also was found to be important for female adolescents who indicated that they needed parental closeness and support, as well as to share similar attitudes, values, and beliefs with their parents (Lucas, 1997).

Sartor and Youniss (2002) examined parental support and identity commitment in a sample of 293 high school sophomores and 719 high school seniors (70% white, 51% female). Identity commitment was measured in terms of the achieved identity status, and parental support was measured using the Interpersonal Relationship Scale (Barber & Shagle, 1992) in which students rated frequency of various communicative, support, and conflictual behaviors with mothers and fathers. Results indicated that parental support was positively associated with identity achievement.

Berzonsky (2004) examined identity commitment and family functioning in a sample of 145 (50 males, 95 females) college students who were between the ages of 18 and 20 ( $M = 18.7$  years). Identity commitment was examined using the Identity Commitment subscale of the ISI. Family functioning was examined in terms of participants' retrospective views of expressiveness and democratic parenting in their

home environments while growing up. Results indicated a positive association between identity commitment and a home environment that was characterized by expressive and democratic.

*Career decision-making.* Career decision-making has been indicated by career indecision, vocational identity, and career decision self-efficacy in the literature. These are all outcomes of the career decision-making process. Career decision-making is measured in a number of different ways. Three of the most popular and reliable measures are the Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1976), the Vocational Identity Scale (VIS; Holland, Daiger, & Power, 1980), and the Career Decision Self-Efficacy Scale (CDSE; Taylor & Betz, 1983).

The CDS has a career indecision scale, which identifies those who experience little indecision, and are decided, and those who are undecided (e.g., “I know I will have to work eventually, but none of the careers I know about appeal to me” and “I need more information about what different occupations are like before I can make a career decision.”). The CDS also has a two-item scale that measures career choice certainty (e.g., “I have decided on a career and feel comfortable with it.”; Osipow et al., 1976).

The VIS taps ability to decide on a career choice based on knowledge of one’s skills, abilities, talents, and personality (Holland et al., 1980). Sample items are “I am uncertain about which occupation I would enjoy” and “If I had to make an occupational choice right now, I am afraid I would make a bad choice” (Marco, Hartung, Newman, & Parr, 2003). The CDS and VIS were highly correlated ( $r = .69$ ) in a sample of undergraduate college students. Both the CDS and VIS appear to measure career

indecision (Marco et al., 2003). However, the VIS measures career indecision based on one's knowledge of his or her skills, abilities, talents, and personality; while the CDS measures career indecision based on why the individual cannot decide on a career (i.e., lack of support, lack of interest, lack of information, and lack of decisiveness)

The CDSE measures career decision self-efficacy, or the confidence one has in dealing with career-related tasks and making decisions about career (e.g., what type of training is necessary to achieve career goals). The subscales are Accurate Self-Appraisal (ability to evaluate the self), Gathering Occupational Information (ability to collect information about occupations), Making Plans (ability to make plans to achieve occupational goals), and Problem Solving (ability to solve problems related to career decision-making) (Whiston, 1996). The CDSE is typically given to individuals who are anticipating making career decisions (mainly high school students and college students who are freshmen and sophomores). The CDS and CDSE are correlated ( $r = -.52$ ) (Osipow & Gati, 1998), but results from studies using both suggest that the CDS and CDSE measure separate constructs (i.e., career indecision and career decision self-efficacy, respectively) because the CDS is not always correlated with the same predictors that the CDSE is (see Whiston, 1996). Overall, researchers examine career indecision (CDS, VIS), career choice certainty (CDS), and career decision self-efficacy (CDSE) to understand the outcomes of the career decision-making process.

Lucas (1997) examined associations between commitment and exploration with career development variables in a sample of 247 (48% female, 52% male) students from a large mid-Atlantic university. The mean age was 20.26 years ( $SD = 2.71$ ). Forty-one

percent were freshmen, 21% were sophomores, 28% were juniors, and 9% were seniors. The sample was 47% Caucasian, 26% African American, 19% Asian, 5% Hispanic, and 2% Other. Seventy-six percent had declared a major. To assess identity commitment and exploration, the revised version of the Extended Objective Measure of Ego Identity Status (Bennion & Adams, 1986) was used. Only the Moratorium and Achievement subscales were used because these statuses assume that exploration has occurred, with or without commitment. Achievement represented exploration and commitment, and Moratorium represented exploration only. Self-exploration was measured using the Self Exploration scale of the Career Exploration Survey (Stumpf, Colarelli, & Hartman, 1983). It measured the extent to which individuals had engaged in self-exploration activities in the previous three months. Internal consistency was .87, and construct and discriminant validity were established by Stumpf et al. (1983). Career indecision was measured using the Decidedness, Comfort, and Self-Clarity scales of the Career Decision Profile (Jones, 1989), where lower scores indicated more indecision. Cronbach's alphas ranged from .68 to .85. Career decision self-efficacy was measured using the CDSE. Internal consistency ranged from .88 to .97 (Robbins, 1985; Taylor & Betz, 1983). Construct, content, and criterion validity have been established (see Blustein, Devenis, & Kidney, 1989; Robbins, 1985; Taylor & Betz, 1983).

Results showed that self-exploration was positively associated with the Achieved identity status. Career development predicted 32% of the variance in the Achieved Identity Status. Gender differences were found, in that for women, being career decided and greater self-exploration predicted the Achieved identity status. For men, being career

decided and comfortable with the decision and greater self-exploration and career self-efficacy predicted the Achieved identity status. Men and women who had more self-clarity were more confident in making career-related decisions. Those who were identity committed (i.e., identity achievement) also were career-decided, were confident in handling career-related tasks, and had engaged in self-exploration. Overall, results showed that identity commitment was predicted by being career-decided, having self-clarity and confidence to handle career-related tasks, and engagement in self-exploration.

Chung (2002) also found positive associations between career decision self-efficacy and career commitment in a sample of 175 undergraduate students taking an introductory psychology course in a Southern university. Seventy percent of the sample was female. Some ethnic diversity existed in the sample: 42% Caucasian, 37% African American, 12% Asian, 4% Hispanic, 2% mixed, and 2% others. Participants were between 18 and 41 years old ( $M = 20.17$ ,  $SD = 3.07$ ). Eighty percent were freshmen and sophomores. Career decision self-efficacy was measured using the Career Decision Self-Efficacy Short Form (CDSE-SF; Betz, Klein, & Taylor, 1996). Internal consistency was .94 (Betz et al., 1996) and has ranged, in subsequent studies, between .95 and .97 (Gloria & Hird, 1999). The CDSE-SF has had moderate correlations (ranging from .31 to .68) with career indecision (reverse scored) and vocational identity. Career commitment was examined by the Career Commitment Scale (CCS; Framer, 1985). Higher scores represent high levels of commitment to career and seeing career as important and giving meaning to life ( $\alpha = .82$ ; Farmer & Chung, 1995). Mean differences indicated that females had greater career commitment than males did, and that African Americans had higher

levels of career decision self-efficacy and career commitment than Caucasian Americans. There were no sex or ethnic differences in the associations between career decision self-efficacy and career commitment. Overall, career commitment and career decision self-efficacy were moderately correlated.

Results of a study (Brown & Lavish, 2006) using a sample of 137 (78 male, 59 female) Native American undergraduate students who were attending a Midwestern tribal college were consistent with previous findings that suggested a positive relationship between career decision self-efficacy and career identity commitment. The majority (89%) of the sample were freshmen and sophomores. Of the 137, 125 were single, 5 were divorced, 3 were separated and 2 were married. Forty-eight percent were pursuing a 2-year associate degree and 52% were pursuing a 4-year bachelor degree. Students participated in exchange for credit toward their work-contribution hours. Participants were between ages 18 and 54 ( $M = 23$ ,  $SD = 5.9$ ). The study examined the relationship between student and worker identity salience and participants' perceived confidence in making decisions about career-related tasks. Career identity salience was measured using two subscales of the Salience Inventory (SI; Super & Nevill, 1985), which assessed the importance of participation in, commitment to, and value expectations of participants' roles as students and workers using a 4-point Likert scale. Participation was measured by the amount of time dedicated to a role. The commitment and values expectations served as the affective components. Commitment assessed emotional attachment to and what one expects to do in the role. Value expectations "measured the extent to which one expects to express important values in each of the life roles" (p. 120). Reliabilities for the

scales were between .81 and .94 in samples of college students (Nevill & Super, 1986). Evidence for construct validity has been demonstrated (see Nevill & Super, 1988). The CDSE-SF was used to measure career decision self-efficacy. Results showed that all dimensions of student role salience and value expectations for work were significantly associated, though low to moderate in magnitude, with career decision self-efficacy. This suggests that students who are confident and ready to make career-related decisions tend to regard the student and worker roles as salient to their identities.

In a sample of 367 Australian 8<sup>th</sup> through 12<sup>th</sup> grade students, Creed and Patton (2003) found that career indecision and certainty as measured by the CDS were correlated with work commitment and work value as measured by the Work Commitment (WC), and the Work Value (WV) scales (Rowley & Feather 1987). Examples of items on the WC and WV scales are “I would get bored without a job” and “Does most of the satisfaction in a person’s life come from their work?”, respectively. Cronbach’s alphas were .80 and .70 for the study (Creed & Patton, 2003). This study suggests that career indecision is negatively associated with commitment to work and valuing work and that career choice certainty is positively associated with commitment to work and valuing work.

In summary, studies that have examined the relationship between career decision-making and career identity commitment have suggested that career decision self-efficacy is positively related to career identity commitment (Brown & Lavish, 2006; Lucas, 1997) and work commitment (Chung, 2002). Career indecision has been shown to be negatively associated with career identity commitment in the form of work commitment (Creed & Patton, 2003).

#### *Factors Influencing Career Decision-Making*

*Positive family functioning.* Research has examined family interaction patterns and their association with career decision-making. Studies have shown that family of origin cohesion and expressiveness are positively related to the ability of high school and college students to choose a career that is in line with their vocational identities (i.e., goals, interests, talents, and personality) and career decision self-efficacy (Hargrove et al., 2002; Johnson et al., 1999; Penick & Jepsen, 1992). Family conflict has been found to be negatively related to vocational identity (Johnson et al., 1999; Penick & Jepsen, 1992). This suggests that families that have high levels of cohesion (measured as positive involvement) and expressiveness and low levels of conflict have adolescents who are certain about their abilities to choose careers that are in line with their vocational identities. These studies indicate the value of family systems theory for explaining the influence of family on career decision-making of adolescents.

Penick & Jepsen (1992) used family systems theory to investigate how family functioning was related to adolescents' vocational identities. Vocational identity was assessed using the VIS (Holland et al., 1980). Family functioning was defined as

“judgment of the usefulness of the structural or behavioral patterns of the family in achieving objectives” (p. 209) and was examined in terms of relationship dimensions (i.e., cohesion, expressiveness, conflict, sociability, idealization, and disengagement) using the Family Environment Scale (FES; Moos & Moos, 1978).

The sample consisted of 215 high school students in the 11th grade and their parents. Of the 215 students, 162 lived with both parents, 24 lived in a blended family with one natural parent, 23 lived with a single parent, and six lived with guardians. About 75% of the families were intact, and 5% had been remarried for at least six years. Results showed that family members’ perceptions of family functioning explained more variance in vocational identity than achievement, gender, and SES. Relationship dimensions were predictors of adolescents’ certainty that their career choices were most fitting. The findings specifically suggested that families that are high in expressiveness, low in conflict, and have high levels of cohesion have adolescents that are certain about their abilities to choose careers that are in line with their vocational identities (Penick & Jepsen, 1992).

Hargrove et al. (2002) also studied the association of family functioning with vocational identity and career-decision-making self-efficacy in a sample of 210 volunteer undergraduate students (95 males, 112 females; 3 no gender information) from a private Catholic university in the Northeast. The average age was 20 years. Fifty-four percent of the participants were Caucasian, 23% were African American, 6% were Latino, 6% were Asian American, and 4% were some other ethnicity. The sample was 45% freshmen, 25% sophomores, 14% juniors, and 13% seniors (3% did not report class standing). The

majority (76%) were upper-middle and middle class. The Family Environment Scale (FES; Moos & Moos, 1978) was used to assess family functioning, and the VIS (Holland et al., 1989) and Career Decision Self-Efficacy Scale (CDSE; Taylor & Betz, 1983) were used to assess vocational identity and career decision self-efficacy.

Results indicated that having higher confidence in selecting career goals, gathering occupational information, making career plans, solving career-related problems, and making accurate self-appraisals were correlated with perceiving the family of origin as more involved (i.e., cohesion) and more open to expression of positive and negative feelings (i.e., expressiveness). System maintenance dimensions (independence orientation and control) were not related to vocational outcomes (Hargrove et al., 2002).

Johnson et al. (1999) also found results that support family systems theory and the role of the relationship dimension in emerging adult career decision-making in a sample of 230 volunteers (58% female, 42% male) from a 4-year post-secondary institution. The mean age was 23.15 ( $SD= 7.31$ ). The majority (84%) of the sample was Caucasian. Twenty-six percent of the students were freshmen, 32% were sophomores, 22% were juniors, and 20% were seniors. The FES (Moos & Moos, 1986) was used to assess family functioning, and the VIS was used to assess vocational identity. Results showed that cohesion, conflict, and expressiveness were related to vocational identity. Multiple regression analyses revealed that expressiveness was the best predictor of vocational identity in participants, accounting for 3% of the variance in vocational identity.

In contrast to studies that have shown associations among family of origin and career decision-making variables, Whiston (1996) showed no relationship among these

variables in a sample of college freshmen. Whiston (1996) examined the relationships among career indecision and career decision self-efficacy and family cohesion, expressiveness, and conflict, as well as organization and control within the family in a sample of 214 (42.5% female, 50% male, 7.5% no gender reported) undergraduates from freshman English classes at a large Southwestern university. The mean age was 20.10, and about 71.5% were freshman and sophomores. The majority (79%) of the sample was Caucasian. Seventy-five percent of the students had chosen a major. Results showed that career indecision (measured by the CDS) was not related to family cohesion, expressiveness, or conflict (measured by the FES). For females, career indecision was negatively related to family organization and control. Career decision self-efficacy (measured by the CDSE) was not related to family organization and control for both males and females. These results provide some support for family systems theory and its ability to be applied to the career decision-making of emerging adults. However, these results do not provide support for the hypothesized relationship among family cohesion, expressiveness, and conflict and career indecision. This study suggests that career indecision may not be related to family functioning.

The studies (Hargrove et al., 2002; Johnson et al., 1999; Penick & Jepsen, 1992) that did find support for the relationship between family functioning and career decision-making examined career decision-making in terms of vocational identity and career decision self-efficacy, rather than career indecision. However, the reason for the difference between Whiston's (1996) finding that career decision self-efficacy was not related to family functioning and Hargrove and colleagues' (2002) contrasting finding

that career decision self-efficacy was related to family functioning is not fully clear. Possible differences in analytic approaches and the type of university (public vs. private) from which the samples were drawn may have, in part, contributed to the different findings. More research needs to examine the role of family systems theory in the career development process by examining relationships among family functioning variables and career decision-making variables, as well as establishing linkages between family functioning and young adults subsequent career identity commitments.

*Parental support.* Findings from research on parental support for career development and career decision-making are clearer than those from research examining family functioning. Alliman-Brissett et al. (2004) examined the relationships among adolescent career decision self-efficacy and perceived parental emotional and instrumental support, verbal encouragement, and parent modeling for career in an eighth grade sample of 81 African American girls (mean age = 13.16 years,  $SD = .93$ ) and 81 African American boys (mean age = 13.15 years,  $SD = .91$ ) living in a large Metropolitan community. The Career-Related Parental Support Scale (CRPSS; Turner, Alliman-Brissett, Lapan, Udipi, & Erugun, 2003) was used to assess parental support in the following domains: instrumental assistance, verbal encouragement, career-related modeling, and emotional support. Career decision-making was assessed using the Missouri Comprehensive Guidance Survey (MCGS; Gysbers, Multon, Lapan, & Lukin, 1992), which assesses adolescents' efficacy for career planning and exploration, knowledge of self and others, and educational and vocational development self-efficacy.

The Middle School Self-Efficacy Scales (MSSE; Fouad et al., 1997), which contains subscales of career decision self-efficacy and career decision-making outcomes expectancy, also was used.

Results indicated that emotional support from parents predicted female adolescents' career decision-making outcome expectations (i.e., the ability to make effective career choices) and confidence in making a successful transition from high school to work or further education. Career-related modeling by parents also predicted female adolescents' confidence in making a successful transition from high school to work or further education. For male adolescents, parents' career-related modeling predicted career decision self-efficacy, confidence in the transition from school to career, and the ability to make effective career choices. This study suggests that for girls, emotional support from parents may be most important, and for boys, parents' career-related modeling may be most important in the prediction of being confident in choosing a career. However, career-related modeling also appears to be important for girls' career decision-making.

Another study showed that parental support of general career goals (e.g., discussion of and agreement about career goals) and adolescent certainty about career goals were positively associated in a sample of 151 African American high school juniors and seniors (Constantine et al., 2005). The Career Support Scale (CSS; Binen, Franda, & Thye, 1995) was used to assess parental support for career, and the CDS was used to assess career decision-making. There was, however, no relationship between parental support and career indecision. This suggests that parental support regarding educational

and career goals contributes to high school juniors and seniors feeling sure about their career goals but does not contribute to them making a decision about career. This may be because most high school students are not typically making decisions about what type of career to pursue because it is not institutionally or developmentally required of them. Decisions about career for college bound students are more salient after high school when individuals must choose a college major.

Also in support of family systems theory, Berrios-Allison (2005) used a family systems perspective and identity control theory as a framework to examine the relationship between parent-child connectedness and separateness and college students' occupational identity status (i.e., decidedness) in a sample of 232 (66% female, 34% male) mostly Caucasian students from a Midwestern college. Half had declared their majors. Almost 81% were 18 or 19 years old, and the other 20% were 20 years or older. The Family Intrusiveness Scale (FIS; Gavazzi & Sabatelli, 1990) measured the degree to which parents try to regulate their children's lives. Reliability was .88, and there has been evidence of construct validity in previous research (Gavazzi, Anderson, & Sabetelli, 1993; Gavazzi & Sabetelli, 1990). The Perceived Social Support From Family (PSS-FA; Procidano & Heller, 1983) measured adolescent perceived familial support. Reliability was a Kuder Richardson coefficient of .70. Occupational identity status was measured using the Occupational Identity Scale (OIS; Melgosa, 1987), which measures the degree of exploration and commitment in the occupational domain. Reliability for each status ranged from .69 to .85.

Results showed that the achieved occupational identity status (i.e., those who had explored and made a decision) was positively associated with perceived parent-child support. The foreclosed occupational identity status (i.e., those who had decided without prior exploration) also was positively associated with perceived parental support. Results suggest that parental support is important in facilitating the career-decision-making process in college students.

Blustein and colleagues' (2002) qualitative comparison of non-student emerging adults in high and low SES groups supports research that has suggested the importance of parental support in young adult's decisions about career. Low SES young adults identified external barriers to making decisions about college, which included a lack of money, and a lack of familial support to go to college. Parents of young adults from low SES backgrounds were less likely to be experienced in making the type of decisions about school and career that their children wanted to make, so guidance about career decision-making was limited. Though these young adults were granted autonomy to make their own decisions, they wanted more guidance in making decisions about school and work. Low SES young adults seemed to lack the instrumental support that high SES young adults had in making the transition from school to work. The work of Blustein et al. (2002) suggests that parents' ability to provide instrumental support in the career decision-making process is important.

Overall, research on high school students, college students, and non-students supports the notion that career-related parental support (e.g., emotional support, instrumental support, career-related modeling, encouragement) is important in the career

decision-making process for career decisions and self-efficacy (see Alliman-Brissett et al. 2004; Blustein et al., 2002; Constantine et al., 2005; Hargrove et al., 2002; Penick & Jepson, 1992). Family support and encouragement are important in helping adolescents and individuals in their early college years make decisions about career and feel certain that they made the right decisions.

*Work experience.* Extant research on work experience and its influence on the career decision-making process has been unclear. Work experience was not associated with career indecision in a sample of 367 Australian students in the 8<sup>th</sup> through 12<sup>th</sup> grades (Creed & Patton, 2003). However, confirmation of work experience's positive association with making decisions about career was found in a longitudinal study of 292 Australian students in the 8th grade (48% female, 51% male) who were followed for two years. Research conducted by Creed, Prideaux, and Patton (2005) revealed that work experience was negatively associated with career indecision. Those students who indicated having made a career decision were more likely to have had work experience than those who were undecided. Eighth grade in Australia is a pivotal period when students make decisions that determine course work for the next two years. Australian citizens are allowed to work for pay at the age of 14. At time 2, in the 10th grade, those who were decided were more likely to have had work experience at T1. This suggests that work experience before a pivotal period when decisions about career must be made is associated with being able to choose a career.

Earl and Bright (2003) examined the amount of work (i.e., hours worked in the past year) and pattern of work (i.e., full-time, part-time, no work) in a 12-month period

and their influence on the career decision-making in a sample of 804 first year and 353 third year Australian college students. First year students were just beginning their studies, while third year students were nearly done. The first year sample consisted of 558 females and 244 males (2 did not identify their sex), that were between the ages of 16 and 50, with an average age of 20 years and 7 months for males and 19 years 11 months for females. The third year sample consisted of 119 females and 230 males that were between the ages of 15 and 38, with an average age of 21 years and 6 months for females and 21 years and 9 months for males. Results indicated that there was no difference in the career indecision of first year and third year students. This may be because the age ranges of the first and third year students were broad, and the overlap between the age ranges of the first and third year students was considerable. Independent samples t-tests indicated that students who worked full-time were more decided than those who had not worked at all. Students with work experience in the previous 12 months scored higher on self-clarity and had more knowledge about occupations and training. The number of hours worked in the previous 12 months (volume of work) was positively associated with self-clarity, occupational training and knowledge, decisiveness, career choice importance, and certainty, and negatively associated with indecision. Volume of work was a better predictor of career decision-making than pattern of work. Results of this study suggest that the amount of time an Australian student works (in hours) is more predictive of career decision-making outcomes (e.g., career indecision, self-clarity in regard to occupational choices) than the breadth of work experiences and whether or not a student works.

In contrast to the Australian studies, in an American sample of 106 university students (68.3% female, 31.7% male), quality of work experience (i.e., type of work experience and whether it related to a chosen career) was a better predictor of the readiness to make informed, age appropriate decisions about career than was quantity of work (Ohler et al., 1996). Results suggest that work experience that is related to a career choice is predictive of being able to make decisions about career. More recently, Mortimer and Staff (2004) found that quality of work in adolescence was positively associated with self-efficacy in emerging adulthood in a longitudinal study that examined quality of work in adolescence and mental health outcomes in emerging adulthood.

Most studies that could be found on work experience and its influence on career decision-making of students were conducted with samples of Australian students. Australia may have more jobs opportunities available to youth that are more relevant to future careers. However, in America, most jobs available to youth are low-skill jobs. Most of the research examining work experience in American samples has focused primarily on adolescents' amount of work and entry into work and adjustment variables, including school-related variables (e.g., school misconduct, educational attainment) (see Bachman & Schulenberg, 1993; Leventhal, Graber, & Brooks-Gun, 2001; Staff & Uggen, 2003; Steinberg & Dornbusch, 1991) and nonacademic variables (e.g., drug and alcohol use) (see Manning, 1990; Shanahan, Finch, Mortimer, & Seongryeol, 1991). (For more information about adolescent work experience see a review by Stone and Mortimer, 1998). The two studies (Mortimer & Staff, 2004; Ohler et al., 1996) that examined the quality of work experience suggested that it may be important for outcomes related to

career in emerging adulthood. More research is needed that focuses on the quality of the work experience and career development outcomes using American samples.

*Educational pathway as a Moderator of Career Decision-Making and Career Identity*

Arnett (2006) theorized that demographic changes in the past 50 years have made emerging adulthood a distinct period in life. In the 1950s marriage occurred in the early 20s. Since that time, the age at which individuals first marry has risen steadily into the late 20s. The age at which couples experience their first birth of a child has steadily risen into the late 20s and early 30s. There also has been a rise in college enrollment, with over 60% of 18 to 24-year-olds receiving some college. However, only approximately half of those who enroll into a 4-year college actually graduate (Hamilton & Hamilton, 2006). Therefore, the importance of understanding the development of those who receive some college, such as those who attended 2-year institutions, has been suggested by researchers (Hamilton & Hamilton, 2006; Arnett, 2006).

Information about the diverse population of emerging adults is lost when those in the “some college” category (i.e., those receiving associates degrees, career-technical degrees, or planning to transfer to 4-year institutions) are not included in the research. Experiences of 2-year college students may be quite different than those of individuals who go directly to 4-year colleges. Of all students enrolled in postsecondary education, 60% are enrolled in 2-year institutions, and more than half of these are enrolled in career tech programs (30% of all postsecondary students). This is a highly understudied population. U.S. Department of Labor (2002) statistics show that part-time enrollment is more likely in 2-year colleges (31.3%) than in 4-year colleges (11.3%). Multiple

transitions to and from work and school are most common in those who have, as their highest educational attainment, a 2-year college degree. College students also work while attending school; two-thirds of 2-year and one-third of 4-year students work. Grubb (2002) found that individuals who completed career technical programs at 2-year colleges had higher median earnings than those with bachelor's degrees in humanities and education fields. In a study that examined the standing of emerging adults at age 24 (Osgood et al., 2005), six groups based on education level, employment, childbearing, living separate from parents, and marital status were found. Those who were single were most likely to have completed a 4-year postsecondary program. Another group, the fast starters, had achieved the most sociological markers of adulthood: marriage or cohabitating, living separate from parents, having children, completion of education, and/or having long-term or career-related jobs. The fast starters were more likely than other groups to be employed in skilled or technical trades.

Another study supports suggested differences between career-technical and 4-year college students. Danielson et al. (2002) conducted a qualitative study with two groups of Norwegian emerging adults. One group was attending a 4-year university and the other had graduated from a vocational school. Results showed that those who had graduated from vocational school were more likely to have made identity commitments, based on an identity status interview, in the work, relationship, and worldviews domains. Almost 55% had made commitments without exploring. In contrast, almost 80% of those attending the 4-year university were exploring (38.5%) or had explored before making commitments (38.5%). It is important to keep in mind that because the researchers used

the identity status interview, identity commitment means making a decision, but the extent to which “identification with commitments” (i.e., certainty about one’s identity commitments) has occurred is not clear. In other words, the measure does not differentiate the two dimensions of identity commitment. A pattern of close relationship decisions taking priority over vocational school decisions, or a more a traditional pattern, was found for the vocational school graduates. This suggests that the theorized identity explorations during emerging adulthood may not be characteristic of individuals who do not attend a 4-year post-secondary institution. This also suggests that the trend that the transition to adulthood is longer and characterized by delay (Arnett, 2006; Cote, 2006; Mortimer et al., 2002) that has been found in extant research may not be true for some emerging adults, such as those whose highest educational attainment is completion of a 2-year career-technical program.

Thus, emerging adults who complete career tech programs may have different developmental paths than those who graduate from 4-year institutions. They are more likely to have made the transitions to adulthood by age 24 than those who received bachelor’s degrees. The traditional pattern found in career technical students suggests that though they may have chosen a career, relationships (e.g., family) may be more important to their identities than career. In other words, career technical students may be more likely to have made career commitments, but they may not be more likely to have identified with career commitments. Stryker’s (1991) identity theory would suggest that because 4-year students are putting more time into their careers than 2-year students, their

careers may be more important to their identities, so they may experience greater levels of identification with career commitment.

### *Goals of the Current Study*

Based on the findings from the review of literature, the current study examined career identity development and its association with career decision-making (i.e., vocational identity and career decision self-efficacy), positive family functioning, parental support for career, and relevant work experience. The moderating role of educational pathway in the relationship between career decision-making and career identity commitment, and the moderating role of gender in the relationship between priority for career and career identity development also was examined.

### III. METHOD

#### *Sample*

Data were collected from two Southeastern post-secondary institutions, a 2-year community college and a 4-year university, located in the same county ( $N = 491$ ). Approximately 550 surveys were distributed. A total of 516 were returned. Of these, 491 were used for analyses. Those who were not between the ages of 18 and 25 ( $N = 6$ ) were removed, and participants that had more than 50% of data missing were removed ( $N = 11$ ). Also, due to the study focus on the developing career identity and anticipated priority for work and family roles, those students who were married or had been remarried were removed from further analyses ( $N = 9$ ). These individuals had already assumed some of the family roles that were examined as anticipated.

Three groups were anticipated: a 2-year career technical group, a 2-year group who intended to transfer to a 4-year institution, and a 4-year university group. The groups that emerged, however, were somewhat different than what was anticipated. From the 2-year community college, two groups of students were identified based on the type of degree they were pursuing. The first was a *2-year terminal group*, which consisted of students who were currently seeking career technical or 2-year Associate's Degrees. The second group was a *2-year continuing group*, which consisted of students who said they were seeking 4-year degrees, suggesting that they would need to transfer to a 4-year institution. From the 4-year university, there were students who had indicated that they

had been at a 4-year institution throughout their college careers, forming the *4-year university group*. Those who had transferred to the 4-year university from a 2-year institution were put into the *4-year transfer group*.

The *2-year terminal group* consisted of 54 participants (55.4% Female, 44.6% Male). Of the 54 students 67.9% were Caucasian, and 30.4% were African American. Ages ranged from 18 to 25 ( $M = 20.80$ ,  $SD = 2.06$ ). Of these, 87.5% reported that they were currently seeking a 2-year Associate's degree, and 12.5% were currently seeking a career technical degree (see Table 2 for descriptive statistics for all 4 groups).

The *2-year continuing group* consisted of 97 participants (48.5% Female, 51.5% Male). The majority were Caucasian. Ages ranged from 18 to 25 ( $M = 20.01$ ,  $SD = 1.52$ ). Ninety-six percent were currently seeking a 4-year bachelor's degree; the other 4% were currently seeking an "other" type of degree.

The *4-year university group* consisted of 292 participants (33.2% Male, 66.8% Female). Most were Caucasian. Ages ranged from 18 to 25 ( $M = 20.63$ ,  $SD = 1.30$ ). Of these, 97.7% reported that they were currently seeking a 4-year bachelor's degree and 2.3% reported that they were currently seeking an "other" type of degree (e.g., five-year master's degree).

The *4-year transfer group* consisted of 57 participants (40.4% Male, 59.6% Female). Most were Caucasian. Ages ranged from 18 to 25 ( $M = 21.33$ ,  $SD = 1.34$ ). Of the 57 participants, 96.5% were currently seeking a 4-year bachelor's degree, and 3.5% were currently seeking an "other" type of degree.

Table 1.

*Whole Sample Descriptive Statistics*

	2-year terminal N = 54	2-year continuing N = 97	4-year university N = 292	4-year transfer N = 57
Female	44.6	48.5	59.6	66.8
Caucasian	67.9	87.6	91.1	82.5
African American	30.4	12.4	7.9	15.8
Asian American	1.8	0	.3	0
Hispanic/Latin American	0	0	0.3	1.8
Other ethnicity	0	0	0.3	0
<i>Degree currently seeking</i>				
Career technical degree	12.5	0	0	0
2-year Associate's	87.5	0	0	0
4-year Bachelor's	0	96.0	97.9	96.5
Other degree	0	4.0	2.1	3.5
First generation students	39.0	29.0	9.9	31.6
Intact family structure	64.3	74.2	84.9	82.5
Single-parent	17.9	9.3	5.8	10.5
Step-parent	8.9	14.4	7.2	3.5
Other family structure	8.9	2.1	1.0	3.5
Single/Never married	96.4	96.9	99.7	96.5
Married	3.6	3.1	0.3	1.8
Remarried	0	0	0	1.8
Serious relationship	51.8	47.4	45.5	40.4
Engaged	5.4	2.1	3.1	7.0
Currently employed	73.2	66.0	35.4	52.6

Note: All numbers are percentages.

## *Measures<sup>1</sup>*

*Demographic information* was gathered with a demographic questionnaire that consisted of questions addressing sex, age, ethnicity, year in school, major and degree type, family of origin income, parents' educational attainment, and grade point average. The demographic questionnaire also contained information about current relationship status, parental, and work status, as well as information about future plans for marriage and parenthood for those who were single non-parents.

*Career Identity Development* was assessed using the Utrecht-Management of Identity Commitments Scale (U-MICS; Meeus, 2001). The U-MICS is a shortened English version of the Utrecht-Groningen Identity Development Scale (U-GIDS; Meeus, 1996), which assesses career identity commitment in terms of identification with commitment (5 items), and assesses career exploration in terms of exploration in depth (5 items), and reconsideration of commitments (3 items) in the education and relationship domains. Items are rated on a five-point Likert scale (1 = 'completely untrue' to 5 = 'completely true'). Higher scores yield greater identification with commitment. The measure can be adjusted to examine different identity domains, as was done by Crocetti, Rubini, and Meeus (2001) in a Dutch female college student sample to assess educational and relational identity domains. For the current study, the items were adjusted to refer to the career domain, and only use the identification with **career** commitment and **career** exploration in depth scales. Due to the design of the study, items also were adjusted to assess anticipated identification with career commitment (e.g., "My career will give me certainty in life"). The exploration in depth items were in present tense (e.g., "I think a lot

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<sup>1</sup> See Appendix A for the full survey of measures.

about my career).” Internal consistency in two different samples for identification with commitment ( $\alpha = .90$  and  $.87$ ); and for exploration in depth ( $\alpha = .85$  and  $.75$ ) have been adequate to good (Crocetti et al., unpublished manuscript). The two scales indicated the latent factor, career identity. In the current study, reliability for the whole group was  $.87$  for identification with career and  $.83$  for career exploration in depth.

*Priority for career versus family* was assessed by asking participants to indicate the percentage, out of 100%, of his or her identity that he or she anticipates will be determined by family/relationships versus career (e.g., 30% career versus 70% family/relationships).

**Career decision-making** was assessed by using measures of career decision self-efficacy and vocational identity. Career indecision was not chosen because of its high correlation with vocational identity ( $r = .69$ ) (Marco et al., 2003).

*Career decision self-efficacy* was measured using the Career Decision Self-Efficacy Short Form (CDSE-SF; Betz, Klein, & Taylor, 1996). The CDSE consists of 25 items that are rated on a 5-point Likert scale. Higher scores indicate higher confidence in dealing with career-related tasks. There are five subscales: Accurate Self-Appraisal (e.g., “Determine what your ideal job would be”), Gathering Occupational Information (e.g., “Talk with a person already employed in a field you are interested in”), Goal Selection (e.g., “Choose a major or career that will fit your interests”), Making Plans (e.g., “Make a plan of your goals for the next five years”), and Problem Solving (e.g., “Persistently work at your major or career goal even when you get frustrated”). Each subscale consists of five items. Internal consistency for the total scale has been found to be  $.94$  (Betz et al., 1996) and has ranged between  $.95$  and  $.97$  (Gloria & Hird, 1999). Internal consistency

for the subscales, examined in two studies, has been good: Accurate Self-Appraisal ( $\alpha = .81; .81$ ), Gathering Occupational Information ( $\alpha = .82; .82$ ), Goal Selection ( $\alpha = .84; .87$ ), Making Plans ( $\alpha = .84; .82$ ), and Problem Solving ( $\alpha = .80; .81$ ) (Paulsen, 2001; Smith, 2001). The CDSE-SF has had moderate to strong correlations (ranging from .31 to .68) with career indecision and vocational identity. Construct validity has been supported in previous studies (see Neimeyer & Metzler, 1987; Taylor & Betz, 1983). For the current study, Cronbach's alpha was .74 for occupational information, .80 for goal selection, .77 planning, .75 for problem solving, and .75 for accurate self-appraisal.

*Vocational identity* was assessed using the Vocational Identity subscale (VIS) of My Vocational Situation (Holland, Daiger, & Power, 1985). The VIS measures one's "possession of a clear and stable picture of one's goals, interests, and talents" (Holland, Johnston, & Asama, 1993). The scale consists of 18 items that are scored as true and false. For the current study, the true and false scale was changed to a 5-point Likert scale, ranging from "very untrue" (1) to "very true" (5). Sample items include "I need reassurance I have made the right choice of occupation." And "I am uncertain about which occupation I would enjoy." Internal consistency has ranged from .86 to .89 (Holland et al., 1993; Hargrove et al., 2002). Construct validity has been provided by Holland et al. (1993). Cronbach's alpha for the whole sample in the current study was .92.

*Positive family functioning* was examined using the three subscales (i.e., cohesion, expressiveness, and conflict) of the Family Functioning Scale (FFS; Bloom, 1985) that was developed using factor analysis of multiple scales: the Family Environment Scale (FES; Moos & Moos, 1981), Family-Concept Q-Sort (FCQS, van der

Veen, 1965), Family Adaptability and Cohesion Evaluation Scales (FACES; Olson, Sprenkle, & Russell, 1979), and Family Assessment Measure (FAM; Skinner, Steinhauer, & Santa-Barbara, 1983). Cohesion refers to the degree to which family members are helpful, supportive, and involved with one another (e.g., “Family members really helped and supported one another”). Expressiveness refers to the degree to which family members are encouraged to express feelings openly and directly (e.g., “Family members felt free to say what was on their minds”). Conflict refers to the extent to which aggression and anger are openly expressed and conflictual interactions are characteristic (e.g., “We fought a lot in our family”). Each subscale contains five true-false items. The subscales have shown Cronbach’s alphas of .78, .77, and .76, respectively. In the current study, they were .87, .82, and .74, respectively.

*Parental support for career* was assessed using the four subscales of the Career-Related Parent Support Scale (CRPSS; Turner, Alliman-Brissett, Lapan, Udipi, & Erugun, 2003). The four subscales of the CRPSS are: Instrumental Assistance, Career-Related Modeling, Verbal Encouragement, and Emotional Support. Instrumental assistance for career is defined as parental support of adolescent career-related skill development (e.g., help and guidance about educational/career-related decisions and tasks). Verbal encouragement is defined as parental praise and encouragement of adolescent educational and career development (e.g., encouragement and expectations to participate in activities that help accomplish educational/career goals). Emotional support for career is defined as parental support of adolescent affect associated with educational and career development (e.g., talking about child’s interests and educational/career goals). Career-related modeling is defined as parental modeling of

career-related behavior (e.g., exposure to parental work environment and/or work role). The subscales consist of seven items, with the exception of the Verbal Encouragement subscale, which has six items. Items are rated on a 5-point Likert scale (1 = ‘strongly disagree,’ 5 = ‘strongly agree’). Internal consistency estimates ranged from .78 to .85. Test-retest reliability over a two-week period were  $r = .75$  (Instrumental Assistance),  $r = .87$  (Career-Related Modeling),  $r = .76$  (Verbal Encouragement), and  $r = .77$  (Emotional Support). For the current study, items were be asked in retrospect with the prompt, “Thinking about growing up in your family of origin’s home, answer the following questions.” Retrospective information from participants is important because research has shown that parental practices in adolescence have consequences for outcomes in young adulthood (see Aquilino & Supple, 2001; Harter, Marold, & Whitesell, 1996; Sartor & Youniss, 2002). For the full sample in the current study, Cronbach’s alphas were .83 for instrumental assistance, .81 for verbal encouragement, .91 for career-related modeling, and .86 for emotional support.

The alpha reliability for each measure for each group was acceptable to good (ranging from .65 to .94). For a summary of the Cronbach’s alphas for each group on each measure, please see Table 2.

Table 2.

*Cronbach's Alphas for the 2-year and 4-year Groups*

	2-year terminal	2-year continuing	4-year university	4-year transfer
	Alpha	Alpha	Alpha	Alpha
Identification with	.90	.87	.87	.75
Exploration in Depth	.81	.84	.82	.90
Vocational Identity	.89	.91	.92	.92
Occupational Info.	.79	.73	.74	.73
Goal Selection	.90	.78	.77	.81
Planning	.86	.78	.73	.81
Problem Solving	.78	.80	.73	.74
Self-Appraisal	.84	.76	.72	.77
Cohesion	.85	.91	.85	.78
Expressiveness	.79	.85	.79	.87
Conflict	.65	.70	.76	.71
Instrumental Assistance	.83	.87	.81	.88
Career Modeling	.89	.85	.78	.78
Verbal Encouragement	.91	.93	.89	.94
Emotional Support	.90	.85	.85	.87

*Career-relevant work experience* was assessed by questions that ask about the type of career a student is pursuing and the work experience he or she has (i.e., all jobs, length of employment, number of hours worked at each job per week, and if the skills used at the job are relevant to the current career choice). If the type of career one is pursuing is unknown, the participant will be asked to indicate his or her top three career choices in order. Relevant work experience was assessed by rating the work experience as relevant for one's career choice on a scale from 1 to 3 (1= not relevant, 2= somewhat relevant, 3= relevant). Scores were calculated by taking the sum of all work experience relevance ratings. Scores were on a continuous scale, where higher scores indicated more relevant work experience. If no information was reported in this section and the sections on the same page and the page after the relevant work experience was assessed, a score of zero was given for relevant work experience. If the section on the same page, before the relevant work experience questions, was not completed, it was assumed that the participant skipped this section, and this was coded as missing data.

### *Procedure*

At the 4-year institution, participants were recruited from large section undergraduate human development and family studies courses. At the 2-year institution, participants were recruited from history, sociology, and career technical classes. Extra credit was offered in exchange for participation at the discretion of the instructor. Participation was strictly voluntary. Paper/pencil surveys were administered outside of class time. All completed surveys were put into sealed boxes by the participants. All participants who are ages 19 and older received an information sheet describing the study

and informing them that they may choose not to answer any questions and may stop participation at any time. Participants 18 years of age received parental consent/participant assent forms to be signed and returned upon completion of the survey. Surveys were completed outside of class time and returned within five days of completion. All surveys were anonymous and took approximately 20 to 30 minutes to complete.

### III. RESULTS

Pearson correlations and structural equation modeling (SEM) were used to assess the hypothesized relationships among the variables. The current study predicted that career decision-making (i.e., vocational identity and career decision self-efficacy) would mediate the relationships between career identity development (i.e., identification with career commitments and career exploration in depth) and relevant work experience, parental support for career, and positive family functioning. Educational pathway (i.e., 2-year terminal, 2-year continuing, 4-year university, and 4-year transfer) was predicted to moderate the relationship between career decision-making and career identity development. Gender also was predicted to moderate the relationship between priority for career and career identity development.

#### *Sample Descriptive Statistics*

Univariate analyses were examined to evaluate the distributions of the variables for each group. One finding was particularly important. In the 4-year transfer group, one case was an extreme outlier for the identification with career and relevant work experience variables. This case was removed from further analyses (For a summary of information on the distributions for each group, please see Appendix B).

Means and standard deviations were computed for the entire sample (see Table 3), each group (see Table 4), and each sex (see Table 5). One-way Analysis of Variance (ANOVA) was used to determine if there were mean differences in the variables between

the educational pathway groups and the male and female groups. Significant differences in demographics were found for the educational pathway groups. The 4-year transfer group was significantly older than the 4-year university group. The 2-year continuing group was significantly younger than the other groups. The 4-year university group had significantly less first generation college students than the other three groups and had significantly more individuals who had come from intact family structures than did the 2-year terminal group. The 2-year terminal group had significantly lower family income than the other three groups. In addition, the 2-year continuing group had significantly higher priority for career versus family than the 4-year university group and significantly lower levels of planning than the 4-year transfer group. Family expressiveness was significantly lower in the 2-year terminal group than in the 4-year transfer group, and family conflict was significantly lower in both 4-year groups than in the 2-year terminal group. Finally, parental emotional support for career was significantly lower in the 2-year continuing group than the 4-year university group.

Chi-square tests were conducted to determine if the groups had significant differences in ratios of ethnicity and sex. For ethnicity, chi-square analysis suggested that the ratio of African American to Caucasian students was greater in the 2-year terminal group than the other groups ( $p < .001$ ). For sex, chi-square analysis showed that the 4-year university group had a lower ratio of males to females than did the other groups ( $p < .01$ ).

The one-way ANOVA showed significant differences between males and females on the variables in the hypothesized model and GPA. On average, females had higher GPA's than males, and males had a higher priority for career and less relevant work

experience than females. On average, females had more career exploration in depth, more confident in seeking occupational information, planning, and being able to accurately self-appraise. Females reported that they came from families that were more expressive, had less conflict, and parents who were provided more instrumental assistance, career-related modeling, verbal encouragement, and emotional support.

Table 3.

*Means and Standard Deviations for the Whole Sample*

Variable	Mean ( <i>SD</i> )
GPA	2.98 (0.50)
Priority for Career	35.03 (14.84)
Relevant Work Experience	2.84 (2.54)
Identification with Career	4.13 (0.70)
Exploration in Depth	3.96 (0.77)
Vocational Identity	3.53 (0.79)
Occupational Information	3.99 (0.65)
Goal Selection	3.83 (0.97)
Planning	3.86 (0.69)
Problem Solving	3.71 (0.67)
Self-Appraisal	3.96 (0.60)
Cohesion	3.43 (0.68)
Expressiveness	3.62 (0.84)
Conflict	3.56 (0.78)
Instrumental Assistance	3.85 (0.78)
Career-Related Modeling	4.18 (0.82)
Verbal Encouragement	4.42 (0.67)
Emotional Support	3.77 (0.84)

Table 4.

*Means and Standard Deviations for 2-year and 4-year Groups*

Variable	2-year terminal	2-year continuing	4-year university	4-year transfer
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
GPA	3.08 (0.49)	2.97 (0.55)	2.99 (0.49)	2.91 (0.46)
Priority for Career	36.22 (17.18)	36.78 (15.06) <sup>c</sup>	33.24 (14.14) <sup>b</sup>	35.55 (12.68)
Relevant Work	2.63 (3.01)	2.60 (2.56)	2.85 (2.44)	3.53 (2.92)
Identification with Career	4.32 (0.76)	4.16 (0.77)	4.07 (0.69)	4.21 (0.65)
Exploration in Depth	4.01 (0.79)	3.91 (0.81)	3.95 (0.73)	4.02 (0.88)
Vocational Identity	3.45 (0.78)	3.44 (0.80)	3.56 (0.78)	3.62 (0.78)
Occupational Info.	3.94 (0.79)	3.93 (0.68)	4.00 (0.61)	4.14 (0.62)
Goal Selection	3.83 (0.88)	3.84 (0.66)	3.82 (0.63)	3.86 (0.66)
Planning	3.91 (0.89)	3.78 (0.71) <sup>d</sup>	3.85 (0.65)	4.05 (0.63) <sup>b</sup>
Problem Solving	3.79 (0.81)	3.70 (0.69)	3.70 (0.64)	3.79 (0.65)
Self-Appraisal	3.96 (0.77)	3.94 (0.61)	3.96 (0.57)	4.04 (0.60)
Cohesion	3.78 (0.96)	3.88 (1.02)	3.25 (0.36)	3.26 (0.32)
Expressiveness	3.41 (0.88) <sup>d</sup>	3.51 (0.98)	3.64 (0.78)	3.85 (0.86) <sup>a</sup>
Conflict	3.24 (0.85) <sup>cd</sup>	3.47 (0.84)	3.60 (0.83) <sup>a</sup>	3.72 (0.77) <sup>a</sup>
Instrumental Assistance	3.71 (0.85)	3.69 (0.89)	3.89 (0.72)	3.92 (0.86)
Career-Related Modeling	4.14 (0.91)	4.17 (0.95)	4.19 (0.77)	4.20 (0.83)
Verbal Encouragement	4.26 (0.84)	4.41 (0.67)	4.46 (0.62)	4.40 (0.65)

Table 4 (continued)

	2-year terminal	2-year continuing	4-year university	4-year transfer
Variable	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )
Emotional Support	3.61 (1.02)	3.57 (0.55) <sup>c</sup>	3.83 (0.80) <sup>b</sup>	3.83 (0.84)

Note: All differences are statistically significant at  $p < .05$ .

<sup>a</sup> different from 2-year terminal group.

<sup>b</sup> different from 2-year continuing group.

<sup>c</sup> different from 4-year university group.

<sup>d</sup> different from 4-year transfer group.

Table 5.

*Means and Standard Deviations for Females and Males*

Variable	Females	Males
	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )
GPA*	3.03 (0.46)	2.88 (0.54)
Priority for Career*	33.18 (13.92)	38.00 (15.81)
Relevant Work Experience*	4.13 (2.75)	2.11 (2.16)
Identification with Career	4.13 (0.72)	4.13 (0.69)
Exploration in Depth*	4.03 (0.75)	3.85 (0.79)
Vocational Identity	3.57 (0.79)	3.88 (0.67)
Occupational Information*	4.05 (0.62)	3.79 (0.68)
Goal Selection	3.85 (0.67)	3.77 (0.72)
Planning*	3.92 (0.67)	3.65 (0.68)
Problem Solving	3.75 (0.66)	3.70 (0.69)
Self-Appraisal*	4.01 (0.59)	3.88 (0.61)
Cohesion	3.42 (0.64)	3.46 (0.74)
Expressiveness*	3.73 (0.85)	3.44 (0.79)
Conflict*	3.69 (0.83)	3.37 (0.80)
Instrumental Assistance*	3.99 (0.74)	3.61 (0.79)
Career-Related Modeling*	4.30 (0.78)	3.99 (0.85)
Verbal Encouragement*	4.58 (0.54)	4.17 (0.77)

Table 5 (continued)

	Females	Males
Variable	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )
Emotional Support*	3.92 (0.81)	3.51 (0.82)

\*. difference statistically significant at  $p < .05$ .

### *Correlations*

Pearson correlations for the whole sample, each educational pathway group, and females and males (Tables 6 through 12) revealed that many of the hypothesized relationships were found. Most importantly, career decision-making and career identity development were positively correlated in almost all cases. Parental support for career was positively correlated with career decision self-efficacy and career identity development in the majority of cases as well. Some exceptions to the expected associations were noted. For the whole sample, priority for career was not significantly associated with career exploration in depth, and relevant work experience was associated with few of the other variables. Identification with career was not associated with family conflict or instrumental assistance, and career exploration in depth was not associated with family functioning. Finally, vocational identity was not associated with family conflict or emotional support from parents, and occupational information was not associated with family cohesion.

Across the four educational pathway groups, career identity development was associated positively with career decision making. Fewer significant associations were found the 2-year terminal and the 4-year transfer groups which were smaller in size, but the patterns of correlations were in the expected direction. For most of the groups, relevant work experience was correlated with few other variables. In addition, positive family functioning (i.e., cohesion, expressiveness, and low conflict) had limited associations with the other variables. Thus hypothesized associations between relevant work experience and positive family functioning with identity development and career decision self-efficacy received very little support at the bivariate level.

Some variation in the patterns of associations among the variables across the educational pathway groups also was observed. For the 2-year terminal group, career decision self-efficacy was not associated with career exploration in depth, and only some of its subscales were associated with identification with career. In addition, only limited associations were found between the career decision self-efficacy subscales and identification with identification with career for the 2-year continuing and 4-year transfer groups. In the all groups except the 4-year university group, vocational identity was not associated with career identity development or with family functioning and was associated with very few parental support for career subscales. Identification with career was not associated with parental support for career in both of the 2-year groups.

Many of the expected associations between the career identity development and the career decision making variables were found. There were some exceptions. For the female participants, priority for career was not associated with career exploration in depth, and relevant work experience was not associated with identity development, as well as several of the career decision-making self-efficacy subscales. Identification with career was not associated with vocational identity, family functioning, or instrumental assistance, and career exploration in depth was not associated with family cohesion and expressiveness or verbal encouragement. Finally, vocational identity was not associated with many of the family process variables, and career decision self-efficacy showed limited association with the positive family functioning variables.

For the male participants, priority for career and relevant work experience were not associated with either of the career identity development variables, and relevant work experience was only associated with one of the career development self efficacy

variables. Career identity commitment was not associated with goal selection, family expressiveness and conflict, or parental support for career, and career exploration in depth was not associated with family conflict. Finally, vocational identity was not associated with family cohesion, instrumental assistance, or emotional support.

Table 6.

*Correlations for Whole Sample (N = 491)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.07	1															
3. ID Commitment	.14**	.05	1														
4. Exploration	.07	.09*	.28***	1													
5. Vocational ID	.01	.16***	.12*	.22***	1												
6. Occup. Info.	.01	.08	.23***	.32***	.33***	1											
7. Goal Selection	.02	.07	.22***	.28***	.51***	.66***	1										
8. Planning	-.00	.19**	.23***	.35***	.45***	.72***	.70***	1									
9. Problem Solving	-.02	.10*	.19***	.27***	.35***	.65***	.67***	.74***	1								
10. Self-appraisal	.00	.15**	.26***	.29***	.46***	.69***	.75***	.73***	.75***	1							
11. Cohesion	-.02	.01	.10*	.08	.01	.07	.11*	.13**	.12**	.10*	1						
12. Expressiveness	-.12*	.06	.10*	.05	.22***	.18***	.19***	.26***	.22***	.20***	.36***	1					
13. Conflict	-.16***	.05	-.01	-.01	.17***	.12**	.15**	.16***	.11*	.14**	.26***	.43***	1				
14. Instr. Assistance	-.15**	.09	.07	.20***	.10*	.22***	.21***	.28***	.25***	.26***	.36***	.51***	.40***	1			
15. Career Modeling	-.13**	.11*	.14**	.20***	.21***	.31***	.26***	.32***	.27***	.27***	.25***	.44***	.27***	.55***	1		

Table 6 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
16. Verbal Enc.	-.12**	.01	.11*	.13**	.16***	.32***	.22***	.28***	.26***	.30***	.26***	.40***	.39***	.61***	.56***	.56***	.56***	.56***
17. Emotional Sup.	-.15**	.04	.14**	.25***	.06	.21***	.15***	.23***	.22***	.19***	.27***	.44***	.31***	.66***	.52***	.57***	.57***	.57***

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 7.

*Correlations for 4-year University Group (N = 291)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.03	1															
3. ID Commitment	.12*	.07	1														
4. Exploration	.04	.08	.22***	1													
5. Vocational ID	.00	.14*	.14*	.24***	1												
6. Occup. Info.	.02	.03	.22***	.35***	.37***	1											
7. Goal Selection	-.02	.08	.20**	.28***	.60***	.61***	1										
8. Planning	-.00	.18**	.22***	.38***	.47***	.68***	.67***	1									
9. Problem Solving	-.05	.11	.18**	.27***	.39***	.56***	.62***	.73***	1								
10. Self-appraisal	-.07	.16**	.23***	.28***	.55**	.58***	.72***	.70***	.69***	1							
11. Cohesion	.01	.01	.06	.07	-.08	.02	.05	.11	.18***	.07	1						
12. Expressiveness	-.04	.09	.14*	.05	.22***	.20**	.19**	.27***	.29***	.22***	.18**	1					
13. Conflict	-.16**	.08	-.03	.03	.16**	.08	.14*	.11*	.10	.13*	.23***	.39***	1				
14. Instr. Assistance	-.13*	.12*	.06	.21***	.09	.19**	.19**	.27***	.27***	.29***	.29***	.49***	.38***	1			
15. Career Modeling	-.12*	.08	.14*	.31***	.21***	.30***	.24***	.34***	.29***	.31***	.12*	.43***	.21***	.52***	1		

Table 7 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
16. Verbal Enc.		-.17**	.07	.11	.23***	.19***	.28***	.20**	.27**	.24***	.28***	.10	.36***	.39***	.61***	.53***	1	
17. Emotional Sup.		-.15*	.08	.13*	.26***	.03	.18**	.14**	.23**	.21***	.17**	.30***	.38***	.33***	.67***	.53***	.56***	1

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 8.

*Correlations for 4-year Transfer Group (N = 54)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.22	1															
3. ID Commitment	.30*	-.23	1														
4. Exploration	.11	-.00	.44**	1													
5. Vocational ID	.07	.23	.20	.13	1												
6. Occup. Info.	.02	.27*	.18	.28*	.33*	1											
7. Goal Selection	-.02	.20	.15	.40**	.49***	.62***	1										
8. Planning	.21	.23	.34**	.31*	.51**	.74***	.58***	1									
9. Problem Solving	.01	.00	.20	.34**	.28*	.70***	.73***	.67***	1								
10. Self-appraisal	.14	.16	.33*	.32*	.40**	.78***	.70***	.76***	.83*	1							
11. Cohesion	.15	-.02	.16	.24	.20	.16	.41**	.11	.25	.25	1						
12. Expressiveness	-.23	-.08	.19	-.01	.23	.08	.28*	.11	.16	.20	.24	1					

Table 8 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13. Conflict	-.19	.04	.10	-.07	.16	.12	.24	.18	.12	.12	.26	.52***	1			
14. Instr. Assistance	-.18	-.15	.15	.19	.18	.13	.26*	.11	.21	.16	.35**	.59***	.48***	1		
15. Career Modeling	-.17	.20	.28*	.16	.52***	.41**	.52***	.44**	.36**	.38**	.37**	.57***	.45**	.61***	1	
16. Verbal Enc.	-.05	-.12	.24	-.09	.23	.33*	.22	.31*	.23	.34**	.23	.54***	.53***	.54***	.53***	1
17. Emotional Sup.	-.12	-.11	.26*	.16	.29*	.18	.31*	.19	.24	.25	.44**	.50***	.48***	.69***	.67***	.54***

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 9.

*Correlations for 2-year Terminal Group (N = 52)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.25	1															
3. ID Commitment	-.13	-.25	1														
4. Exploration	-.09	.15	.46**	1													
5. Vocational ID	-.19	.18	-.02	.13	1												
6. Occup. Info.	-.17	.20	.19	.19	.28*	1											
7. Goal Selection	-.06	.26	.15	.12	.34*	.83***	1										
8. Planning	-.25	.28*	.20	.15	.37*	.84***	.86***	1									
9. Problem Solving	-.16	.26	.22	.21	.32*	.81***	.81***	.88***	1								
10. Self-appraisal	-.10	.31*	.27*	.22	.35*	.85***	.83***	.87***	.84***	1							
11. Cohesion	-.32*	-.01	.13	.20	.01	.22	.13	.15	.16	.11	1						
12. Expressiveness	-.30*	-.16	-.08	.04	.12	.26	.14	.22	.20	.19	.56***	1					
13. Conflict	-.29	-.04	.02	-.08	.05	.05	.05	.15	.09	.08	.50***	.48***	1				
14. Instr. Assistance	-.10	.00	.24	.34*	-.08	.27	.17	.22	.30*	.28*	.68***	.43**	.24	1			
15. Career Modeling	-.27	.16	.09	.06	.05	.15	.03	.14	.12	.06	.29*	.28*	.19	.43**	1		

Table 9 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
16. Verbal Enc.		-.14	-.09	.22	.18	.32*	.16	.22	.31*	.27*	.54***	.39**	.27*	.64***	.40**		
17. Emotional Sup.		-.20	-.02	.17	.48***	-.12	.18	.04	.20	.13	.41**	.36**	.11	.67***	.37**	.59***	1

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 10.

*Correlations for 2-year Continuing Group (N = 94)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.18	1															
3. ID Commitment	.26*	-.07	1														
4. Exploration	.23*	.08	.34***	1													
5. Vocational ID	.15	.02	.06	.25*	1												
6. Occup. Info.	.11	.01	.21*	.29**	.22*	1											
7. Goal Selection	.19	-.13	.31**	.27**	.41***	.72***	1										
8. Planning	.09	.06	.16	.41**	.46***	.71***	.70***	1									
9. Problem Solving	.14	.02	.14	.25*	.30**	.75***	.66***	.72***	1								
10. Self-appraisal	.15	-.03	.23*	.30**	.37***	.80***	.81***	.71***	.79**	1							
11. Cohesion	-.10	.13	.07	.09	.14	.11	.17	.28**	.08	.15	1						
12. Expressiveness	-.05	.16	.09	.13	.17	.06	.15	.27**	.10	.08	.78***	1					
13. Conflict	-.00	.05	-.02	.00	.22*	.21*	.24*	.29**	.14	.16	.54***	.46***	1				
14. Instr. Assistance	-.05	.17	.03	.10	.09	.20	.18	.31**	.16	.13	.63***	.60***	.51***	1			
15. Career Modeling	-.03	.05	.05	.00	.11	.36***	.29**	.29**	.28**	.26*	.48***	.46***	.36***	.65***	1		

Table 10 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
16. Verbal Enc.	-.02	.03	.05	-.01	.08	.39***	.36***	.37***	.28**	.31**	.48***	.43***	.37***	.59***	.71***	1	
17. Emotional Sup.	-.01	.05	.20*	.17	.03	.21*	.19	.28**	.19	.17	.50***	.63***	.29**	.59***	.48***	.60***	1

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 11.

*Correlations for the Females (N = 302)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	-.07	1															
3. ID Commitment	.19**	-.04	1														
4. Exploration	.08	.01	.26***	1													
5. Vocational ID	.02	.15**	.06	.14*	1												
6. Occup. Info.	.06	.07	.25***	.32***	.27***	1											
7. Goal Selection	.00	.10	.27***	.27***	.54***	.65***	1										
8. Planning	-.03	.17**	.21***	.30***	.46***	.69***	.70***	1									
9. Problem Solving	.00	.11	.19**	.22***	.38***	.63***	.67***	.75***	1								
10. Self-appraisal	.00	.17**	.28***	.22***	.50***	.66***	.77***	.72***	.74***	1							
11. Cohesion	-.06	.03	.04	.02	-.03	.01	.05	.10	.10	.04	1						
12. Expressiveness	-.07	.04	.09	-.05	.19**	.15**	.17**	.25***	.22***	.19**	.42***	1					
13. Conflict	.18**	.04	-.08	-.13*	.10	.08	.14*	.11	.07	.07	.32***	.40***	1				
14. Instr. Assistance	-.14*	.07	.09	.11*	.09	.19**	.21***	.29***	.27***	.24***	.38***	.55***	.39***	1			
15. Career Modeling	-.15*	.06	.14*	.18**	.18**	.25***	.26***	.33**	.31***	.26***	.29***	.45***	.27***	.60***	1		

Table 11 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
16. Verbal Enc.	-.03	-.07	.11*	.02	.07	.20***	.15**	.22***	.19**	.19**	.25***	.39***	.29***	.61***	.56***	1	
17. Emotional Sup.	-.16**	.01	.15**	.20**	.04	.19**	.14*	.23***	.20**	.15**	.29***	.42***	.26***	.68***	.61***	.54***	1

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

Table 12.

*Correlations for the Males (N = 189)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Priority for career	1																
2. Work Experience	.00	1															
3. ID Commitment	.07	.13	1														
4. Exploration	.12	.14	.34***	1													
5. Vocational ID	.01	.17*	.19*	.33***	1												
6. Occup. Info.	-.02	.05	.16*	.28***	.41***	1											
7. Goal Selection	.05	.04	.10	.26***	.46***	.69***	1										
8. Planning	.06	.19*	.23**	.39***	.44***	.74***	.74***	1									
9. Problem Solving	-.02	.04	.17*	.31***	.29***	.68***	.67***	.73***	1								
10. Self-appraisal	.03	.09	.22**	.36***	.40***	.73***	.73***	.74***	.75***	1							
11. Cohesion	.01	-.03	.18*	.18*	.06	.15*	.19*	.18*	.15*	.19**	1						
12. Expressiveness	-.13	-.02	.11	.17*	.24**	.19**	.20*	.26***	.20**	.18*	.31***	1					
13. Conflict	-.07	-.04	.08	.13	.27***	.14	.18*	.21**	.13	.21**	.21**	.41***	1				
14. Instr. Assistance	-.06	-.04	.05	.26***	.08	.20**	.19*	.22**	.20**	.24**	.39***	.40***	.35***	1			
15. Career Modeling	-.04	.09	.12	.18*	.23**	.37***	.25**	.28***	.20**	.26***	.23**	.37***	.22**	.44***	1		

Table 12 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
16. Verbal Enc.		-.12	-.02	.12	.18*	.22**	.40***	.30***	.31***	.32***	.39***	.33***	.37***	.45***	.57***	.56***	1
17. Emotional Sup.		-.06	-.09	.13	.29***	.18*	.15*	.19**	.22***	.20**	.29***	.41***	.31***	.59***	.52***	.57***	1

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Note: Career Identity Development: items 3-4

Note: Career Decision Self-Efficacy: items 6-10

Note: Positive Family Functioning: items 11-13

Note: Parental Support for Career: items 14-17

### *Testing the Hypothesized Model*

Before confirmatory factor analysis was conducted using SEM, imputation of missing data using full information maximum likelihood was used. Measurement models were created using all latent variables. These were career decision-self efficacy, parental support for career, career identity, and vocational identity. A latent variable was created from vocational identity by dividing the items into two groups of nine items each. The first nine items formed for the first factor, and the second nine items formed the second factor to indicate vocational identity. Several indicators of the fit of the model to the data were used. If  $\chi^2$  is nonsignificant, this indicates that there is a good fit; however,  $\chi^2$  is sensitive to sample size is likely to be significant. If the ratio of the  $\chi^2$  to degrees of freedom (CMIN/DF) is less than 5, this indicates an acceptable fit (CMIN/DF < 2 or 3 indicates a good fit; (Garson, 2006; Tabacknick & Fidell, 2001). Other fit indices that were used were the TLI (Tucker-Lewis Index) and the CFI (Comparative Fit Index). The TLI is a relative fit index that compares the hypothesized model to a “null model,” or the independence model. It is computed by using the ratios of the hypothesized model chi-square, the null model chi-square, and the degrees of freedom (Bollen, 1989). Bollen (1990) showed that the TLI is relatively unaffected by sample size. The CFI is a non-centrality based index, in that the usual chi-square fit is based on a test that the null hypothesis is true ( $\chi^2 = 0$ ) (Bentler, 1990). For the TLI and CFI, values between .90 and .95 reflect acceptable fit, and values greater than .95 reflect good fit (Bentler, 1990; Bollen, 1989). Finally, the root mean square error of approximation (RMSEA) was used to estimate the lack of fit in the model compared to a saturated model. An RMSEA < .08 indicates an acceptable fit; good fit is indicated by an RMSEA < .05 (Byrne, 2001;

Browne & Cudeck, 1993). The  $\Delta \chi^2$  test indicates whether a model fits significantly better based on the chi-square statistic and degrees of freedom. If the  $\Delta \chi^2$  is greater than the critical value, the model fit is significantly better.

The measurement model was first tested using the full sample ( $N = 491$ ). Results showed that the factors loaded as expected (see Table 13). Significant, positive correlations also were found among the latent constructs, with the exception of the correlation between career identity development and positive family functioning, which was nonsignificant (see Table 14). The chi-square was significant ( $\chi^2 (94) = 240.86, p = .00$ ). The TLI (.95), CFI (.96), and RMSEA (.05,  $p = .11$ ) all indicated that the model fit the data well.

Table 13.

*Factor Loadings for the Measurement Model for the Whole Sample (N = 491)*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<i>Parental support for career</i>					
Emotional support	.77***				
Verbal encouragement	.74***				
Career-related modeling	.69***				
Instrumental assistance	.84***				
<i>Positive family functioning</i>					
Cohesion		.46***			
Expressiveness		.75***			
Conflict		.58***			
<i>Career decision self-efficacy</i>					
Accurate self-appraisal			.88***		
Problem solving			.83***		
Planning			.86***		
Goal selection			.83***		
Occupational information			.80***		
<i>Vocational Identity</i>					
Indicator 1				.88***	
Indicator 2				.89***	

Table 13 (continued)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<i>Career identity</i>					
Identification with career					.42***
Exploration in depth					.67***

\*\*  $p < .05$ , \*\*\*  $p < .001$

Table 14.

*Factor Correlations for the Whole Sample (N = 491)*

	1	2	3	4	5
1. Parental support for career	--				
2. Career decision self-efficacy	.38***	--			
3. Career identity development	.37***	.55***	--		
4. Positive family functioning	.79***	.31***	.13	--	
5. Vocational identity	.16**	.54***	.34***	.27***	--

\*\*  $p < .01$ , \*\*\*  $p < .001$

Next, the hypothesized structural model was tested using the entire sample. The model would not fit. Several efforts at troubleshooting were employed. First, because only one subscale of the Vocational Identity Scale was used (and was artificially divided to form a latent vocational identity factor), this variable was put into the model as an observed variable. The model still would not fit. After examining the correlations of the vocational identity and career decision self-efficacy factors ( $r = .54, p < .001$ ), it was

concluded that the two variables might be too strongly correlated (possibly contributing to multicollinearity), and the decision was made to remove vocational identity from the model. Career decision self-efficacy was retained for the final structural model because it theoretically represented more of the process that the model aimed to examine. In other words, Career Decision Self-Efficacy Scale (CDSE) examined the confidence to make a decision, whether the individual has made the decision or not, based on his or her knowledge about occupations, about the self, planning abilities, selecting goals, and solving career decision-related problems. Whereas the Vocational Identity Scale (VIS) indicates whether individuals have made a choice and if they are certain of the choice. Fit of the structural model was tested again without vocational identity in the model. This model fit; however, the path from positive family functioning to career identity development was a negative and significant (path coefficient =  $-.38$ ,  $p = .03$ ). The correlations at the bivariate level indicated that positive family functioning and career identity development were not associated ( $r = .08$ ,  $p = .07$ ). The correlations of the positive family functioning and parental support for career factors showed that the two were highly correlated ( $r = .79$ ,  $p < .001$ ) at the bivariate level, which suggested they were collinear. Therefore, positive family functioning was removed from the model because positive family functioning is less specific to the career identity development process than parents' support for career development. Also, the literature is mixed on whether family functioning is associated with career decision self-efficacy (Hargrove et al., 2002; Whiston, 1996).

When the trimmed model was tested, the chi-square was significant ( $\chi^2(61) = 136.91$ ,  $p = .00$ ); however, the TLI (.96), CFI (.97), and RMSEA (.05,  $p = .43$ ) all

indicated that the reduced model fit the data well. All paths were significant except the path from relevant work experience to career identity development (see Figure 2) and accounted for 43% of the variance in career identity development. In order to test for mediation in the hypothesized model, according to Holmbeck (1997), several steps needed to be taken. First, a direct effect from the potentially mediated variable to the outcome variable needs to be established. In the current model, this meant establishing a direct link between parental support for career and career identity development. Next, whether there was good fit when the mediator is included:  $A \rightarrow B \rightarrow C$  needs to be tested. Finally, in the assessment of a mediational effect, the path from  $A \rightarrow C$  needs to be constrained to zero. “If there is a mediational effect, the addition of the  $A \rightarrow C$  path to the constrained model should not improve the fit” (p. 602).

First, the model was fit without the mediator to test for a significant path from parental support for career and relevant work experience to career identity (see Figure 3). Results showed that the path from parental support for career to career identity was significant. The path from relevant work experience to career identity development also was significant. The path from parental support for career to career identity development decreased in significance when the mediator (i.e., career decision self-efficacy) was added to the model (path decreased from .41,  $p < .001$  to .21,  $p < .01$ ), which indicated partial mediation. The path from relevant work experience to career identity development decreased in significance when the mediator was added to the model, which also indicated partial mediation. In order to further test mediation, the path from parental support for career and the path from relevant work experience to career identity were constrained to zero, in separate analyses. The  $\Delta\chi^2$  test showed that the model with the

estimated path from parental support for career to career identity development (the unconstrained model) did fit significantly better (critical  $\chi^2 = 3.84$ ;  $\Delta\chi^2 = 7.41$ ,  $df = 1$ ). Therefore, results did not support full mediation for the relationship between parental support for career and career identity development. However, evidence of partial mediation was found because the path from parental support for career to career identity development decreased in significance when the mediator was added to the model (compare Figures 2 and 3). In order to test further whether career decision self-efficacy mediated the relationship between relevant work experience and career identity development, the path from relevant work experience to career identity was constrained to zero. The  $\Delta\chi^2$  test showed that the model with the estimated path from relevant work experience to career identity development did not significantly better (critical  $\chi^2 = 3.84$ ;  $\Delta\chi^2 = 1.21$ ,  $df = 1$ ). Therefore, results did support mediation for the relationship between relevant work experience and career identity development by career decision self-efficacy (path decreased from .13,  $p < .05$  to .07, *n.s.*).

Figure 2. Hypothesized structural model for the whole sample.

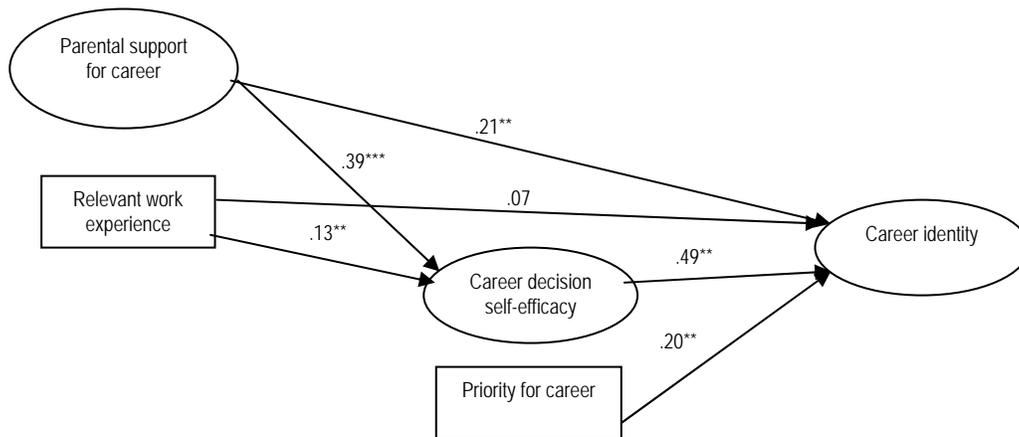
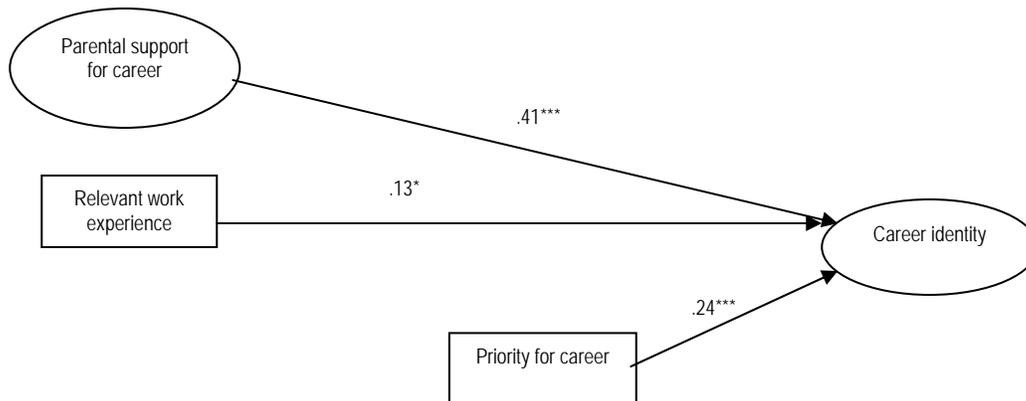


Figure 3. Reduced structural model without the mediator for the whole sample.



#### *Testing the Measurement Model for Each Educational Pathway Group*

The next step was to examine the potential moderating effects of educational pathway. In order to control for demographic differences among the groups, age, sex, family structure, family income, and being a first generation college student were controlled by residualizing each variable in the model. The final measurement model included parental support for career, career decision self-efficacy, and career identity development. The fit indices indicated that the measurement model fit adequately for all of the groups except the 4-year transfer group (see Table 15). Figures depicting the final measurement model for each group can be seen in Appendix C. All factors loaded on their constructs as expected (see Tables 16 through 19). The anticipated correlations among the latent variables also were found (see Tables 20 through 23). In order to test for differences across the groups, a multiple-group analysis was conducted in AMOS to compare measurement models between the groups. Because of sample size differences between the groups, five random samples of 100 4-year university participants were selected for the analysis and compared, in turn, to the other three groups; the 2-year

terminal, the 2-year continuing, and the 4-year transfer groups also were compared to each other. Means of the models' measurement weights and measurement intercept were used to examine differences in the measurement model across the different educational pathway groups. The model fit for the random samples was comparable to that of the entire 4-year university group. Results showed that the mean measurement weights ( $p = .11$ ) and intercepts ( $p = .44$ ) were not significantly different between each of the four groups.

Table 15.

*Final Measurement Model Fit Indices for 2-year and 4-year Groups*

	2-year terminal N = 52	2-year continuing N = 94	4-year university N = 291	4-year transfer N = 54
Chi-square	47.23	61.37	77.83	75.13
p-value	.23	.02	.00	.00
Df	41	41	41	41
TLI	.97	.94	.96	.82
CFI	.98	.96	.97	.89
RMSEA	.05	.07	.05	.12
p-value	.43	.16	.29	.01
CMIN/DF	1.15	1.50	1.90	1.83

Table 16.

*Factor Loadings for the Measurement Model for 4-year University Group*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.77***		
Verbal encouragement	.67***		
Career-related modeling	.63***		
Instrumental assistance	.80***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.83***	
Problem solving		.82***	
Planning		.87***	
Goal selection		.80***	
Gathering occupational information		.74***	
<i>Career identity</i>			
Identification with career			.36***
Career exploration in depth			.58***

\*\*\*  $p < .001$

Table 17.

*Factor Loadings for the Measurement Model for 4-year Transfer Group*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.86***		
Verbal encouragement	.59***		
Career-related modeling	.74***		
Instrumental assistance	.76***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.94***	
Problem solving		.85***	
Planning		.79***	
Goal selection		.76***	
Gathering occupational information		.83***	
<i>Career identity</i>			
Identification with career			.67***
Career exploration in depth			.54**

\*\*  $p < .01$ , \*\*\*  $p < .001$

Table 18.

*Factor Loadings for Measurement Model for the 2-year Terminal Group*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.76***		
Verbal encouragement	.76***		
Career-related modeling	.40**		
Instrumental assistance	.85***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.92***	
Problem solving		.92***	
Planning		.96***	
Goal selection		.90***	
Gathering occupational information		.91***	
<i>Career identity</i>			
Identification with career			.60*
Career exploration in depth			.77*

\*  $p < .05$ , \*\*\*  $p < .001$

Table 19.

*Factor Loadings for Measurement Model for the 2-year Continuing Group*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.65***		
Verbal encouragement	.85***		
Career-related modeling	.85***		
Instrumental assistance	.73***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.94***	
Problem solving		.85***	
Planning		.79***	
Goal selection		.86***	
Gathering occupational information		.88***	
<i>Career identity</i>			
Identification with career			.54***
Career exploration in depth			.64**

\*\*  $p < .01$ , \*\*\*  $p < .001$

Table 20.

*Factor Correlations for the 4-year University Group*

	1	2	3
1. Parental support for career	1		
3. Career decision self-efficacy	.34***	1	
4. Career identity development	.65***	.48**	1

\*\*  $p < .01$ , \*\*\*  $p < .001$

Table 21.

*Factor Correlations for the 4-year Transfer Group*

	1	2	3
1. Parental support for career	1		
2. Career decision self-efficacy	.39*	1	
3. Career identity development	.38	.70**	1

\*  $p < .05$ , \*\*  $p < .01$

Table 22.

*Factor Correlations for the 2-year Terminal Group*

	1	2	3
1. Parental support for career	1		
2. Career decision self-efficacy	.39*	1	
3. Career identity development	.44*	.32	1

\*  $p < .05$ .

Table 23.

*Factor Correlations for the 2-year Continuing Group*

	1	2	3
1. Parental support for career	1		
2 Career decision self-efficacy	.43**	1	
3 Career identity development	.05	.51*	1

\*  $p < .05$ , \*\*  $p < .01$

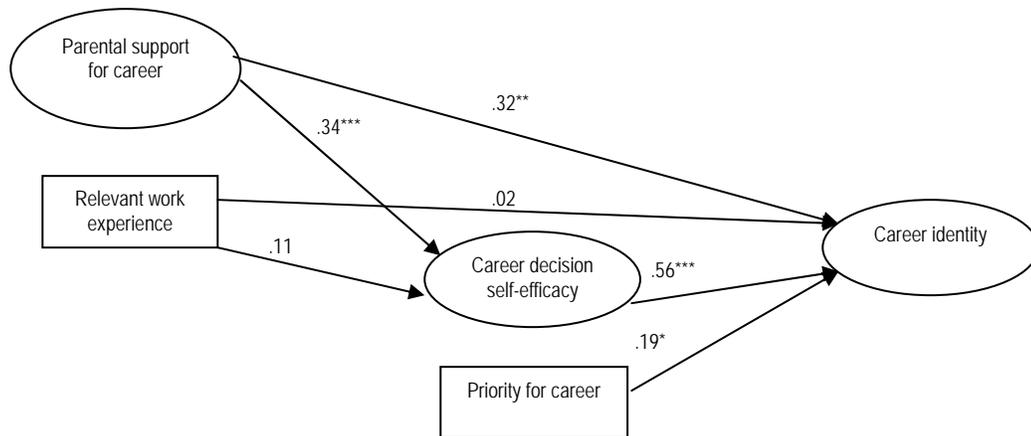
*Testing for the Hypothesized Moderating Effect of Educational Pathway*

In order to test for hypothesized group differences in the path from career decision self-efficacy to career identity development, the model was fit for each group (Figures 4 to 7; additional exploratory analyses testing for mediation within each educational pathway group can be found in Appendix D).

For the *4-year university group* (see Figure 4), the Chi-square was significant ( $\chi^2(61) = 101.64, p = .001$ ), but the TLI (.95), CFI (.97), and RMSEA (.05,  $p = .56$ ) all

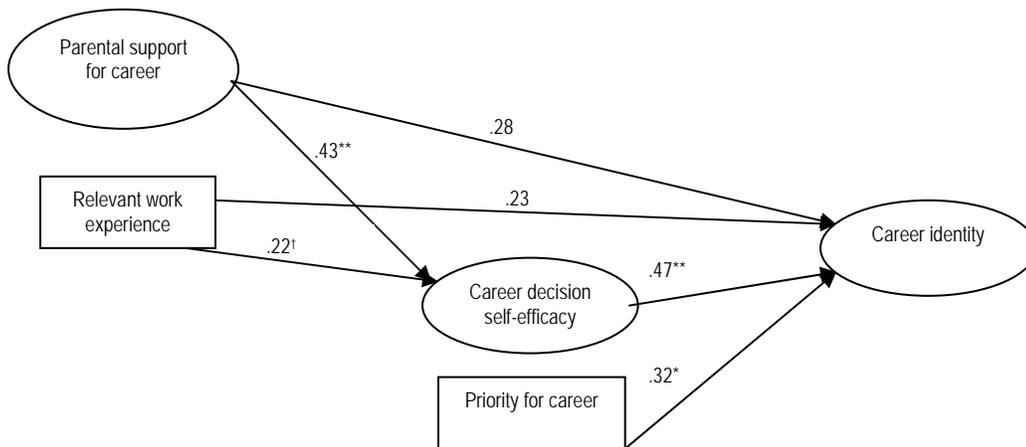
indicated that the hypothesized model fit the data well. The model accounted for 57% of the variance in career identity development. The paths from relevant work experience to career identity development and to career decision self-efficacy were not significant, but the paths from parental support for career to career decision self-efficacy and from career decision self-efficacy to career identity development were significant.

Figure 4. Hypothesized structural model for the 4-year university group.



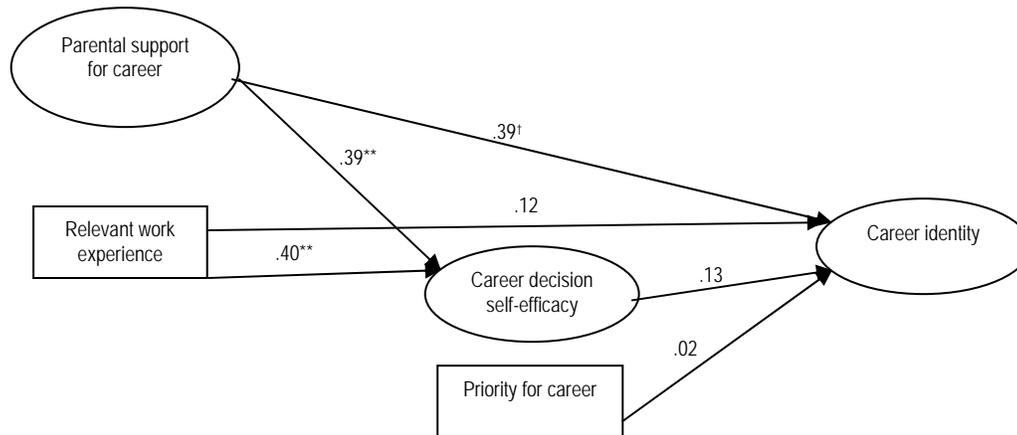
For the *4-year transfer group* (see Figure 5), the Chi-square was significant ( $\chi^2(61) = 119.01, p < .001$ ). The TLI (.74), CFI (.82), and RMSEA (.13,  $p < .001$ ) indicated that the full model still did not fit the data; however, the model accounted for 62% of the variance in career identity. The paths from relevant work experience and parental support for career to career identity development were not significant. The path from relevant work experience to career identity development neared significance ( $p = .09$ ).

Figure 5. Hypothesized structural model for the 4-year transfer group.



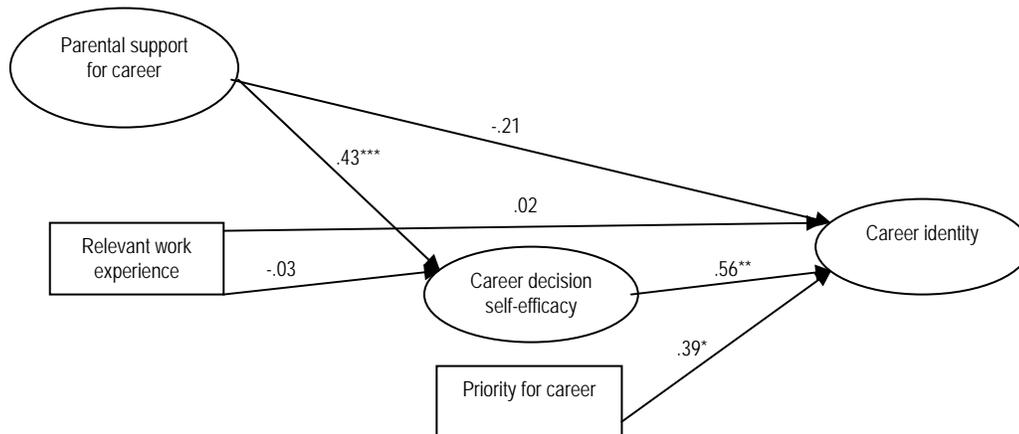
For the 2-year terminal group (see Figure 6), the Chi-square for the hypothesized model was not significant ( $\chi^2(61) = 72.90, p = .14$ ). The TLI (.96), CFI (.97), and RMSEA (.06,  $p = .35$ ) all indicated that the hypothesized model fit the data well. The model accounted for 24% of the variance in career identity development. After fitting the hypothesized model, it was found that the paths from priority for career, relevant work experience, and career decision self-efficacy to career identity development were not significant. The non-significant path from career decision self-efficacy to career identity was expected because it was hypothesized that the 2-year group would have a weak or non-significant relationship between career decision self-efficacy and career identity development. What was significant in the model are the paths from parental support for career and relevant work experience to career decision self-efficacy, as well as parental support for career and career identity development (neared significance;  $p = .09$ ).

Figure 6. Hypothesized structural model for the 2-year terminal group.



Finally, for the *2-year continuing group* (see Figure 7), the Chi-square for the hypothesized model was not significant ( $\chi^2(61) = 75.83, p = .10$ ). The TLI (.96), CFI (.97), and RMSEA (.05,  $p = .46$ ) all indicated that the hypothesized model fit the data well. The model accounted for 41% of the variance in career identity development. Significant paths from parental support for career decision self-efficacy and from career decision self-efficacy and priority for career to career identity development were found. The paths from relevant work experience to career decision self-efficacy and to career identity development were not significant, nor was the path from parental support for career to career identity development.

Figure 7. Hypothesized structural model for the 2-year continuing group.



To test for the hypothesized moderation according to educational pathway for the relationship between career decision self-efficacy and career identity development, a multiple-group analysis was performed in AMOS. All four groups were compared with each other in the first step. If the structural weights and/or intercepts were significantly different, then the path from career decision self-efficacy to career identity development would be tested for differences. Because of sample size differences between the groups, five random samples of 100 4-year university participants were selected for the analysis and compared, in turn, with the other three groups. The other three groups also were compared to each other. Means of the models' structural weights and structural intercepts were used to examine differences across the different educational pathway groups. The path from career decision self-efficacy to career identity development was constrained to be equal in the multiple-group analysis to test for differences in the path across the four groups. The model fit for the random samples of 100 4-year university students was comparable to that of the entire 4-year university group. Results did not support the hypothesized moderation according to group; there were no significant

differences in the structural weights (mean  $p = .34$ ) or structural intercepts (mean  $p = .43$ ) across the five random samples of 100. None of the random samples of 100 showed significant differences in structural weights or intercepts across the four groups. Table 24 shows the mean p-values for each group comparison when examining the path from career decision self-efficacy to career identity development. Results of the multiple-group analysis did not support hypothesized moderation of the path from career decision self-efficacy to career identity development according to educational pathway.

Table 24.

*P-values for the Comparison of the Path from CDSE to Career Identity*

Comparison	P-value
2-year terminal and 2-year continuing	.61
2-year terminal and 4-year university	.54
2-year terminal and 4-year transfer	.85
2-year continuing and 4-year university	.56
4-year university and 4-year transfer	.23
2-year continuing and 4-year transfer	.20

However, it is important to note that for the 2-year terminal group the path from career decision self-efficacy to career identity development was *not* significant. For the other three educational pathway groups, this path was significant. Also, the path from relevant work experience to career decision self-efficacy was significant only for the 2-

year terminal and 4-year transfer groups. The path from priority for career to career identity development was significant for all groups except the 2-year terminal group. And lastly, the path from parental support for career to career identity development was significant only for the 2-year terminal and 4-year university groups.

#### *Testing for the Hypothesized Moderating Effect of Gender*

The measurement model was tested for females and males, separately. Results showed that the factors loaded as expected (see Tables 25 and 27). The expected correlations also were found among the latent constructs (see Tables 26 and 28). For the female participants, the chi-square was significant ( $\chi^2(41) = 88.73, p = .00$ ), however, the TLI (.96), CFI (.97), and RMSEA (.06,  $p = .12$ ) all indicated that the model fit the data well. For the male participants, the chi-square was significant ( $\chi^2(41) = 68.06, p = .01$ ), however, the TLI (.97), CFI (.97), and RMSEA (.06,  $p = .26$ ) all indicated that the model fit the data well. Measurement models were compared using multiple-group analysis in AMOS. Results showed that there were significant differences in the measurement weights and intercepts in the measurement models for females and males at the  $p < .001$  level. Further analyses were conducted in which the path from the construct to its indicator was constrained for males and females in order to test for moderation by gender. Results indicated that the measurement weight for career exploration in depth as an indicator of career identity development was stronger for males than for females at the  $p < .001$  level.

Table 25.

*Factor Loadings for the Measurement Model for Females (N = 302)*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.80***		
Verbal encouragement	.71***		
Career-related modeling	.65***		
Instrumental assistance	.83***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.88***	
Problem solving		.84***	
Planning		.85***	
Goal selection		.83***	
Occupational information		.78***	
<i>Career identity</i>			
Identification with career			.49***
Career exploration in depth			.53***

\*\*\*  $p < .001$

Table 26.

*Factor Correlations for Females (N = 302)*

	1	2	3
1. Parental support for career	--		
2. Career decision self-efficacy	.34***	--	
3. Career identity development	.32**	.58***	--

\*\*  $p < .01$ , \*\*\*  $p < .001$

Table 27.

*Factor Loadings for the Measurement Model for Males (N = 189)*

	Factor 1	Factor 2	Factor 3
<i>Parental support for career</i>			
Emotional support	.71***		
Verbal encouragement	.80***		
Career-related modeling	.60***		
Instrumental assistance	.75***		
<i>Career decision self-efficacy</i>			
Accurate self-appraisal		.88***	
Problem solving		.83***	
Planning		.87***	
Goal selection		.82***	
Occupational information		.84***	
<i>Career identity</i>			
Identification with career			.42***
Career exploration in depth			.80**

\*\*\*  $p < .001$

Table 28.

*Factor Correlations for Males (N = 189)*

	1	2	3
1. Parental support for career	--		
2. Career decision self-efficacy	.42***	--	
3. Career identity development	.38*	.48**	--

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

The hypothesized model was fit for females and males, separately. Results showed that for females, the chi-square was significant ( $\chi^2(61) = 124.74, p = .00$ ), but the TLI (.95), CFI (.96), and RMSEA (.06,  $p = .16$ ) all indicated that the model fit the data adequately (see Figure 8) and explained 46% of the variance in career identity development. All paths were significant except the path from relevant work experience to career identity development. For males, the chi-square was significant ( $\chi^2(61) = 88.92, p = .01$ ), but the TLI (.96), CFI (.97), and RMSEA (.05,  $p = .50$ ) all indicated that the model fit the data well (Figure 9) and explained 36% of the variance in career identity development. All paths were significant or neared significance (i.e., the paths from relevant work experience to career decision self-efficacy ( $p = .08$ ) and career identity development neared significance ( $p = .07$ ). The path from priority for career to career identity development also neared significance ( $p = .07$ )). To test for the moderating role of gender, in the relationship between priority for career and career identity development, the same procedure was conducted. Results showed that there were significant differences in the measurement and structural weights and intercepts ( $p < .001$ ).

However, there was no significant difference in the path from priority for career to career identity development. It should be noted that the path from priority for career to career identity development for females reached conventional levels of significance at  $p < .001$ ; whereas for males this path did not ( $p = .07$ ).

Figure 8. Hypothesized structural model for females.

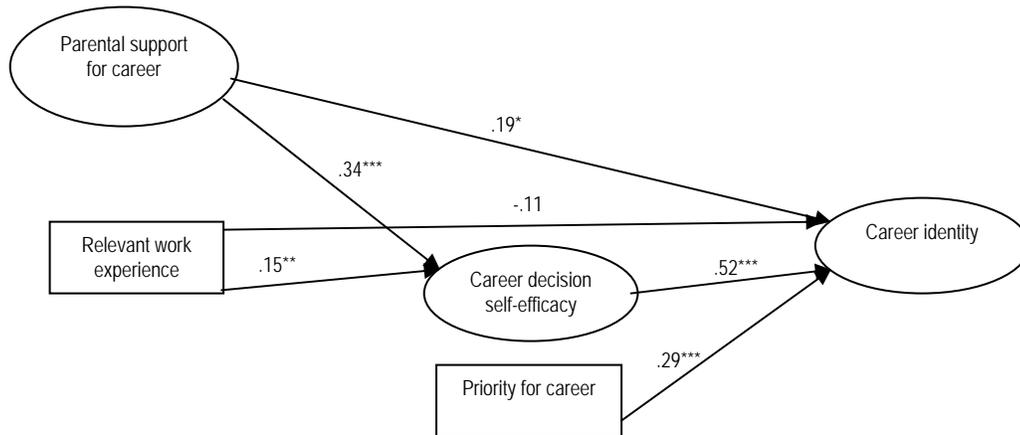
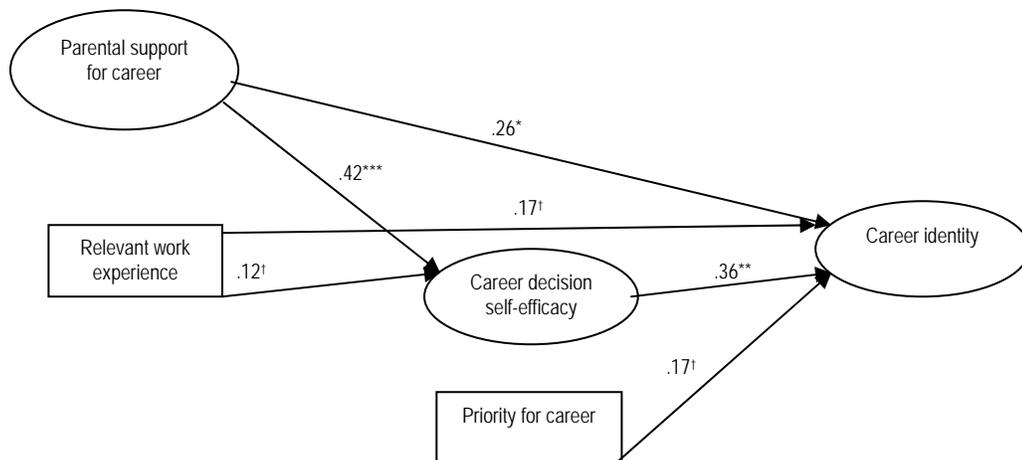


Figure 9. Hypothesized structural model for males.



#### IV. DISCUSSION

The current study had two primary goals. The first was to examine the roles of family processes, career decision making, relevant work experience, and priority for career in the career identity development process. The second was to examine the moderating effects of educational path way and gender on specified paths in the model.

To address the goals of this study, four hypotheses were tested. The first hypothesis was that career identity development would be predicted by career decision self-efficacy, vocational identity, positive family functioning, parental support for career, relevant work experience, and priority for career. The second hypothesis was that career decision self-efficacy and vocational identity would mediate the relationship between parental support for career, positive family functioning, and relevant work experience and career identity development. The third and fourth hypotheses addressed potential moderation. Hypothesis three was that educational pathway would moderate the relationships of career decision self-efficacy and vocational identity with career identity development, and lastly, hypothesis four was that gender would moderate the relationship between priority for career and career identity development.

Due to problems with colinearity between parental support for career and positive family functioning and between vocational identity and career decision self-efficacy, only career decision self-efficacy and parental support for career were selected for use in the final tested model. Parental support for career was selected because it was specific to

career, whereas positive family functioning was more general. Career decision self-efficacy was chosen because the measure assessed an individual's ability to make decisions about career based on information about the self and occupations, as well as one's confidence to plan, select goals, and problem solve. In contrast, the vocational identity (as measured by the Vocational Identity Scale) offered a more narrow focus that addressed whether or not an individual could make a decision about a career.

Findings for the full sample are reviewed first. Next, group comparisons for the educational pathway groups are discussed, followed by a discussion of gender comparisons. Finally, limitations, conclusions, and future directions are addressed.

*Hypothesized Model Tested with the Full Sample of College Student.*

When the hypothesized model was tested with the full sample, ignoring educational pathway and gender, significant associations were found that are consistent with the literature reviewed. All paths were significant except the path from relevant work experience to career identity development. Parental support for career was important for both career identity development and career decision self-efficacy (Alliman-Brissett, et al., 2004; Blustein et al., 2002; Constantine, et al., 2005; Hargrove et al., 2002; Leal-Muniz & Constantine, 2005; Lucas, 1997; Penick & Jepson, 1992). Consistent with past research (Creed & Patton, 2003; Creed, et al., 2005; Earl & Bright, 2003), relevant work experience was significantly associated with career decision self-efficacy. Also consistent with past research (Brown & Lavish, 2006; Chung, 2002; Creed & Patton, 2003; Lucas, 1997), career decision self-efficacy was significantly associated with career identity development. Finally, consistent with some of the past research (Bielby, 1992; Friedman & Weissbrod, 2005; Matula et al., 1992; Peronne et al., 2006),

the current study found that priority for career (versus family) was significantly and positively associated with career identity development. The current study adds to existing literature by testing the mediating role of career decision self-efficacy in the relationship between parental support for career and career identity development and relevant work experience and career identity development. Partial mediation of parental support for career and career identity development by career decision self-efficacy was found. This indicates that both parental support for career and career decision self-efficacy are important for career identity development. Although some of the effects of parental support for career influence career identity development through career decision self-efficacy, parental support for career still uniquely contributes to career identity development.

#### *Comparing the Hypothesized Model across Differing Educational Pathways*

*The 4-year university group.* In the 4-year university group, parental support for career, career decision self-efficacy, and priority for career all significantly predicted career identity development. Relevant work experience, however, did not. Mediation was not supported in this model. Therefore, it can be interpreted that parental support for career is important for both career identity development and career decision self-efficacy and that career decision self-efficacy is important for career identity development. This supports the findings of Alliman-Brissett and colleagues (2004), Blustein et al. (2002), Brown and Lavish (2006), and Lucas (1997). Placing importance on one's career in the future also was important for career identity development, which was consistent with previous literature (Bielby, 1992; Friedman & Weissbrod, 2005; Matula et al., 1992; Peronne et al., 2006).

The *4-year transfer group*. In the 4-year transfer group, parental support for career was important for career decision self-efficacy, and career decision self-efficacy and priority for career were important for career identity development. Also, parental support for career was important for career decision self-efficacy, and relevant work experience appeared to be important for career decision self-efficacy. The mediating role of career decision self-efficacy also was found (see Appendix D for details), meaning that career decision self-efficacy was the mechanism through which parental support for career influenced career identity development. However, the hypothesized model did not fit the data well for this group. Because no studies have examined students who are at a 4-year university who transferred from a 2-year college separately from other 4-year university students, there is no clear explanation for why the model did not fit well for this group except that the small sample size may have been a problem. Speculation regarding other reasons why the model did not fit for the 4-year transfer group may be that because this group had a 2-year institution experience, something about that experience may have made the career identity process different than that of the other groups. They may have had to do more planning and placed more focus on the decision-making process, so it could be that the parental support for career was not as important to the model as was career decision self-efficacy. This should be an important consideration for researchers who study career identity development in 4-year university students; heterogeneity within this group should be assumed and studied in greater detail.

The *2-year continuing group*. In the 2-year continuing group, parental support for career was important for career decision self-efficacy, and career decision self-efficacy and priority for career were important for career identity development. However, there

was no mediation. In contrast to extant research (Brown & Lavish, 2006; Lucas, 1997), parental support for career was not associated with career identity development. This inconsistency with extant literature may be because 29% of these students were first generation college students, and their parents may not have had the background (e.g., educational experiences or been able to freely choose a career) to know how to be supportive about career in the way that parents who had gone through the process of pursuing higher education and choosing a career may be. As with the 4-year transfer group, this group has not been studied and should be examined more to understand career identity development in emerging adulthood.

*The 2-year terminal group.* In the 2-year terminal group, relevant work experience and parental support for career were important for career decision self-efficacy. Interestingly, and as predicted, career decision self-efficacy was not associated with career identity development. This prediction was based on studies by Danielson and colleagues (2002) and Osgood and colleagues (2005). In fact, none of the predictors were significantly associated with career identity development, although the path from parental support for career to career identity development neared significance. This suggests that career identity development may be a somewhat different process for students who are obtaining terminal 2-year degrees.

For all groups except the 4-year transfer group, relevant work experience was not a significant predictor of career identity development as predicted. This is inconsistent with the literature reviewed (Creed & Patton, 2003; Creed, et al., 2005; Earl & Bright, 2003). Relevant work experience may be important for career identity development for the 4-year transfer group because this group, on average, was significantly older than the

4-year university group, and the acquisition of relevant work experience may have been more intentional and more likely to have been acquired by the 4-year transfer group. The present study failed to examine, however, whether the relevant work experience was sought intentionally. This may matter when examining the role of relevant work experience in the career identity development process. Also consistent with previous research, parental support for career mattered for career decision self-efficacy in all groups (Alliman-Brissett, et al., 2004; Blustein et al., 2002; Constantine, et al., 2005; Hargrove et al., 2002; Leal-Muniz & Constantine, 2005; Lucas, 1997; Penick & Jepson, 1992).

The model, which was based on extant literature, fit best for the 4-year university group. For the 4-year university group, parental support for career, career decision self-efficacy and priority for career mattered for career identity development. As discussed earlier, this is not surprising given that much of the past research has focused on 4-year university samples. When compared to other educational pathway groups, the results of the current study are not as consistent with previous literature. For the 4-year transfer group, the model showed that career decision self-efficacy and priority for career mattered for career identity development and that career decision self-efficacy served as the mechanism through which parental support for career influenced career identity development. Career decision self-efficacy has never been studied as a mediator between parental support and career identity. Results for the 4-year transfer group need to be interpreted cautiously due to the small sample size.

No information could be found in extant literature about the career development of this group. Results from this study suggest possible differences in the career identity development process for students who transfer from 2-year schools into 4-year university and those who have only attended a 4-year university.

Further inconsistencies with previous literature were found for the 2-year groups. For the 2-year continuing group, similar results to the 4-year transfer group were found. This seems expected because the individuals in the 4-year continuing group are where the individuals in the 2-year continuing group plan to be in their educational pathways. One important reminder is that the hypothesized model did not fit for the 4-year transfer group, but it did for the 2-year continuing group.

The model showed no significant paths to career identity development in the 2-year terminal group. The path from parental support for career to career identity development neared significance, which is worth noting given the small sample size. It is important to note that as predicted and supported by the literature (Danielson et al., 2002; Osgood et al., 2005), there was not a significant path from career decision self-efficacy to career identity development in the 2-year terminal group; in contrast, there was a strong significant path between career decision self-efficacy and career identity development in the other groups. This supports the prediction that career would not be as important to the identities of students who were getting 2-year degrees because research has shown that though individuals who are considered “fast track” (i.e., individuals who are assuming adult roles, such as career, more quickly than others) may have chosen their careers, they are less likely to have explored before committing to a career and a pattern of close relationships taking priority of career was found (Danielson et al., 2002; Osgood et al.,

2005). It also provides important information about emerging adulthood for understudied populations. For individuals who are spending less time on higher education, emerging adulthood may not be characterized as a period of exploration as it is for individuals who are spending more time on their education.

The lack of significant paths from the predictors to career identity development for the 2-year terminal group indicates that career development may be more about making a decision for individuals than identifying with their careers. These students may have less of an opportunity to spend the time exploring who they are and what they want their careers to be. Given that this group did have a significantly lower income than the other groups and more first generation students than the 4-year university group, these students may reflect the individuals in the Blustein et al. (2002) study who did not have the luxury of pursuing the career they wanted; instead they were more focused on a career as a means of survival not a means of self-expression and fulfillment. Or, consistent with Danielson et al. (2002), it could be that these students are more concerned with family and significant relationships and do not identify with their careers in the same way that students who obtain more education do.

#### *Comparing the Hypothesized Model across Genders*

Previous studies have found that for women, there has been a negative relationship between family and work commitment and a positive relationship between priority for career versus marriage and work commitment but no significant relationship between family and work commitment for men (Friedman & Weissbrod, 2005; Matula et al., 1992). In contrast Peronne and colleagues (2006) found that there was a positive relationship between work and family with no gender differences. Results from the

current study show a positive association between priority for career versus family and career identity development, which suggests a negative relationship between priority for family and career identity development. In support of Peronne and colleagues (2006) and inconsistent with (Friedman & Weissbrod, 2005; Matula et al., 1992), no gender differences were found in the relationship between priority for career and career identity development. Overall, and on average, participants reported greater anticipated priority for family than for career. This may reflect emerging adults' valuing of family relationships. This supports Arnett's theory of emerging adulthood as a time of exploration in the area of love (Arnett, 2005). Because, for most young adults, having a romantic partner and a family as adults is important in the future, it makes sense that emerging adults would be exploring love and relationships.

Although a goal of the study was not to examine gender differences in the model, it is important to note that when the multi-group analysis was tested, results showed that there were gender differences in the measurement and structural weights and intercepts. This suggests that the way items were measured differed for males and females and that other paths in the model may have been moderated by gender. The measurement model for males showed that the beta for career exploration in depth significantly was higher for males ( $\beta = .80, p = .002$ ) than females ( $\beta = .53, p < .001$ ) at the  $p < .001$  level. This suggests that career identity for males may be more about career exploration depth than for females. When comparing the hypothesized structural models for males and females, priority for career was a significant predictor of career identity development for females, but it was not for males. Although the path was not significantly different when multiple-group analyses were conducted, this does suggest that gender may have some effect on

the relationship between priority for career versus family and career identity development. Another difference between males and females in the hypothesized model was that relevant work experience was significantly associated with career decision self-efficacy for females and not males. This may be because females had significantly higher levels of confidence to carry out career planning, gathering occupational information, and relevant work experience than males. Therefore, they may have sought relevant work experience more than males, and as a result of having this relevant work experience, they were more confident about making decisions about their careers. Because there were measurement model differences for males and females, differences in the hypothesized structural models between males and females should be taken with caution. Future research should consider gender differences when examining career identity development, both in how it is conceptualized at the measurement level, and the hypothesized associations among key variables predicting its development.

### *Limitations*

The current study had several limitations. The first limitation was the sample size of the 2-year terminal, 2-year continuing, and 4-year transfer groups. Due to the smaller sample size of these groups, the power to detect significant effects within each group, as well as group differences, was limited. Second, the measurement of vocational identity and career decision self-efficacy appeared to be too similar. Although the two are measured as separate constructs in the literature, their relatively high correlation made it difficult to test them as separate mediators in the SEM analyses. Another limitation was the measure of relevant work experience. An established measure of relevant work experience to career interests could not be found. Thus, a measure of relevant work

experience was created for this study. The self-report method used to collect information about relevant work experience through self-report that was used in the present study may not have been the best way to measure this concept. Further testing of the validity of the approach used is needed. A final limitation is the retrospective, as well as speculative, nature of the study. Participants were asked to recall parental support for career while growing up, family functioning while growing up, and previous work experience. In addition, they were asked to foretell how important career would be relative to family when they occupied both roles, as well as how much they thought they would identify with their careers in the future. Ideally, the model would be tested longitudinally, in which individuals would be followed from childhood or earlier in adolescence to when they have actually assumed their career and family roles.

#### *Conclusions and Future Directions*

The findings from the current study support extant research and add to it in many ways. First, the existing literature primarily focuses on 4-year college/university students or high school students. Findings from the 4-year university group in the current study were consistent with previous findings indicating that parental support and career decision self-efficacy are important for career identity commitment (Alliman-Brissett, et al., 2004; Blustein et al., 2002; Brown & Lavish, 2006; Constantine, et al., 2005; Creed & Patton, 2003; Hargrove et al., 2002; Leal-Muniz & Constantine, 2005; Matuala et al., 1992; Lucas, 1997; Penick & Jepson, 1992). Also, the significant positive path from priority for career versus family to career identity development supports current literature (Friedman & Weissbrod, 2005; Matula et al., 1992). This study adds to the literature by examining career identity in a more process focused way. This study looked at linkages

between current career decision making and the extent to which individuals were engaged in career identity development as indicated by the degree to which they were exploring their career identities in depth and the degree to which they anticipated identification with career. This means that the career identity development outcome was less a final position and more of an ongoing process that included both the exploration of and identification with one's chosen career.

Another important contribution of the current study is the inclusion of understudied populations in the area of career identity development (i.e., 2-year community college students). This study examined students who are pursuing 2-year terminal degrees at a community college, students who are pursuing 4-year degrees, but beginning at a community college, and students who transferred from a 2-year school to a 4-year university. Although the results must be interpreted cautiously due to sample size limitations, the findings show patterns that suggest career identity development may be somewhat different for emerging adults who are pursuing varied educational pathways. It will be important for future research to also examine career identity development in individuals who do not receive any higher education after high school, as well as those who do not complete high school. More research on understudied groups of emerging adults must be undertaken in order to fully understand the period of development.

Also, in extant literature, studies that examine 4-year college/university students do not separately examine the students who began their college careers at a 4-year institution and those who transferred from a 2-year to a 4-year school. Findings from this study suggest that those students who transferred from a 2-year school may be different in terms of the way career identity develops. Full mediation was found for the 4-year

transfer group, whereas it was not found for any of the other groups. In addition, career development self-efficacy did not predict career identity development for the 2-year terminal group, but was a significant predictor of career identity development for the other three groups. Such differences make it important for future research to further examine the possibility that career identity development may be a somewhat different process for different educational pathways.

The similarity of measurement for vocational identity and career decision self-efficacy was a problem when attempting to fit a model with both included as mediators. This suggests that the two may not be separate constructs, or that the measurement of these two concepts do not get at the theoretical differences between vocational identity and career decision self-efficacy. Attempting to test the hypothesized model with both positive family functioning and parental support for career also was a problem. Because of the inconsistencies in previous literature about the role of family functioning in the career development process (see Hargrove et al., 2002; Johnson et al., 1999; Penick & Jepsen, 1992; Whiston, 1996), future research should continue to examine the role of family functioning in the career identity development process. It could be that parental support for career mediates the relationship between family functioning and career identity development. Lastly, the measure used to assess relevant work experience should be validated.

Overall, the results of the present study supported and added to extant literature. For the emerging adult sample as a whole, parental support for career positively predicted career decision self-efficacy and career identity development, and career decision self-efficacy and priority for career positively predicted career identity development. Also,

relevant work experience positively predicted career decision self-efficacy. For the full sample of emerging adults, career decision self-efficacy was found to mediate the relationship between relevant work experience and career identity development (full mediation) and the relationship between parental support for career and career identity development (partial mediation). Because the majority of studies that have examined career decision-making, family and parental influences, and career identity in 4-year college/university samples, the current study adds to extant literature by examining these constructs in a sample that also includes 2-year college students. The results suggest that emerging adulthood may not be characterized as a time of exploration in the area of work for 2-year terminal students. Another important outcome from the present study is that it may be important for researchers who are studying career development in 4-year institutions to distinguish between students who have only attended a 4-year institution and those who have transferred from 2-year institutions. The current study also shows that there are gender differences in the career identity development process, both in terms of the nature of the career identity development variables and in terms of the associations between career identity development and other variables. Although the current study does have some limitations, its findings provide valuable future directions for the study of career identity development.

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## APPENDICES

Appendix A

Measures

**Demographic Information Sheet**

1. **Age:** \_\_\_\_\_ years
2. **Sex:** (A) Male (B) Female
3. **Race/Ethnicity (Check all that apply):**
  - (A) Black/African American
  - (B) White/Caucasian
  - (C) Hispanic/Latino
  - (D) Native American
  - (E) Asian American
  - (F) Other: \_\_\_\_\_ (Please specify)
4. **Education - what year are you currently attending in school?**
  - (A) 1<sup>st</sup> year (Freshman)
  - (B) 2<sup>nd</sup> year (Sophomore)
  - (C) 3<sup>rd</sup> year (Junior)
  - (D) 4<sup>th</sup> year (Senior)
  - (E) Other \_\_\_\_\_ (Please specify)
5. **What is your major/field of study?** \_\_\_\_\_ (Please specify)
  - 5a. **What type of degree are you currently seeking?**
    - (A) 4-year Bachelor's Degree
    - (B) 2-year Associate's Degree
    - (C) Career Technical Degree
    - (D) Other \_\_\_\_\_ (Please specify)
6. **What is your overall grade point average?** \_\_\_\_\_
7. **What was your overall grade point average at the end of high school?**  
\_\_\_\_\_
8. **What were your scores on the following tests, if applicable:**
  - a. ACT \_\_\_\_\_
  - b. SAT \_\_\_\_\_
9. **What type of diploma did you receive in high school?**
  - (A) General

- (B) College Prep/AP/Advanced
- (C) Vocational/Technical
- (D) Other \_\_\_\_\_ (please specify)

10. Are you a first generation college student? (A) Yes (B) No

11. While growing up, what was your family's *primary* structure?

- (A) Both of your original (biological or adoptive) parents
- (B) An original (biological or adoptive) parent and a stepparent
- (C) A single parent
- (D) Other \_\_\_\_\_

12. Did your family structure change (e.g., did the parent/guardian you live with divorce more than once, marry more than once, etc.)?

- (0) Not at all (1) A little (2) A lot

13. What is your family of origin's income level (before taxes)?

- (A) \$0 - 25,000
- (B) \$25,001 - \$50,000
- (C) \$50,001 - \$75,000
- (D) \$75,001 - \$100,000
- (E) \$100,001 - or more

14. How much schooling do your parents have? (For each parent, circle the number that shows the highest level of education each has obtained so far.)

- | a. Father/Father-Figure             | b. Mother/Mother-Figure             |
|-------------------------------------|-------------------------------------|
| (0) I do not have a father (figure) | (0) I do not have a mother (figure) |
| (1) Less than High School           | (1) Less than High School           |
| (2) High school graduate            | (2) High school graduate            |
| (3) Trade/Vocational School         | (3) Trade/Vocational School         |
| (4) Some College                    | (4) Some College                    |
| (5) Community College Graduate      | (5) Community College Graduate      |
| (6) College Graduate                | (6) College Graduate                |
| (7) Masters Degree                  | (7) Masters Degree                  |
| (8) Doctor/Lawyer/Other Doctorate   | (8) Doctor/Lawyer/Other Doctorate   |

15. What is your current relationship status?

- (A) Single, never married

- (B) Single, casually dating
- (C) In a relationship (If so, how long? \_\_\_\_\_ Yrs)
- (B) Engaged (If so, how long? \_\_\_\_\_ Yrs)
- (B) Married (in own 1<sup>st</sup> marriage) (If so, how long? \_\_\_\_\_ Yrs)
- (C) Legally separated but not yet divorced
- (D) Divorced (If so, how long? \_\_\_\_\_ Yrs)
- (E) Remarried after divorce or widowhood (If so, how long? \_\_\_\_\_ Yrs)
- (F) Widowed (If so, how long? \_\_\_\_\_ Yrs)

16. If you are not married, do you intend to get married? (A) Yes (B) No

16a. If you answered "Yes" to question 10, do you intend to be married in the next

- (A) 1 year
- (B) 5 years
- (C) 10 years
- (D) More than 10 years

17. Do you have any children? (A) Yes (B) No

17a. If you answered "No" to question 11, do you intend to have children?

- (A) Yes
- (B) No

18. Are you currently employed? (A) Yes (B) No

19. Did you transfer from one college to the current college in which you are enrolled?

- (A) Yes
- (B) No

19a. If you answered "Yes" to question 14, what type of college did you transfer from?

- (A) 4-year institution
- (B) 2-year institution
- (C) Other

20. What is your current career choice? \_\_\_\_\_(Please specify)

20a. If you do not currently have a career choice, please list the top three choices

you are considering, in order, with the most likely choice first:

Most likely: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Work Experience

Please list all job titles held, including internships/volunteer positions, with a short description, length of employment in months, hours worked per week, beginning with your current or most recent position and ending with your first. Also, please rate whether or not the skills you used/learned in the job are useful for your current career choice(s) (Circle 1 for “No,” 2 for “Somewhat,” and 3 for “Yes”)

Job/Position Title and Short Description	Length of Employment (Months)	Hours per Week	Are the skills useful to your career choice?		
			No	Somewhat	Yes
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3
			1	2	3

## Utrecht-Management of Identity Commitments Scale (U-MICS)

Meeus, W. (2001). Utrecht-Management of Identity Commitments Scale. *Unpublished measure*.

### *Identification with commitment*

5 = completely true to 1 = completely untrue

1. My career will give me security in life.
2. My career will give me self-confidence.
3. My career will make me feel sure of myself.
4. My career will give me security for the future.
5. My career will allow me to face the future with optimism.

### *Exploration in depth*

1. I try to find out a lot about my future career.
2. I often reflect on my future career.
3. I make a lot of effort to keep finding out about new things about my future career.
4. I often try to find out what other people think about my future career.
5. I often talk with other people about my future career.

### *Identification with family commitment*

1. My role in my family will give me security in life.
2. My role in my family will give me self-confidence.
3. My role in my family will make me feel sure of myself.
4. My role in my family will give me security for the future.
5. My role in my family will allow me to face the future with optimism.

## Vocational Identity Scale (VIS)

Holland, J. L., Daiger, D. C., & Power, P. G. (1980). *My Vocational Situation*. Palo Alto, CA: Consulting Psychologists Press.

1 = completely untrue to 5 = completely true

1. I need reassurance that I have made the right choice of occupation.
2. I am concerned that my present interests may change over the years.
3. I am uncertain about the occupations I could perform well.
4. I don't know what my major strengths and weaknesses are.
5. The jobs I can do may not pay enough to live the kind of life I want.
6. If I had to make an occupational choice right now, I am afraid I would make a bad choice.
7. I need to find out what kind of career I should follow.
8. Making up my mind about a career has been a long and difficult problem for me.
9. I am confused about the whole problem of deciding on a career.
10. I am not sure that my present occupational choice or job is right for me.
11. I don't know enough about what workers do in various occupations.
12. No single occupation appeals strongly to me.
13. I am uncertain about which occupation I would enjoy.
14. I would like to increase the number of occupations I could consider.
15. My estimates of my abilities and talents vary a lot from year to year.
16. I am not sure of myself in many areas of life.
17. I have known what occupation I want to follow for less than one year.
18. I can't understand how some people can be so set about what they want to do.

## Career Decision Self-Efficacy Scale (CDSE)

Betz, N.E., Klein, K., & Taylor, K.M. (1996). Evaluation of a short form of the Career Decision Self-Efficacy Scale. *Journal of Career Assessment, 4*, 47-57.

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:

1 = No confidence at all to 5 = Complete confidence

1. Use the internet to find information about occupations that interest you.
2. Select one major from a list of potential majors you are considering.
3. Make a plan of your goals for the next five years.
4. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.
5. Accurately assess your abilities.
6. Select one occupation from a list of potential occupations you are considering.
7. Determine the steps you need to take to successfully complete your chosen major.
8. Persistently work at your major or career goal even when you get frustrated.
9. Determine what your ideal job would be.
10. Find out the employment trends for an occupation over the next ten years.
11. Choose a career that will fit your preferred lifestyle.
12. Prepare a good resume.
13. Change majors if you did not like your first choice.
14. Decide what you value most in an occupation.
15. Find out about the average yearly earnings of people in an occupation.
16. Make a career decision and then not worry whether it was right or wrong.
17. Change occupations if you are not satisfied with the one you enter.
18. Figure out what you are and are not ready to sacrifice to achieve your career goals.
19. Talk with a person already employed in a field you are interested in.
20. Choose a major or career that will fit your interests.
21. Identify employers, firms, and institutions relevant to your career possibilities.
22. Define the type of lifestyle you would like to live.
23. Find information about graduate or professional schools.
24. Successfully manage the job interview process.
25. Identify some reasonable major or career alternatives if you are unable to get your first choice.

## Family Functioning Scale (FFS)

Bloom, B. L. (1985). A factor Analysis of self-report measures of family functioning. *Family Processes*, 24, 225-239.

Cohesion, Expressiveness, Conflict subscales of measure using the Family Environment Scale, Family Concept Q-Sort, FACES, and Family Assessment Measure

1 = completely untrue to 5= completely true

1. Family members really helped and supported one another.
2. There was a feeling of togetherness in our family.
3. Our family didn't do things together.
4. We really got along well with each other.
5. Family members seemed to avoid contact with each other when at home.
6. Family members felt free to say what was on their minds.
7. Our family did not discuss its problems.
8. Family members discussed problems and usually felt good about the solutions.
9. In our family it was important for everyone to express their opinion.
10. We didn't tell each other about our personal problems.
11. We fought a lot in our family.
12. Family member sometimes got so angry they threw things.
13. Family members hardly ever lost their tempers.
14. Family member sometimes hit each other.
15. Family members rarely criticized each other.

## Career-Related Parent Support Scale (CRPSS)

Turner, S. L., Alliman-Brissett, A., & Lapan, R. T. (2003). The Career-Related Parent Support Scale. *Measurement & Evaluation in Counseling & Development, 36*, 83-94.

1 = strongly disagree to 5 = strongly agree

1. My parents rewarded me for doing my schoolwork well.
2. My parents taught me things that I would someday be able to use.
3. My parents helped me pick out classes that would help me in my career.
4. My parents gave me chores that taught me skills that I could use in my future career.
5. My parents helped me do my homework.
6. My parents let me do activities outside of school that taught me future job-related skills.
7. My parents talked to me about how what I was learning would someday be able to help me on the job.
8. My parents helped me take pride in my work.
9. My parents told me about their jobs.
10. My parents showed me the kind of things they did at work.
11. My parents had taken me to their work.
12. My parents had me meet someone they worked with.
13. My parents showed me where they worked.
14. My parents told me things that happened to them at work.
15. My parents told me about the kind of work they did.
16. My parents praised me when I learned job-related skills.
17. My parents encouraged me to learn as much as I could at school.
18. My parents encouraged me to make good grades.
19. My parents encouraged me to go to a technical school or college or get a job after I graduate.
20. My parents told me they expect me to finish school.
21. My parents talked to me about what kind of job they would like me to have.
22. My parents talked to me when I was worried about my future career.
23. My parents said things that made me happy when I learned something I might use in a job sometime.
24. My parents talked to me about what fun my future job could be.
25. My parents told me they were proud of me when I did well in school.
26. Sometimes my parents and I got excited when we talked about what a great job I might have someday.
27. My parents knew I was sometimes scared about my future career.

## Appendix B

### Distributions of the Variables

Univariate analyses were examined to evaluate the distributions of the variables for each group. The skew statistic was used to determine whether variables should be transformed. Power transformations were used for those with skew statistics whose absolute values were greater than 1. Those with a skew statistic greater than 1 were transformed using the square root method ( $\sqrt{x}$ ). Those with a skew statistic less than -1 were transformed using the square root( $k-x$ ) method, where  $k$  is 1 plus the largest score. Those with skew statistics less than -2 were transformed using the  $\log_{10}(k-x)$  method.

Histograms and skew statistics for the whole sample showed that the distributions for all variables except relevant work experience, identification with career, and verbal encouragement from parents were relatively symmetric. Relevant work experience was slightly positively skewed ( $1 < \text{skew stat} < 2$ ). Identification with career and verbal encouragement were slightly negatively skewed ( $-2 < \text{skew stat} < -1$ ).

Histograms and skew statistics showed that for the *2-year terminal group*, the distributions for relevant work experience, identification with career, and verbal encouragement from parents were relatively symmetric. Relevant work experience was slightly positively skewed ( $1 < \text{skew stat} < 2$ ). Identification with career and verbal encouragement were slightly negatively skewed ( $-2 < \text{skew stat} < -1$ ).

Histograms for the *2-year continuing group* showed that the distributions for all variables except relevant work experience, identification with career, career-related modeling, and verbal encouragement from parents were relatively symmetric. Relevant work experience was slightly positively skewed ( $1 < \text{skew stat} < 2$ ). Identification with

career and career-related modeling were slightly negatively skewed ( $-2 < \text{skew stat} < -1$ ). Verbal encouragement was negatively skewed ( $\text{skew stat} < -2$ ).

Histograms for the *4-year university group* showed that all variables except verbal encouragement showed relatively symmetric distributions. Verbal encouragement was negatively skewed ( $\text{skew stat} < -2$ ).

Histograms for the 4-year university transfer group showed that all variables were relatively symmetric except relevant work experience, and identification with career. Relevant work experience was positively skewed ( $\text{skew stat} > 2$ ), and identification with career was slightly negatively skewed ( $-2 < \text{skew stat} < -1$ ).

## Appendix C

### Measurement Model for Each Educational Pathway Group

*Figure 1.* Measurement model for the 2-year terminal group.

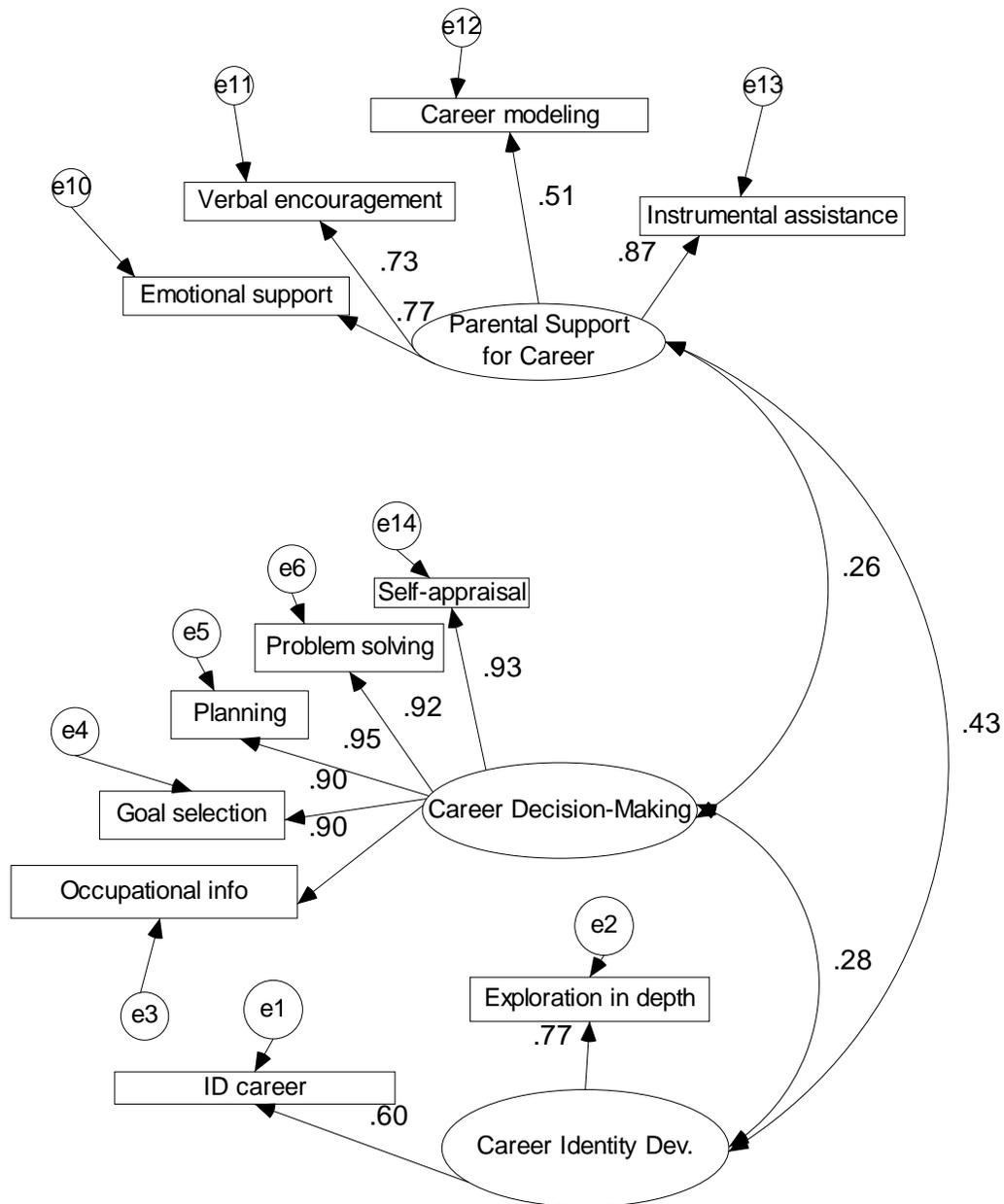


Figure 2. Measurement model for the 2-year continuing group.

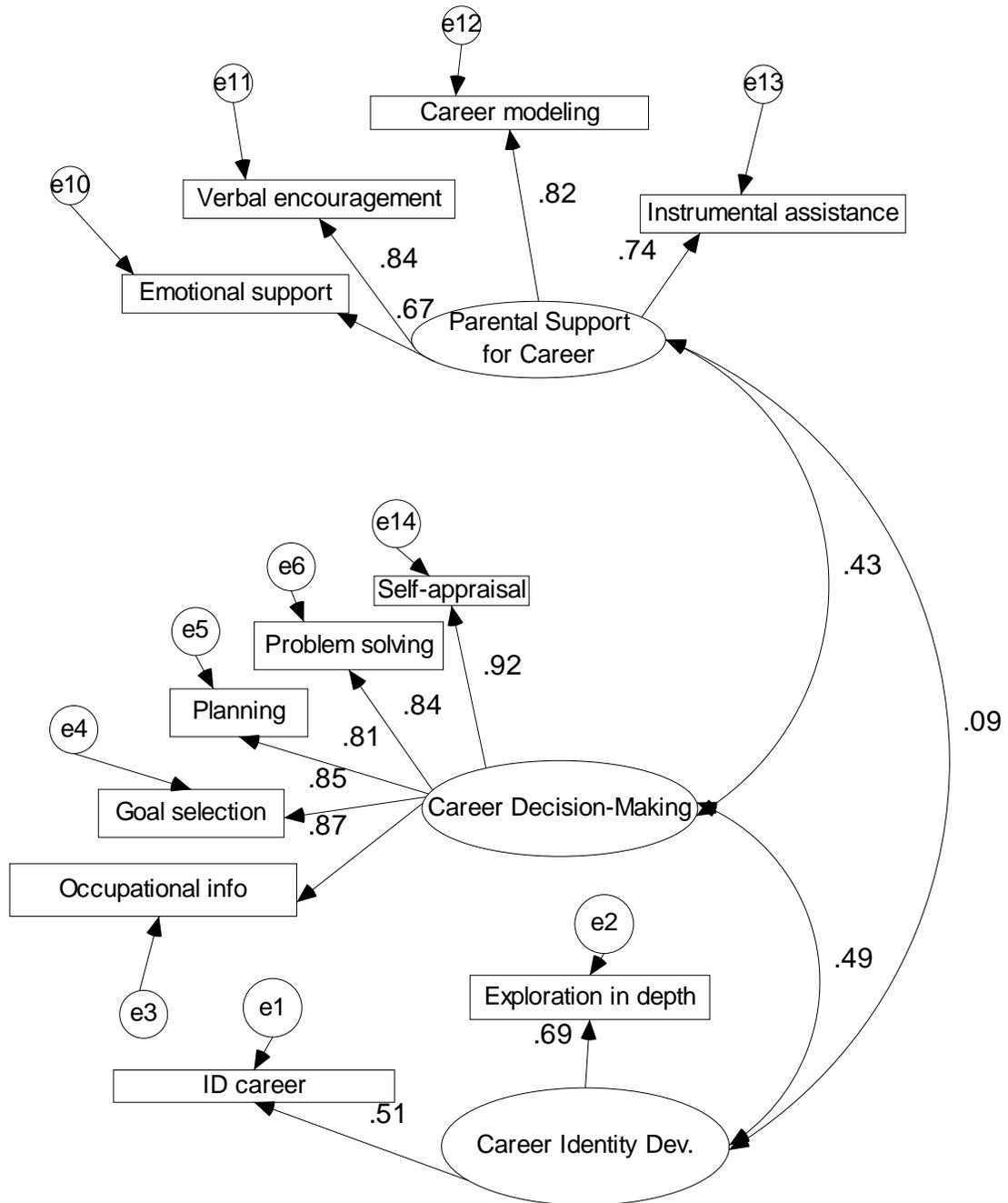


Figure 3. Measurement model for the 4-year university group.

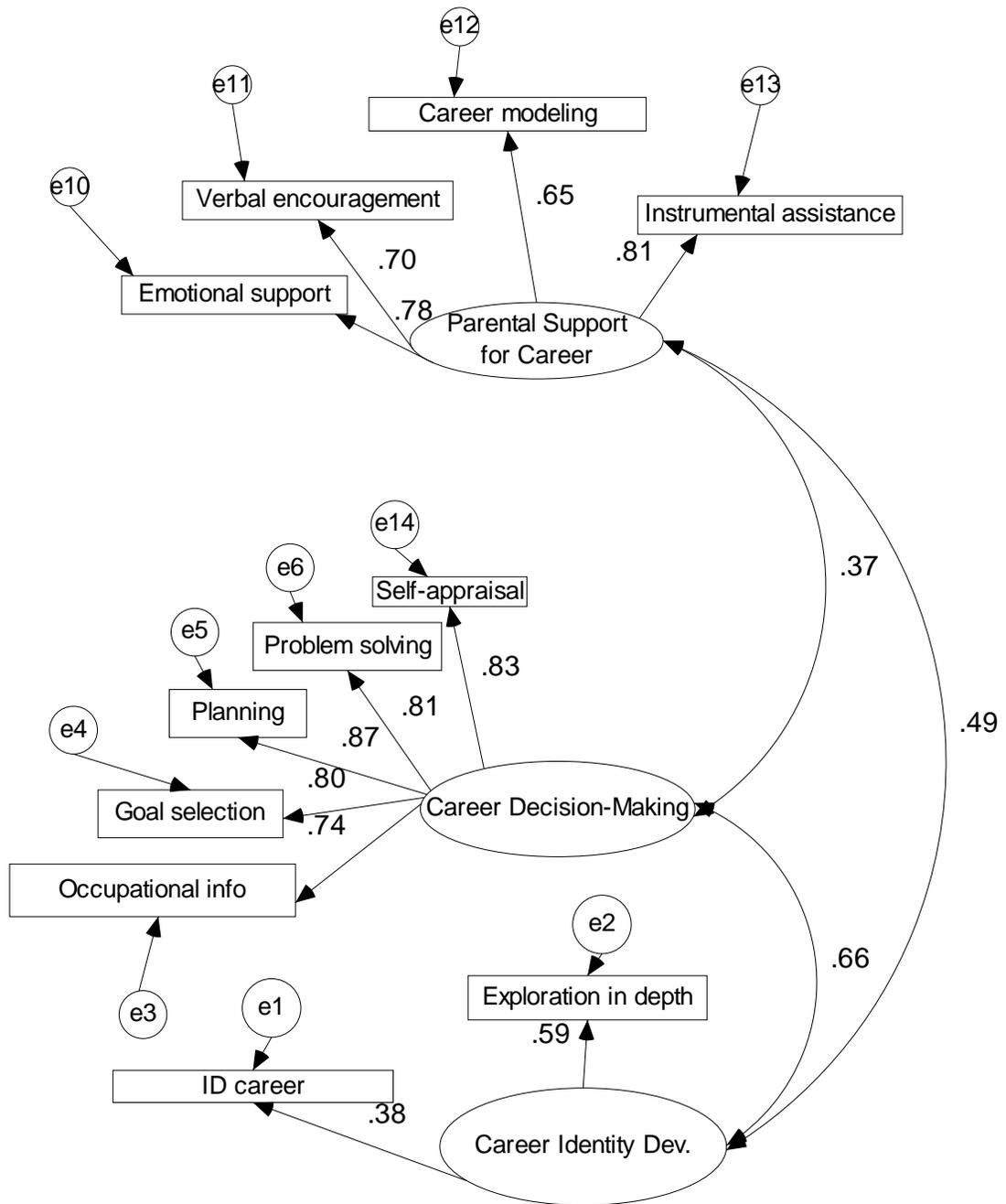
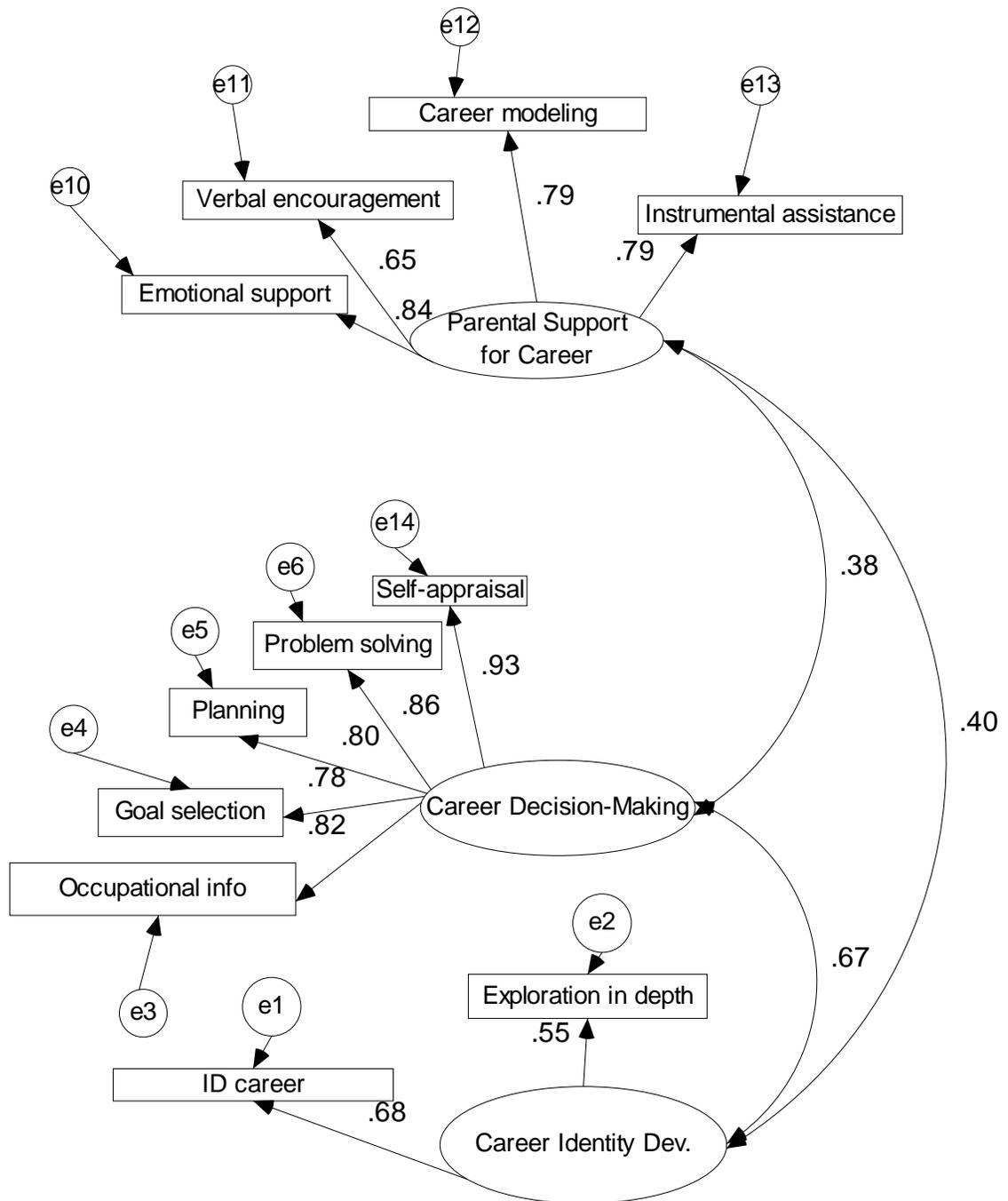


Figure 4. Measurement model for the 4-year transfer group.



## Appendix D

### Testing for Mediation within Each Group

The first models tested (i.e., *the direct effects model*) were the models without the potential mediator (CDSE) in the model, in which direct paths from parental support for career, relevant work experience, and priority for career to career identity development were indicated. Next the models were fit so that career decision self-efficacy was included in order to test for mediation.

For the *4-year university group* (Figure 1), the Chi-square for the direct effects model was not significant ( $\chi^2(19) = 27.48, p = .09$ ). The TLI (.96), CFI (.98), and RMSEA (.04,  $p = .69$ ) all indicated that the direct effects model fit the data well. Only the path from parental support for career to career identity development was significant. Mediation was not supported because when career decision self-efficacy was included in the model, the path from parental support for career to career identity development stayed the same in significance (compare Figures 1 and 2). To verify this, the model was fit again with the path from parental support for career to career identity development constrained to zero (Figure 2, values in parentheses), the  $\Delta\chi^2$  test showed that the model with the estimated path (parental support for career  $\rightarrow$  career identity development) fit significantly better (critical  $\chi^2 = 3.84$ ;  $\Delta\chi^2 = 8.62, df = 1$ ). This offered additional evidence that career decision self-efficacy did not mediate the relationship between parental support for career and career identity development. Thus, this model indicates that parental support for career predicts career decision self-efficacy, and parental support along with career decision self-efficacy and priority for career predict career identity.

Figure 1. Direct effects model without CDSE for the 4-year university group.

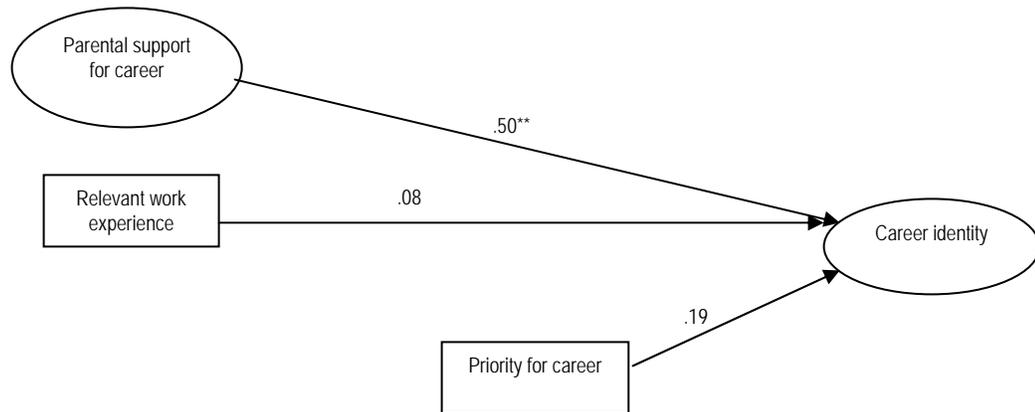
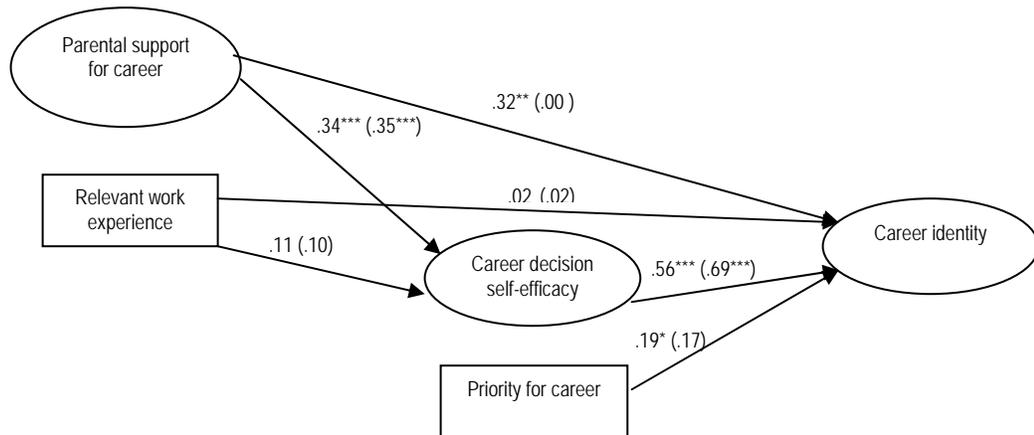


Figure 2. Full model with CDSE for the 4-year university group.



For the 4-year transfer group (Figure 3), the Chi-square for the direct effects model was not significant ( $\chi^2 (19) = 33.50, p = .02$ ). The TLI (.71), CFI (.85), and RMSEA (.12,  $p = .06$ ) all indicated that the direct effects model did not fit the data well. All of the paths were significant. Given that the strength and significance of the path from parental support for career to career identity development is less (becomes nonsignificant) in the full model with CDSE than in the direct effects model mediation was supported (compare Figures 3 and 4). In order to further test for mediation, the model was fit again with the path from parental support for career to career identity

development was constrained to zero (Figure 4, values in parentheses). The  $\Delta\chi^2$  test showed that the model with the estimated path did not fit significantly better (critical  $\chi^2 = 3.84$ ;  $\Delta\chi^2 = 2.08$ ,  $df = 1$ ). Therefore, we fail to reject the null hypothesis that estimating the path significantly improves the model fit. Career decision self-efficacy does fully mediate the relationship between parental support for career and career identity development. Although there is poor fit, the model shows that parental support for career and relevant work experience ( $p = .09$ ) predicts career decision self-efficacy and relevant work experience. Both career decision self-efficacy and priority for career predict career identity development.

Figure 3. Direct effects model without CDSE for the 4-year transfer group.

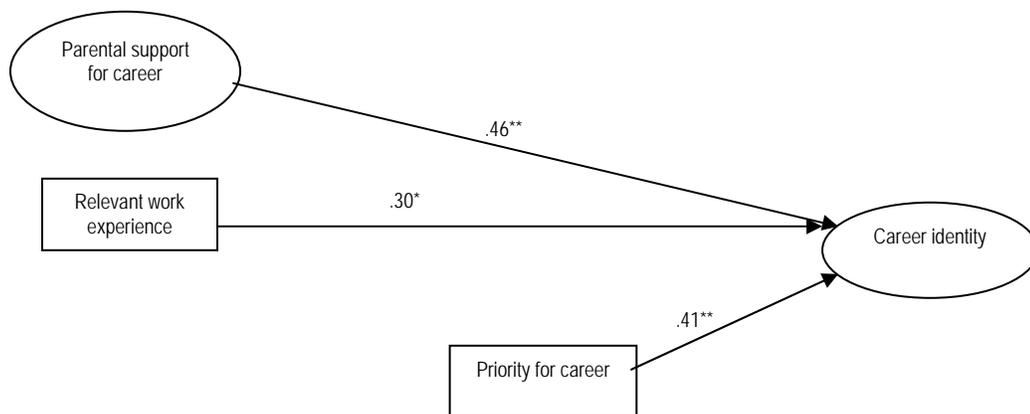
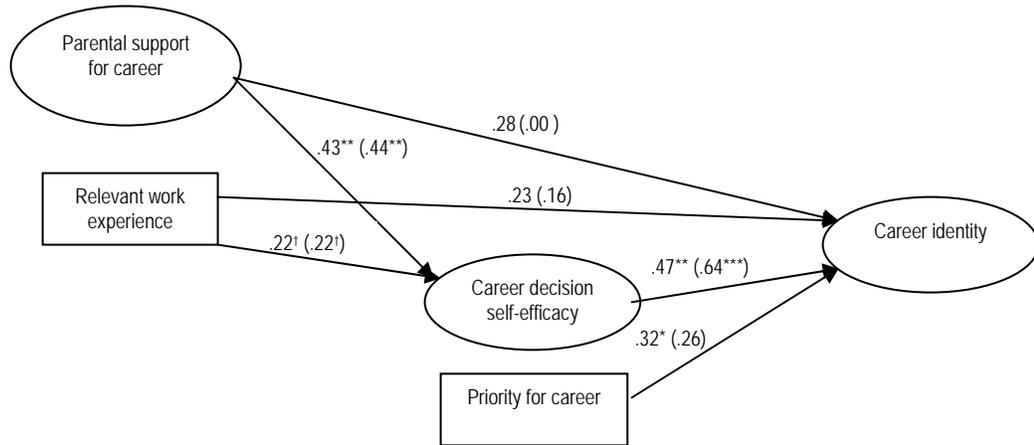


Figure 4. Full model with CDSE for the 4-year transfer group.



For the 2-year terminal group (Figure 5), the Chi-square for the direct effects model was significant ( $\chi^2 (19) = 31.37, p = .04$ ). The TLI (.58), CFI (.78), and RMSEA (.11,  $p = .09$ ) all indicated that the direct effects model did not fit the data well. No paths in the model were significant. Therefore, mediation was not tested.

Figure 5. Direct effects model without CDSE for the 2-year terminal group.

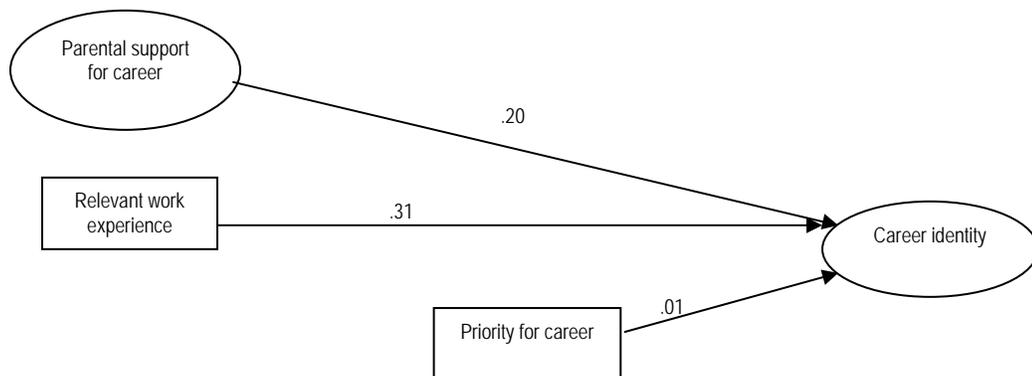
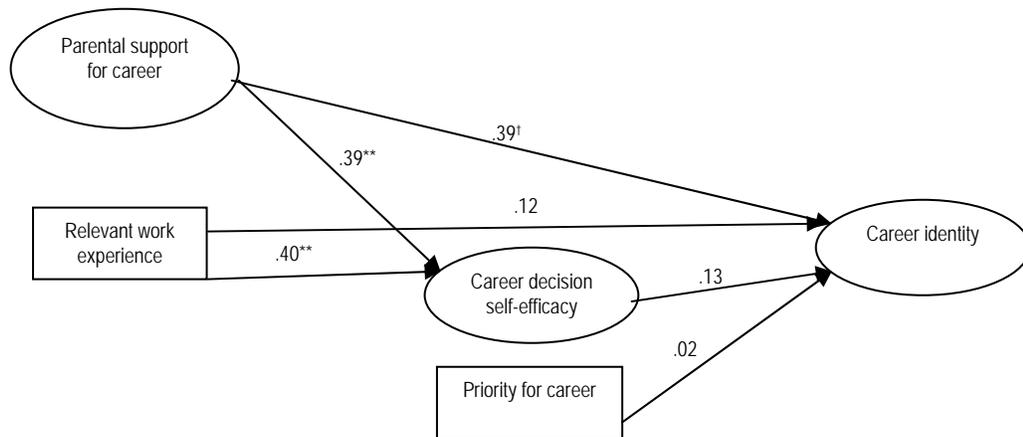


Figure 6. Full model with CDSE for the 2-year terminal group.



Finally, for the 2-year continuing group (Figure 7), the Chi-square for the direct effects model was not significant ( $\chi^2(19) = 21.14, p = .33$ ). The TLI (.97), CFI (.99), and RMSEA (.04,  $p = .58$ ) all indicated that the direct effects model fit the data well. Only the path from priority for career to career identity development was significant. Therefore, mediation was not tested for this group.

Figure 7. Direct effects model without CDSE for the 2-year Continuing Group.

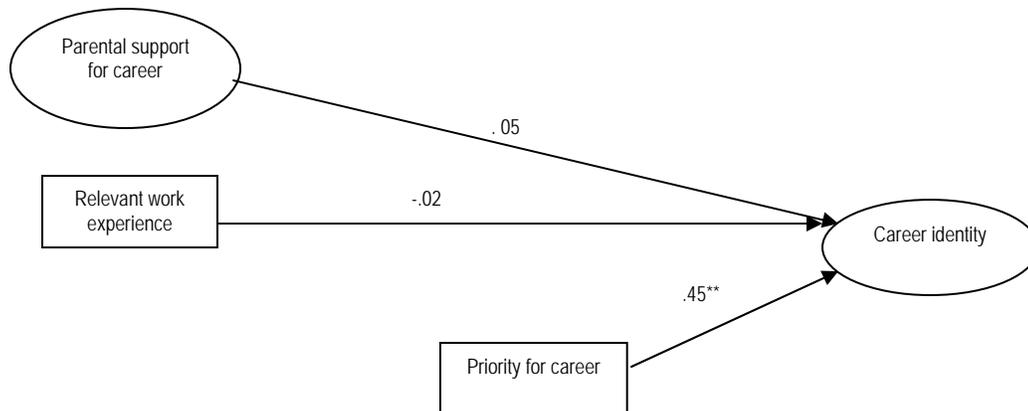


Figure 8. Full model with CDSE for the 2-year continuing group.

