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# Contextual support for Post Secondary Plans Scales: school personnel and community factors examination

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*University of Iowa*

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CONTEXTUAL SUPPORT FOR POST SECONDARY PLANS SCALES: SCHOOL  
PERSONNEL AND COMMUNITY FACTORS EXAMINATION

by

Charles J. Bermingham

A thesis submitted in partial fulfillment  
of the requirements for the Doctor of Philosophy  
degree in Psychological and Quantitative Foundations in the  
Graduate College of  
The University of Iowa

August 2016

Thesis Supervisor: Professor Saba Rasheed Ali

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PH.D. THESIS

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## **ABSTRACT**

Social support has been identified as an important component of planning for careers among high school students. Lent, Brown, and Hackett (2000) advocated for the importance of this support within Social Cognitive Career Theory (SCCT). These authors identified a need for further research with better measurement for examining contextual support and its connection to career decision-making. Ali et al. (2011) developed a set of measures to address this need for better measurement, but identified the need for more nuanced examination of specific types of contextual support. The current study was designed to assess the importance of nuanced measuring of different types of support in career-decision making. Specifically, two scales, School Personnel and Community, from the Contextual Support of Post Secondary Planning Scales (CSPSPS) are analyzed using confirmatory factor analysis to force the scales into the factor structures proposed by Ali et al. (2011). Additionally, exploratory factor analysis was used to further examine the school personnel scale. Finally, interventions to aid School Personnel and Community in ways to support students in career decision-making are considered.

*Keywords:* contextual support, social cognitive career theory, career decision-making

## **PUBLIC ABSTRACT**

Social support has been identified as an important component of planning for careers among high school students. Authors Lent, Brown, and Hackett (2000) are proponents of looking at the effects of such contextual support and have used a theory known as Social Cognitive Career Theory (SCCT) as the framework for examining support. These authors identified a need for further research with better measurement for examining contextual support and its connection to career decision-making. Ali et al. (2011) developed a set of measures to address this need for better measurement. They found that the field was in need of more precise measurement of the specific types of support that can influence career decision-making. The current study was designed to look at this need for more nuanced measurement of different types of support in career-decision making. Specifically, two scales, School Personnel and Community, from the Contextual Support of Post Secondary Planning Scales (CSPSPS) are analyzed using confirmatory factor analysis to explore the assumptions of Ali et al. (2011). Additionally, exploratory factor analysis was used to further examine the school personnel scale to identify the specific ways students can feel supported in their academic settings. Finally, interventions to aid School Personnel and Community in ways to support students in career decision-making are considered.

*Keywords:* contextual support, social cognitive career theory, career decision-making

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## **Chapter 1: Introduction**

Social support is a type of interaction between people where emotions, evaluations, information, and/or tangible help is shared, with the purposes of expressing love and esteem and encouraging feelings of approval, importance, and inspiration (Teoh, Chia, & Mohanraj 2009). Social support is important for managing a variety of life situations. Humans, as social creatures, need social support to cope with stressors, enhance decision making, and feel connected, all of which can improve one's overall well-being (Shumaker & Brownell, 1984). Research has demonstrated that support for making career related decisions is an important predictor of career aspirations and post-secondary plans (Paa & McWhirter, 2000; Ali, McWhirter, & Chronister, 2005). Further, support from significant others has demonstrated different strengths of associations depending on the support person. For example, perceptions of support from parents and teachers have demonstrated the strongest association with career outcomes in a majority of the studies (e.g. Alliman-Brissett, Lapan, Udipi, & Ergun, 2003; Fisher & Stafford, 1999; McWhirter, Rasheed, & Crothers, 2000). However, there are a few studies that have demonstrated that siblings and peers can also be significant sources of support for K-12 students dealing with career development milestones (Ali, et al., 2005; Ali, Martens, Button, & Larma, 2011). Considering how support is a crucial element of feeling efficacious in the career decision-making process (Choi, Park, Yang, Lee, Lee, & Lee, 2012), it is important to better understand and the role of social support among adolescents as they explore post-secondary opportunities.

Theoretically, social support is conceptualized within career theories including Social Learning Theory (SLT; Krumboltz, 1994) and Social Cognitive Career Theory



(SCCT; Lent, Brown, Hackett, 1994; 2000). These theories postulate that support combines with other factors to influence the career development of adolescents and young adults. While social support is conceptualized within SCCT, one major issue that has limited researchers from fully understanding how it operates within the SCCT model to influence the career and post-secondary decisions of individuals is the lack of measurement (Lent & Brown, 2006).

Identification of support readily available to students is important to help build students' feelings of efficacy and motivation in career decision making (Ali, Martens, Button, & Larma, 2011; Fisher & Stafford, 1999; Malecki & Demarary, 2002). Social support derived from the larger community is an area currently under-investigated in the research. A student's perception of the resources that are available to them through their school and community could be important determinants in what a student does after high school. Related constructs, such as if students had an opportunity to talk with and be supported by people knowledgeable about the community, suggest students could make more informed decisions about their future when they perceive receiving support. Similarly, school personnel are interacting with students on a daily basis throughout the vast amount of time students spend in school. These individuals have influence in terms of the experience and knowledge they have to offer in support of students trying to determine their future goals and plans (Farmer, 1985; Malecki & Demarary 2002). One of the primary issues related to the dearth of research into the ways in which community support influences students' career development trajectories is the lack of available measures that capture this influence. While there has been more research on the relations between perceived support from school personnel and career outcomes (Farmer, 1983;

Fisher & Stafford, 1999; Malecki & Demarary, 2002; McWhirter et al., 2000, McWhirter & Paa 1999), the majority of this research is specifically tied to teachers and tends to ignore the contributions of other personnel such as guidance counselors, principals, and coaches.

Ali, Martens, Button, and Larma (2011) created a set of scales aimed at measuring contextual support in post-secondary planning from six different sources, specifically, mother, father, sibling, peers, school personnel, and community. While other measures of support exist, Ali et al. (2011) created a measure that claims to capture the more nuanced support mechanisms associated with career development of adolescents. Among these were two scales that assessed support from community and one that assessed support from school personnel, specifically. The community support scale is unique in its assessment of community influence on career decision-making, and Ali et al. (2011) suggest this influence may play a larger role in the development of self-efficacy beliefs and outcome expectations than other sources of support. The school personnel scale is important because it allowed student participants to identify the specific person among the school personnel who was most influential. Ali et al. (2011) showed that many students identified teachers to be influential, but for over half of the students in the study, coaches, guidance counselors, and others were identified as being more influential in the career development process. The purpose of the current study is to provide further validation of these two scales of support for post-secondary plans. The next chapter will review the literature relevant to the purpose of this study.

## **Chapter 2: Literature Review**

The history of career theory illustrates that a theoretically driven conceptualization of support in career decision-making is necessary to accurately measure aspects of support from community and school personnel. This section will provide a brief description of the history of relevant career theory and current measurement practices. Additionally, several studies will be discussed which have illustrated the importance of different forms of support in career-decision making. The following are definitions for key terms used throughout this study. Support refers to those people or activities that help one cope with stressors, enhance decision making, and feel connected, all of which can improve one's overall well-being (Shumaker & Brownell, 1984). Social support refers to interactions between people where emotions, evaluations, information, and/or tangible help is shared, with the purposes of expressing love and esteem and encouraging feelings of approval, importance, and inspiration (Teoh, Chia, & Mohanraj 2009). In this study, contextual support refers to how one's environment impacts their ability to make career decisions. Post-secondary refers to activities/education/employment occurring after high school has been completed. Social Cognitive Career Theory refers to Lent, Brown & Hackett's (1994; 2000) idea that there is an interaction among environment, behavior, and cognitive influences that influences three social cognitive mechanisms known as self-efficacy beliefs, outcome expectations, and goal representations. Career decision-making refers to the planning needed in order to choose educational or experiential opportunities to move towards desired employment.

## **Social Cognitive Career Theory**

The framework of Social Cognitive Career Theory (SCCT), as described by Lent, Brown and Hackett (1994), is based on Bandura's (1986) social cognitive theory. Bandura's (1986) model proposed the idea of triadic reciprocity. This idea proposed the importance of interaction among personal characteristics, environmental elements, and behavior. Each component was thought to be linked and each is affected by the other. Prior to SCCT, career development theory did recognize the importance of the interaction between a person and their environment (Osipow, 1990). However, triadic reciprocity emphasized the bidirectional impact of each component on the other component, including behavior. These behaviors could change elements of the context, which could result in different thoughts and feelings, thereby influencing future behavior (Bandura, 1986). Lent et al. (1994) applied SCCT to career development to help to explain the interaction among environment, behavior, and cognitive influences.

SCCT emphasizes three social cognitive mechanisms as influential in career development: self-efficacy beliefs, outcome expectations, and goal representations (Lent, Brown, & Hackett, 1994; 2000). The three mechanisms in SCCT are directly tied to the support needed by students exploring post-secondary endeavors. Lent, Brown, and Hackett (2000) explain the importance of perceived self-efficacy, outcome expectations, individual characteristics, and the support or barriers encountered. Importantly, Lent, Brown, and Hackett (2000) recognized how the development of interest in certain careers could be linked back to the perception of support when contemplating future endeavors. The authors further explain that social support as a contextual variable in career development is important because it can lead an individual to opportunities in choosing

and actively obtaining a desired career. However, the opposite is also true, that a lack of support, actual or perceived, can slow or prevent the process of career development.

Social support has been shown to positively affect students physically and psychologically (East, Hess, & Lerner, 1987; Forman, 1988; Klooomok & Cosden, 1994; Shumaker & Brownell, 1984; Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Wenz-Gross & Siperstein, 1997). Social support can be defined in numerous ways, but Lent et al. (2000) define social support as a contextual factor, which facilitates the choice and pursuit of a career. Given the power social support holds in the formation of career development, further exploration into the nuanced forms of social support is necessary, a pursuit also advocated for by Lent et al., (2000). Lent, Brown, and Hackett, (2000) suggest that further measurement of social support could lead to career interventions that focus on helping individuals (a) to marshal available contextual assets (e.g., identifying role models or funding sources in one's existing support system), or (b) to alter their environments in order to access currently unavailable resources (e.g., developing new peer support systems). (p. 42)

Several studies have attempted to measure social support in career decision making. These measures are associated with different theoretical underpinnings and have been used with the adolescent population. In the next section, those studies will be described and critiqued.

### **Measurement Issues in Social Support for Career and Academic Decisions**

#### ***Scales Measuring Direct Contextual Support***

**Career-Related Parent Support Scale** Turner, Alliman-Brissett, Lapan, Udipi, & Ergun (2003) developed The Career-Related Parent Support Scale. The measure is based in Social Cognitive Theory (Bandura, 1986) and SCCT (Lent, Brown, & Hackett, 1994;

2000). The authors' goal was to create an instrument to detect the relationship between parents' support and the educational and vocational development of adolescents in terms of their self-efficacy, as defined by Bandura (1977; 1997). There were 293 participants from seventh and eighth grade classes in an ethnically diverse public middle school located in a low socioeconomic inner-city neighborhood in a large city in the Midwest. The participants included 138 males, median age 13.25 years, and 155 females, median age 13.18 years. The participants included 99 who identified as Native American, 91 African American, 69 Caucasian American, 15 Hispanic/Latino, 9 international students, 3 Asian American, and 7 identified as multiethnic or "other". The school's records identified 92% of participants to be living at or below the federal poverty line, 40% living in single-parent families, 7.5% in foster care, and less than 40% were expected to graduate high school on time.

The authors confirmed the factor structure of the CRPSS. They found all pattern coefficients to be significant: the Instrumental Assistance factor ranged from .37 to .87, the Career-Related Modeling factor from .64 to .75, the Verbal Engagement factor from .58 to .75, and the Emotional Support factor from .64 to .93. The authors report the CRPSS to have construct validity, evidenced by bivariate correlations ranging from .34 to .40 with the Career Planning and Exploration Self-Efficacy Scale (Turner et al., 2003), .39 to .54 with the Knowledge of Self and Others Self-Efficacy Scale (Turner et al., 2003), .32 to .50 with the Educational and Vocational Development Self-Efficacy Scale (Turner et al., 2003), .37 to .48 with the Career Decision-Making Self-Efficacy Scale (Taylor & Betz, 1983), and .26 to .43 with the Career Decision-Making Outcome Expectations Scale (Taylor & Betz, 1983).

The authors found that parental support was associated with instrumental self-efficacy and educational and career-related efficacy, which is consistent with the propositions of SCCT that purport the importance of support in helping an adolescent develop self-efficacy beliefs as necessary for career decision-making (Bandura, 1986; Lent, Brown, & Hackett, 1994; 2000). Turner, Alliman-Brissett, Lapan, Udipi, & Ergun (2003) stated that assisting parents in providing support can help increase students' feelings of confidence and pursuit of educational and career plans.

**Child and Adolescent Social Support Scale** Malecki, Demaray, Elliott, and Nolten (1999) developed the Child and Adolescent Social Support Scale, CASSS. This scale was created with the purpose of helping teachers and school psychologists measure the perceptions of social support among children and adolescents. The authors developed the measure in order to provide a better understanding of the importance of social support for children and adolescents, as well as help others develop interventions for these young individuals. Malecki and Demaray (2002) conducted a study to perform confirmatory factor, reliability, and correlational analyses on the CASSS. The study was based on a large sample of 1110 students between 3<sup>rd</sup> and 12<sup>th</sup> grade from schools across five states, representing males and females, students with identified disabilities and no identified disabilities, and students of White, Hispanic, Native American, African American, Asian, and other ethnicities.

The scale was produced in two versions; Level 1 for children from 3<sup>rd</sup> to 6<sup>th</sup> grade and Level 2 for children from 6<sup>th</sup> to 12<sup>th</sup> grade. The study demonstrated that the Child and Adolescent Social Support Scale had internal consistency reliability coefficients of .94 for Level 1 and .95 for Level 2. Confirmatory factor analyses supported the authors'

hypothesized model including four subscales: Parent, Teacher, Classmate, and Close Friend, reliability ranging from .87 to .93 and .89 to .94. Strong validity was also evident in scale to subscale correlations ranging from .65 to .86 for Level 1 and .71 to .78 for Level 2 and intercorrelations showed discriminant validity between subscales ranging from .23 to .58 for Level 1 and .35 to .57 for Level 2. The CASSS was examined in correlation with the Social Support Scale for Children (SSSC; Harter, 1985) and resulted indicated convergent validity of  $r=.70$ .

While this measure was not specific to career or post-secondary plans, the significance of this study is that the Child and Adolescent Social Support scale can help adults in the school system see how students perceive the social support they receive, as well as help students foster those sources of support. Teachers, one subscale of the measure, are important members of school personnel, also predicted in the current study to be influential in fostering support in making career-related decisions. However, The Child and Adolescent Social Support scale is not aimed at identifying how these sources of support can aid students in making career decisions.

**Teacher Support Scale (TSS)**The Teacher Support Scale is a 27 item measure that was developed to assess the degree to which high school students perceived their teachers to be supportive of their career plans. McWhirter and Paa (1999) showed concurrent validity with a correlation of  $r=.72$  between the TSS and the six item measure of teacher support by Farmer (1983) and obtained a Cronbach's alpha of .96 with a sample of freshman and sophomore high school students. McWhirter et al. (2000) used this scale to assess the differences in perceptions of support from teachers among high school students in a larger study as a control measure to determine if there were differences between the



intervention group and control group in perceived teacher support. This measure was not used to assess if the career intervention program increased perceptions of teacher support. McWhirter, et al. (2000) did not find the two groups to differ in their perceptions of teacher support prior to the intervention.

Given that the career education class did not focus on building contextual support, it is difficult to determine the effectiveness of this measure for understanding or predicting students' post-secondary plans or the impact of interventions in increasing support.

**Parent Support Index (PSI)** The PSI is a 32-item measure developed by Ali and McWhirter, (2006). The authors developed the measure for the purposes of their study to examine the impact of SCCT factors on the post-secondary plans of high school students from rural central Appalachia. The PSI is intended to measure the degree of support students perceive from their parents or guardians. The measurement from this index includes the degree to which students feel their parents or guardians support their college preparatory activities, vocational training activities, and general education activities. The measure is divided into three sections. The first is 15 items directed at perceived support from mothers, the second section contains the same 15 items but are reflective of perceived support from fathers, and the last 2 items examine how much financial assistance students believe they will receive from parents and their perception of their parents' attitude towards helping them secure alternate financial assistance for their future educational/vocational plans.

Participants included 338 11<sup>th</sup>-grade high school students chosen from five high schools in rural southern Appalachia, (182 male and 156 female). The PSI showed

concurrent validity via a moderate correlation with Farmer et al.'s (1981) Parent Support Scale. The PSI also showed evidence of reliability with a Cronbach's alpha of .89.

Using this measure, Ali and Saunders, (2006) investigated perceived support from significant others, such as parents, contributions to high school students reaching their career goals. Results indicated that parental support predicted expectations to attend college. They suggested, at least for the Appalachian students in their study, because school personnel have an opportunity to provide guidance regarding future career decisions and educational or employment opportunities, they can also advocate for engaging parents about their student's educational goals. The current study suggests that the role of school personnel be considered beyond what they can do to engage parents, and assess what direct impact students perceive they have on their career decision-making.

**Sibling Support Scale (SSS), Friend Support Scale (FSS)** Several measures related to contextual support in career decision-making were created by Ali, McWhirter, and Chronister (2005). They created these measures to use in their pilot study examining the influence of support systems, socioeconomic status, and barriers on the vocational self-efficacy and outcome expectations among adolescents from primarily lower socioeconomic backgrounds (Ali, McWhirter, & Chronister, 2005).

**Sibling Support Scale** Ali, McWhirter, and Chronister (2005) created the Sibling Support Scale. This scale measured the level of perceived support students experience from their most influential sibling. The SSS specifically measured the degree of support students perceived in areas of educational and vocational activities, ideas, and plans. The validity items, "My siblings are supportive of my future career plans" and "My siblings

are interested in my future” were used to show the concurrent validity of the scale, found to be a correlation coefficient of  $r=.56$ . Further studies demonstrating the validity of the scale are needed.

**Friend Support Scale** The FSS was created by Ali, McWhirter, and Chronister (2005). This scale includes 16 items aimed at assessing student’s experience of the support of their educational and vocational activities, ideas, and plans received from the friends closest to them. The validity items, “My friends are supportive of my future career plans” and “My friends are interested in my future” were used to show the concurrent validity of the scale, found to be a correlation coefficient of  $r=.48$ . Further studies demonstrating the validity of the scale are needed.

**Parent Support Scale** The Parent Support Scale was created by Farmer et al. (1981). The measure is 26 items in length and assesses how students perceive the support provided by mothers and fathers in regards to their academic work and progress. Farmer et al. only used 6 items from the measure in their initial study, but McWhirter, Hackett, and Bandalos (1998) used the full 26-item measure and showed it to be reliable and valid in their study with Mexican American high school girls. Ali et al. (2005) showed that support of mothers and fathers was not a significant predictor of vocational/educational self-efficacy expectations of adolescents from lower socioeconomic backgrounds; however, other studies, (Farmer, 1985; McWhirter, Hackett, & Bandalos, 1998), did show parental support to be significant. The differences in these outcomes could be due to several factors, so a more nuanced measure is needed.

### *Scales Measuring Indirect Contextual Support*

**Adolescent-Parent Career Congruence Scale.** Sawitri, Creed, and Simmer-Gembeck (2013) created and validated the Adolescent-Parent Career Congruence Scale. The authors primary purpose was to develop an instrument capable of assessing adolescent-parent congruence in the career domain. The study was conducted in four phases. In the first phase they created 20 items based on a literature review, focus groups (four groups including 18 girls and 11 boys between 15-16 years of age from a high school in Indonesia), and expert feedback. The second phase utilized 550 students (258 boys and 292 girls from three different high schools in Indonesia, mean age of 15.94, in year 10 of school) and their results underwent item and exploratory factor analyses, resulting in a reduction in their scale from 20 to 12 items. In the third phase another sample, 512 students (226 boys and 286 girls from three different high schools in Indonesia, mean age of 15.92, in year 10 of school), was used to run confirmatory factor analyses to confirm the original structure. The fourth phase included determining construct validity, based on correlation with other measures of parental support, parental expectations, and life satisfaction. The results of their study show their scale can assess complementary and supplementary congruence.

Complementary congruence refers to how well adolescents believe their needs are met by parents as well as how satisfied parents are with the career progress of their adolescent. Supplementary congruence refers to how similar adolescents and parents think their beliefs and orientation are. The authors state that use of this measure will allow assessment of correspondence between adolescents and parents in the career domain. They state the scale can be useful for career counselors as well as to those who create interventions to guide

and optimize the career development of adolescents. The authors identify one limitation as the development of their scale with Indonesian high school students. According to Triandis (1989), differences in individualism and collectivism at the community level may exist and influence the individual level of congruence between parents and adolescents, but there are also differing degrees of individualism and collectivism at the levels of families which can affect the degree of congruence among family members. The authors suggest the family and individual differences should be researched, as they can influence behavior in the career domain. Additionally they suggest further studies with more diverse populations, beyond the applicability they found in Western and Eastern cultures, would be beneficial.

There is research support for the reliability and validity of the Adolescent-Parent Career Congruence Scale of the construct of congruence between parents and adolescents. However, the support of parents is only one domain of social support. Additionally, Oishi and Sullivan (2005) state that there are positive feelings associated with aligning with parents which could potentially confound the choices adolescents make about their career paths.

**Career Influence Inventory** Fisher and Stafford (1999) developed the Career Influence Inventory. This measure is meant to assess student's perceptions of influences on the process of career development and planning. The authors developed this measure so that students could identify external influences on career decision-making and could be matched with interventions to help those students struggling to develop career plans. Participants included 564 undergraduate students from several universities in the southwestern portion of the United States. The participants included 359 women, 204

men, and one individual who did not indicate gender. Participants self-identified ethnicity in the following numbers; 401 Anglo American, 53 Hispanic, 34 Asian American, 30 African American, 18 Mixed/Creole, 14 Native American, 8 Mediterranean/middle Eastern, and 6 as Other. The mean age of participants was 21.9 years with a range from 17 to 47 years. The results of their psychometric analysis using exploratory principal component analysis showed six constructs, including parent, teacher, friend influences, negative social events, high school academic experiences and self-efficacy, and ethnic-gender expectations. An overall Cronbach's alpha of .89 indicated good reliability. The results showed support for their instrument as a six-factor instrument. Further, they found teacher influence to be the strongest factor, in the amount of variance it accounted for in the component analysis and in internal consistency.

**Career Decision Scale** Osipow, Carney, and Barak (1976) created the Career Decision Scale to assess the antecedents of indecision. They hypothesized students who sought assistance in making career decisions would score higher on the indecision scale than those not seeking assistance. Those seeking assistance were thought to be in need of support in making decisions about their majors. Additionally they hypothesized the levels of indecision between the two groups would be closer after those seeking assistance experienced a counseling intervention aimed at reducing vocational/educational indecision. Participants included 837 students from Ohio State University, including 432 males and 405 females.

Results indicated that students who experienced career indecision, such as counseling center students and students in an orientation class for undecided students, scored higher on the indecision scale. Additionally, after these students were exposed to

interventions intended to address career indecision, they scored lower on the indecision scale. These scores were similar to those who were not seeking assistance for career indecision.

### ***Summary and Critique of Scales Measuring Direct and Indirect Support***

The previous section reviewed measures which were designed to measure perceptions of support from influential others in career decision-making among adolescents. They identified several sources of support, such as teachers, parents, and peers, as being influential in supporting adolescents' career planning. Reviewing the research on measurement of social support for career and post-secondary plans of high school students reveals important gaps in the literature. First, several of the studies indicated teacher support to be highly influential (Fisher & Stafford, 1999; Malecki & Demarary, 2002; McWhirter et al. 2000), and as such this source of support and other associated school personnel support need to be examined further. Second, not all of the variance in scores could be accounted for by the previous measures. This indicates the need for more nuanced measures and measures capable of examining other sources of support, such as community support.

The scales reviewed have demonstrated to be reliable and valid measures. However, these studies illustrate the need for further research. The most apparent gap in the current measurement of support in career decision-making is the need for more nuanced measures. Measures capable of determining who, and in in what manner students can be supported in making career decisions are necessary. The previously reviewed measures do provide ways to measure social support, as it is broadly defined,

but more nuanced measures, able to also measure support from different sources as it relates specifically to career decision making, is needed.

In the Sibling Support Scale and Friend Support Scale further studies supporting their psychometric properties are warranted if they are to be used by others with other populations beyond rural Appalachian students. Additionally, these measures are capable of providing information about perceptions of support for post-secondary plans, but do not necessarily capture support (or lack thereof) from the community. Given that Ali and McWhirter (2006) claim that Appalachian students may be highly influenced by the Appalachian community and their post secondary plans are tied to community perceptions, it would stand to reason that a measure of community support may help investigators to assess whether this proposition can be supported.

While the Career Decision Scale showed to be construct-valid, and provided promise for identifying the antecedents of career indecision, reducing indecision is only the first step in helping a student feel capable of making career decisions. Understanding the antecedents of indecision provides researchers and counselors an opportunity to identify interventions capable of helping a student reduce their feelings of indecision, which could lead to greater feelings of efficacy. However, SCCT suggests that pursuit of a career requires an understanding of self-efficacy beliefs, outcome expectations, and goal representations (Lent, Brown, & Hackett, 1994; 2000) and support is one necessary element in helping a student envision their future plans and their ability to develop these beliefs (Lent, Brown, & Hackett, 2000). The Career Decision Scale may be useful in the process of career exploration, but after indecision has been reduced, a more nuanced



measure of support is still necessary to help students identify sources of support from whom they can depend to pursue their goals.

Several of the studies discussed above discuss the need for further research. The examination of the School Personnel and Community support scales in the present study meets the need for more nuanced measurement, and also fulfills some of the suggestions for future research suggested by authors of the measures discussed above. The Sibling Support Scale indicates the importance of searching for unexamined sources of contextual support, just as the present study suggests in further examining community support. The Teacher Support Scale illustrates the potential impact of teachers on perceptions of support in career decision-making and, in the current study, the School Personnel scale includes the support of teachers as well as other individuals capable of influencing students' perceptions of support.

The results of Fisher and Stafford's (1999) psychometric study of the Career Influence Inventory included indications that teacher influence was the strongest of the six identified constructs. Again, these results indicate the large potential for school personnel to influence career-decision making of students. Fisher and Stafford (1999) also identify negative social events as a strong influence on career development and planning. The authors suggest that the impact of negative social events on career development points to the importance of resiliency, or one's ability to pursue career goals successfully despite encountering obstacles during the process (Fisher & Stafford, 1999). The authors state that students who experience negative social events may be able to learn from others who have previously exhibited this resiliency by overcoming obstacles and still pursuing their choice careers. Community members are one pool of individuals

who could have experiences students may be able to relate to and learn from, and as such this paper argues the construct of support from community members needs to be present among measures of contextual support in career decision-making.

Turner, Alliman-Brissett, Lapan, Udipi, & Ergun (2003) demonstrated students' feelings of confidence and pursuit of educational and career plans can be influenced by parental support. Further they showed that assisting parents in providing such support to their students could increase the students' feelings of efficacy and their pursuit of career plans. However, they do not assess support from the community for career planning and goal attainment. Given that the majority of the sample in this study identified as Native American, collective and community perceptions may be an important factor in students' career development. For example, Alliman-Brissett and Turner (2005) advocated for more support from Native American community members for the career development of Native American students.

The current study supports this notion but also points to the importance of identifying how students create their educational and career plans. This study predicts community and school personnel may be capable of influencing how adolescents' create these plans. Additionally this study will suggest interventions to aid community members and school personnel in supporting students, interventions similar to those suggested by Turner et al. (2003) for parents.

Next, research that describes the relations of contextual support and career decision making, specifically related to self-efficacy beliefs, goal formation, and outcome expectations, will be examined. The remaining gaps in this literature base will also be discussed.

## **Research of Social Support for Career and Academic Decisions and Remaining Gaps in the Research**

**Support and Outcome Expectations** In a study investigating the utility of SCCT in examining the post-secondary plans of rural Appalachian high school students Ali and McWhirter (2006) found college outcome expectations and vocational/educational self-efficacy, not necessarily the support from teachers or parents, were the most dominant predictors of post-secondary plans among the targeted population. However, Ali and McWhirter (2006) suggest the support received from teachers and other sources may be contributing indirectly and not detectable with their use of discriminant function analysis, therefore indicating moderating effect of support variables is necessary. Additionally, Ali and McWhirter (2006) suggested that a lack of information, guidance, and financial resources could result in significant difficulty in a student feeling efficacious in pursuing college or advanced degrees.

Further, Ali and McWhirter (2006) suggested that students' perceptions of support (or lack thereof) from the larger Appalachian community could have contributed to self-efficacy beliefs and outcome expectations of rural Appalachian students. Yet, the authors did not examine students' perceptions of support from their community. One of the major factors is there are no measures that existed at the time of this study that assess community support for post-secondary plans.

The contextual effect attributable to the rural Appalachian community is an important variable to consider, as Ali and McWhirter (2006) state. However, simply considering this variable is not sufficient; a community support measure is needed to actually capture relations between career outcomes and perception of community support. Ali and McWhirter suggested a lack of information and guidance could be contributing to

lower beliefs of outcome expectations, and that these beliefs could be tied to community values.

In another study, Ali et al. (2005) investigated the relationships of parent, sibling and peer support to outcome expectations among a group of 114 high school students in ninth grade. Participants included 47 boys, 66 girls and one who did not identify their sex. The mean age was 14.7 years. The authors found support from peers and siblings positively predicted vocational outcome expectations among adolescents from lower socioeconomic backgrounds. Additionally, the authors found that students with more support from parents and peers tended to also have lower perceptions of barriers. This finding is consistent with the argument by Lent et al. (2000) that the literature puts too much of an emphasis on carrier barriers, and instead more focus should be given to increasing social support. This suggests the need for more measurement of the impact of a variety of sources of contextual support in career decision-making. Gushue and Whitson (2006) found that parental support was positively related to career decision self-efficacy and teacher support was positively related to career decision self-efficacy and career outcome expectations among a group of 104 African American ninth grade students. The results of this study demonstrate that while both parents and teacher support seem to have an impact on the career decision making process of ethnic minority students, the impact could be different. It appears that teachers may have more influence on students' expectations of their futures in different careers.

Perry, Liu, and Pabian (2009) found that support from both parents and teachers significantly contributed to career preparation among a group of 285 students (110 male, 175 female) from a major city in the Midwest attending a local public high school or a

private parochial school. The participants ranged in age from 11 to 19 years ( $M=15.38$ ,  $SD=1.64$ ), and included 6.7% seventh graders, 15.1% eighth graders, 30.5% freshmen, 18.9% sophomores, 8.8% juniors, and 19.3% seniors. The authors found that teacher support was a better predictor of career preparation than parental support. This finding is congruent with the notion that individuals outside of the traditional immediate family can fulfill a prominent role for youth in urban areas (Stanton-Salazar, 1997; Suarez-Orozco & Suarez-Orozco, 2001).

Metheny, McWhirter, & O'Neil (2008) found that students' perceptions of the support of their teachers was significantly correlated with vocational outcome expectations and career decision-making self-efficacy among 325 participants attending an urban public high school in a mid-size Midwestern city. The measures used included the TSS (McWhirter, 1996), the CDMSE Scale (Taylor & Betz, 1994), and the VOE (McWhirter, Rasheed, & Crothers, 2000). The participants were 53% female and the mean age of the sample was 17.5 years old, with a standard deviation of 0.60. The authors used an exploratory factor analysis to show the TSS to hold a four factor model with subscales: Invested, Positive Regard, Expectations, and Accessible. Significant, positive correlations were found between the TSS and the CDMSE ( $r = .32$ ,  $p < .001$ ) and the VOE ( $r = .37$ ,  $p < .001$ ). The authors used an existing data set plus new participants from another high school in the same community to perform a confirmatory factor analysis. The participants from this data set included 464 students, 440 who turned in usable surveys, from two urban high schools in a mid-size Midwestern city. The participants were in 9<sup>th</sup> or 10<sup>th</sup> grade, 49% were female, and the mean age of the sample was 15.3, with a standard deviation of 0.81.

The confirmatory factor analysis showed the parameter estimates to be statistically significant but the four factor model to not be a good fit. In considering all results, the authors suggest that the strong relationship between higher perceptions of teacher support and higher levels of career decision-making self-efficacy and vocational outcome expectations is consistent with the existing literature regarding teacher support (Ali & McWhirter, 2006; McWhirter et al., 1998). Further, students' perceptions of their teachers as caring and having investment in their futures most strongly correlates with career decision-making self-efficacy, and students' perceptions of their teachers as caring and having high expectations for the students is most strongly associated with outcome expectations. Metheny et al. (2008) suggest students' perception of teachers' positive regard is a critical element of teacher support in career-related outcomes. In the four factor model perceptions of teacher accessibility had the smallest relationship to career-related outcomes, and as such the authors suggest other sources of support may also be important for adolescents in career-related outcomes.

**Career Barriers** McWhirter (1997) developed the Perceptions of Educational Barriers scale. This measure is 84-items and assesses the barriers to seeking education beyond high school. The factors of barriers assessed include Likelihood of Encountering Barriers, Magnitude of Barriers, and Difficulty Overcoming Barriers. In a sample of 1139 high school students, 482 identified as Mexican-American/Chicano, 113 as Hispanic, and 555 as white/Caucasian, McWhirter (1997) showed the Perceptions of Educational Barriers Scale to be reliable and valid. In this study the author found evidence of both ethnic and gender differences in perceived barriers to pursuing post-secondary education. The author found female participants anticipated more barriers than male participants and Mexican-

American participants anticipated more barriers than Euro-American participants. Lent, Brown, & Hackett (1994; 2000) suggest contextual factors, such as ethnic and gender differences in perceived barriers, affect the link between a student's interest in a career and choices made to realize that career. The confirmation of ethnic and gender differences impacting the perception of barriers is important because targeted contextual support could help those who perceive their barriers to be greater or impassible, and again school personnel and community members are in prime positions to offer this support. Further, the work of Osipow, Carney, and Barak (1976) with the Career Decision Scale showed that after experiencing interventions designed to address career-related concerns, students showed lower levels of career indecision. This finding illustrates the importance of interventions aimed at supporting adolescent's career decision-making process, however it does not address how to identify and encourage sources of contextual support for these adolescents.

Collectively, these studies show that the measures used to assess social support in career development are less nuanced than they need to be and/or do not address the necessity of focusing on how support can be used to foster feelings of efficacy and help students have a better understanding of what their goals are, and what the outcomes of those goals will look like in their future. Lent, Brown, and Hackett (1994; 2000) illuminate the importance of such self-efficacy, outcome expectations, and goal representation. There are multiple forms of social support, and all of the above measures lack the ability to illuminate the variable effects of the multitude of different social supports available to students. Ali et al. (2011) created a measure aimed at identifying the nuanced forms of social support available in an adolescent's individual environment.

### **Contextual Support for Post Secondary Plans Scales (CSPSPS; Ali et al., 2011)**

Social support is a contextual piece of SCCT that has not received nearly as much attention as the cognitive aspects of the model (Ali et al., 2011). Measurement of the construct of social support has the potential to expand research in career development and planning (Lent, Brown, & Hackett, 2000).

The CSPSPS is one such measure that assesses various factors of social support. The measure is described in detail below, and most importantly, examination of the types of support in the CSPSPS can help identify who students are relying on for support, and further how that support aids them in decision-making about their career paths. While numerous studies have demonstrated the importance of parental and teacher support, there is limited research that investigate how other sources of support relate to career outcomes. For example, there may be community members or aspects of a student's community that can have an influence on his or her career decisions. Community support is defined by Ali et al. (2011) as "an individual's appraisal of the values and resources for career development afforded by his or her community." While teacher support is commonly understood, the support from other school personnel has not been adequately explored. School personnel and community support could be vital in facilitating career development and it is important that counseling psychologists and others working with students better understand these influences. It is imperative that measures are able to tap into these influences to establish a body of research in this area.

Therefore, the purpose of this study is to further investigate the psychometric properties of the community and school personnel scales with a group of high school students in two rural schools. More specifically, the aim of this study is to test the



theoretical underpinning of the original domain structure that Ali et al. (2011) proposed when designing the measures. Additionally, this study will try to provide evidence for convergent validity by correlating the measures with existing measures that have been established in the literature.

## Chapter 3: Method

### Participants

Participants included 247 (101 male, 137 female, and eight who did not identify their gender) students (10th-12th graders) from two rural high schools in a Mid-Western state. The grade breakdown was as follows: 88 were in Grade 10, 127 were in Grade 11, 22 were in Grade 12, and eight did not identify their grade level. The participants ranged in age from 15 to 19 years ( $M=16.21$ ,  $SD=1.72$ ). Participants identified their ethnicities as follows: Caucasian American (79.4 %), Hispanic/Latino American (6.5%), Multiracial (2.8 %), Other (4.5%), African American (2.0%), Native American (1.2 %), and Asian American (0.0%). Eight participants did not indicate ethnic background.

### Measures

**Demographic Measure** The demographic questionnaire assessed information related to sex, age, ethnicity, and grade level.

#### **Contextual Support for Post Secondary Plans Scales (CSPSPS)**

Ali et al. (2011) developed a measure, the Contextual Support for Post Secondary Plans Scales (CSPSPS), aimed at assessing this social support used by students making career plans beyond high school. The forms of social support measured included: mother, father, sibling, peers, school personnel, and community. Ali et al. (2011) defined each of the forms of social support as follows:

Mother and father were defined as the biological or adoptive parents or legal guardians who have served the role of mother and father. Sibling was the biological or adoptive brother or sister that had the most influence on the student. A student who

had no siblings or had siblings whom the student deemed too young to be influential was asked to omit the items in the sibling scale. Friend was defined as someone close to the student's age, who has had the most influence on the student. School personnel was defined as one adult working at the student's high school, who has had the most influence on the student. Community was defined as the environment in which the student lived. Examples of community (town, city, group of towns combined to form the student's high school, and religious community) were provided, and prior to answering items on the community scale, students were asked to identify the types of occupations/positions in which people in their community work. (p. 132)

The authors developed a list of items for each of the six scales by means of an extensive literature review of content which included contextual support in examining high school students' career and educational plans. A review of SCCT literature was conducted to ensure the creation of items was reflective of the concepts of this theory. The first compilation of items included 10-12 for the Mother, Father, Sibling, Peer, and School Personnel scales, for a total of 80 items. The factors of these scales were as follows:

- (a) cognitive guidance, that is helping formulate one's thinking and reasoning processes regarding one's pursuit of their postsecondary plans (e.g., goal setting); (b) financial support, which was defined as providing one directly with the monetary means or the ability and insight to procure monetary support for one's post-secondary plans; (c) role modeling, or providing one with a standard or representation of behaviors, thoughts, or emotions that can enhance one's success in postsecondary pursuits; (d) verbal encouragement, or providing emotional and verbal support; (e)

support for overcoming barriers, or assisting one in surmounting any perceived or actual obstacles to postsecondary plans; (f) involvement with school/home from significant others; and (g) information/resources about the world of work, defined as a provision of relevant knowledge, prospects, assets, and other means that enhance one's postsecondary pursuits. (p. 132-133)

The sixth scale, Community, included an initial list of 40 items. The factors for this scale included:

(a) values and beliefs, which are the overriding principles, morals, ideals, attitudes, or generally accepted social doctrines regarding acceptable career paths; (b) opportunities and resources, or the types of career information and opportunities within one's community; and (c) modeling, or the types of jobs that community members hold and how involved the community is in helping students make decisions. (p. 133)

The appropriateness of each item was then reviewed. During this review, 20 items from the first five scales and 21 items from the Community scale were eliminated based on redundancy. This left 206 items across all scales. These items were then analyzed by SCCT theorists and researchers, deemed experts by Ali et al. (2011), based on their publications and research in the area. The experts rated items based on readability and applicability to a domain, (i.e. how representative an item was of the type of support capable of impacting the career planning of a high school student). All items were retained based on the experts' scores. The six scales were then reviewed by one female and two male high school students. This review resulted in the elimination of two items from the Community support scale. The scales were then formatted and prepared for a

pilot study. The breakdown of items in each scale was as follows: 47 items for the Mother scale, 47 items for the Father scale, 46 items for the Sibling scale, 52 items for the Peer scale, 43 items for the School Personnel scale, and 16 items for the Community scale.

The pilot study included 316 high school students between 10<sup>th</sup>-12<sup>th</sup> grade, from two rural high schools in the Midwest, one with 350 total students and one with 330 total students. The participant demographic break down was 153 males, 159 females, and 4 who did not identify their gender; 117 were in Grade 10, 112 were in Grade 11, 84 were in Grade 12, and 3 did not identify their grade level; ages between 14 and 18 years; Caucasian American (73.7%), Hispanic/Latino American (19.6%), Multiracial (2.5%), Asian American (2.2%), African American (0.6%), and Native American (0.3%). Participants filled out demographic information and the six scales. Ali et al. (2011) determined the results of this study indicated that a one-factor solution was the most statistically and theoretically meaningful fit for their data across all of the scales, meaning general support for postsecondary career plans of high school students was assessed by each scale. The authors stated their data indicated varying forms of support are not necessarily perceived differently by high school students.

The results of the initial testing of the CSPSPS showed contextual support for post-secondary plans was uni-factorial among all six forms of support, despite trying to differential between them (Ali et al., 2011). However, the authors did not test whether the factor structure was consistent with the support factors they identified through the measure development process. The authors suggest future studies could use confirmatory factor analysis in order to force items onto each different factor of support. This

suggestion is an important one, because their measure did prove to be reliable and valid, and given that it incorporates multiple forms of social support, unlike many other measures before it, there is much potential to use the measure wholly, or in parts, to explore the impact of these specific forms of social support. The authors claim that because the CSPSPS is based in SCCT and includes scales for each factor of support, researchers may find it of use in exploring forms of support which were not previously able to be assessed (Ali et al., 2011).

**CSPSPS-community** The CSPSPS-community scale was developed by Ali et al. (2011) in order to assess the impact of community on perceived support and related career decision making among students. A Likert-type scale was used and included six options including (a) strongly disagree (1 point), (b) disagree (2 points), (c) slightly disagree (3 points), (d) slightly agree (4 points), (e) agree (5 points), and (f) strongly agree (6 points). Additionally, students were given a categorical question asking them to choose the specific source of support for which they were responding, and students were instructed to think about that specific support person as they responded to the items on the scale. Students were asked to identify the type of positions in which people in their community were employed. Students were asked to select one or more of the following response options: (a) farming, (b) factory, (c) professional, (d) clerical, (e) trade, (f) domestic work, or (g) service positions. There are 16 items in this scale.

**CSPSPS-school personnel** The CSPSPS-school personnel scale was developed by Ali et al. (2011) in order to assess the impact of school personnel on perceived support

and related career decision making among students. A Likert-type scale was used and included six options including (a) strongly disagree (1 point), (b) disagree (2 points), (c) slightly disagree (3 points), (d) slightly agree (4 points), (e) agree (5 points), and (f) strongly agree (6 points). Additionally, students were given a categorical question asking them to choose the specific source of support for which they were responding, and students were instructed to think about that specific support person as they responded to the items on the scale. Students were asked to select from six different school mentor options (a) teacher, (b) guidance counselor, (c) athletic coach, (d) organization sponsor or advisor, (e) administrative assistant, or (f) other. There are 43 items in this scale.

**Perception of School Characteristics (PSC).** The PSC (McWhirter, 1992) assesses students' perceptions of their high school's guidance programming. The PSC consists of 13 "yes/no/I don't know" questions. One such question is, "Does your school have any programs for preventing dropout?" Scores were summed and total scores ranged from 0-12. Responses of "no" and "I don't know" were scored as 0 and "yes" responses were scored as 1. McWhirter (1992) reported that two criterion items, "Students at my high school were strongly encouraged to go to college" and "Students at my high school were strongly encouraged to find challenging careers," were significantly correlated with the PSC scale, with correlation coefficients of .41 and .32 ( $p < .01$ ), respectively. Ali et al. (2005) reported a Cronbach's alpha of .62 with 338 rural Appalachian students.

**Validity Items (Community).** Concurrent validity items were constructed in order to validate the Community scale. Two items related to community were constructed and asked students to rate the degree (same Likert-scale response options).

The two items included, “In general, I believe there is support in my community for my career plans,” and “In general, there are lots of people in my community with whom I can talk about my career plans.” These items were also summed to produce one total score for community support. These items were tested by Ali, et al. 2011, however given the lack of existing measurement of community variables it should be noted that the lack of well-established validity items was a limitation of this study. McWhirter, Rasheed, Crothers (2000) utilized a similar method of creating validity items, which was the basis for the creation of these community validity items.

### **Procedure**

For the present study, the same procedure described in the first study (Ali et al., 2011) was employed. Parental packets were mailed two weeks prior to administration of the questionnaires and a total of 18 parents returned postcards stating that their high school students were not to complete the survey. These students were provided an alternative activity during survey administration. Classroom teachers were given detailed standardized instructions for the administration of the questionnaires. Classroom teachers administered the questionnaires to students during their “advisory” periods. The survey took 40-45 minutes to complete.

**Statistical Analysis** Confirmatory factor analysis is a statistical procedure meant to determine the how well data collected in a study can fit in a suggested factor structure (van Prooijen, & van der Kloot, 2001). Ali et al. (2011) suggest confirmatory factor analysis as a recommendation for further research. The authors state that confirmatory analytic procedures would allow researchers to force individual scale items onto factors linked to the initial support factors proposed within each of the scales, which in this case



will be the School Personnel and Community Support scales. Confirmatory factor analysis is the best tool to test for any differences between the School Personnel and Community Support scales because this procedure is designed to allow the researcher to control which variables are able to load onto which factors. In confirmatory factor analysis the researchers identify the number of factors before beginning analysis, and they often fix certain factor pattern coefficients to zero, thereby preventing variables from being able to load onto any/all factors (van Prooijen, & van der Kloot, 2001). Ali et al. (2011) found that the six categories of support examined by the CSPSPS each measured general support for postsecondary career plans of high school students, which was based on the authors decision that a one-factor model was most relevant. Their suggestion of using confirmatory factor analysis in future studies implies the assumption that if the factors were examined separately, a multi-factor model is conceivable. Therefore, the hypothesis of this project is that confirmatory factor analysis will show that the School Personnel scale and the Community scale measure different types of support, as perceived by student participants. This study will use confirmatory factor analysis to force the School Personnel and Community support scales to fit the factor structure initially proposed by Ali et al. (2011). The original factor structure of the School Personnel scale was proposed to have 7 factors, and the Community scale 3 factors. Additionally, ideas for how relationships between students and school personnel and between students and community members can be strengthened will be explored.

## Chapters 4: Results

### Confirmatory Factor Analysis Community Scale

Based on the suggestion of the original authors, confirmatory factor analysis was performed on the Community Support Scale. It was originally assumed that the Community scale could be broken down into 3 factors. As such, factor analysis using the maximum likelihood method was used to estimate the loadings for the three factors. Oblique rotations were used to allow the factors to correlate as was expected based on the original author's assumptions. The findings for this scale in the present study were consistent with the original assumption of a 3 factor model. The chi-square value for the overall fit of the Community Support three factor model was significant,  $\chi^2(62) = 179.87, p < .001$  suggesting a lack of fit between the data and the hypothesized model. However, large samples sizes increase the sensitivity of  $\chi^2$  and as such other fit indices were explored, including relative  $\chi^2 = 2.90$ , suggesting acceptable model fit. Root mean square error of approximation (RMSEA) = .09, Comparative fit index (CFI) = .89, and Standardized root mean square residual (SRMR) = .06 together indicate acceptable model fit. Psychometric information for the Community scale are summarized in Table 1.

### *Convergent Validity and Internal Consistency Community Scale*

A bivariate correlation was calculated between two validity items developed to assess social support from the community and the Community Support Scale in order to provide convergent validity evidence for the Community Support Scale. The Community Support Scale yielded a correlation coefficient of  $-.38 (p < .001)$  with the two validity items. A negative correlation was expected given inverse coding, i.e. one Likert scale used higher numbers to indicate agreement and the other used lower numbers to indicate

agreement. Cronbach's alpha of .88 for the Community Support Scale indicates a high degree of internal consistency.

### **Confirmatory Factor Analysis School Personnel Scale**

Based on the suggestion of the original authors, confirmatory factor analysis was performed on the School Personnel scale. It was originally assumed that the School Personnel scale could be broken down into 7 factors. As such, factor analysis using the maximum likelihood method was used to estimate the loadings for the three factors. Oblique rotations were used to allow the factors to correlate as was expected based on the original author's assumptions. The findings for this scale in the present study were not consistent with the original assumption of a 7 factor model. The chi-square value for the overall fit of the School Personnel Support seven factor model was significant,  $\chi^2(804) = 2091.90, p < .001$  suggesting a lack of fit between the data and the hypothesized model. However, large samples sizes increase the sensitivity of  $\chi^2$  and as such other fit indices were explored, including relative  $\chi^2 = 2.80$ , suggesting acceptable model fit. Root mean square error of approximation (RMSEA) = .09 and Standardized root mean square residual (SRMR) = .07 indicating acceptable model fit. However Comparative fit index (CFI) = .80 indicates a lack of model fit. Psychometric information for the School Personnel scale is summarized in Table 2.

### *Exploratory Factory Analyses*

Given the School Personnel scale narrowly missing the criteria for goodness of fit and the assumption of Ali et al. (2011) of a multi-factor School Personnel scale an exploratory factor analysis was conducted to examine possible factor structures. Based on the findings from the 7 factor model 2, 3, and 4 factor models were examined. Each of

the three models was explored and item loadings were considered. Items loading about .40 were considered relevant to a given factor. Please see Table 1 for loading information. The items seemed to load onto three different factors. These factors seemed to be theoretically consistent with SCCT and previous literature. They were renamed informational support, involved support, and managing barriers support.

Table 1: Factor Loadings for School Personnel Support 3 Factor Model

Original Factors	Item	1	2	3
Cognitive Guidance	SCHOSP3	0.52	0.10	0.10
	SCHOSP4	0.64	0.02	0.06
	SCHOSP6	0.84	-0.05	-0.01
	SCHOSP11	0.78	0.00	0.06
	SCHOSP28	0.68	0.08	0.11
Financial Support	SCHOSP31	0.67	0.07	0.10
	SCHOSP14	0.75	0.00	0.00
	SCHOSP16	0.64	0.07	0.06
Role Modeling	SCHOSP12	0.15	-0.13	0.60
Verbal Encouragement	SCHOSP8	0.16	-0.18	0.53
	SCHOSP9	0.56	-0.06	0.30
Support for Overcoming Barriers	SCHOSP50	-0.04	-0.01	0.88
	SCHOSP52	-0.01	0.30	0.52
	SCHOSP53	0.09	0.22	0.56
	SCHOSP35	0.14	0.15	0.54
	Involvement	SCHOSP36	-0.09	-0.11
SCHOSP37		0.06	0.14	0.43
SCHOSP42		0.16	0.54	0.06
SCHOSP43		-0.07	0.48	0.19
SCHOSP44		-0.06	0.86	-0.10
SCHOSP45		0.20	0.64	-0.17
SCHOSP46		0.15	0.61	0.01
SCHOSP47		0.01	0.68	-0.07
SCHOSP48		-0.09	0.85	-0.07
SCHOSP5	0.89	0.03	-0.16	

	SCHOSP7	0.70	0.09	0.07
Information/Resources	SCHOSP13	0.66	-0.03	0.05
	SCHOSP30	0.51	0.19	0.16
	SCHOSP32	0.10	-0.03	0.73

*Second Confirmatory Factor Analysis School Personnel Scale*

Based on the three factor model shown by the exploratory factor analysis, another confirmatory factor analysis was performed on the School Personnel Support Scale. Only items from the exploratory factor analysis loading above .40 were kept in the model. Factor analysis using the maximum likelihood method was used to estimate the loadings for the three factors. Oblique rotations were used to allow the factors to correlate as was expected based on the original author’s assumptions. The findings for this scale in the present study were consistent with the newly defined 3 factor model. The chi-square value for the overall fit of the School Personnel Support three factor model was significant,  $\chi^2(374) = 887.97, p < .001$  suggesting a lack of fit between the data and the hypothesized model. However, large samples sizes increase the sensitivity of  $\chi^2$  and as such other fit indices were explored, including relative  $\chi^2 = 2.37$ , suggesting acceptable model fit. Root mean square error of approximation (RMSEA) = .08, Comparative fit index (CFI) = .88, and Standardized root mean square residual (SRMR) = .06 together indicate acceptable model fit. Psychometric information for the School Personnel scale is summarized in Table 2.

*Convergent Validity and Internal Consistency School Personnel Scale*

A bivariate correlation was calculated between the Perception of School Characteristics (PSC; McWhirter, 1992) and the School Personnel scale in order to provide convergent validity evidence for the school personnel scale. The School

Personnel Scale yielded a correlation coefficient of  $-.31$  ( $p < .001$ ) with the PSC. A negative correlation was expected given inverse coding, i.e. one Likert scale used higher numbers to indicate agreement and the other used lower numbers to indicate agreement. The low correlation coefficient may be indicative of a problem in using the PSC as a measure of convergent validity. The PSC asks students questions such as “Have you ever met with your guidance counselor to discuss your future education or career?” to which students can respond: “Yes, I don’t know, or No.” This measure does not afford students the opportunity to select the school personnel member they identify as most influential in their career planning. The sample from this study showed the majority of students (55.1%) indicated that the most influential person for them at school was a teacher. This suggests that the low correlation coefficient may be the result of students’ responses to items that asked about the support they receive from their guidance counselor (only 13.4% of the students in this sample chose guidance counselor as the person at school who influences them the most). A Cronbach’s alpha of .97 for the School Personnel Scale indicates a high degree of internal consistency.

Table 2: Psychometric Information for the Community and School Personnel Support Scales

Model	$\chi^2$	df	$\chi^2/df$	CFI	SRMR	RMSEA
Community 3 factor	179.87	62	2.90	.89	.06	.09
School Personnel 7 Factor	2091.90	804	2.60	.80	.07	.09

School	887.97	374	2.37	.88	.06	.08
Personnel						
3 Factor						

## **Chapter 5: Discussion**

### **Summary and General Discussion**

The purpose of the present study was to investigate the factor structure and provide further validity information for the Community and School Personnel Support Scales proposed by Ali et al. 2011. Ali et al., 2011 suggested social support is a contextual piece of SCCT that had not received sufficient attention in comparison to the cognitive aspects of the model. Lent et al. 2000 argued that measurement of the construct of social support has the potential to expand research in career development and planning. Ali et al. (2011) developed six measures, with the goal of assessing social support used by high school students making career plans. The forms of social support measured included: mother, father, sibling, peers, school personnel, and community. The School Personnel and Community scales defined as follows: School personnel was defined as one adult working at the student's high school, who has had the most influence on the student and Community was defined as the environment in which the student lived. Examples of community (town, city, group of towns combined to form the student's high school, and religious community) were provided, and prior to answering items on the community scale, students were asked to identify the types of occupations/positions in which people in their community work. (p. 132) A comprehensive literature review of content including contextual support in examining high school students' career and educational plans was conducted in order for the authors to develop a list of items for each of the six scales. The authors conducted a review of SCCT literature to ensure the construction of items was reflective of the concepts of this theory. The first compilation of items included 10-12 for the Mother, Father, Sibling,



Peer, and School Personnel scales, for a total of 80 items. The factors of these scales were as follows:

(a) cognitive guidance, that is helping formulate one's thinking and reasoning processes regarding one's pursuit of their postsecondary plans (e.g., goal setting); (b) financial support, which was defined as providing one directly with the monetary means or the ability and insight to procure monetary support for one's post-secondary plans; (c) role modeling, or providing one with a standard or representation of behaviors, thoughts, or emotions that can enhance one's success in postsecondary pursuits; (d) verbal encouragement, or providing emotional and verbal support; (e) support for overcoming barriers, or assisting one in surmounting any perceived or actual obstacles to postsecondary plans; (f) involvement with school/home from significant others; and (g) information/resources about the world of work, defined as a provision of relevant knowledge, prospects, assets, and other means that enhance one's postsecondary pursuits. (p. 132-133)

The sixth scale, Community, included an initial list of 40 items. The factors for this scale included:

(a) values and beliefs, which are the overriding principles, morals, ideals, attitudes, or generally accepted social doctrines regarding acceptable career paths; (b) opportunities and resources, or the types of career information and opportunities within one's community; and (c) modeling, or the types of jobs that community members hold and how involved the community is in helping students make decisions. (p. 133)

The results of the original analyses by Ali et al. (2011) showed a one-factor solution as the most statistically and theoretically meaningful fit for their data across all of the scales. This suggested that general support for postsecondary career plans of high school students was assessed by each scale rather than different forms of support being perceived differentially by high school students. The authors suggested their study be expanded by using confirmatory factor analysis to further explore the possibility of support being discriminately perceived by high school students.

The current study followed the recommendation of Ali et al 2011 to better understand the factor structure of the School Personnel and Community Support Scale. The results of the study indicated that the Community Support Scale did indeed exhibit a three factor structure as originally proposed by Ali et al., 2011. The three factors were values and beliefs, which are the overriding principles, morals, ideals, attitudes, or generally accepted social doctrines regarding acceptable career paths; opportunities and resources, or the types of career information and opportunities within one's community; and modeling, or the types of jobs that community members hold and how involved the community is in helping students make decisions. The School Support Scale did not fit the seven factor structure proposed by Ali et al. 2011, but did exhibit a three factor model, including: informational support, involved support, and managing barriers support. These findings provide further depth to the results found by Ali et al. 2011. In contrast to Ali et al. 2011 findings of support as uni-factorial, the results of the current study show that among the six scales that comprise the CSPSPS, at a minimum the Community and School Personnel Scales illustrate the ability to capture different,

distinguishable factors of the construct of support, suggesting they could have differential utility in predicting career outcomes.

Convergent validity results (bivariate correlations with existing support scales or items created for the purposes of assessing validity) were  $-.31$  (school personnel) and  $-.38$  (community). These moderate to low correlations may suggest these two scales could be capturing aspects of support for career planning that existing scales have not been able to measure. Internal consistency results, (Cronbach's alpha) were high at  $.97$  (school personnel) and  $.88$  (community) high, thus suggesting a high degree of internal consistency for each of these two scales.

Additionally, the Community and School Personnel scales showed overlap in the content of their factor structures with existing measures. The Community and School Personnel Scales were primarily different in the source of support they measured but the way in which support was received from the various sources was reflected similarly in factor structures of other measures. For example, The Career-Related Parent Support Scale by Turner et al 2003 showed a four factor structure including: Instrumental Assistance, Career-Related Modeling, Verbal Engagement, and the Emotional Support. The factors are similar to the Community factors of and the School Personnel factors in terms of provision of assistance via information/opportunities/resources and guidance, modeling, and active engagement via verbal and emotional/values-based encouragement. The School Personnel factor structure does allow for more specific assessment of the impact of support in overcoming barriers, which according to Lent et al. 2000 is vital to helping a student develop self-efficacy beliefs that will aid in career decision making. Also the Community Scale more directly assesses the impact of support via values and

beliefs, which allows for a more nuanced look at how social support as conceptualized within SCCT can influence the career and post-secondary decisions of individuals, as was suggested by Lent and Brown, 2006. The general overlap in the thematic content of the factor structures between the Community and School Personnel CSPSPS scales and other existing measures indicates these CSPSPS scales are tapping into already established modes of support, but are different in terms of the sources of support they are able to measure.

The original authors proposed that these scales could be used in a multitude of ways in future research, which this study supports. Previous research has focused primarily on academically related support, which both the school personnel and community support scales can assess, however these scales can also assess non-academically related support, such as from role modeling, resource/financial support, and support for overcoming barriers. Given that both the school personnel and community support scale are based in SCCT, future researchers could use the scales to explore the impact of various forms of support on the primary elements of SCCT, including self-efficacy beliefs, outcome expectations, and goal representation (Lent, Brown, & Hackett, 1994; 2000). SCCT posits that these three mechanisms may be influenced by support systems. More specifically, Lent et al. 2000 recognized how the development of interest in certain careers could be linked back to the perception of support when contemplating future endeavors. Future research may be able to use the school personnel and community support scales to compile information to expand the field's literature base regarding the differential influence of various types of support on the three SCCT

mechanisms. These scales also offer the ability for future researchers to more thoroughly examine one or two individual types of support at a time.

### **Limitations**

Although this study showed acceptable validity and reliability evidence for the Community and School Personnel Scales, there are limitations that warrant discussion. Literature review and Social Cognitive Career Theory suggested that the Community and School Personnel Scales would exhibit multi-factor structures, indicating they measured individual identifiable types of support. The Community Scale showed confirmation of this hypothesis. The School Personnel Scale required additional intervention to illuminate its factor structure. More research with different samples, replicating and further examining the newly defined three factor structure is needed in order to support the notion that the School Personnel Scale can adequately distinguish the categories that inform School Personnel as a support index. Lastly, the data used in this research study was obtained from small rural high schools in the Midwest comprised of a dominantly Caucasian American student base. Item response may have been variable based on the particular school, community setting (e.g. urban versus rural), ethnic background, and geographical region of the country (e.g. Midwest versus Northeast). Further research is needed to examine any variability in perceptions of contextual support across community settings, ethnic background, and geographical location.

### **Implications for Theory**

The identification of multi-factor structures among the School Personnel and Community scales is important to the field. Support for post-secondary planning has been viewed from a uni-factorial framework, assuming that different types of support for post-

secondary planning are not distinguishable. In the SCCT model support is defined as a contextual factor which facilitates the choice and pursuit of a career (Lent, et al. 2000). Perceived self-efficacy, outcome expectations, individual characteristics, and the support or barriers encountered are all elements of SCCT theory which comprise the support needed by students exploring post-secondary endeavors. Lent, Brown, and Hackett (2000) further explained how the development of interest in certain careers could be linked back to the perception of support when contemplating future endeavors. The process of career development can be aided by social support in helping students identifying opportunities related to a given career, or conversely, a lack of support, actual or perceived, can impede the process of career development (Lent, et. al. 2000).

The results of the current study suggest that research that different ways that students experience support students may be warranted. For example, do school personnel provide different types of support than parents? This is an important addition to the field as social support has been conceptualized within SCCT but lack of measurement has been a major limitation to fully understanding how it operates within the SCCT model to influence the career and post-secondary decisions of individuals (Lent & Brown, 2006).

The findings of the current study are just some of many that will be necessary to establish of body of research substantial enough for the understanding of social support in the context of career and post-secondary decision-making. SCCT emphasizes self-efficacy beliefs, outcome expectations, and goal representations (Lent, Brown, & Hackett, 1994; 2000), support is defined within the SCCT model as a background contextual factor or a proximal contextual factor. When support is defined as a

background contextual factor it is assumed to influence learning experiences, which in turn directly influence the development of self-efficacy beliefs and outcome expectations. When it is a proximal contextual factor it is assumed to promote the realization of goals into an action plan. However, to date studies have not distinguished how support for post secondary plans operates or how different sources of support may provide different types of support in the career development process. It is somewhat unknown what distinguishes one source of support from another in the development of self-efficacy beliefs, outcome expectations, and how this leads to career interest development.

The current study adds to this area of literature in that the multi-factorial structure of the School Personnel and Community scales provide nuanced information regarding the type of support students perceive among these specific groups of people in their lives. The nuanced information starts with the breakdown of each scale into its respective factor structure. The School Personnel Scale breaks into three factors: informational support, involved support, and managing barriers support. Informational support refers to formulating and reasoning through his or her postsecondary plans. Further, this factor is related to how a student may experience support when others provide relevant knowledge and assets. This factor is congruent with the message provide by Ali and McWhirter (2006) suggesting that information, guidance, and financial resources are necessary for students to feel able to successfully pursue college or advanced degrees. The factor of involved support refers to the students' perception of importance and effort placed on their post secondary planning by salient people in their lives. Turner, Alliman-Brissett, Lapan, Udipi, & Ergun (2003) showed that parental support can influence the feelings of confidence a student has in their educational and career planning, and while parents do

not represent the entirety of individuals who might be involved in a student's life, it does suggest that what this factor is assessing is consistent with existing literature. The third factor of support for managing barriers taps into how a student feels they are aided in prevailing over anticipated/perceived or actual obstacles to their post secondary planning. Again, this factor is consistent with existing knowledge provided by Osipow, Carney, and Barak (1976) with the Career Decision Scale which shows that career indecision can be mitigated with interventions designed to address the barriers associated with career-decision making.

The Community Scale breaks into three factors as well: values and beliefs, opportunities and resources, and modeling. Values and beliefs capture the overriding ideals, morals, principles, attitudes, or generally accepted social doctrines regarding acceptable career paths. Opportunities and resources refers to the variety of opportunities and career information available in one's community. Modeling provides information regarding the types of jobs that community members hold and how involved the community is in helping students make decisions. (Ali et al., 2011). These factors are all congruent with Ali and McWhirter (2006) suggestions that perceptions of support (or lack thereof) from the larger community could contribute to self-efficacy beliefs and outcome expectations for students living in rural areas. Given that Community support has largely been absent in research and considerations regarding post-secondary planning, the findings in this study will allow for further exploration of the tenets of Social Cognitive Career Theory. The CSPSPS Community Scale is a measure that can assess for community support, thereby allowing for more information to be gathered to further investigate such influences on self-efficacy beliefs and outcome expectations. .



The factor structure of both the School Personnel and Community Scales indicates the nuanced ways in which students can perceive support. All of these variations of support are contextually dependent and as such they align with the description of Lent et al. (2000) of social support being a contextual factor which facilitates the choice and pursuit of a career.

### **Research and Counseling Implications**

Although this study had limitations, the Community and School Personnel Support Scales could prove to be useful to researchers interested in exploring the impact of these specific types of support on career outcomes for students in high school. According to Lent, et al. (2000) contextual supports have received relatively little attention in the history of Social Cognitive Career Theory. They suggest the focus has remained on career barriers and career supports for career goals and outcomes. The Community and School Personnel Scales are rooted in Social Cognitive Career Theory and examine factors of support for career plans not previously assessed. As such, these scales may prove to be useful to researchers interested in exploring both academic related support and non-academic related support in relation to career outcomes. The focus of previous research has been most often related to teacher and parent support. The factor structure of the School Personnel and Community Scales of the CSPSPS create an opportunity for researchers to examine how other salient people in a student's life, both in school and in/near their home can impact their career planning. Additionally researchers could utilize these scales in exploring the idea within SCCT that self-efficacy beliefs influence the link between contextual support and career interests, and how different sources of support can impact the development of such self-efficacy beliefs.

Counseling psychologists, school counselors, and others working with students need to have access to information about the variety and functions of multi-factorial support structures. In order for such information to be available to professionals, it is necessary that measures exist that are able to illuminate such factors of support in order to establish a related body of research. This study shows that the CSPSPS is one such measure, and as Ali et al., 2011 showed the CSPSPS to be based in SCCT, this measure may allow researchers access to the assessment of forms of support which were previously inaccessible.

Career education is another field that could benefit from use of the Community Support and School Personnel Support Scales. High school advisors, school counselors, and/or counseling/vocational psychologists working with high school students or who are involved in general career education could utilize these scales to illustrate the types of support available and their potential impact. Career intervention programs could be aimed at helping students identify members of the community or school personnel who could be trusted and depended upon for career planning purposes.

Despite limitations in the study, the importance of relationships between students and school personnel and between students and community members has been illuminated. Results showed that students identified the person who works at their school and influences them the most as follows: 55.1 % said teacher, 17.4% said athletic coach, 13.4% said guidance counselor, 5.3% said other, 2.4% said organization sponsor/advisor, .8% said administrative assistant or secretary, and .4% said administrator. Social Cognitive Career Theory highlights the importance of the contextual factors that influence students to explore careers which interest them (Lent et al., 2000).

The relationships that exist between students and school personnel and community members can be integral parts of such contextual influences. It is worthwhile to consider how to foster such relationships. Given the number of school personnel available to students and the variety of responses indicated by students of who they view as influential, it may be wise to establish a mentor/mentee program. All interested school personnel could volunteer to be a part of such a program and the school or school district could provide training for these individuals in helping them prepare to be mentors. After completing the School Personnel Support Measure students could be paired with the school personnel they identified to be most influential. There could be designated times for individual or small group meetings for this program, and mentors could have the option of extending their mentorship to helping with college applications, resumes, job searches, etc. In this way student could benefit from more individualized attention from mentors within their schools. Such attention and perception of support have the potential to allow for assessment of increases in self-efficacy beliefs and outcome expectations among students.

In a similar way, the variety of occupations among community members in a given location should be considered. Results from this study showed that students identified the predominant occupations in their community to be: 32.8% farming positions, 21.9% factory positions, 11.7% service positions, 9.3% clerical positions, 8.1% professional positions, 5.7% domestic work positions, and 4.0% trade/construction positions. Given the variety of perspectives offered from individuals in different occupations, connecting students with interested community members could prove to be beneficial. A mentor/mentee program similar to that with school personnel could be

established once interested community members feel adequately prepared to serve in a mentor role. Outreach programs could be hosted by invested school personnel to recruit community members. Trainings, such as those offered by psychologists and school counselors, could then be hosted for those interested community members in order to more adequately prepare them to support the student(s) they are paired with. After completing the Community Support Measure students could be paired with the community members they identified to be most influential. These pairings could meet during designated times during school hours if possible for all parties, or outside events or even field trips could be arranged to allow students to interact with the community members in the community, or even directly in the locations where these community members work. First-hand experience or shadowing could be beneficial in helping students understand more about the career paths they are interested in. If such connections are fostered among students and school personnel and community members, students will have the opportunity to feel supported by and learn from individuals who are invested in their growth as well as have a plethora of knowledge about their community and opportunities available to them after high school. As with School Personnel support, these connections and perceptions of support have the potential to allow for assessment of increases in self-efficacy beliefs and outcome expectations among students.

SCCT theory points to the importance of assessing both the conduits and barriers to career development (Lent et al. 2000). The School Personnel and Community scales of the CSPSPS offer a nuanced way to explore such influences on career development. These scales begin to close the gap in the literature that has so long focused on broad

measures of support. The factors are theoretically driven and consistent with the larger literature base that exists in the fields of support and career development. These scales have the capacity to advance the field and add to the understanding of how contextual support, in conjunction with the social cognitive mechanisms of SCCT (self-efficacy beliefs, outcome expectations, and goal representations) interact to impact career development.

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