FAMILY INFLUENCES ON CAREER DECISION-MAKING SELF-EFFICACY OF SECONDARY VOCATIONAL STUDENTS IN CHINA

by

XUE XING

(Under the Direction of Jay W. Rojewski)

ABSTRACT

This study examined the role of selected family variables in predicting 587 Chinese secondary vocational students' career decision-making self-efficacy. Family *structure,* or demographic, variables that reflected family members' socioeconomic status, and *process* variables, especially, parental career-related behaviors, were examined. General parental psychosocial support was a significant factor in predicting career decision-making self-efficacy and explained 38.3% of the variance of career decision-making self-efficacy for this group of Chinese adolescents.

INDEX WORDS: Career decision-making self-efficacy, Family influences, Chinese adolescents, Social cognitive career theory

FAMILY INFLUENCES ON CAREER DECISION-MAKING SELF-EFFICACY OF SECONDARY VOCATIONAL STUDENTS IN CHINA

by

XUE XING

BA, Tongji University, P.R. China, 2011

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2016

FAMILY INFLUENCES ON CAREER DECISION-MAKING SELF-EFFICACY OF SECONDARY VOCATIONAL STUDENTS IN CHINA

by

XUE XING

Major Professor:	Jay W. Rojewski
Committee:	Roger B. Hill
	In H. Lee
	John M. Mativo

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
May 2016

DEDICATION

I dedicate this dissertation to my parents, Kuize Xing and Dongmei Huang, for their unconditional love and support. They believe in me and provide me with the best they can offer. I also dedicate this dissertation to my deceased grandparents whom I miss dearly. I hope you will be proud of your granddaughter in the other world.

ACKNOWLEDGEMENTS

This dissertation witnesses my growth to become a more independent woman, a critical thinker, and an emerging scholar. I have gained so much knowledge, experience, and, most importantly, precious love and support from many people. This part of the journey of my life would not be so wonderful without your input. First and foremost, I would like to express my deepest gratitude to my major professor, mentor, and role model of my life, Dr. Jay W. Rojewski. Your integrity as a person and rigor as a scholar has inspired me in many ways. You always encourage me to challenge myself, respect my attempts and decisions, support me, and share with me life wisdom. All these are invaluable. I could not grow so fast without your help.

I also would like to give my sincere gratitude to my committee members, Drs. Roger B. Hill, In H. Lee, and John M. Mativo, for your expertise, support, and friendship. I appreciate every one of you for offering me straightforward opinions and challenging me to think deeper and more comprehensive. My work has improved greatly with your input. I also appreciate you, Dr. John M. Mativo, for inviting me to celebrate Thanksgiving in past five years and introducing me to your family and close friends. I feel the warmth of family in a foreign country.

In addition, I would like to thank other faculty members who supported me during this doctoral journey at the University of Georgia. I thank you, Drs. Robert Wicklein, Elaine Adams, and Bettye Smith, for your care and encouragement. I thank you, Dr. Karen Jones, for guiding me through the most challenging course I had in the first semester. As the only international student in the classroom, I had little knowledge about U.S. legislations and educational practice and had difficulty understanding various accents of my classmates. You gave me extra help and

attention. I was the only one in class who passed the final test with full score, which gave me great confidence to succeed this doctoral program.

In the end, I want to thank my friends who accompanied me through ups and downs of this long journey. Dr. Minwook Lee, Dr. Jiangmei Yuan, Dr. Yu-ju Lin, Wenting Yang, and Hwachoon Park, you made my journey less lonely and more fun. I thank you, Stephanie Gouge, Yihong Xun, Lavon Smith, Mallory Stallings, Rebekah Nunez, and Sybil Zimmerman, for accompanying me blending in American culture. Thank you “Uncle” Bob and “Aunt” Lynn Culver for your hospitality, generosity, and good heart. My family had a wonderful time traveling across the U.S. seeing many fabulous landscapes. Last but not least, special thanks and many love to my dearest friend Margaret Theivagt, who loves me and supports me to get through the most difficult time. I wish you all be happy and successful in your lives.

TABLE OF CONTENTS

Page

LIST OF TABLES ix

LIST OF FIGURES x

CHAPTER

1 INTRODUCTION 1

Rationale 1

Statement of Purpose 4

Research Questions 5

Theoretical Framework 5

Importance of the Study 7

2 REVIEW OF LITERATURE 9

China's Education Background 9

Social Cognitive Career Theory 15

Career Decision-Making Self-Efficacy 22

Family Influences on Career Decision-Making Self-Efficacy 24

Family Influences in a Chinese Context 28

3 METHOD 32

Statement of Purpose 32

Research Questions 33

Design 33

Participants....34

Instrumentation....37

Procedure....43

Data Analysis....45

4 RESULTS....52

Handling Missing Values....53

Factor Structure of Scales....55

Regression Analysis....60

Research Question One....62

Research Question Two....64

5 DISCUSSION....67

Summary of Study....67

Discussion....77

Implications for Practice....83

Limitations and Recommendations for Future Research....84

REFERENCES....87

APPENDICES

A PERMISSION TO REPRODUCE THE CAREER DECISION SELF-EFFICACY SCALE....111

B CAREER DECISION SELF-EFFICACY SCALE-SHORT FORM....113

C PARENT CAREER BEHAVIOR CHECKLIST....115

D DEMOGRAPHIC QUESTIONNAIRE....118

E STUDY QUESTIONNAIRE IN CHINESE....120

LIST OF TABLES

Page

Table 3.1: Data Analysis for Each Research Question 50

Table 4.1: Fit Indices of Confirmatory Factor Analysis of the Parent Career Behavior Checklist 58

Table 4.2: Factor Loadings for the Parent Career Behavior Checklist 59

Table 4.3: Descriptive Statistics and Correlations of Study Variables 63

Table 4.4: Regression Coefficients and Collinearity Statistics of Regression Analysis 65

LIST OF FIGURES

Page

Figure 4.1: Parallel analysis of latent factors in the Parent Career Behavior Checklist 57

Figure 4.2: Standardized residual scatterplot of the Career Decision Self-Efficacy scale-Short Form scores of Chinese adolescents 61

Figure 4.3: Normal P-P plot of standardized residuals of the Career Decision Self-Efficacy scale-Short Form scores of Chinese adolescents.....62

CHAPTER 1

INTRODUCTION

Rationale

Self-efficacy is a pivotal influence in determining individuals' behavior and achievement in academic and career domains. Self-efficacy refers to an individual's beliefs about his or her abilities to attain a goal and complete tasks (Stajkovic & Luthans, 1998a). Unless individuals believe they have the ability to achieve goals, they have little motivation to act or to persevere in the face of obstacles (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). Positive anticipation of goal achievement (e.g., success) based on competence or previous experience motivates individuals to implement learning strategies to overcome difficulties and produce desirable outcomes, which, considered as an experience of success, reciprocally enhances individuals' self-efficacy (Zimmerman, 2008). Self-efficacy positively affects the quality of academic performance (Caprara et al., 2008) and is negatively related to procrastination in the achievement of goals (Wäschle, Allgaier, Lachner, Fink, & Nückles, 2014). Self-efficacy guides young adolescents to the career that will help them realize their potential (Bandura et al., 2001); inspires late adolescents' and young adults' career exploration and interest cultivation (Lent et al., 2008; Turner & Lapan, 2005); and affects adults' further career development, pursuits, and job satisfaction (Klassen & Chiu, 2010).

Career decision-making self-efficacy focuses on ways that individuals navigate the career decision-making process. Individuals who lack confidence in their ability are less likely to engage in decision-making tasks and more likely to avoid career exploratory behaviors, thus

impeding the development of decision-making skills and causing problems in career decision-making. Individuals who have completed previous related tasks and goals are often more decisive because successful experiences of accomplishment enhance self-efficacy expectations (Bandura, 1977; Taylor & Betz, 1983). High career decision-making self-efficacy is usually associated with positive career attitudes, high self-esteem, clear vocational identity (Choi et al., 2012), a high level of participation in career-related activities such as career exploration and career planning (Rogers & Creed, 2011), and commitments to career choice (Chung, 2002), but is negatively associated with perception of task difficulties and barriers (Taylor & Betz, 1983) and vulnerability to stress and depression (Bandura et al., 2001). Low career decision-making self-efficacy indicates a higher level of emotional and personality-related career decision-making difficulties, which often lead to career indecision (Gati et al., 2011).

A number of factors can influence career decision-making self-efficacy such as age, gender, personality traits, and contextual factors including support from family, peers, and school (Rogers & Creed, 2011; Sovet & Metz, 2014). Family is an important contextual feature in U.S. adolescents' career decision-making process and career development (Fouad et al., 2010; Paloş & Drobot, 2010). Parental educational and occupational attainment indicates the potential economic resources (i.e., finance and social network) available to adolescents for their academic and career development (Blustein et al., 2002). Family dynamics, such as parental support and family interactions, play a more important role in adolescents' career development than family structural variables (e.g., socioeconomic status). Parents pass on values and expectations to adolescents; provide them with assistance in the form of verbal encouragement, instruction, career-related modeling, and emotional support (Howard, Ferrari, Nota, Solberg, & Soresi, 2009; Turner & Lapan, 2005); and, thus, influence the development of career aspirations and

expectations, career exploration, and perceived self-efficacy of adolescents (Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Hartung, Porfeli, & Vondracek, 2005; Metheny & McWhirter, 2013; Rogers & Creed, 2011). Keller and Whiston (2008) suggested investigation the role of specific parenting behaviors (e.g., providing information about specific careers and encouraging children to participate in career exploration activities) on the career development of young adolescents.

In Chinese culture where social norms value affiliation, interdependence, and respect for elders, individuals rely strongly on family for influence and support throughout their lifetime. Chinese are more likely to consider family expectations and obligations when choosing a career, especially a career that enhances the social status and brings glory to their family (Fouad et al., 2008; Hannum, An, & Cherng, 2011; Leong, Kao, & Lee, 2004). Chinese parents have high aspirations for their children in terms of education and career choices, especially successful middle-class parents who are keen to invest in their children's education to ensure that their children maintain or surpass their current social position and lifestyle (Sheng, 2012). Studying hard, achieving scholarly honor, and working for the government have become the dream career path for young people from ancient to modern times (Zhang, Hu, & Pope, 2002; Zhou, Leung, & Li, 2012). This ideal career path becomes the source of family expectations, but is also a source of stress for many Chinese youth (Okubo, Yeh, Lin, Fujita, & Shea, 2007). In addition, due to the competitive examination system in China, adolescents barely have time for extracurricular and career exploration activities and, thus, little attention is paid to acquiring knowledge about the world of work. As a result, many students at an early age have to consider their parents' opinions and often select career paths chosen by their parents (Mau, 2000).

A few studies have examined the construct validity of career decision-making self-efficacy and the measurement invariance of career decision-making scales to different groups of Chinese students (e.g., Hampton, 2005, 2006; Jin, Ye, & Watkins, 2012; Mau, 2000). Jin, Watkins, and Yuen (2009) examined the role of career decision-making self-efficacy plays in the relationship between personality and career commitment. Despite the influence of family on adolescents' career and life, little is known about how family structural and dynamic variables influence Chinese adolescents' career development. Therefore, it was important to examine the career decision-making self-efficacy of Chinese adolescents and determine the influence of family on Chinese youths' career decision-making self-efficacy.

Statement of Purpose

The purpose of this study was to examine the influence of family factors on the career decision-making self-efficacy of secondary vocational students in China. Career decision-making self-efficacy refers to the degree of confidence an individual has to engage in and accomplish tasks associated with making and committing to a career choice (Taylor & Betz, 1983). Family plays a crucial role in U.S. adolescents' career development (Hartung et al., 2005), but little is known about family influences on the career development of Chinese youth. Therefore, I examined (a) the career decision-making of Chinese adolescents and (b) how selected family factors influenced the construct. Family variables were categorized as (a) *structure*, or demographic variables that reflected family members' socioeconomic status and (b) *process* variables, which referred to family members' interaction and support (Lindstrom, Doren, Metheny, Johnson, & Zane, 2007). In this study, residence and family socioeconomic status (SES) were used to reflect family structure variables. General parental psychosocial support, as well as specific parental actions related to adolescents' career concerns (Keller & Whiston,

2008), reflected family process variables. Questionnaires of translated instruments and demographic information were administered to a convenience sample of all first-year students enrolled in a key secondary vocational school in Lanzhou, China. Results identified the influence of selected family factors on the career decision-making self-efficacy for this group of students.

Research Questions

Two research questions were answered in this study:

1. What is the career decision-making self-efficacy of Chinese vocational students?
2. What is the best set of selected variables to explain the variance found in the career decision-making self-efficacy of Chinese vocational students?

Theoretical Framework

Career decision-making self-efficacy is an integral part of social cognitive career theory (SCCT; Lent, 2005; Lent, Brown, & Hackett, 1994, 2000). SCCT was derived from Bandura's (1977, 1986) general social cognitive theory, which asserts that people learn by observing others and that personality is a result of the interaction between environment, behavior, and a person's cognitive processes. Cognitive processes refer to the mechanism of human minds proactively and creatively interacting with the environment (Bandura, 2001). Social cognitive theory emphasizes the role of self-regulatory behavior in guiding human motivation and behavior (Lent et al., 1994), while SCCT integrates self-regulatory processes inherent in academic and career development with other personal, behavioral, and contextual/environmental factors (Ferry, Fouad, & Smith, 2000). Self-regulatory learning refers to the process by which an individual takes control, evaluates, and regularly reflects on his or her learning, behavior, and goal achievement (Schmitz & Wiese, 2006; Zimmerman, 2002).

SCCT explains three intricately linked tenets affecting individuals' career behavior: self-efficacy beliefs, outcome expectations, and personal goals (Lent et al., 1994). Self-efficacy refers to individuals' beliefs about their abilities to attain a goal and complete specific tasks. It is assumed that self-efficacy beliefs are acquired and modified through four primary informational sources: (a) personal performance accomplishments, (b) vicarious learning, (c) social persuasion, and (d) physiological states and reactions (Bandura, 1986). Lent, Lopez, Brown, and Gore (1996) suggested that these four sources are highly inter-correlated and that self-efficacy depends more on the influence of one's personal performance accomplishments than on the influence of significant others. Outcome expectations refer to an individual's beliefs about the likely results of performing a particular behavior. Outcome expectations are usually formed through past experiences and the perceived results of these experiences. Personal goals are the determination to engage in a particular activity or to affect a particular outcome. People's behavior is organized or sustained based on these established goals.

SCCT assumes that self-efficacy, outcome expectations, interests, and goals are associated with career planning and exploration activities. People are likely to form enduring interests in activities that they feel efficacious in and that produces positive outcomes. These interests trigger goal establishment for future activity participation and practice, producing particular performance attainments (e.g., successes and failures) which will revise self-efficacy and outcome expectations (Lent et al., 1994). This process will repeat itself continuously over the lifespan. High self-efficacy individuals with higher career outcome expectations are more likely to set higher career-related goals and engage in more career planning and exploration (Rogers, Creed, & Glendon, 2008). In contrast, individuals with low career decision-making self-efficacy tend to perceive more barriers, such as those related to gender, race/ethnicity, age, SES,

or family constraints. Perceived barriers may create negative outcome expectations, which lead to avoiding career-related activities (Brown & Lent, 1996).

SCCT proposes that personal input factors (e.g., age and gender), contextual factors (e.g., supports and barriers), and experimental/learning factors influence an individual's career decision-making process. These factors shape individuals' career decision-making self-efficacy and may directly influence individuals' career decision-making goals and actions or indirectly affect career-related goals and actions via career decision-making self-efficacy. Parents as important role models for children play great roles in adolescents' academic and career development. For example, a supportive relationship was found to predict academic goal orientations, intrinsic motivation, academic achievement and career development (Howard et al., 2009). Financial support from the family may influence an individual's process of transforming career interests to career goals (Lent et al., 2001). SCCT provided the theoretical framework for this study to explain the role of self-efficacy plays in the career decision-making process and the influence of selected family and personal variables on Chinese adolescents' career decision-making self-efficacy.

Importance of the Study

Although previous studies have revealed the importance of self-efficacy for making career decisions and for successful career development in the U.S. (e.g., Burns, Jasinski, Dunn, & Fletcher, 2013; Choi et al., 2012; Garcia et al., 2012; Metheny & McWhirter, 2013; Nam, Yang, Lee, Lee, & Seol, 2011), there is limited knowledge about how the construct of career decision-making self-efficacy applies to Chinese adolescents. In addition, the role of parents in youth's career decision-making self-efficacy is seldom studied in collective cultures such as China (Zhou et al., 2012). In these cultures, the influence of family may be more pronounced on

youth's self-efficacy and perceived values toward work (Fouad et al., 2008; Leong et al., 2004). This study examined the effect of family structural variables, such as family socioeconomic status, and also family process variables, especially parental career-related behaviors (i.e., general parental support behavior and specific parental behaviors related to adolescents' career concerns), on Chinese youths' career decision-making self-efficacy. The results of this study can be used by parents and school career counselors to provide Chinese students with career counseling support and career exploration opportunities. Finally, this study intends to call on attention to Chinese secondary vocational students' career development and career guidance and counseling practice in China.

CHAPTER 2

REVIEW OF LITERATURE

China's Education Background

Education System in China

China's education system reflects a "9+3+4" model with 9 years of compulsory education, 3 years of high school level education, and 4 years of college (higher) education. Nine-year compulsory schooling constitutes China's current basic education system. The *Compulsory Education Law*, first enacted in 1986 and amended in 2006, mandates that all children of school age receive 9 years of schooling with no tuition and prohibits the employment of children under age 16 (Fang, Eggleston, Rizzo, Rozelle, & Zeckhauser, 2012). Compulsory education usually includes 6 years of elementary education and 3 years of middle school education for children ages 6 to 12. Before receiving 9 formal years of education, children ages 3 to 5 can attend kindergarten; children who are five years old but willing to enroll in elementary schools are required to attend extra preschool classes offered by local elementary schools, which usually last for a year, to be better prepared for school (Hu & Szente, 2009). When students complete elementary education, they are usually assigned to the nearest middle school to continue their compulsory education.

Education beyond elementary school diverges into two tracks: general and vocational education. General education is academic in focus and prepares students for higher education institutions. Vocational education, on the other hand, offers students hands-on skills and knowledge needed to enter the job market. At the middle school level, general education refers to

regular middle school education, which most students will receive after completion of elementary school; vocational education refers to junior secondary vocational schools, which exist primarily in undeveloped rural and remote mountainous areas to meet the needs of labor for the local economy (Kuang & Shi, 2009; Wang, 2010). Junior secondary vocational education is a part of the nine-year compulsory education. However, the number of junior secondary vocational schools nationwide decreases quickly with the popularization of compulsory education and accounts for less than .1% of regular middle school education in 2013; the same statistics apply to the number of student enrolled in these junior secondary vocational schools (China Statistical Yearbook, 2014).

At the high school level, general education includes both general academic high schools and academically prestigious institutions called *key* high schools, which only admit students with the highest scores on high school entrance exams (Hannum et al., 2011). Secondary vocational education includes secondary specialized schools, vocational high schools, and skilled workers' schools (Kuang & Shi, 2009). Secondary specialized schools are typically administered by the Department of Labor, vocational high schools are administered by the Department of Education, and skilled workers' schools are generally run by large and medium-sized enterprises. All three types of vocational schools usually have a 3-year academic structure. In terms of preparing graduates, there are fewer differences in the curriculum of the three types of vocational schools today than in the past (Wang, 2010). Graduates of these programs are awarded vocational diplomas by the Department of Education, and those who pass state professional qualification exams are awarded vocational qualifications certificates by the Department of Labor. For those who cannot enroll in a general academic high school, vocational high schools offer opportunities to continue their secondary education. Vocational education at the high school level enrolls about

46% of middle school graduates and plays an important role in increasing the educational level of the workforce and providing specialized technical personnel for the country (China Statistical Yearbook, 2014; Wang, 2013).

Both academic high school and secondary vocational school graduates can continue their education at 4-year universities or 4-year tertiary vocational schools/colleges, depending on their performance on the national college entrance exams. Academic high school students with inadequate scores on the national college entrance exams may *fall off* the academic track and enroll in tertiary vocational schools, and vocational students with qualified performance on the national college entrance exams may *advance* their education at 4-year academic universities. Students who graduate from a university can continue their education by going to graduate school. Those who graduate from vocational colleges usually enter the job market. Adults with years of working experience can continue their education at higher education institutions through national high-stakes exams such as the adult national college entrance exams and the national graduate school entrance exams (Wang, Ding, Fu, Lv, & Chen, 2013).

Comparison of General and Vocational Curricula at the High School Level

The high school curriculum is standardized throughout China (Zhu, 2007). In the first year of high school, there are some diverse courses offered, such as Chinese, mathematics, oral English courses with foreign instructors, physical education, physics, chemistry, and politics. By the end of the first year of high school, students are required to choose either science or art as the focus of their study in order to prepare for the national college entrance exams (Lin, Deng, Chai, & Tsai, 2013). Science courses include subjects tested in the national college entrance exam for science-focused students, such as physics, chemistry, and biology. Courses in the liberal arts include subjects tested in the national college entrance exam for liberal arts-focused students,

such as lower-level mathematics, history, geography, and politics. In the second year of high school, students who choose science as the focus will enroll in science courses and students who choose liberal arts as the focus will enroll in liberal arts courses. All high school students enroll in Chinese, mathematics, and English, which are three common subjects tested in both national college entrance exams for science- and liberal arts-focused students (Hannum et al., 2011). However, students in the science track learn more advanced mathematics while students in the liberal arts track enroll in lower-level mathematics. Levels of difficulty of mathematics curricula match the levels of mathematics tests for these two national college entrance exams. During the third year of high school, school organized exams are common. Initially, these exams are administered once a month; eventually, they are administered weekly. Extra class time on weekends is required for all seniors, and parents are willing to pay for this extra training because they want their children to attend key or prestigious colleges.

The curriculum of vocational schools is comprehensive, holistic, and relatively independent (Kuang & Shi, 2009). Senior secondary vocational schools typically emphasize a specific field of work, such as the business trade, electronics, or engineering. A standardized curriculum was constructed through an analysis of selected work systems with specific integrated job requirements. Senior secondary vocational schools adopt a "2+1" structure for some majors with the 3rd year requiring a full-time internship in appointed companies or factories. There might be some basic level courses in common for students from different majors for the first year of school. However, as students' knowledge of their selected vocational specialty increases, the curriculum becomes highly specialized. Vocational schools cooperate with companies in relevant fields to receive reduced-priced software for instruction, access to facilities, and technical support (Yi et al., 2013), which explains why curricula of many vocational schools each

specializes in one field of work. The majority of graduates enter the job market soon after they graduate. However, there is always a portion of vocational students who want to attend a 4-year academic university. They do so by taking the college entrance exam for vocational students. Vocational schools usually offer relevant courses to help them with the preparation for the exam.

Examination and School Admission in China

High-stakes exams such as the high school and the national college entrance exams play an important role in selecting qualified candidates for enrollment in a higher level of educational institutions (Hannum et al., 2011). For students, their academic performance on those exams result in success or failure to further their education, pursuit of education in a general or a vocational track, and probably the type of employment (blue or white collar jobs) students will eventually obtain (Chu, Li, Yan, Han, & Fan, 2015; Ding & Lehrer, 2007). For example, the high school entrance exam determines if students can enroll in a key high school, a general high school, or a senior secondary vocational school. For those who cannot enroll in a general academic high school, vocational high schools offer opportunities to continue their secondary education. The high school exit exam determines if students will successfully graduate from high school. There are a few options for students who fail to meet cutoff scores in the high school entrance exam. Students may pay to repeat the final year of middle school at their current school or another school. They can also participate in the following year's high school entrance exam. Other options include paying to enter private high schools or enrolling in added-tuition classes in public high schools (Hannum et al., 2011).

National college entrance exams determine if students can enroll in a prestigious university, a general academic university, or a vocational college, as well as enrollment in desired academic majors (Zhu, 2007). Universities throughout China are categorized according

to their admission guidelines and timelines. The most prestigious and key universities admit students first. General academic universities belong to the second wave of admission decisions, followed by vocational colleges. Students who fail to reach exam cutoff scores for universities at one level are automatically assigned to the next level of universities until they are either admitted or fail to be admitted. Those with exam scores lower than admission cutoffs for an intended major, but higher than admission cutoff scores for the university, can still be admitted to the university but will be required to transfer to majors with lower admission cutoff scores. However, if a student's score is below the admission cutoff of a targeted university, there is no possibility of admission to that university.

Diagnostic testing serves as an important and efficient indicator of students' likely performance on those high-stakes tests, allowing students to become aware of their academic performance, adjust plans to better review lessons, and make decisions about school application strategies for high school or national college entrance exams (Zhao, 2013). There are usually three rounds of diagnostic tests organized by the local bureau of education before the administration of national high-stakes exams. The interval between each round is usually one month. Diagnostic tests are created by public test service institutes and distributed to each school. Test service institutes analyze test scores and then give feedback about students' performance compared to their peers. Students usually take the first round of the city-wide diagnostic test, which occurs three months before the high-stakes exams. Because the first round of diagnostic testing reflects students' command of knowledge compared to that of their peers and provides students and teachers with opportunities to reflect on exam preparation strategies in the following three months, students will still have some time to work harder on the exam

preparation. With the knowledge of diagnostic tests performance, students should be aware of their chances of attending different types of schools.

Social Cognitive Career Theory

General Social Cognitive Theory

Bandura's (1977, 1986) social cognitive theory is founded on a model of causation involving triadic reciprocal determinism. Behavior, personal factors, and environmental effects operate as interacting determinants that influence each other bidirectionally. The reciprocal causation between behavior and personal factors reflects the interaction of thought, affect, and actions. What people think, believe, and feel influences how they act. Sensory and neural systems also influence behavior and impose constraints on capabilities. The natural and extrinsic effects of actions, in turn, partly determine thought patterns and emotional reactions (Bandura, 2011). The reciprocal causation between personal and environmental factors assumes that human expectations, beliefs, emotional bents, and cognitive competencies are developed and modified by social influences through modeling, instruction, and social persuasion. People may have different social reactions due to personal characteristics such as age, gender, race, and physical attractiveness. People also influence the social environment through their social roles, status, and observable characteristics. The reciprocal causation between behavior and environmental factors assumes that people are both products and producers of their environments. Bandura (1977) argued that "behavior determines which of the many potential environmental influences will come into play and what forms they will take. Environmental influences, in turn, partly determine which forms of behavior are developed and activated" (p. 195).

Bandura (2012) asserted that "in this triadic codetermination, human functioning is a product of the interplay of intrapersonal influences, the behavior individuals engage in, and the

environmental forces that impinge upon them" (p. 11). People are not completely controlled by their environments, nor are they able to exercise absolute free will. People exercise self-influences over their behaviors, such as self-monitoring, self-judgment, and affective self-reaction, which are proposed as the three principal mechanisms of the human self-regulation system. The self-regulation system indicates how people plan and cyclically adapt self-generated thoughts, feelings, and actions for attaining personal goals (Zimmerman, 2000).

Mechanisms of Human Agency

Personal agency is the key to one's self-regulation process. According to social cognitive theory, people are agents of the experiences in their lives rather than simply witnesses of experiences (Bandura, 2001). Being an agent refers to the intentional exercise of influence on one's functioning and life circumstances. People act mindfully to achieve desired outcomes rather than simply generating solutions under situational forces. Personal agency consists of four core features: (a) intentionality, (b) forethought, (c) self-reactiveness, and (d) self-reflectiveness (Bandura, 2001, 2006). People act with *intentions*. An intention indicates a future course of action to be performed. An initial partial intention after adjustment, revision, refinement, and even reconsideration becomes a concrete purpose/goal which guides one's actions. People also anticipate the likely consequences of prospective actions and exercise courses of action that are likely to produce desired outcomes rather than detrimental ones; this anticipation of future outcomes is called *forethought*. Through the exercise of forethought, people motivate themselves, progress as planned, reorder priorities, and structure their lives accordingly (Bandura, 2001). In addition, people need to acquire the deliberative ability of decision-making and creation of appropriate courses of action to motivate and regulate their execution (*self-*

reactiveness). Finally, people *reflect* upon themselves and the adequacy of their thoughts and actions, through which they evaluate their motivation, values, and life pursuits.

Self-Efficacy

Among the mechanisms of personal agency, self-efficacy beliefs are considered to be the foundation and the most influential predictor of self-motivation in regulating behavior, thought, learning, and decisional processes (Chong, 2007). Self-efficacy refers to an individual's convictions about (or confidence in) his/her ability to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context (Stajkovic & Luthans, 1998a). Self-efficacy obtained from previous successful experiences motivates people to take effective action and persevere in the face of difficulties and new challenges (Paris & Lung, 2008). Self-efficacy gained through engagement in activities also builds self-knowledge and overall self-perception and helps people positively cope with stress and depression to remain emotionally stable and healthy (Shi & Zhao, 2014). People with a high level of self-efficacy are likely to objectively analyze situations, including success and failure, and be able to explain attributions or their successes and failures by self-reflection and an examination of external factors. Even when the worst situation occurs, people with a high level of self-efficacy can still maintain a positive attitude and take initiatives. Finally, self-efficacy affects the options people consider and the choices they make at important decision-making points, thus influencing their life paths and what they become (Bandura, 2012).

Self-efficacy is usually acquired and modified through four primary sources of experience: (a) personal performance accomplishments, (b) vicarious learning, (c) verbal persuasion, and (d) physiological states and reactions (Bandura, 1986). Personal performance accomplishments, including previous successes and failures, are especially influential in

establishing self-efficacy, because an individual develops an internal view of his or her capabilities. Strong self-efficacy is built through repeated success, so the negative impact of occasional failure is likely to be reduced (Bandura, 1977). Established self-efficacy can be generalized and transferred to other similar or even different situations or activities. Vicarious learning refers to learning by observing others' behaviors and reproducing (copying) the same practices (O'Fallon & Butterfield, 2012). People do not solely learn from their own experiences. By observing others' behaviors, individuals refrain from making mistakes and build self-efficacy when they see others' accomplishments. Verbal persuasion is another common source for acquiring self-efficacy. Supportive suggestions and encouragement from others may be likely to lead individuals to enhance their self-efficacy and raise their expectations. Finally, physiological and emotional states indicate an individual's judgment of anxiety and vulnerability to stress, which may be likely to affect self-efficacy in the face of threatening situations in which a certain level of anxiety and fear are experienced.

Framework for Understanding Academic and Career Development

Social cognitive career theory (SCCT; Lent, 2005; Lent et al., 1994, 2000) was derived from Bandura's (1977, 1986) social cognitive theory. SCCT integrates social cognitive theory's self-regulatory process in order to understand the personal, behavioral, and contextual/environmental factors of individuals' educational and career pursuits. SCCT explains three intricately linked tenets affecting individuals' career choices and behaviors: self-efficacy beliefs, outcome expectations, and personal goals (Lent & Brown, 1996). Self-efficacy refers to beliefs regarding one's performance capabilities. Outcome expectations refer to an individual's beliefs about probable response outcomes (i.e., imagined consequences of performing particular behaviors) and the relative value of these outcomes to the individual (Lent, Brown, & Hackett,

1994). Outcome expectations and self-efficacy, together, influence individuals' decisions about actions to take. For example, costly life decisions may require serious consideration of possible outcomes and the capability for accomplishing them. Goals are often expressed as career plans, aspirations, or decisions when particular intentions are involved and a certain level of commitment is required. By setting goals, individuals organize, guide, evaluate, and sustain their behaviors toward desired outcomes.

SCCT offers a framework to explain the interactive processes of the formation of interests, choice making, and performance attainment (Lent et al., 2000). SCCT does not view career decision-making as a single or static act but, rather, as an unfolding process with multiple influences and choice points. SCCT divides the initial choice process into three components: the expression of a primary choice (or goal) for a particular field, taking actions to implement the expressed goal, and subsequent performance and experience that will shape future choice options (Lent, 2005). SCCT posits that self-efficacy, a set of dynamic self-beliefs, along with outcome expectations, directly give rise to career-related interests, which tend to foster career choice goals (i.e., intentions, plans, or aspirations to engage in a particular career direction); goals motivate choice actions (or efforts to implement the goals), which leads to performance success or failure (Lent et al., 1994). Self-efficacy and outcome expectations may also affect choice goals and actions directly, rather than having an indirect effect via interests, to help people interpret, organize, and apply their skills. Self-efficacy exerts a direct effect on an individual's performance attainment, as well. At the same time, the whole process of career decision-making reflects cycling interactions: feedback received through the current process of career decision-making either strengthens or weakens the original thoughts and may lead to adjusted career

choices (or goals) in the next instance of decision-making; changes may be made in future career-related behaviors, and an individual may have a better performance.

Influences of Social Contextual Factors on Self-efficacy

SCCT proposes that personal variables (e.g., age and gender), contextual variables (e.g., family socioeconomic status), and experiential variables (e.g., learning sources) influence self-efficacy beliefs and outcome expectations, both of which affect the formation of personal interests, which subsequently influence academic or career related goals, actions, and performance (Ferry et al., 2000; Sheu et al., 2010). In SCCT, these contextual factors are divided into two general types based on when they occur during the choice process:

> The first type includes more distal, background influences (e.g., cultural and gender role socialization, types of available career role models, skill development opportunities) that help to shape self-efficacy, outcome expectations, and, hence, interests. The second type involves environmental influences that come into play during the active phases of choice-making. Examples include emotional or financial support for pursuing a particular option, job availability in the individual's preferred field, and sociostructural barriers, such as discrimination. (Lent, 2005, p. 110)

Social cognitive assumptions about reciprocal causation suggest that these personal and contextual factors influence career development in a complexly interactive way (Lent et al., 1994). Personal input and contextual factors may serve as precursors of social cognitive variables, moderators of certain key theoretical relations, or direct facilitators or deterrents. Race and gender usually transcend their biological properties and are more likely to be viewed as a socially constructed statuses reflecting selective exposure to career-relevant experiences. Barriers, such as those related to gender, race/ethnicity, age, socioeconomic status, or family

constraints, and support, despite their objective features of the environment, are perceived and interpreted differently among people (Sheu et al., 2010). Some perceive and interpret as barriers, generate negative outcome expectations, and refuse certain career-related activities; while others interpret as challenge and motivations. At the same time, contextual variables and personal input affect choice goals through self-efficacy; therefore, self-efficacy mediates (at least in part) the relationship between contextual factors and choice goals (Lent et al., 2008).

Lent and Brown (2006) extended SCCT to aid in explaining satisfactory experiences in career and educational pursuits. They proposed that emotions (positive and negative) and personality traits are important personal input variables; these factors and other contextual variables jointly influence self-efficacy, goal-setting, and job satisfaction, defined as the extent to which people enjoy their jobs (Fritzsche & Parrish, 2005; Lent & Brown, 2006). Positive affective states and personality traits give rise to pleasant moods and, thus, create job satisfaction. Furthermore, positive traits tend to inspire more positive cognitive appraisals of self-efficacy and positive perception of environmental supports, which increase job satisfaction. Affective commitment to a certain career field that involves feelings of pride, enthusiasm, and strong identity associates with more favorable self-efficacy and outcome expectations (Conklin, Dahling, & Garcia, 2013). Individuals who are emotionally committed to a field of study and perceive that their capabilities fit with the environment are likely to appraise their experiences positively, persevere, and set goals for future careers.

SCCT summarizes existing career-related findings on self-efficacy, incorporates other social cognitive constructs in the career literature, and offers a set of formal hypotheses to guide future inquiry into career development from a social cognitive perspective (Sheu et al., 2010). Gainor (2006) argued that the two strengths of SCCT are its explicit attention to the roles of

environmental and other contextual variables that influence the development of career interests, goals, and attainments; and the ease with which its elements can be used to develop assessments and interventions to guide career development across the life span. SCCT provides the theoretical framework for this study.

Career Decision-Making Self-Efficacy

Self-efficacy is a domain-relevant construct; it only has meaning when related to a specific task domain. Career self-efficacy consists of two unique domains: the content and process domains of career decision-making (Choi et al., 2012). The content domain focuses on self-efficacy in specific fields or majors, such as math and science. The process domain focuses on self-efficacy in using the necessary strategies to navigate the decision-making process, such as career search self-efficacy or career decision-making self-efficacy. Career search self-efficacy refers to one's beliefs about specific job search activities (Betz & Hackett, 2006).

Career decision-making self-efficacy refers to the degree of confidence individuals possess in their ability to engage in and accomplish tasks associated with making and committing to a career choice (Taylor & Betz, 1983). Career decision-making self-efficacy exerts a strong, direct influence on the career decision-making process and significantly affects the development of core career choice constructs (Betz, 2004; Fabio, Palazzeschi, Asulin-Peretz, & Gati, 2013). Individuals with low career decision-making self-efficacy tend to avoid career decision-making tasks, such as choosing a major, making plans to achieve goals, and persistently working toward a career goal; feel afraid to make a career commitment; and experience low levels of job satisfaction (Jin et al., 2009; Klassen & Chiu, 2010; Taylor & Betz, 1983). Career decision-making self-efficacy also shapes adolescents' expectations of these outcomes, facilitates career

exploration and career planning activities, and influences the formation of career interests and achievement performance (Lent, Paixao, da Silva, & Leitao, 2010).

Career decision-making self-efficacy plays an important mediation role in the relationship between personality and career behavior (Fabio et al., 2013; Parker, Bindl, & Strauss, 2010; Stajkovic & Luthans, 1998b). Students with proactive personalities (i.e., individuals who tend to take the initiative to influence their surroundings) are likely to engage in career exploring and planning activities, through which they develop a higher level of self-efficacy regarding job searching and career decision-making, which, in turn, helps them initiate career adaptive behaviors and ease the process of career role shifting during the school-to-work transition (Hou, Wu, & Liu, 2014).

Career decision-making self-efficacy is also associated with individuals' emotional intelligence (Jiang, 2014). Emotional intelligence refers to a blend of emotional and social competences that determine the way people deal with their emotions, those of others, and environmental pressures and demands. Individuals with high emotional intelligence are believed to be better aware of and more successful in managing their emotions and are more capable of integrating emotional experience with thoughts and actions. Therefore, emotional intelligence plays an important role in the career decision-making process (Fabio et al., 2013). Students who exhibit higher levels of emotional intelligence are likely to have greater self-efficacy with regard to making career choices and experience fewer difficulties.

The relationship between career decision-making self-efficacy and career indecision (a similar construct that refers to the inability of an individual to make a career decision), and their respective roles in the career decision-making process has been examined by researchers for years (Brown & Rector, 2008; Gati, Krausz, & Osipow, 1996; Osipow, 1999). Individuals with

lower levels of confidence in their capacity to accomplish career choice-related activities exhibit higher levels of career indecision (Stărică, 2012). However, the mechanism of how these two constructs influence each other is complex and remains uncertain. Restubog, Florentino, and Garcia (2010) examined the mediating effect of career decision-making self-efficacy and career decidedness, described as the level of certainty of a particular career decision, in the relationship between contextual support (e.g., parental support and career counseling courses) and persistence operationalized as academic program turnover. They found parental support and career counseling courses facilitated the development of career decision-making self-efficacy, thereby affecting career decidedness and persistence.

Choi et al. (2012) conducted a meta-analysis of career decision-making self-efficacy and relevant variables from 34 studies published in seven major journals from 1983 to 2008. They found that career decision-making self-efficacy had no significant direct relationship with gender, race, or career barriers and only a moderate relationship with career outcome expectations. This may imply that relationships among gender, race and career decision-making self-efficacy are shaped by various learning experiences, as indicated by the social cognitive career theory. Results also indicated that career decision-making self-efficacy was strongly correlated with general (i.e., self-esteem) and career-specific (i.e., vocational identity) self-concepts.

Family Influences on Career Decision-Making Self-Efficacy

There have been a number of empirical studies examining the role of family on career development in the last few decades (Hargrove, Creagh, & Burgess, 2002; Metheny & McWhirter, 2013; Whiston & Keller, 2004). Two interdependent dimensions of influence on career development that emanate from the family were identified, including: (a) structural

features of the family and (b) process-oriented features of the family (Keller & Whiston, 2008; Lindstrom et al., 2007). By viewing a family's socioeconomic status as a structural feature of the family, family structure features represent relatively *stable* characteristics of the family, including educational, financial, and familial configurations; and family process features represent certain family *dynamic* processes, such as parent-child relationships and family interactions.

Family Socioeconomic Status

Family socioeconomic status (SES) is the most important indicator of a family's social position, power, and resources (Conger, Conger, & Martin, 2010). Family SES usually reflects parents' educational and occupational attainment, as well as educational, financial, relational, and social networking resources that youth can access. Family SES exerts a significant influence on adolescents' academic achievement, academic attainment, career aspirations, career decision-making, and occupational status attainment (Metheny & McWhirter, 2013; Rojewski, 1997; Whiston & Keller, 2004). Parents in higher SES families are more likely to be supportive and encouraging of a child's career exploration and to provide information and resources for the child's career planning and career development (Hsieh & Huang, 2014). Youth from higher SES families often hold expectations of higher levels of education attainment, aspire to more prestigious occupations (Rojewski & Kim, 2003), express greater interest in work as a source of personal satisfaction, have greater access to external resources, and are more likely to engage in systematic career exploration and career planning activities (Blustein et al., 2002). In contrast, youth from lower SES families often experience pressure to contribute to the family financially, express the motivation to achieve greater financial stability and status than their family of origin (Lindstrom et al., 2007), and perceive more barriers and less family support in the career

development process than their higher SES counterparts (Ali, McWhirter, & Chronister, 2005; Metheny & McWhirter, 2013).

Family Interactions and Support

Howard et al. (2009) examined the role of family support in the development of Italian youths' perceived self-efficacy, motivation, and goal-setting and goal-pursuing orientation (e.g., frequency of making a choice and strategies for setting and pursuing goals) in their academic and career outcomes. Individuals who are highly efficacious, intrinsically motivated, and goal-directed also reported higher academic outcomes and better career decision-making readiness. Family support significantly predicted the Italian boys' and girls' grades. For both boys and girls from Northern Italy, family support was a significant factor related to children's career decidedness.

Ferry et al. (2000) examined the role of family contextual variables in a social cognitive model for career-related choice behavior in the math and science domains. Several general familial indices known to influence career behaviors were included, such as parental role modeling, parental expectations, parental encouragement, parenting style, family SES, and parent-child relationship. The researchers discovered that parental encouragement in the math and science domains (i.e., verbal encouragement or behavioral support from parents on the domain-related activities) led individuals to believe that they could deal successfully with what had overwhelmed them in the past through verbal persuasion, thus, significantly influencing a student's learning experiences, which in turn enhanced the student's self-efficacy and outcome expectations.

According to reports from college students who specialize in the area of engineering, parents with no bachelor degrees are likely to express expectations with passion for their children

to pursue postsecondary education, achieve a higher standard of living, and engage in more meaningful life pursuits that they themselves did not attain, which greatly motivates these students to undertake courses and complete bachelor degrees (Martin, Simmons, & Yu, 2014). Despite feeling generally supported by their parents, half of students report in some situations that they do not feel supported by their parents in choosing degrees or careers. At the same time, they feel pressured to complete college degrees, because their parents could not appreciate the rigor that is requisite for obtaining the degrees. For students whose parents possess bachelor degrees, they feel certain about obtaining college degrees and are provided with information related to their interests.

Hargrove et al. (2002) found that students with higher career decision-making self-efficacy tended to come from families that emphasized achievement in school and work, that students with higher self-efficacy in self-appraisal came from families with an orientation toward intellectual and cultural activities, and that students with higher self-efficacy in problem-solving and goal-setting came from families that emphasized expression of feelings and problems. Whiston (1996) found that parents who have interests in political, intellectual, and cultural activities will pass on some of these values to their children, which has a positive effect on their children's engagement in career decision-making activities.

Parental behaviors were positively correlated with students' general career self-efficacy. Roach (2010) found that parental behaviors accounted for a substantial portion of the variance (29%) of the career decision-making self-efficacy after controlling for the effects of grade level and gender. Stărică (2012) found that a high level of parental involvement in Romanian high school students' career choices was associated with low levels of career indecision. In other

words, students were more confident in making a career choice when their parents were involved in career choice-related activities.

Parental emotional bonds with a child (i.e., parental attachment) influence an individual's self-efficacy in making and committing to career decisions. Lee and Kim (2015) found that the emotional bond between a child and mother significantly predicted commitment to career choices, which refers to occupational preference, self-assurance and self-confidence in one's particular vocational choices, a positive sense of one's vocational future, and an awareness of potential obstacles, for both Korean male and female college students. However, results from previous studies were inconsistent in terms of the relationship between a mother's and father's attachment and career-related variables and the impact of a mother's and father's attachment to boys and girls, respectively, on a particular career variable. Wright and Perrone (2010) found that undergraduate students, of which most were White females, with higher levels of secure attachment reported higher levels of social self-efficacy and career decision self-efficacy, which then led to greater life satisfaction.

Family Influences in a Chinese Context

Socioeconomic Status and Residence

In China, students are usually assigned to schools close to their neighborhoods for compulsory education. There are great differences in educational quality among different neighborhoods and cities. Residing in a wealthier neighborhood or in developed cities usually means better educational resources and more opportunities for children (Xie & Wang, 2006). For example, course training academies that aim to help students improve their school grades are accessible in large cities. Therefore, attending school in an urban or rural area significantly influences students' academic achievement and, subsequently, influences students' career

outcomes such as the transition to work or the pursuit of postsecondary education (Hannum et al., 2011; Knight, Shi, & Quheng, 2009). Chinese parents sacrifice a great deal to support their children's academic and career advancement. Even for children with low academic performance, parents support them in their continuation of schooling as far as possible (Hannum et al., 2011).

Due to the mechanization of farming and an increase in grain food production over the last 30 years, workloads have been greatly reduced for Chinese farmers. To seek better working opportunities to support themselves, their child's educational expenses, and probably their own parents living in the rural hometown, millions of Chinese farmers from economically less-developed provinces migrate to large cities, such as Beijing, Shanghai, and Guangzhou. The children of these migrant workers are also brought to large cities to receive a better education. Family SES and the father's educational level are consistently associated with a child's performance at school and academic achievement (Hannum et al., 2011). The influence of family SES on these migrant children outweighs other family factors such as parental educational attainment and parental involvement. Accessing high-quality education in urban public schools for their children is a critical challenge for these migrant families as well as local education systems because of financial issues and restrictions on school enrollment policies for migrants (Guo, 2011).

Parental Expectations

Parental expectation has an extensive influence on students' career decisions (Fouad et al., 2008). Because of rapid economic growth and cultural exchanges with other countries within the last 30 years, the Chinese people have begun to gradually change their views toward the world, work, and gender occupational stereotypes and achievement. Traditionally, Confucian philosophy prescribes expected behaviors for men and women. Women are considered to be

subordinate to men, and this has led to the perpetuation of a patriarchal system for thousands of years that still has some influence in today's society (Sheng, 2012). Under the influence of cultural norms, a husband's contribution to a family is evaluated by his paid work and occupational achievement, while a wife's role is assessed primarily in terms of her housework responsibilities (Sheng, 2012; Zuo & Bian, 2001). Nowadays, more and more women are working to support the family, and it is possible that they are more successful than their husbands. The fact is mothers are now usually the ones who are involved in their children's daily school learning activities, while fathers provide general or broad instruction in terms of their children's schooling and education choice.

The shift in views toward occupations and achievement has changed parents' expectations for their children. Chinese parents expect their children to achieve similar career success and work hard to implement their higher expectations for their children. Successful middle-class mothers in particular have high aspirations in terms of their children's education (Sheng, 2012). Many parents send their children to study abroad and travel around the world if they can afford the expenses. Some of these parents may do so only for broadening their children's views and experiences.

Higher education has been seen as prestigious and associated with profitable and respectable occupations from ancient to modern times (Hung, Chung, & Ho, 2000; Zhou et al., 2012). This reflects the Confucian belief that education empowers people to climb up the social ladder (Xie & Goyette, 2003). Therefore, Chinese parents provide as much support as they can for their children's greater achievement and expect their children to bring glory to the family. In addition, Chinese parents encourage their children to undertake high-income careers, which

conveys their expectation for the children to undertake high social status careers in terms of education and income (Liu, McMahon, & Watson, 2015).

Liu et al. (2015) found that Chinese parents transmit their career-related values, sometimes implicitly, and gear their children's future towards what they consider to be the right path. They verbally support their children's career aspirations by nurturing the children's career interests and intentionally provide opportunities for their children to explore these interests. Even though Chinese parents do not plan a specific career for their children, they foster children's career-related intrapersonal characteristics (e.g., interest and skills) and values and beliefs and contribute to the formation of their children's image as future adults, which is being individuals of high social status with a good education and a high income. In sum, similar to parents in Western countries, Chinese parents play important roles in their children's career development.

CHAPTER 3

METHOD

Statement of Purpose

This study examined the influence of family factors on the career decision-making self-efficacy of secondary vocational students in China. Career decision-making self-efficacy refers to the degree of confidence an individual has to engage in and accomplish tasks associated with making and committing to a career choice (Taylor & Betz, 1983). Family plays a crucial role in U.S. adolescents' career development (Hartung et al., 2005), but little is known about family influences on the career development of Chinese youth. Therefore, I examined (a) the career decision-making of Chinese adolescents and (b) how selected family factors influenced the construct. Family variables were categorized as (a) *structure*, or demographic variables that reflected family members' socioeconomic status and (b) *process* variables, which referred to family members' interaction and support (Lindstrom et al., 2007). In this study, residence and family socioeconomic status (SES) were used to reflect family structure variables. General parental psychosocial support, as well as specific parental actions related to adolescents' career concerns (Keller & Whiston, 2008), reflected family process variables. Questionnaires of translated instruments and demographic information were administered to a convenience sample of all first-year students enrolled in a key secondary vocational school in Lanzhou, China. Results identified the influence of selected family factors on the career decision-making self-efficacy for this group of students.

Research Questions

Two research questions were answered in this study:

1. What is the career decision-making self-efficacy of Chinese vocational students?
2. What is the best set of selected variables to explain the variance found in the career decision-making self-efficacy of Chinese vocational students?

Design

A cross-sectional survey was conducted for this study. Survey research is used to collect information about characteristics, experiences, or opinions of a group (Ary, Jacobs, Razavieh, & Sorensen, 2009) for purposes of description, explanation, and exploration (Babbie, 2013). Surveys are capable of collecting data representing multiple variables of interest and can be administered in a number of ways including email, fax, mail, and online. Costs of administering surveys vary, but are relatively inexpensive when compared with more sophisticated experimental designs. A cross-sectional survey is administered at a single time point, while a longitudinal survey is administered to the same individuals at multiple points over time.

A cross-sectional survey is useful in identifying associations between multiple variables of interest. The major advantages of cross-sectional surveys are that participants are not deliberately exposed to experimental treatment conditions, and hence there are seldom ethical difficulties. Cross-sectional surveys are relatively inexpensive, because data are collected only once and multiple variables can be examined in a single study (Mann, 2003). One major disadvantage of cross-sectional surveys is the inability to detect developments or changes in variables over time. Longitudinal surveys can address this concern and can also separate time effects (changes over time within individuals) from cohort effects (differences between individuals at the baseline). However, longitudinal surveys demand additional expenditures in

terms of time and money compared with cross-sectional surveys. Longitudinal surveys can experience a reduction in sample size due to participant attrition at each data collection point and may endure intervening effects of confounding variables (Rindfleisch, Malter, Ganesan, & Moorman, 2008). The purpose of my study was not to examine time effects or changes in career decision-making self-efficacy, so a cross-sectional research design was used.

While surveys offer many advantages, several disadvantages also exist. Survey studies often experience a lack of participant response, which might lead to non-representative responses and skewed data (Gay, Mills, & Airasian, 2011). In addition, the quality of data gathered is dependent on the types of questions posed to participants. Participants may not feel comfortable to provide honest answers to certain questions. To address these disadvantages, a pilot study on a group of students similar to my sample was conducted before the formal data collection in my study to detect potential problems. Besides, questionnaires were administered anonymously to participants in person in classroom settings to ensure a higher response rate. Despite disadvantages, survey research was still appropriate for this study because it secured data needed to examine the career decision-making self-efficacy of Chinese adolescents and multiple regression analysis is able to examine the relationship between family factors the career decision-making self-efficacy. Paper-pencil questionnaires were administered to students in their classrooms.

Participants

Given highly competitive examinations and the school admissions and enrollment system in China, most career exploration activities and career development for college-bound youths occur when students enter college (Shiah, Huang, Chang, Chang, & Yeh, 2013; Zhou et al., 2012). These students have very limited time for extracurricular activities that might further their

career development (such as exploring the world of work, developing a career plan, or engaging in career-related activities). In contrast, secondary vocational students engage in learning professional knowledge and skills in various specialized fields. Career decision-making and development of career-related skills become prominent for this group of students, so secondary vocational students were the target of sampling.

A convenience sampling method was used to select a secondary vocational school as the sampling unit for this study because of limited accessibility to the target population, which was all secondary vocational students in China. Convenience sampling is a non-random sampling technique, also known as non-probability sampling, in which samples are selected in a way that does not give all individuals in the population an equal chance of being selected. Convenience sampling obtains responses from participants or units to which researchers have easy access (Kitchenham & Pfleeger, 2002). Convenience sampling is fast, available, and cost-effective. However, because selection is not random, the generalizability of research findings is limited. The purpose of my study was to describe the nature of the construct of career decision-making self-efficacy and examine its relationship to selected family factors, rather than generalize research findings to the target population. Therefore, the convenience sampling method was appropriate.

The sample for this study was all first-year students enrolled in the Gansu Building Material Industry School (BMIS), a key national secondary vocational school located in Yuzhong county, Lanzhou, China. Based on comprehensive social development indictors, such as city size, population, GDP, and per capita income, the Chinese categorize cities into four tiers (Tan, Li, Xie, & Lu, 2005). First-tier cities are Beijing, Shanghai, and Guangzhou; second-tier cities are well-developed cities along the coast; third-tier cities are capital cities of inland

provinces; and fourth-tier cities are the least developed cities in China. Lanzhou is a typical tier 3 inland city. It is the capital city of Gansu Province in Northwest China and serves as the economic, political, cultural, and educational center of Gansu Province.

Historically, Lanzhou was called the Golden City. It was located upstream of the Yellow River and was a major link on the ancient Silk Road; therefore, the city was both an important military and commercial strategic location. Nowadays, Lanzhou is a prosperous city with a population of 3.6 million (Lanzhou Government, 2012). Due, in part, to geographic restrictions, industrial structure, natural resources, and climate, the Gross Domestic Product (GDP) of Lanzhou was only 178 billion RMB (Chinese currency) in 2013, about one-tenth that of Beijing (tier 1 city) and one-fifth that of Chengdu (top tier 2 city), ranking it 99th among 355 cities nationwide. Yuzhong County is currently the largest county (rural) in Lanzhou with a population of .4 million.

Gansu BMIS is a secondary vocational school in Gansu Province preparing graduates in the field of construction materials. Gansu BMIS provides curricula in eight specialties including silicate process and industrial control (concrete and glass), mechanical and electrical equipment installation and maintenance (machinery for building materials), electric operation and automation (building materials), application of electronic techniques, environmental protection and monitoring, industrial analysis and testing, construction and engineering materials, and mechatronics. All specialties require two years of coursework, plus the completion of a one-year internship. Gansu BMIS enrolls over 3,000 students and employs 162 lecturers and staff members. It is equipped with labs and practical training fields for electricians and lathe operators.

Determining sample size is crucial in planning survey research. Statistical power analysis is a popular technique to calculate the minimum sample size to detect a given effect size (Cohen, 1992). In statistical hypothesis testing, the statistical power indicates the probability that the null hypothesis is rejected when the null hypothesis is false. In multiple regression analysis, statistical power depends on the level of significance (α), the sample size (N), the number of independent variables, and the effect size. An effect size is a quantitative measure of the magnitude of some phenomenon of interest (Kelley & Preacher, 2012). When the statistical power is set too high, a large sample is required which may cost too much time and resources; while if the statistical power is set too low, statistical error increases. 80% is usually considered to be a sufficient power. In multiple regression, a small effect =.02 accounts for 2% of the variance in the dependent variable explained by independent variables, a medium effect =.15 accounts for 13%, and a large effect =.35 accounts for 26% (Cohen, Cohen, West, & Aiken, 2003). In my study, there were six independent variables. To obtain a medium effect with α=.05 and power=.80, the sample size should be at least 97 according to Cohen's (1992) multiple regression sample size table. In my study, I selected all first-year students who were enrolled during the 2014 Spring semester (February to July) at Gansu BMIS, Lanzhou, China (n=639) as my sample due to access.

Instrumentation

A cross-sectional survey was administered to all first-year students at Gansu BMIS. The survey consisted of three sections: (a) measurement of students' career decision-making self-efficacy, (b) measurement of parental career-related behaviors, and (c) demographic and family background information.

Measurement of Career Decision-making Self-efficacy

The Career Decision Self-Efficacy scale-Short Form (CDSE-SF; Betz, Klein, & Taylor, 1996) was used to measure the construct of career decision-making self-efficacy. A longer 50-item version, the Career Decision Self-Efficacy scale (CDSE; Taylor & Betz, 1983), is also available. The CDSE-SF contains 25 items. The original structure of the 50-item CDSE was retained by selecting 5 items from each of five subscales representing five different career choice competencies: self-appraisal, information gathering, goal selection, planning, and problem-solving. Self-appraisal refers to the ability to identify resources, constraints, and personal characteristics that might influence individuals' career choices (Presti et al., 2013; Taylor & Betz, 1983). Information gathering refers to the ability to locate and manage sources of information on training and employment opportunities. Goal selection refers to the ability to develop lists of priorities for effective actions regarding professional development. Planning refers to knowing the steps needed to realize a vocational project. And problem solving refers to the ability to formulate alternative plans or coping strategies when plans do not go as intended. Examples of items in the instrument are "How much confidence do you have that you could… '…accurately assess your abilities?' (self-appraisal), '…find information in the library about occupations that you are interested in?' (information gathering), '…choose a career that will fit your preferred lifestyle?'(goal selection), '…make a plan of your goals for the next five years?' (planning), and '…change occupations if you are not satisfied with the one you entered?'" (problem-solving).

Responses were obtained using a 5-level confidence continuum from *No Confidence At All* (1) to *Complete Confidence* (5). The five subscale scores were combined to compute a composite score for career decision-making self-efficacy, with higher scores indicating higher

levels of confidence in career decision-making (Jin et al., 2012; Nam et al., 2011). The CDSE-SF has been applied in multicultural contexts such as France (Gaudron, 2011), Italy (Presti et al., 2013), Greece (Koumoundourou, Kounenou, & Siavara, 2011), Korea (Nam et al., 2011), and the Philippines (Garcia et al., 2012), suggesting construct validity of the career decision-making self-efficacy and content validity of the CDSE-SF instrument across nationalities and cultures. Jin et al. (2012) reported Cronbach's α was .85 for the total score of the CDSE-SF for graduate students from Beijing, China.

Nancy E. Betz and Karen M. Taylor own the copyright of the Career Decision Self-Efficacy scales (both long and short forms). I purchased a license from Mind Garden Inc., an authorized party that publishes the Career Decision Self-Efficacy scales, to reproduce 850 copies of the CDSE-SF for this study (see Appendix A for a copy of permission letter to reproduce the CDSE scales; see Appendix B for three sample items from the CDSE-SF due to copyright restrictions). The anticipated 850 copies included 200 for a pilot test and 650 copies for the main data collection. I also received permission from Mind Garden Inc. to translate the CDSE-SF into Chinese. The internal consistency reliability was .89 for the total scores of the CDSE-SF for my sample.

Measurement of Parental Career-related Behaviors

The Parent Career Behavior Checklist (PCBC; Keller & Whiston, 2008) was used to measure specific career-related parenting behaviors that may be associated with adolescents' career decision-making (see Appendix C). The instrument consists of 23 items assessing respondents' perceptions of general parental psychosocial support (Support scale, n=13) and specific career-related parental behaviors (Action scale, n=10). Participants are asked to select the parent/guardian most concerned with their career issues and then to indicate the degree that

each item applies to that guardian using a 5-point Likert scale ranging from *Never* (1) to *Very Often* (5). Examples of items in the instrument are "My parent encourages me to choose whatever career I want" (Support), and "My parent has helped me understand the results from career tests or interest assessments I have taken" (Action). The composite score for the Support scale ranges from 13 to 65. The composite score for the Action scale ranges from 10 to 50. A higher score on the Support scale indicates a higher frequency of general parenting behaviors and psychosocial caring. A higher score on the Action scale indicates a higher frequency of parental behaviors with regard to adolescents' career-related concerns. Paloş and Drobot (2010) reported Cronbach's α was .95 for the whole instrument, .93 for the Support subscale, and .93 for the Action subscale. The internal consistency reliability was .91 for the total scores of the PCBC, .88 for the Support scale, and .81 for the Action scale for my sample.

Measures of Demographic Information

A demographic section was included on the survey to obtain students' demographic and family background information (see Appendix D). Items in this section asked for students' gender, age, residence status (0=urban, 1=rural), and family socioeconomic status (SES). Family SES was measured by the Family Affluence Scale II (FAS II; Currie et al., 2004). Because adolescents usually have little knowledge and lack an accurate understanding of their parents' occupations, education, and income, which are usually used major indicators of SES for adults (Wardle, Robb, & Johnson, 2002), the FAS was developed specifically for use by adolescents as a more accurate and reliable instrument for child-reported family SES (Currie, Elton, Todd, & Platt, 1997).

The FAS II contains 4 items that ask respondents to indicate the number of vehicles the family owns (0, 1, 2+), whether or not the child has his or her own bedroom (yes, no), the days

of family travel per year (0, 1, 2+), and family computer ownership (0, 1, 2+). A composite score was calculated from these four items, with higher scores indicating higher family affluence (Boyce, Torsheim, Currie, & Zambon, 2006). A three-point ordinal categorization is also adopted by researchers to reflect relative or approximate SES position with a low FAS (score= 0-2) indicating low affluence, a medium FAS (score=3-5) indicating middle affluence, and a high FAS (score= 6-7) indicating high affluence (Currie et al., 2008). FAS II is widely used around the world in the context of international studies of adolescents' health (Cho & Khang, 2010; Currie et al., 2008) and also has been shown to be a valid and reliable measure of family SES for Chinese adolescents. The FAS II showed moderate internal consistency (Cronbach's α = .58) and substantial test-retest reliability (ICC > .75) for adolescents in Beijing, China (Liu et al., 2012). The internal consistency reliability was .65 for the total scores of the FAS II for my sample, which is at the high end among reliabilities for the FAS II so far reported from various countries (Lin, 2011; Schnohr et al., 2008).

I obtained permission to use and translate each instrument. The quality of translation and the validity of scores obtained from translated instruments play significant roles in ensuring that results obtained in cross-cultural research are not due to errors in translation but, rather, are due to real differences being measured (Maneesriwongul & Dixon, 2004). Brislin (1970) provided four alternative techniques for maintaining the content equivalence between two language versions of an instrument, including (a) back-translation method, (b) bilingual technique, (c) committee approach, and (d) pretest procedure. Back-translation is a technique in which the target language version is translated back to the original language to verify the accuracy of the translation. The bilingual technique requires individuals who are proficient in both original and target languages to examine discrepancies between the original and target language versions. The

committee approach uses a panel of bilingual people to translate from the original to the target language. This approach usually requires more than three bilingual translators, and accessibility to these translators is a key issue when applying this approach (Cha, Kim, & Erlen, 2007). The pretest procedure requires a pilot test after instrument translation. A combination of translation techniques is generally recommended for instrument validation for cross-cultural research (Brislin, 1970; Cha et al., 2007).

Before visiting the school, translation of the entire questionnaire from English to simplified Chinese, including all sections, was completed by four Chinese graduate students at the University of Georgia with professional English reading and writing skills. Three students independently translated the questionnaire from English to simplified Chinese, translated it back to English, and modified their translations in Chinese. When these students completed their work, a fourth student compared the three different Chinese versions with the original English version, resolved any discrepancies, and concluded the best version of the translation.

Because administering the questionnaire, I conducted cognitive interviews with a small group of students similar to the study sample to improve readability of the translated scales. A cognitive interview refers to a process of administering survey questions to a participant and collecting additional verbal information relevant to survey responses (Beatty & Willis, 2007; Dillman, Smyth, & Christian, 2009). A cognitive interview is an important technique for validating survey questions, especially newly invented instruments. Four students randomly selected from a class of all second-year students at Gansu BMIS were asked to provide feedback to improve the questionnaire. Each student was interviewed for about 20 minutes after completing the questionnaire regarding difficulties in understanding and answering each question, confusion about terms, and opinions on alternative ways to phrase questions in a more

understandable manner. After the cognitive interviews, I corrected some wording and questionnaire format (see Appendix E for a copy of the final version of the questionnaire in Chinese; due to copyright restrictions, only three sample items from the CDSE-SF are provided).

Procedure

Application to the University of Georgia's Institutional Review Board (IRB) was initially submitted in April 2014 and approved in June 2014. Written permission from the principal to collect data at Gansu Building Material Industry School was obtained before visiting the school. Upon IRB approval, data collection activities took place in classrooms during students' self-studying time under the supervision of the program coordinator. Students were instructed to obtain parental consent forms and sign minor consent forms themselves. Questionnaires were administered only to students who returned both signed parental and minor consent forms. Students were told that participation in the study was voluntary and they could stop if they did not feel comfortable at any time during the survey. Questionnaires were administered anonymously.

The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) has established its validity and reliability for various groups of Chinese students (i.e., Hampton, 2005, 2006; Jin et al., 2012; Ye, 2014). The total score of CDSE-SF is seen as an appropriate measure of an individual's overall career decision-making self-efficacy with higher scores indicating more confidence in making and committing to a career choice in various cultural contexts (Jin et al., 2012; Nam et al., 2011). However, a lack of previous investigation of the application of the Parent Career Behavior Checklist (PCBC) to the Chinese population suggested validity risks from using PCBC scores directly in data analysis.

Therefore, a pilot study on a group of Chinese students similar to my study sample was conducted before the main data collection and analysis. This pilot study aimed to (a) detect potential problems with survey procedures, including participant recruitment and questionnaire administration, (b) explore the applicability of the PCBC on Chinese students, and (c) check the validity of the instrument scores. A pilot study refers to conducting a small-scale version of a larger study, as well as the specific pre-testing of a particular research instrument such as a questionnaire or interview schedule (Teijlingen & Hundley, 2002). Conducting a pilot study has many advantages. It can improve the internal validity of survey research through the monitoring of questionnaire administration procedures, the gathering of feedback from participants on the wording of questions, and the examination of participants' responses. It can also provide an opportunity to assess a research protocol, train the research team, develop and test instruments, and collect preliminary data.

To explore the validity and factor structure of the PCBC on Chinese students, first, I conducted exploratory factor analysis (EFA) with the pilot data to determine the number of latent factors of the PCBC. EFA is exploratory in nature and is appropriate when there is a little priori justification for specifying a particular model. Researchers employ EFA to (a) determine the appropriate number of underlying latent factors among observed variables, (b) establish the underlying dimensions or structures between latent factors and observed variables, and (c) provide construct validity evidence of self-reporting scales (Preacher, Zhang, Kim, & Mels, 2013; Williams, Brown, & Onsman, 2012). Then, I conducted confirmatory factor analysis (CFA) with the sample data to examine the factor structure of the PCBC for subsequent analysis. CFA is a statistical technique that verifies underlying latent factors that account for variances and covariances among a set of observed variables (Comrey & Lee, 1992). Results from the EFA

provided justification for the CFA. Both exploratory and confirmatory factor analyses provided evidence of the applicability and validity of the PCBC for this sample.

A sufficiently large sample for factor analysis tends to provide more stable factor structure and more precise estimates of factor loadings across repeated sampling (MacCallum, Widaman, Zhang, & Hong, 1999). Comrey and Lee (1992) provided a rough estimation of required sample sizes in factor analysis: 100 = poor, 200 = fair, 300 = good, 500 = very good, 1,000 or more = excellent. Gorsuch (1983) suggested a minimum of 5 times of the number of items included in factor analysis. For the 23-item PCBC, the minimum sample size is 115. Because factor analysis served only as a preliminary analysis in my study to determine the dimensionality and factor structure of the PCBC for the following regression analysis. Therefore, I randomly selected four classes (about 50 students per class) of second-year Gansu BMIS students for a pilot study to obtain a fair results in EFA. In the end, a total of 197 student responses were analyzed using EFA. For the study sample, all first-year Gansu BMIS students exceeded 500, which ensured an adequate sample size for reliable CFA results.

Data Analysis

Multiple regression (MR) analysis examined the role of family structure variables (i.e., family SES and residence) and family process variables (i.e., parental career-related behavior measured by the Parent Career Behavior Checklist) in Chinese vocational students' career decision-making self-efficacy. MR is a flexible data analysis technique that is appropriate whenever a quantitative dependent (or criterion) variable is examined in relation to multiple factors expressed as independent or predictor variables (Cohen et al., 2003). Multiple linear regression examines the relationship between two or more independent variables and a dependent variable and uses a linear function of all independent variables to represent

conditional distribution of dependent variable given values of all independent variables. A multiple linear regression model seeks the linear function that best represents the data according to the ordinary least squares method, which minimizes the sum of squares of vertical distance from the observed data points to the predicted line (Leng, Zhang, Kleinman, & Zhu, 2007). The multiple linear regression equation is

$$Y = B_0 + \sum_i B_i X_i$$

where *Y* is the dependent variable; X_i is the *i*th independent variable; B_0 is a constant indicating the value of the dependent variable when all independent variables have the value of 0; and B_i is the raw-score partial regression coefficient by which each corresponding value of the variable X_i is to be multiplied in the multiple regression equation that includes all independent variables. The regression coefficient, B_i, indicates that for any given values of the other independent variables, an increase of one unit in independent variable *i* is associated with an increase of B_i in the amount of the dependent variable *Y* (Brace & Snelgar, 2000).

In multiple regression, the multiple correlation coefficient *R* indicates the relationship between predicted and actual scores of the dependent variable. A value of 0 means there is no linear relationship between predicted and actual scores of the dependent variable. A value of 1.00 indicates that the linear combination of the independent variables perfectly predicts the dependent variable. A squared multiple correlation, R^2, or the coefficient of determination, is used to measure the goodness of fit of the regression line (Nakagawa & Schielzeth, 2013). The coefficient of determination, R^2, indicates the proportion of total variance in the dependent variable accounted for by the selected independent variables. Because the sample R^2 typically

overestimates the population, and R^2 values need to be adjusted downward. The a*djusted* R^2 ($R^2_{adj.}$) makes this adjustment by using the equation

$$R^2_{adj.} = (1 - R^2)\frac{n-1}{n-k-1}$$

where *n* = sample size and *k* = number of independent variables.

Violating assumptions of analysis can result in biased estimates and untrustworthy results. Five major assumptions of multiple linear regression were checked throughout data analysis: (a) a linear relationship between predictor variables and the criterion variable, (b) zero conditional mean of errors, (c) independence of errors, (d) homoscedasticity (constant variance) of errors, and (e) a normal distribution of errors (Williams, Grajales, & Kurkiewicz, 2013). Zero conditional mean of errors assumes errors have a mean of zero for any given value, or combination of values, on independent variables. Independence of errors assumes that errors are independent. Homoscedasticity (constant variance) of errors, also known as homogeneity of variance, assumes that model errors have an unknown but finite variance that is constant across all levels of the independent variables. Normal distribution of errors assumes that errors are distributed normally, which is usually robust for violation in large samples.

Regression assumptions were tested using SPSS Statistics 17.0. A linear relationship between independent variables and the dependent variable was tested by plotting standardized residuals against the predicted values of Y and then visually inspecting this plot for linearity (Green & Salkind, 2008). For example, a U-shaped plot would suggest a nonlinear relationship between independent and dependent variables. The plot of standardized residuals against the predicted values of Y can also be used to check the assumption of homoscedasticity of errors. For example, if the residuals are tightly clustered for some values of the predicted scores and widely varying for other values, the assumption of homoscedasticity of errors might be violated.

A normal distribution of errors was tested by creating a normal probability plot. Deviations from a straight line suggest departures from normality.

A correlation matrix of all predictive variables was used to check for collinearity. The correlation coefficient *r* measures the direction and the magnitude of the relationship between a dependent variable and an independent variable. The value of *r* ranges from -1.00 to +1.00. The sign (positive or negative) of the value of *r* indicates the direction of change of the dependent variable when the independent variable increases. A positive relationship implies the value of a dependent variable increases when the value of an independent variable increases. A negative relationship implies the value of a dependent variable increases when the value of an independent variable decreases. The absolute value of *r* indicates the magnitude of the relationship between two variables. A value of 0 means there is no relationship (correlation) between the independent and the dependent variable. A value of 1.00 indicates the strongest relationship between those two variables, meaning that one unit of change in the independent variable will cause one unit change in the dependent variable.

Multicollinearity occurs when two or more independent variables contain strongly redundant information. A multiple regression with two or more collinear variables will produce errant results. If so, the highly correlated variables may need to be analyzed in separate regression equations, and then the results should be compared to determine how they operate together when included in the same model. A correlation coefficient above .80 is usually an indicator that collinearity might be present (Sweet & Grace-Martin, 2008). In SPSS, collinearity tolerance less than .10 also indicates the presence of multicolinearity (Dormann et al., 2013).

The dependent variable, career decision-making self-efficacy, was measured by CDSE-SF with the total score ranging from 25 to 125 (see Table 3.1). The mean score of the career

decision-making self-efficacy was calculated by dividing the total score by 25, indicating the general average level of career decision making self-efficacy of Chinese adolescents. Parental career-related behaviors were measured by PCBC. Two composite scores were calculated for parental Support scale and parental Action scale, respectively, by summing across items measuring the corresponding subscale. High scores on the Support scale indicated high frequencies of parental psychosocial caring behaviors. High scores on the Action scale indicated high frequencies of specific parental behaviors with adolescents' career concerns. A total score from FAS II, ranging from 0 to 7, represents family socioeconomic status with a higher value indicating a more affluent family background. Adolescents' gender and residence status were coded dichotomously as 0 and 1. Adolescents' age ranging from 15 to 17 was also included in the regression model.

Table 3.1

Data Analysis for Each Research Question

Research questions	Independent variables	Dependent variable	Analysis
1. What is the career decision-making self-efficacy of Chinese vocational students		Career decision-making self-efficacy continuous range: 25-125	*M, SD, r, n, %*
2. What is the best set of selected variables to explain the variance found in career decision-making self-efficacy of Chinese vocational students	Gender categorical 0 - male, 1 - female Age continuous range: 15-17 Family SES continuous range: 0-7 Residence categorical 0 - urban, 1 - rural Parental career-related behaviors continuous *Support* scale range: 17-85 *Action* scale range: 5-15	Career decision-making self-efficacy continuous range: 25-125	*M, SD,* R^2 *, n,* omnibus *F* test, *t* test for partial coefficients

Note. SES refers to socioeconomic status.

Multiple linear regression with one set of independent variables was used in this study. One set of independent variables corresponds to a regression analysis procedure that treats all independent variables as one group entered into the regression equation at once. This procedure is usually used when researchers might be interested in many types of relationships and conduct analysis to assess how well the dependent variable is predicted from each independent variable, from an independent variable above and beyond a group of independent variables, and from all independent variables (Green & Salkind, 2008). Because the purpose of this study was to

examine the influence of selected factors on adolescents' career decision-making self-efficacy, all independent variables were treated as one set.

A pre-determined criterion of a .05 significance level was used, which is common in educational/psychological research. Significance level indicates the probability of observing a difference given that the null hypothesis is true. In other words, at a significance level of .05, researchers are 95% confident that the alternative hypothesis is true and not due to chance. Mean, standard deviation, and variance of the dependent variable were calculated. A series of tests of statistical significance were conducted: (a) test of significance of R^2 and (b) test of partial coefficients *B* (Cohen et al., 2003). Estimates of partial coefficients *B* and standardized partial coefficients β were reported.

CHAPTER 4

RESULTS

The purpose of this study was to (a) describe the career decision-making self-efficacy of Chinese secondary vocational students, and (b) determine how selected family factors influenced Chinese adolescents' career decision-making self-efficacy. A cross-sectional survey design was used. The survey included three sections that measured career decision-making self-efficacy and parental career-related behaviors, and asked for demographic information of participants and family socioeconomic status (SES). Career decision-making self-efficacy was measured using the 25-item Career Decision Self-Efficacy Scale-Short Form (CDSE-SF; Betz et al., 1996). Selected family factors included family structure features such as family SES and residence status (urban or rural), and family process features, specifically, parental career-related behaviors. Family SES was determined by the 4-item Family Affluence Scale II (FAS II; Currie et al., 2004). Parental career-related behaviors were measured using the 23-item Parent Career Behavior Checklist (PCBC; Keller & Whiston, 2008), which measures general parental psychosocial support behaviors as well as specific parental career-related behaviors. Adolescents' demographic information, such as gender and age, were also collected to analyze their influence on Chinese adolescents' career decision-making self-efficacy.

Two research questions were answered in this study:

1. What is the career decision-making self-efficacy of Chinese vocational students?
2. What is the best set of selected variables to explain the variance found in the career decision-making self-efficacy of Chinese vocational students?

Multiple linear regression analysis was used to explain the influence of selected family factors on Chinese vocational students' career decision-making self-efficacy. All first-year students enrolled in Gansu Building Material Industry School (BMIS) during the Spring semester of 2014 comprised the convenience sample (*n*=639). Six hundred and thirty-six students returned signed consent forms and completed questionnaires. Among these questionnaires, responses consisting of complete blanks for a whole section of the questionnaire (*n*=6) and special response patterns (*n*=43, e.g., repeated response pattern to all items or same response to a sequence of items) were identified, which resulted in the exclusion of 49 cases from further analysis. Thus, the valid sample size was 587, and the actual participation rate was 92.3%.

Handling Missing Values

A missing value refers to participant nonresponse on one or more items or even whole units. Inappropriate treatment of missing data can result in bias for estimation and a reduction of statistical power. Rubin (1976) described three mechanisms of missingness: (a) missing completely at random (MCAR), (b) missing at random (MAR), and (c) missing not at random (MNAR). MCAR assumes that the probability of missing data for a variable is unrelated to the value of that variable or to the values of any other variable in the data set (Cheema, 2014; Lee, 2012). MAR assumes that the probability of missing data for a variable is unrelated to the value of that variable, but is related to values of other variables in the data set. MNAR assumes that the probability of missing data for a variable is a function of the value of that variable. Nonresponses under MCAR and MAR are considered ignorable with regard to the production of unbiased estimates with appropriate missing data treatment techniques, but nonresponses under MNAR are not ignorable and require complicated assumptions and model specifications for missing data (Gemici, Rojewski, & Lee, 2012). Little's (1988) MCAR test can determine whether data is

missing completely at random. However, no statistical tests are available to distinguish MAR from MNAR.

Missing value rates in my sample were less than 4% for each participant, while missing rates for each questionnaire item were less than 1%. According to Little's (1988) MCAR test, the missing pattern for this sample of Chinese vocational students was not missing completely at random ($\chi^2 = 2276.6$, $df = 2117$, $p < .05$). Therefore, some type of treatment for missing values was required. The Expectation-Maximization (EM) imputation method was used for handling missing data. The EM imputation is an iterative estimation process that generates estimated values for missing data (E-step), replaces missing values with E-step-generated values, and recomputes new expected values (M-step) until changes in expected values from iteration to iteration become negligible (Musil, Warner, Yobas, & Jones, 2002).

The EM imputation method has advantages over listwise or pairwise deletions. For example, listwise deletion eliminates all cases with any missing data (Carter, 2006). Listwise deletion greatly reduces the available sample size for analysis and yields relatively unbiased estimates of regression coefficients only when the missing pattern is missing completely at random (Kang, 2013). The EM imputation method produces efficient and less biased estimates when missing data are missing at random or even missing not at random (Musil et al., 2002) and is particular useful and highly recommended for exploratory factor analysis (Schlomer, Bauman, & Card, 2010). In addition, SPSS 17.0 contains missing values analysis module that makes it easily to handle missing values using the EM imputation method. The disadvantage of the EM imputation is that it produces lower estimates of standard errors than other methods such as listwise deletion and regression imputation (Pigott, 2001). Despite its disadvantage, the EM imputation method was appropriate for my study.

Factor Structure of Scales

The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) has been applied to Chinese populations, and CFSE-SF scores have provided evidence of validity and reliability of the construct of career decision-making self-efficacy (Hampton, 2005, 2006; Jin et al., 2012; Ye, 2014). However, due to a lack of evidence regarding the application of the Parent Career Behavior Checklist (PCBC) with a Chinese population, factor analysis was performed to examine the applicability of the PCBC. Factor analysis is a statistical technique that examines patterns of variance and covariance among a set of observed variables and identifies underlying latent factors that explain these patterns (Comrey & Lee, 1992). Factor analysis is often used to examine the psychometric characteristics of newly invented instruments in social and psychological fields. It is also widely used to provide evidence of the construct validity of established instruments in cross-cultural contexts (Carlson & Herdman, 2012). Factor analysis includes exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA identifies the number of latent factors or dimensions that underlie a set of observed variables with little or no prior knowledge, while CFA verifies the factor structure or factor-variable relationships proposed by previous studies or EFA (Brown, 2015).

In factor analysis, the rotation method maximizes high item loadings and minimizes low item loadings and produces a more interpretable and simplified solution (Williams et al., 2012). There are two general rotation techniques: orthogonal and oblique. Orthogonal rotation produces a factor structure that is uncorrelated, while oblique rotation allows factor inter-correlations. In PCBC, two latent factors, general parental psychosocial support and specific parental career-related behaviors, were hypothesized to be correlated (Keller & Whiston, 2008). Promax rotation

was used here because it is a popular oblique rotation method that is designed to obtain a simple factor structure (Gerbing & Hamilton, 1996).

In EFA, multiple criteria are used to determine the number of factors to retain among observed variables: (a) eigenvalue > 1 rule (Kaiser, 1960), (b) parallel analysis (Horn, 1965), and (c) interpretation of factors. Eigenvalues represent the amount of information captured by a factor. The sum of eigenvalues for all factors equals the number of observed variables. For example, for a 30-item test, a factor with an eigenvalue of 6 represents six units of information, which equals 20% (6/30) of the total information. The eigenvalue > 1 rule suggests that factors with eigenvalues greater than 1 are worth considering because each of these factors contains more information than a unit of information that is represented by one item/variable. Parallel analysis is one of the most recommended rules for determining the number of factors (Hayton, Allen, & Scarpello, 2004; Ledesma & Valero-Mora, 2007; Ruscio & Roche, 2012). Parallel analysis allows researchers to compare eigenvalues extracted from their sample with eigenvalues extracted from a randomly generated correlation matrix that has the same sample size and number of variables (Patil, Singh, Mishra, & Donavan, 2008). Factors are retained when eigenvalues of the sample are larger than the 95th percentile of the distribution of eigenvalues derived from the random data.

I conducted the EFA with the pilot study data (n=197). To determine the number of underlying factors, I used the SPSS 17.0 dimension reduction module. Five factors had eigenvalues greater than 1, respectively equal to 7.55, 1.71, 1.26, 1.17, and 1.07. When examining the factor loadings of each item, many individual items cross-loaded saliently (i.e., loading > .30) on more than one factor, which makes interpretation difficult. Then I conducted a parallel analysis using SPSS syntax. Parallel analysis revealed that two factors should be retained

because two eigenvalues were greater than the 95th percentile (red line) of the eigenvalues of the random data (see Figure 4.1). I used Mplus 7 to conduct the EFA with Promax rotation method. Item 12 "My parent has talked to me about the steps involved in making difficult decisions" cross-loaded saliently (loading > .30) on two factors, and, therefore, was deleted. Meanwhile, when analyzing the content of each item, the two-factor solution was more interpretable with one factor indicating general parental psychosocial support and the other indicating specific parental actions. Therefore, the two-factor solution for the PCBC was deemed appropriate.

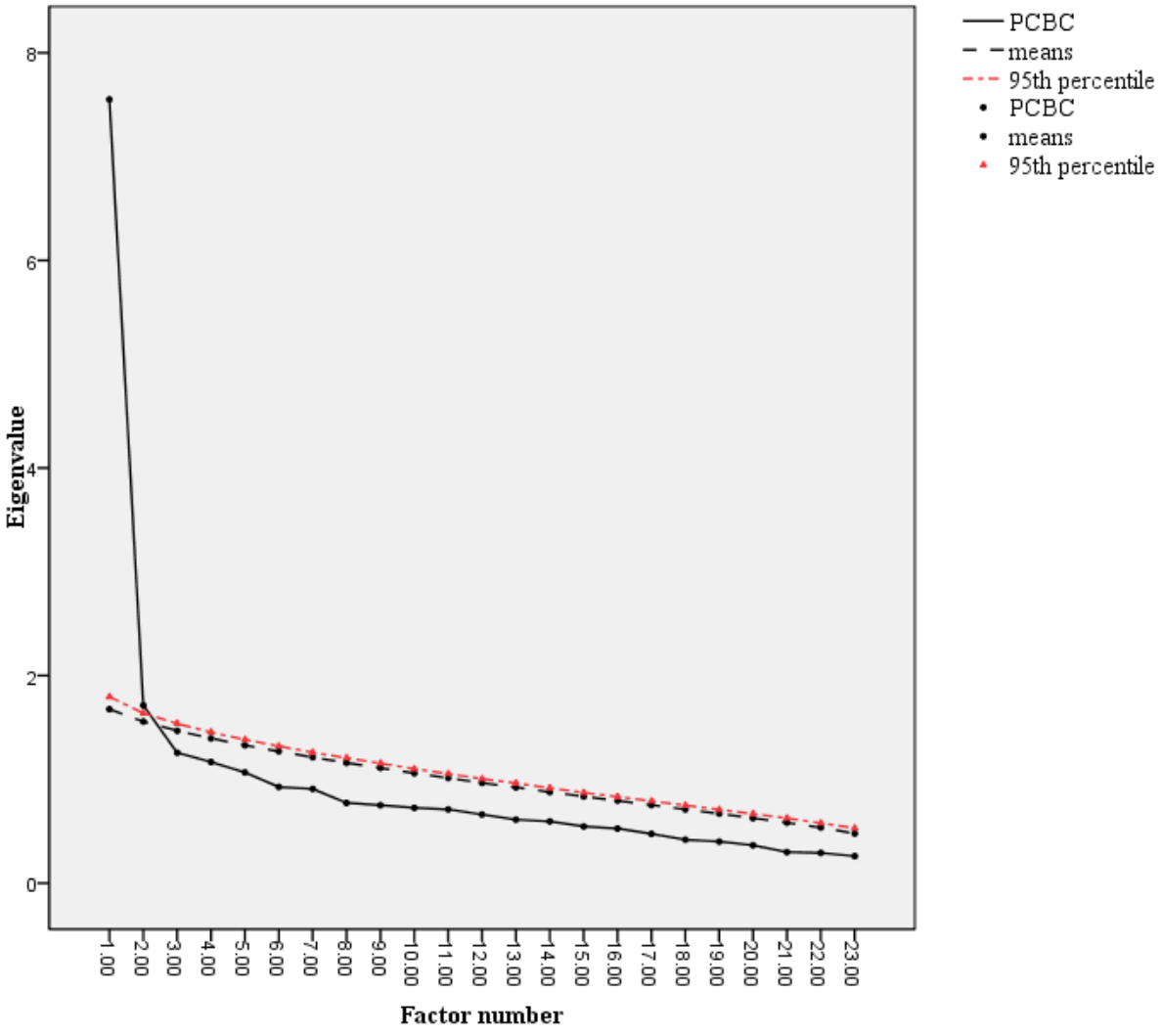

Figure 4.1. Parallel analysis of latent factors in the Parent Career Behavior Checklist.

Given the factor structure obtained from the EFA, I conducted the CFA with my sample data (n=587) using Mplus 7. CFA revealed that 17 items loaded saliently (i.e., loadings > .40) on the first factor, general parental psychosocial support, and 5 items loaded saliently on the second factor, specific parental career-related actions. An examination of fit indices revealed that the CFA model adequately represented the data (see Table 4.1). The PCBC items are presented in descending order according to the size of their EFA factor loadings (see Table 4.2).

Table 4.1

Fit Indices of Confirmatory Factor Analysis of the Parent Career Behavior Checklist

Model (n=587)	χ^2	df	RMSEA	CFI	NNFI	SRMR
CFA	454.70	208	0.045	0.934	0.927	0.042

Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; NNFI = non-normed fit index; SRMR = standardized root mean square residual.

Table 4.2

Factor Loadings for the Parent Career Behavior Checklist

		Support	Action
Psychosocial Support Items:			
20	My parent asks what careers I am considering for my future.	**.73** (.52)	-.19
18	My parent encourages me to try new things.	**.71** (.64)	-.01
16	My parent tells me he/she loves me.	**.71** (.45)	-.09
14	My parent has encouraged me to be involved in extra-curricular activities	**.64** (.60)	-.13
21	My parent encourages me to choose whatever career I want.	**.62** (.56)	-.04
23	My parent has supported me when I have told him/her that I am interested in a specific career.	**.57** (.56)	.04
4	My parent encourages me to make my own decisions.	**.54** (.52)	.03
6	My parent has encouraged me to consider many different educational and career options.	**.52** (.52)	.09
1	My parent expresses interest in various teenage issues that are important to me.	**.52** (.48)	-.05
19	My parent encourages me to talk to him/her about my career plans.	**.50** (.65)	.20
22	My parent tells me he/she is proud of me.	**.47** (.59)	.20
5	My parent tells me he/she has high expectations for my career.	**.47** (.45)	.10
7	My parent tells me about specific careers.	**.46** (.49)	.03
3	My parent has encouraged me to take interest assessments or career tests offered by my school.	**.46** (.46)	.05
8	My parent helps me feel better when I tell him/her I am worried or concerned about choosing a career.	**.45** (.54)	.13
9	My parent really tries to understand my thoughts, feelings and opinions about various topics.	**.43** (.49)	.08
15	My parent encourages me to ask questions about different jobs.	**.42** (.57)	.21
Career Action Items:			
11	My parent has given me written material about specific colleges.	-.21	**.94** (.73)
10	My parent has given me written material about specific careers.	-.09	**.77** (.68)
13	My parent has participated with me in a structured career development workshop offered by my school, church, etc.	.08	**.60** (.69)
17	My parent has helped me understand results from career tests interest assessments I have taken.	.15	**.57** (.63)
2	My parent has shown me where to find information about colleges or careers in the library or bookstore.	.13	**.52** (.62)

Note. Factor loadings > .40 for the exploratory factor analysis (EFA) are in boldface. Standardized loadings for the confirmatory factor analysis (CFA) are in parentheses.

Regression Analysis

Violating assumptions of analysis can result in biased estimates and untrustworthy results. Before conducting a regression analysis, five major assumptions were checked to ensure valid results: (a) a linear relationship between predictor and criterion variables, (b) zero conditional mean of errors, (c) independence of errors, (d) homoscedasticity (constant variance) of errors, and (e) a normal distribution of errors (Williams et al., 2013). Residual scatterplots of observed and predicted values of the dependent variable allow visual assessment of the distance of each observation from the zero line with standardized residuals on Y-axis and standardized predicted values on X-axis (Cohen et al., 2003). When a scatterplot follows a random pattern centered on the line of zero standard residual value, it suggests that (a) linearity exists between independent and dependent variable, (b) model errors have a mean of 0 for independent variables, and (c) model errors have a constant variance across all levels of the independent variables. The standardized residual scatterplot for this sample revealed that the points, which represent standardized predicted scores against standardized residuals of the Career Decision Self-Efficacy scale-Short Form scores, were scattered evenly above and below the centered horizontal line with the standardized residual value of 0 (see Figure 4.2), indicating the assumptions of linearity, zero conditional mean of errors, and homoscedasticity of errors were satisfied.

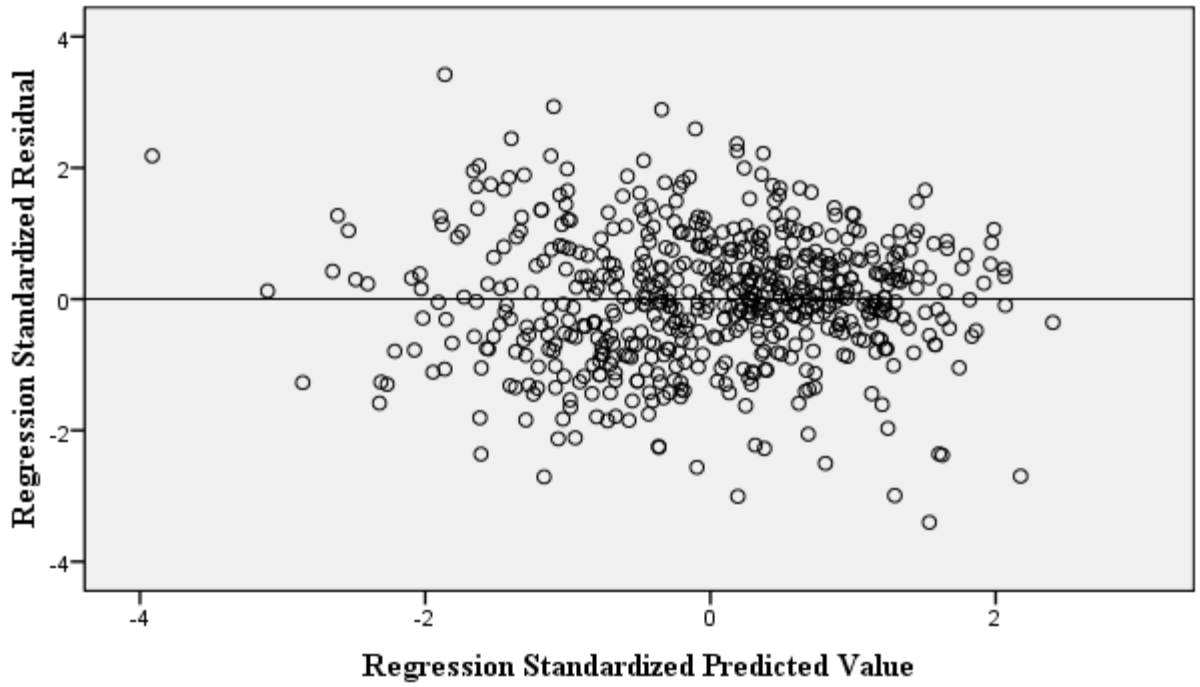

Figure 4.2. Standardized residual scatterplot of the Career Decision Self-Efficacy scale-Short Form scores of Chinese adolescents.

The normal Probability-Probability (P-P) plot is also based on the standardized residuals (Cohen et al., 2003). The X axis reflects the observed cumulative probability based on the percentiles in the frequency distribution of the residuals (i.e., probability of that value or below). The Y axis is based on the cumulative probability of the standardized residuals. If the residuals are normally distributed, the points should fall on the diagonal line. The normal P-P plot indicated how well observed cumulative probability values and expected cumulative probability values of standardized residuals of the Career Decision Self-Efficacy scale-Short Form scores agree with each other (see Figure 4.3). In the normal P-P plot, points were scattered on the straight reference line, which indicates that the error terms of career decision-making self-efficacy were normally distributed. After an examination of the two plots, major regression analysis assumptions were satisfied; therefore, results could be considered trustworthy.

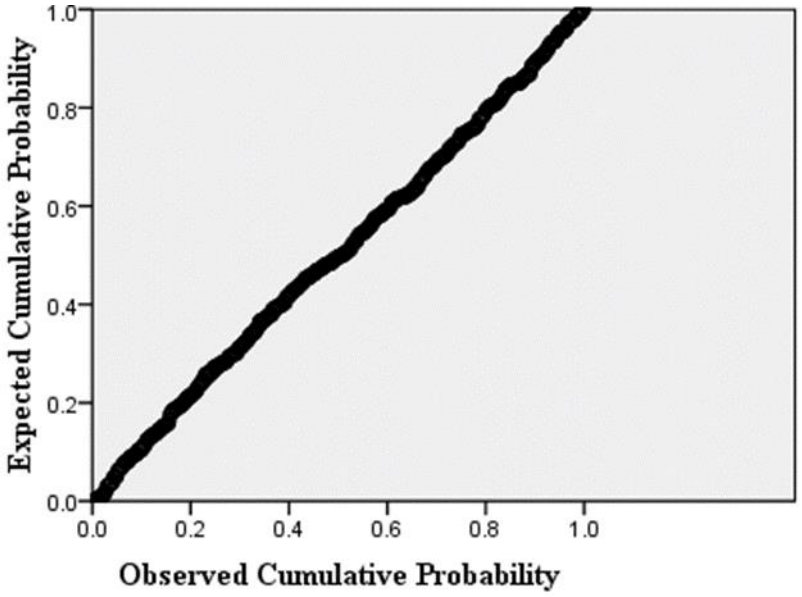

Figure 4.3. Normal P-P plot of standardized residuals of the Career Decision Self-Efficacy scale-Short Form scores of Chinese adolescents.

Research Question 1

What Is the Career Decision-Making Self-Efficacy of Chinese Vocational Students?

Descriptive statistics were calculated for the sample of 587 first-year Gansu BMIS students (see Table 4.3). Three hundred and ninety-eight (67.8%) students were boys and 189 (32.2%) were girls. Adolescent boys represented a majority of students because Gansu BMIS specializes in the field of construction materials, which has been viewed as a traditionally male occupation in China. Participants' ages ranged from 15 to 17, with an average of 15.80 (*SD* = .63). Five hundred and sixteen (87.9%) students indicated that their families' official residence was in a rural area, and 71 (12.1%) in an urban area. FAS II scores have been shown to be a valid and reliable measure of family SES for Chinese adolescents (Liu et al., 2012). The range of FAS II scores is from 0 to 7 with scores indicating low (score = 0-3), medium (score = 4-5), and high (score = 6-7) family affluence levels. The mean of FAS II scores for this group of students was 1.80 (*SD* = 1.63). Among these students, 83% (*n* = 488) came from a low affluence family

background, 14% (*n* = 83) reported a medium affluence family background, and 3% (*n* = 16) came from a high affluence family background.

Table 4.3

Descriptive Statistics and Correlations of Study Variables

Variable	2	3	4	5	6	7	Mean	SD
1. CDSE-SF	.61*	.42*	.01	-.02	.00	.07	93.09	11.56
2. PCBC-Support	-	.64*	.04	-.08*	-.05	.17*	63.04	9.41
3. PCBC-Action		-	-.00	-.07	-.06	.16*	16.74	3.91
4. Age			-	.09*	.04	.08	15.80	.63
5. Gender				-	-.12*	.10*	.32	.47
6. Residence					-	-.26*	.88	.33
7. Family socioeconomic status						-	1.80	1.63

Note. CDSE-SF = Career Decision Self-Efficacy scale-Short Form. PCBC-Support = Parental Career-Related Behavior Checklist-Support Scale. PCBC-Action = Parental Career-Related Behavior Checklist-Action Scale.
*$p < .05$

Means and standard deviations were calculated for the CDSE-SF and PCBC subscales using SPSS Statistics 17.0. For the CDSE-SF, total scores ranged from 60 to 119, with a mean score of 93.09 (*SD* = 11.56). Approximately 95% of the CDSE-SF scores fell between 70 and 116, indicating a high level of average global career decision-making self-efficacy among these students. For the 22-item PCBC, total scores ranged from 32 to 110, with a mean score of 79.79 (*SD* = 12.23). The subscale PCBC-Support consisted of 17 items with total scores ranging from 25 to 85 with a scale mean score of 63.04 (*SD* = 9.41) and an item mean score of 3.71 (*SD* = .55), indicating that general parental support behaviors occur more than *sometimes* and nearly *often* according to students' perceptions. The subscale PCBC-Action consisted of five items with total scores ranging from 5 to 25, a scale mean score of 16.74 (*SD* = 3.91), and an item mean score of 3.35 (*SD* = .78), indicating that specific career-related parenting behaviors occur between *sometimes* and *often* according to students' perceptions. Overall, this group of students

had high levels of global career decision-making self-efficacy and perceived general parental support and specific career-related parenting behaviors occurring between *sometimes* and *often*.

Career decision-making self-efficacy explained 36% of the variance of general parental psychosocial support. Career decision-making self-efficacy explained approximately 18% of the variance of specific career-related parental actions. General parental psychosocial support explained 41% of the variance of specific career-related parental actions. Family socioeconomic status held small, yet significant, correlations with general parental psychosocial support (3% variance explained), specific career-related parental actions (3% variance explained), gender (1% variance explained), and family residence status (6.8% variance explained). Age had a small, yet significant, correlation with gender and non-significant correlations with other variables.

Research Question 2

What Is the Best Set of Selected Variables to Explain the Variance Found in the Career Decision-Making Self-Efficacy of Chinese Vocational Students?

F statistics showed that the linear regression represented data well ($F = 59.96$, $p < .05$), denoting a significant improvement in explaining the dependent variable, career decision-making self-efficacy, with selected independent variables. The multiple correlation coefficient, *R*, between career decision-making self-efficacy and all selected independent variables was .62, indicating that selected independent variables explained 36% of the variance of the career decision-making self-efficacy of Chinese adolescents. Because independent variables predicted career decision-making self-efficacy, the correlation coefficient between the predicted scores and the actual scores of career decision-making self-efficacy is also .62. The squared multiple correlation, R^2, or the coefficient of determination, was .383, which indicates that 38.3% of the variance of students' career decision-making self-efficacy could be explained by selected

independent variables. The adjusted R^2 within the consideration of the sample size of this study was calculated to be .376.

Multicollinearity occurs when two or more predictive variables contain strongly redundant information (Sweet & Grace-Martin, 2008). A multiple regression with two or more collinear variables will produce errant results. Statistics showed no multicolinearity between independent variables, because all correlation coefficients were below .80 (Sweet & Grace-Martin, 2008) and the collinearity tolerance was larger than .10 (Dormann et al., 2013). Collinearity tolerance indicates the percentage of variance in one independent variable that cannot be accounted for by other independent variables. The larger the collinearity tolerance, the less dependency of this independent variable on other independent variables (Brace & Snelgar, 2000). Collinearity tolerance also equals 1/variance inflation factor (VIF). The two most highly related variables in this study, general parental psychosocial support and specific career-related parental actions, can serve as two independent variables in one regression model to predict students' career decision-making self-efficacy with both variables having unique contributions in explaining the variation of the career decision-making self-efficacy (see Table 4.4).

Table 4.4

Regression Coefficients and Collinearity Statistics of Regression Analysis

				Collinearity Statistics	
	B	*SE B*	*β*	Tolerance	VIF
(Constant)	51.61*	9.80			
PCBC-Support	.72*	.05	.59	.61	1.65
PCBC-Action	.19	.12	.07	.61	1.64
Age	-.48	.61	-.03	.98	1.02
Gender	1.04	.82	.04	.96	1.04
Residence	.80	1.21	.02	.92	1.10
Socioeconomic status	-.32	.25	-.04	.89	1.12

Note. PCBC-Support = Parental Career-Related Behavior Checklist-Support scale. PCBC-Action = Parental Career-Related Behavior Checklist-Action scale.
* $p < .05$

Regression analysis revealed that only one independent variable was statistically significant in explaining students' career decision-making self-efficacy, viz., general parental psychosocial support (see Table 4.4). General parental psychosocial support alone explained 38.3% of the variance of the dependent variable, career decision-making self-efficacy, among all selected independent variables for this sample. When controlling for all variables, one unit of change in the score of PCBC-Support resulted in .72 unit of change in students' career decision-making self-efficacy. This indicated that general parental psychosocial support had substantial influence on Chinese adolescents' career decision-making self-efficacy. Family structure features, residence and family SES, as well as adolescents' age and gender were not significant in predicting career decision-making self-efficacy of this group of Chinese secondary vocational students.

CHAPTER 5

DISCUSSION

This chapter summarizes the entire study, including the purpose of the study, research method and analysis, and findings. A discussion of findings, implications, and recommendations for practice and further research are also presented.

Summary of Study

Introduction

People take initiative, anticipate the likely outcomes of a series of prospective behaviors, intentionally exercise actions to produce desired outcomes and avoid detrimental ones, make decisions, reflect on their thoughts and actions, adjust and refine their goals, and motivate and evaluate their behavior (Bandura, 2001, 2006). People exercise personal agency over their thought processes, motivation, and actions through a triadic reciprocal relationship, in which intrapersonal (i.e., cognitive, affective, and biological) factors, overt behavior patterns, and environmental determinants interact continuously (Bandura, 1986). This triadic reciprocal relationship explains human behaviors. Self-efficacy is believed to serve as the key to human agency and is considered as one of the most influential predictors of motivation to monitor behavior, thoughts, and decision-making processes (Chong, 2007).

Self-efficacy refers to individuals' beliefs about their abilities to complete a task or solve a future problem (Bandura, 1977). Self-efficacy is built on self-knowledge and overall self-perception, which are gained through personal experiences and interactions with the environment. Successful experiences increase confidence in performing similar tasks, while

unsuccessful experiences cause evaluation of personal and external factors and avoid making similar mistakes in the future. More importantly, people with high self-efficacy are able to objectively analyze their successes and failures and explain attributions of their experiences and environmental factors (Bandura, 2012). So, when a situation is negative or undesirable, people with high self-efficacy can still maintain a positive attitude, take initiative, and persevere in the face of difficulties and new challenges (Paris & Lung, 2008). Self-efficacy also helps people cope positively with stress and depression to remain emotionally stable and healthy (Shi & Zhao, 2014).

Career decision-making is one of the most difficult tasks in people's lives and has received attention from career researchers and counselors for years. Career decision-making self-efficacy is a pivotal construct in understanding the process of career decision-making and people's career behaviors (Betz, 2007; Fabio et al., 2013). Career decision-making self-efficacy refers to individuals' degree of confidence in their abilities to engage in and accomplish tasks associated with making and committing to a career choice (Taylor & Betz, 1983). Individuals with low career decision-making self-efficacy tend to avoid career decision-making tasks, such as choosing a college major or making plans to achieve goals (Jin et al., 2009). Adolescents with high levels of career decision-making self-efficacy are likely to engage in career exploration and planning activities, identify their career interests, persistently work toward career goals, and have greater achievement (Lent et al., 2010).

Career decision-making self-efficacy mediates the relationship between individuals' personal characteristics and their career behaviors (Jiang, 2014; Parker et al., 2010; Stajkovic & Luthans, 1998b). For example, individuals with proactive personalities like to take initiative. They tend to engage more in career exploring and planning activities and, therefore, are likely to

develop a higher level of self-efficacy in job searching and decision-making, which, in turn, helps initiate career adaptive behaviors and shift roles during the school-to-work transition (Hou et al., 2014). Individuals with high emotional intelligence are usually better aware of and more successful in managing their emotions; therefore, they are also likely to have greater self-efficacy for making career choices and to perceive fewer obstacles in the process of career decision-making (Fabio et al., 2013).

Social cognitive career theory (SCCT; Lent, 2005; Lent et al., 1994, 2000) applies Bandura's self-efficacy and human agency mechanism to explain career behaviors and proposes three tenets that are intricately linked to career development: self-efficacy, outcome expectation, and personal goals. Outcome expectations refer to the imagined consequences of certain behavior (Lent et al., 1994). Goals refer to intentions when a certain level of commitment is required. Individuals set goals to organize, guide, evaluate, and sustain their behavior toward desired outcomes. Self-efficacy is an important source of outcome expectations. Together, self-efficacy and outcome expectations influence individuals to set goals and come up with a plan of actions. Individuals refine and adjust goals through their performance attainment, which, in turn, influences their self-efficacy and outcome expectations. For example, individuals with high self-efficacy and high career outcome expectations are more likely to set higher career-related goals and engage in more career activities; by achieving these goals, individuals enhance their self-efficacy and increase outcome expectations for the future (Rogers et al., 2008).

SCCT proposes that personal variables (e.g., age and gender), contextual variables (e.g., perceived support and barriers), and experiential variables (e.g., learning sources) can influence self-efficacy, outcome expectations, the formation of interests, and goals. Self-efficacy and outcome expectations also mediate the relationship between career choice process variables (i.e.,

interests and goals) and personal, contextual, and experiential variables (Ferry et al., 2000; Sheu et al., 2010; Sovet & Metz, 2014). Contextual variables such as perceived social support have more direct influence on the development of self-efficacy than on outcome expectations, interests, or goals (Lent et al., 2010). High perceived support is associated with low perception of barriers. For adolescents, who are at the critical stage of forming a sense of self and a vocational identity, it is important to receive support from the most influential people in their lives (Rodríguez, Inda, & Fernández, 2015). Support and recognition from parents, teachers, and friends is crucial for adolescents' career development.

Family plays a crucial role in the career development of U.S. adolescents (Fouad et al., 2010; Paloş & Drobot, 2010). Family socioeconomic status (SES) exerts a significant influence on adolescents' academic achievement, career aspirations, career decision-making, and occupational status attainment (Metheny & McWhirter, 2013; Rojewski, 1997; Whiston & Keller, 2004). Parents in families with higher SES are more likely to be supportive in the child's career exploration activities and are able to provide information and resources for career planning and development (Hsieh & Huang, 2014). Parental encouragement increases an adolescent's self-efficacy and influences a student's learning experiences, which, in turn, enhance self-efficacy and outcome expectations (Ferry et al., 2000). A strong emotional bond with an adolescent's mother improves career decision-making self-efficacy and can predict career choice commitment (Lee & Kim, 2015).

In Eastern cultures, social norms value collectivistic ideology and behaviors such as obedience, conformity, and interdependence and discourage unique individual characteristics. In China, social power, authority, humility, and wealth are viewed as very important (Schwartz, 2006). Chinese parents have high aspirations for their children's education and career choices

and expect them to achieve career success (Sheng, 2012). Young people, in particular, rely strongly on family for influence and support and are also more likely to comply with expectations and obligations from the family when choosing a career, which may change the social status and bring glory to their families (Fouad et al., 2008; Hannum et al., 2011; Leong et al., 2004). One common path for children to achieve high parental expectations is through higher educational attainment, which has been associated with profitable and respectable occupations from ancient to modern times in China (Hung et al., 2000; Zhou et al., 2012).

Purpose of Study

Despite the cultural norms of high parental expectations and parent-child interdependence in China, few studies have been conducted to examine the relationship between family and adolescents' career decision-making. The purpose of this study was to examine the career decision-making self-efficacy of Chinese secondary vocational students and determine the influence of selected family factors on the career decision-making self-efficacy of Chinese adolescents. Family variables were categorized as (a) *structure*, or demographic, variables that reflected family members' socioeconomic status, and (b) *process* variables, which referred to family members' interaction and support (Lindstrom et al., 2007). Family socioeconomic status and residence (rural or urban) were used to represent family structure variables. Family career-related behaviors, including general and career-specific parental support behaviors (Keller & Whiston, 2008), represented family process variables.

Method

Participants. All first-year students (n=639) enrolled in Gansu Building Material Industry School (BMIS), a key national secondary vocational school located in Lanzhou China, during the Spring semester of 2014 constituted the convenience sample for this study. A total of

636 students returned signed parental and minor consent forms and were administered questionnaires. Cases that had complete blanks for a whole section of the questionnaire (*n*=6) or special response patterns (*n*=43, e.g., repeated response pattern to all items or same response to a sequence of items) were identified. As a result, 49 cases were excluded from further analysis. Thus, the final sample size was 587, and the actual participation rate was 92.3%.

Before the main data collection, four randomly selected classes of second-year students at Gansu BMIS (n=197) participated in a pilot study to detect potential problems with survey procedures including participant recruitment and questionnaire administration and to check the validity of the instrument scores. The pilot study provided evidence of validity of the instrument scores and the information on the factor structure of scales on Chinese students for the main data analysis.

Instruments.

Career decision-making self-efficacy. Career decision-making self-efficacy was measured by the Career Decision Self-Efficacy scale-Short Form (CDSE-SF; Betz et al., 1996). The CDSE-SF contains 25 items measuring respondents' confidence associated with tasks from 5 career choice competencies: self-appraisal, information gathering, goal selection, planning, and problem-solving. The scale asks respondents to rate their confidence using a 5-point Likert scale (1=*No Confidence At All* to 5=*Complete Confidence*). Examples of the items are "How much confidence do you have that you could… '…accurately assess your abilities?' (self-appraisal), '…find information in the library about occupations that you are interested in?' (information gathering), '…choose a career that will fit your preferred lifestyle?'(goal selection), '…make a plan of your goals for the next five years?' (planning), and '…change occupations if you are not satisfied with the one you entered?'" (problem-solving). A composite score summing all items

provides a general level of confidence in career decision-making with higher scores representing higher levels of self-efficacy (Jin et al., 2012; Nam et al., 2011). I obtained permission to reproduce 850 copies of the CDSE-SF for this study including anticipated 200 copies for the pilot test and 650 copies for the main data collection. The internal consistency reliability was .89 for the total scores of the CDSE-SF for my sample.

Parental career-related behaviors. Parental career-related behaviors, which refer to parenting behaviors associated with adolescents' career development, were measured by the Parent Career Behavior Checklist (PCBC; Keller & Whiston, 2008). The PCBC consists of 23 items assessing respondents' perceptions of general parenting behaviors (Support scale) and career-specific parenting behaviors (Action scale). Participants are asked to select the parent/guardian most concerned about their career issues and then to indicate the degree that each item applies to that guardian using a 5-point Likert scale (1=*Never* to 5=*Very Often*). Examples of the items are "My parent encourages me to choose whatever career I want" (Support), and "My parent has helped me understand the results from career tests or interest assessments I have taken" (Action). A composite score summing items from the Support scale indicates the frequency of general parenting and psychosocial caring behaviors. A composite score summing items from the Action scale indicates the frequency of specific parental behaviors associated with adolescents' career-related concerns. The internal consistency reliability was .91 for the total scores of the PCBC, .88 for the Support scale, and .81 for the Action scale for my sample.

Demographics and family socioeconomic status. The demographic section asked for respondents' gender, age, residence status (0=*Urban*, 1=*Rural*), and family socioeconomic status (SES). Family SES was measured by the Family Affluence Scale II (FAS II; Currie et al., 2004),

which was developed as an alternative measure for adolescents to report their family SES rather than using traditional SES indicators, such as parental education, occupation, and income (Currie et al., 1997). FAS II contains 4 items that ask respondents to indicate the number of vehicles the family owns (0, 1, 2+), whether or not the child has his or her own bedroom (yes, no), the number of family trips (travel) per year (0, 1, 2+), and family computer ownership (0, 1, 2+). A composite score indicates general family affluence status with higher scores representing higher levels of family affluence (Boyce et al., 2006). FAS II is widely used around the world in assessing international adolescents' health inequality and has also been shown to be a valid and reliable measure of family SES for Chinese adolescents (Liu et al., 2012). The internal consistency reliability was .65 for the total scores of the FAS II for my sample, which is at the high end among reliabilities for the FAS II so far reported from various countries (Lin, 2011; Schnohr et al., 2008).

I obtained permission to use and translate the instruments in this study. The survey was translated from English to simplified Chinese by four Chinese graduate students at the University of Georgia with professional English reading and writing skills. Three students independently translated the questionnaire from English to Chinese, translated it back to English, and modified their translations in Chinese. A fourth student compared the three different Chinese versions with the original English version, resolved any discrepancies, and concluded the best translated version. In addition, I conducted a cognitive interview with four randomly selected second-year students at Gansu BMIS to improve the questionnaire. Each student was interviewed for about 20 minutes after completing the questionnaire regarding difficulties in understanding and answering each question, confusion about terms, and opinions on alternative ways to phrase

questions in a more understandable manner. After the cognitive interviews, I corrected some wording, changed the questionnaire format, and settled on the final version of the translation.

Procedure. The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) has established its validity and reliability for various groups of Chinese students (i.e., Hampton, 2005, 2006; Jin et al., 2012; Ye, 2014). However, a lack of investigation of the Parent Career Behavior Checklist (PCBC) to the Chinese population suggested risks of using the PCBC scores directly in the data analysis. To examine the validity and factor structure of the PCBC on Chinese students, first, I conducted exploratory factor analysis (EFA) with the pilot data (n=197) to determine the number of latent factors of the PCBC. Then, I conducted confirmatory factor analysis (CFA) with the sample data (n=587) to examine the factor structure of the PCBC for subsequent regression analysis. In the main data analysis, multiple regression (MR) was used to examine the role of selected family structure and process variables on Chinese secondary vocational students' career decision-making self-efficacy.

Results

Factor Analysis of the Parent Career Behavior Checklist. EFA with the pilot data indicated that a two-factor solution was supported by parallel analysis and considered to be the most interpretable solution with one factor indicating general parental psychosocial support and the other indicating specific parental career-related actions. All items loaded saliently (i.e., loadings > .40) on only one factor except one cross-loaded item (loadings > .30). The cross-loaded item, "My parent has talked to me about the steps involved in making difficult decisions", was deleted from subsequent analysis. CFA of the PCBC supported the two-factor solution that best represented the sample. Results indicated that 17 items loaded saliently (i.e., loadings > .40) on the first factor (general parental psychosocial support) and that 5 items loaded saliently (i.e.,

loadings > .40) on the second factor (specific career-related parental actions). Fit indices suggested an adequate fit of the CFA model. Factor structure obtained from the CFA was used to compute composite scores of two subscales of the PCBC for subsequent regression analysis.

Regression Analysis. Participants' ages ranged from 15 to 17. About two-thirds were boys. Most students (87.9%) indicated that their families' official residence was in a rural area, and the rest in urban areas. Most students (83%) came from a low affluence family background, 14% reported a medium affluence family background, and 3% came from a high affluence family background. For the CDSE-SF, total scores ranged from 60 to 119, with a mean score of 93.09 (*SD* = 11.56) and an item mean score of 3.72. For the 22-item PCBC, total scores ranged from 32 to 110, with a mean score of 79.79 (*SD* = 12.23). The subscale PCBC-Support consisted of 17 items with total scores ranging from 25 to 85 with a scale mean score of 63.04 (*SD* = 9.41) and an item mean score of 3.71 (*SD* = .55), indicating that general parental support behaviors occur more than *sometimes* and nearly *often* according to students' perceptions. The subscale PCBC-Action consisted of five items with total scores ranging from 5 to 25, with a scale mean score of 16.74 (*SD* = 3.91), and an item mean score of 3.35 (*SD* = .78), indicating that specific career-related parenting behaviors occur between *sometimes* and *often* according to students' perceptions.

Regression analysis indicated that general parental psychosocial support was the only significant factor explaining 38.3% of the variance of the dependent variable, career decision-making self-efficacy. Family structure features, residence and family SES, as well as adolescents' age and gender were not significant in predicting career decision-making self-efficacy of this group of Chinese secondary vocational students. When controlling for all other variables, one unit of change in the score of PCBC-Support resulted in .72 unit of change in

students' career decision-making self-efficacy. This indicated that general parental psychosocial support had substantial influence on Chinese adolescents' career decision-making self-efficacy.

Discussion

Career decision-making self-efficacy plays an important role in the process of individuals' career decision-making and career development. Individuals with higher levels of career decision-making self-efficacy are more motivated to explore career opportunities and exercise control over their career-related behaviors. Likewise, self-efficacy can be enhanced through positive outcomes; individuals with higher levels of self-efficacy are more likely to be positive, secure high self-esteem, and be less vulnerable to stress (Choi et al., 2012; Choi & Kim, 2013; Komarraju, Swanson, & Nadler, 2014). Career decision-making self-efficacy also helps ease employment pressures during the transition from school to work (Hou et al., 2014). Family is a significant influence on U.S. adolescents' career development (Hartung et al., 2005), but little is known about Chinese youth. This study described the career decision-making self-efficacy of Chinese secondary vocational students and examined the role of family on career decision-making self-efficacy from both structural and process perspectives.

The Parent Career Behavior Checklist (PCBC; Keller & Whiston, 2008) measured parental career-related behaviors. When an instrument is applied in a specific context for the first time, it is important to ensure instrument validity, i.e., the instrument measures the same construct as it does in the context where it was developed. Therefore, the construct validity of the PCBC with a Chinese student population was examined. Results showed that the 22-item PCBC was a valid and reliable measure of parental behaviors related to Chinese adolescents' career development. Two latent factors, general parental psychosocial support and specific parental career-related actions, were found to underlie the PCBC for Chinese adolescents.

Previous research conducted in the U.S. also supported the two-factor solution (Keller & Whiston, 2008); however, the factor structure of the PCBC was different from Chinese students. The U.S. sample consisted of 282 middle school students from a Midwestern state with diverse socioeconomic status in both urban and rural areas. The majority of students were Whites (94%). The PCBC-Support subscale contained 13 items and the PCBC-Action subscale contained 10 items on U.S. adolescents. For this Chinese sample, the Support subscale of the PCBC contained 17 items, and the Action subscale contained 5 items. This shift in the factor structure of the PCBC may be due to different interpretation of factor loadings. Keller and Whiston (2008) chose greater than .40 as the cutoff score to determine the cross-loaded items while I used .30 as the cutoff score. Ideally, researchers want to retain items that load strongly on one factor with small to nil loadings onto the other factors (Matsunaga, 2010). In reality, items often do not "load clearly" on one factor. Therefore, researchers make in part subjective decisions in terms of the cutoff score, which may cause changes in the factor structure, especially when a recently developed instrument does not have many applications.

In addition, a shift in the factor structure may emerge from translation errors. In this study, three Chinese graduate students independently translated the survey from English to Chinese, translated it back to English, and modified their translated versions. A fourth student examined the original and translated versions, resolved discrepancies, and settled on the best translated version. Brislin (1970) suggested that back-translation should be conducted in several steps. First, one person translates from the source to the target language and a second person blindly translates back from the target to the source language. Several people evaluate the original, target language, and back-translated versions for errors that lead to differences in meaning until no errors will be found. Then, translators pretest the translated version on target

language-speaking individuals and administer the source language and translated versions to bilingual subjects to compare outcomes such as means and standard deviations. In addition, translation errors may reduce if more than one translator work together to compare the original and the target languages and resolve translation discrepancies among different translated versions.

Parental psychosocial support includes parental attention, encouragement, expectation, and guidance behaviors in this study. General parental psychosocial support displayed a significant influence on the career decision-making self-efficacy of Chinese students, which is consistent with previous research (Paloş & Drobot, 2010). Career development is not only an intrapersonal, but also a contextually constructed, process in which family variables are highly significant contextual variables, especially for adolescents (Blustein, 2011; Ginevra, Nota, & Ferrari, 2015; Lent et al., 2000). Parents, as primary sources of social support, usually have a stronger influence on young people's career development than peers and teachers (Whiston & Keller, 2004). Perceived parental support influences adolescents' confidence in coping with tasks of identifying goals, seeking out information, and making choices (Ginevra et al., 2015; Restubog et al., 2010). Howard et al. (2009) found family support was associated with youth's academic achievement and career decision-making readiness through perceived self-efficacy.

Specific career-related parenting actions did not have significant influence on career decision-making self-efficacy of my sample. Both parental support and action factors explained variations in U.S. and Romania adolescents' career decision-making self-efficacy in previous studies, but parental psychosocial support was found to be a more salient factor than concrete actions in facilitating adolescents' career decision-making (Keller & Whiston, 2008; Paloş & Drobot, 2010). In other words, providing support and displaying high expectations for young

adolescents in general is more important to career development than specific interactions such as offering explicit information about a career.

Furthermore, confirmatory factor analysis of the Parent Career Behavior Checklist suggested that 4 items that measured specific career-related parental actions on U.S. students shifted to measure general parental psychosocial support on this group of Chinese adolescents (Keller & Whiston, 2008). These four items were item 3 “my parent has encouraged me to take interest assessments or career tests offered by my school”, item 7 “my parent tells me about specific careers”, item 15 “my parent encourages me to ask questions about different jobs”, and item 19 “my parent encourages me to talk to him/her about my career plans”. In multiple regression, the second significant predictor explains incremental variance of the dependent variable above and beyond the first significant predictor. For this sample of Chinese students, more items measuring general parental psychosocial support may cause specific career-related parental actions not to be a significant factor in explaining Chinese adolescents’ career decision-making self-efficacy. In addition, general parental psychosocial support explained 41% of the variance of specific career-related parental actions. As a result, no unique variance of career decision-making self-efficacy could be explained above and beyond parental psychosocial support when keeping other variables constant.

Family socioeconomic status (SES) and family residence did not have significant influence on Chinese adolescents’ career decision-making self-efficacy. Previous research supports this finding, i.e., family process variables (e.g., parental expectations, parent-child interactions, and family support) play a more important role in adolescents’ career development than family structural variables (e.g., residence, family SES). When family process and structural variables are accounted for, the influence of family SES on career development constructs are

likely to diminish (Ali & Saunders, 2006; Metheny & McWhirter, 2013; Whiston & Keller, 2004).

Another reason that family SES was not significant in predicting career decision-making self-efficacy may be that my sample was skewed in that a majority (83%) of participants came from low affluence families, 14% from a medium affluence family background, and 3% from a high affluence family background. The limited variability in students' family affluence background tends not to be able to detect difference in the career decision-making self-efficacy caused by levels of family socioeconomic status.

Furthermore, the limited variability in students' family residence may cause family residence as a non-significant predictor of the career decision-making self-efficacy. The household registration or *hukou* system in China requires all citizens to register their permanent place of residence and the type of residence that is either agricultural/rural or non-agricultural/urban depending on whether the household owns farmlands (Afridi, Li, & Ren, 2015). As urbanization continues in China, more and more farmers sell farmlands and work in cities. After several years of working, some may be able to change their residence status to urban citizens. In this study, about 12% of students indicated that their family registered residence was in an urban area, but this does not necessarily indicate that their families reside in cities all the time. It is possible that some or all of these students grew up in the same or a similar rural environment as other students. Therefore, further investigations of the growing environment of these students may facilitate understanding their career decision-making self-efficacy.

Age and gender did not significantly influence career decision-making self-efficacy of these Chinese students. Previous studies have revealed mixed results regarding the relationship between demographic factors (e.g., gender, race, age) and career decision-making self-efficacy.

Rodríguez et al. (2015) found no statistically significant differences between Spanish boys and girls in self-efficacy beliefs, outcome expectations, interests, emotional states, or gender-role attitudes. Ginevra et al. (2015) reported no significant gender differences for career choice, career self-efficacy, and perceptions of parental support among Italian adolescents. Sovet and Metz (2014) found no gender differences in career decision-making self-efficacy for Korean boys and girls, but gender differences did exist among French boys and girls. Eccles (2011) believed that gender differences in career decision-making are related to gender role socialization, which can (a) lead to different hierarchies of core personal values and explicit motives, (b) place different values on various long-range goals and adult activities among men and women, and (c) affect individuals' educational and vocational choices indirectly through the behaviors and attitudes of the people they interact with on a regular basis. If boys and girls grow up in similar educational environments with similar educational or career expectations, it is likely that these boys and girls will make similar educational and career choices.

The lack of gender differences in my sample may also be due to the filter effect of Chinese school entrance exams. Gansu Building Material Industry School is a key secondary vocational school and also the only one that specializes in the field of constructional materials in Gansu Province. Students enrolled in this school will have the same level of academic performance on their high school entrance exams, reflecting the achievement from middle school. It is likely that these students also have similar levels of diligence and learning experience. Second, those who applied to this school have similar career interests and goals that focus on the field of building and construction. Given these similarities, girls and boys in this school may behave alike, have similar personalities, resulting in similar levels of career decision-making self-efficacy.

Implications for Practice

Most Chinese literature on career decision-making self-efficacy and on career development focuses on students who are college-bound or enrolled in college. This situation has theoretical and practical reasons. First of all, despite the notion of developing vocational education and career guidance to reform the Chinese education system first advocated in 1917, Chinese vocational education and career guidance systems did not start to develop until the late 1980s (Zhang et al., 2002). Current Chinese research and practice in career guidance and counseling is still in the early stages of learning and developed using many Western models (Sun & Yuen, 2012). Therefore, it is critical to explore a career guidance and counseling system that can accommodate China's characteristics and educational background.

Bandura et al. (2001) asserted that all factors that operate as guides and motivators are rooted in self-efficacy, which determines the initial decision to perform a task, the effort to be spent, and the persistence to continue in the face of difficulties. Secondary vocational students are younger and less mature than college students. Secondary vocational school administrators may reference the relevant practice of postsecondary institutions to provide career guidance materials and organize career exploration and planning activities for students. Successful experience in such activities can build students' career decision-making self-efficacy and lead to success in obtaining a job and future career development. Furthermore, career scholars and practitioners need to collaborate and take advantage of the special connections between vocational schools and enterprises to develop curricula targeting career guidance and career development for vocational students and advocate for governmental implementation of policies guiding career research and counseling practice.

In Chinese culture, family is the core unit from which people seek advice. The influence of family may be more potent for adolescents. Cheung and Pomerantz (2011) found that parents' heightened involvement in schools predicted both Chinese and American children's enhanced engagement in learning and achievement. Schools may seek parental cooperation to assist students in developing career plans, making career decisions, and adapting to the change of roles during school-to-work transition. Specifically, a school's career guidance center may initiate meetings with parents to inform them of their children's recent progress, explain the role of parents in students' career development, and encourage parents to involve in their children's school and extracurricular activities. Chinese parents living in rural areas usually receive low levels of education and perhaps do not graduate from high school. Dimensions of family support, specifically informational support and high expectations, are associated with career decision-making self-efficacy (Fouad et al., 2010). Career counselors may provide these parents with information about career planning and guidance to help them communicate with their children in terms of career development. In addition, a school's career guidance center may hold career guidance workshops and invite parents to participate and interact with their children.

Limitations and Recommendations for Future Research

This study expanded social cognitive career theory to a culturally different context, explaining the family influences as contextual variables together with other personal variables on career decision-making self-efficacy. One limitation of this study was the use of a convenience sampling selection process, meaning that results do not generalize to all Chinese secondary vocational students. First, Gansu Building Material Industry School is located in a rural region in Lanzhou city. Most parents of students lived in a rural area, probably received lower levels of education, and were not wealthy. The family background of these students lacks variability

compared with students who live in an urban area. Second, associated with the different dynamics of family background, levels of career decision-making self-efficacy may vary between students enrolled in urban and rural schools. Third, funding received by Chinese schools largely depends on local economic development and influences the environment of learning, quality of instruction, and access to advanced facilities and resources, which may influence students' career decision-making self-efficacy. Educational levels and performance vary among schools from different regions and across China. Future research should compare vocational and high school students from both urban and rural areas in China.

The Family Affluence Scale II (Currie et al., 2004) has been shown to be a valid and reliable measure to represent family socioeconomic status; however, the information the Family Affluence Scale can provide is limited. Some traditional indicators for family socioeconomic status, such as parents' levels of education and parental occupations, provide important insights for researchers to understand the background of a family and may be used together with the Family Affluence Scale II for researchers to have a sound understanding of family's socioeconomic status.

This study examined family process variables using general and career-related parental behaviors perceived by students. Future research should compare the difference in parental reports of support with students' perceived support when personal variables (i.e., gender, gender-role attitude, personality characters) are also in play. The influence of other family process variables, such as Chinese parent-child interaction pattern, parental attachment, parents' autonomy, needs to be examined in the future to facilitate an understanding of Chinese family dynamics and family-child relationships and how they influence adolescents' career development. Future research may examine the role of family members' occupations on

adolescents' choice of careers. Further investigation may also be extended to the roles of peers, teachers, and schools in youths' career decision-making self-efficacy and test the whole model of social cognitive career theory on the Chinese population.

REFERENCES

Afridi, F., Li, S. X., & Ren, Y. (2015). Social identity and inequality: The impact of China's hukou system. *Journal of Public Economics, 123*, 17-29. doi:10.1016/j.jpubeco.2014.12.011

Ali, S. R., McWhirter, E. H., & Chronister, K. M. (2005). Self-efficacy and vocational outcome expectations for adolescents of lower socioeconomic status: A pilot study. *Journal of Career Assessment, 13*(1), 40-58. doi:10.1177/1069072704270273

Ali, S. R., & Saunders, J. L. (2006). College expectations of rural Appalachian youth: An exploration of social cognitive career theory factors. *Career Development Quarterly, 55*(1), 38-51. doi:10.1002/j.2161-0045.2006.tb00003.x

Ary, D., Jacobs, L. C., Razavieh, A., & Sorensen, C. (2009). *Introduction to research in education* (8th ed.). Belmont, CA: Wadsworth.

Babbie, E. R. (2013). *The practice of social research* (13th ed.). Belmont, CA: Wadsworth.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215. doi:10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1-26. doi:10.1146/annurev.psych.52.1.1

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1*(2), 164-180. doi:10.1111/j.1745-6916.2006.00011.x

Bandura, A. (2011). Social cognitive theory. In P. A. M. V. Lange, A. W. Kruglanski & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 349-373). Thousand Oaks, CA: Sage.

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management, 38*(1), 9-44. doi:10.1177/0149206311410606

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*(1), 187-206. doi:10.1111/1467-8624.00273

Beatty, P. C., & Willis, G. B. (2007). Research synthesis: The practice of cognitive interviewing. *Public Opinion Quarterly, 71*(2), 287-311. doi:10.1093/poq/nfm006

Betz, N. E. (2004). Contributions of self-efficacy theory to career counseling: A personal perspective. *Career Development Quarterly, 52*(4), 340-353. doi:10.1002/j.2161-0045.2004.tb00950.x

Betz, N. E. (2007). Career self-efficacy: Exemplary recent research and emerging directions. *Journal of Career Assessment, 15*(4), 403-422. doi:10.1177/1069072707305759

Betz, N. E., & Hackett, G. (2006). Career self-efficacy theory: Back to the future. *Journal of Career Assessment, 14*(1), 3-11. doi:10.1177/1069072705281347

Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*(1), 47-57. doi:10.1177/106907279600400103

Blustein, D. L. (2011). A relational theory of working. *Journal of Vocational Behavior, 79*(1), 1-17. doi:10.1016/j.jvb.2010.10.004

Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology, 49*(3), 311-323. doi:10.1037//0022-0167.49.3.311

Boyce, W., Torsheim, T., Currie, C., & Zambon, A. (2006). The Family Affluence Scale as a measure of national wealth: Validation of an adolescent self-report measure. *Social Indicators Research, 78*(3), 473-487. doi:10.1007/s11205-005-1607-6

Brace, N., & Snelgar, R. (2000). *SPSS for psychologists: A guide to data analysis using SPSS for Windows*. Mahwah, NJ: Erlbaum.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216. doi:10.1177/135910457000100301

Brown, S. D., & Lent, R. W. (1996). A social cognitive framework for career choice counseling. *Career Development Quarterly, 44*(4), 354-366. doi:10.1002/j.2161-0045.1996.tb00451.x

Brown, S. D., & Rector, C. C. (2008). Conceptualizing and diagnosing problems in vocational decision making. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (4th ed., pp. 392-407). Hoboken, NJ: Wiley.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). New York, NY: Guilford.

Burns, G. N., Jasinski, D., Dunn, S., & Fletcher, D. (2013). Academic support services and career decision-making self-efficacy in student athletes. *Career Development Quarterly, 61*(2), 161-167. doi:10.1002/j.2161-0045.2013.00044.x

Caprara, G. V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology, 100*(3), 525-534. doi:10.1037/0022-0663.100.3.525

Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods, 15*(1), 17-32. doi:10.1177/1094428110392383

Carter, R. L. (2006). Solutions for missing data in structural equation modeling. *Research and Practice in Assessment, 1*(1), 1-7.

Cha, E. S., Kim, K. H., & Erlen, J. A. (2007). Translation of scales in cross-cultural research: Issues and techniques. *Journal of Advanced Nursing, 58*(4), 386-395. doi:10.1111/j.1365-2648.2007.04242.x

Cheema, J. R. (2014). A review of missing data handling methods in education research. *Review of Educational Research, 84*(4), 487-508. doi:10.3102/0034654314532697

Cheung, C. S.-S., & Pomerantz, E. M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development, 82*(3), 932-950. doi:10.1111/j.1467-8624.2011.01582.x

China Statistical Yearbook. (2014). *China statistical yearbook 2014*. Beijing, People's Republic of China: National Bureau of Statistics.

Cho, H.-J., & Khang, Y.-H. (2010). Family Affluence Scale, other socioeconomic position indicators, and self-rated health among South Korean adolescents: Findings from the Korea Youth Risk Behavior Web-Based Survey (KYRBWS). *Journal of Public Health, 18*(2), 169-178. doi:10.1007/s10389-009-0299-9

Choi, B. Y., Park, H., Yang, E., Lee, S. K., Lee, Y., & Lee, S. M. (2012). Understanding career decision self-efficacy: A meta-analytic approach. *Journal of Career Development, 39*(5), 443-460. doi:10.1177/0894845311398042

Choi, K., & Kim, D.-Y. (2013). A cross cultural study of antecedents on career preparation behavior: Learning motivation, academic achievement, and career decision self-efficacy. *Journal of Hospitality, Leisure, Sport and Tourism Education, 13*, 19-32. doi:10.1016/j.jhlste.2013.04.001

Chong, W. H. (2007). The role of personal agency beliefs in academic self-regulation: An Asian perspective. *School Psychology International, 28*(1), 63-76. doi:10.1177/0143034307075681

Chu, X., Li, Z., Yan, B., Han, J., & Fan, F. (2015). Comparative study of regular and vocational high school students on family socioeconomic status, social support, self-efficacy and well-being. *Open Journal of Social Sciences, 3*, 61-68. doi:10.4236/jss.2015.38006

Chung, Y. (2002). Career decision-making self-efficacy and career commitment: Gender and ethnic differences among college students. *Journal of Career Development, 28*(4), 277-284. doi:10.1023/A:1015146122546

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159. doi:10.1037/0033-2909.112.1.155

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*(3), 685-704. doi:10.1111/j.1741-3737.2010.00725.x

Conklin, A. M., Dahling, J. J., & Garcia, P. A. (2013). Linking affective commitment, career self-efficacy, and outcome expectations: A test of social cognitive career theory. *Journal of Career Development, 40*(1), 68-83. doi:10.1177/0894845311423534

Currie, C. E., Elton, R. A., Todd, J., & Platt, S. (1997). Indicators of socioeconomic status for adolescents: The WHO Health Behaviour in School-Aged Children Survey. *Health Education Research, 12*(3), 385-397. doi:10.1093/her/12.3.385

Currie, C. E., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., & Richter, M. (2008). Researching health inequalities in adolescents: The development of the health behaviour in school-aged children (HBSC) Family Affluence Scale. *Social Science and Medicine, 66*(6), 1429-1436. doi:10.1016/j.socscimed.2007.11.024

Currie, C. E., Roberts, C., Morgan, A., Smith, R., Settertobulte, W., Samdal, O., & Barnakov-Rasmussen, V. (2004). *Young people's health in context*. Copenhagen, Denmark: World Health Organization Regional Office for Europe.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: Wiley.

Ding, W., & Lehrer, S. F. (2007). Do peers affect student achievement in China's secondary schools? *The Review of Economics and Statistics, 89*(2), 300-312. doi:10.1162/rest.89.2.300

Dormann, C. F., Elith, J., Bacher, S., Buchmann, C., Carl, G., Carré, G., . . . Lautenbach, S. (2013). Collinearity: A review of methods to deal with it and a simulation study

evaluating their performance. *Ecography, 36*(1), 27-46. doi:10.1111/j.1600-0587.2012.07348.x

Eccles, J. (2011). Gendered educational and occupational choices: Applying the Eccles et al. model of achievement-related choices. *International Journal of Behavioral Development, 35*(3), 195-201. doi:10.1177/0165025411398185

Fabio, A. D., Palazzeschi, L., Asulin-Peretz, L., & Gati, I. (2013). Career indecision versus indecisiveness: Associations with personality traits and emotional intelligence. *Journal of Career Assessment, 21*(1), 42-56. doi:10.1177/1069072712454698

Fang, H., Eggleston, K. N., Rizzo, J. A., Rozelle, S., & Zeckhauser, R. J. (2012). The returns to education in China: Evidence from the 1986 compulsory education law (NBER Working Paper No. 18189). Retrieved from National Bureau of Economic Research website: http://papers.nber.org/papers/w18189

Ferry, T. R., Fouad, N. A., & Smith, P. L. (2000). The role of family context in a social cognitive model for career-related choice behavior: A math and science perspective. *Journal of Vocational Behavior, 57*(3), 348-364. doi:10.1006/jvbe.1999.1743

Fouad, N. A., Cotter, E. W., Fitzpatrick, M. E., Kantamneni, N., Carter, L., & Bernfeld, S. (2010). Development and validation of the Family Influence Scale. *Journal of Career Assessment, 18*(3), 276-291. doi:10.1177/1069072710364793

Fouad, N. A., Kantamneni, N., Smothers, M. K., Chen, Y.-L., Fitzpatrick, M., & Terry, S. (2008). Asian American career development: A qualitative analysis. *Journal of Vocational Behavior, 72*(1), 43-59. doi:10.1016/j.jvb.2007.10.002

Fritzsche, B. A., & Parrish, T. J. (2005). Theories and research on job satisfaction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 180-202). Hoboken, NJ: Wiley.

Gainor, K. A. (2006). Twenty-five years of self-efficacy in career assessment and practice. *Journal of Career Assessment, 14*(1), 161-178. doi:10.1177/1069072705282435

Garcia, P. R. J. M., Restubog, S. L. D., Toledano, L. S., Tolentino, L. R., & Rafferty, A. E. (2012). Differential moderating effects of student- and parent-rated support in the relationship between learning goal orientation and career decision-making self-efficacy. *Journal of Career Assessment, 20*(1), 22-33. doi:10.1177/1069072711417162

Gati, I., Gadassi, R., Saka, N., Hadadi, Y., Ansenberg, N., Friedmann, R., & Asulin-Peretz, L. (2011). Emotional and personality-related aspects of career decision-making difficulties: Facets of career indecisiveness. *Journal of Career Assessment, 19*(1), 3-20. doi:10.1177/1069072710382525

Gati, I., Krausz, M., & Osipow, S. H. (1996). A taxonomy of difficulties in career decision making. *Journal of Counseling Psychology, 43*(4), 510-526. doi:10.1037//0022-0167.43.4.510

Gaudron, J. P. (2011). A psychometric evaluation of the Career Decision Self-Efficacy Scale-Short Form among French university students. *Journal of Career Assessment, 19*(4), 420-430. doi:10.1177/1069072711409713

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). Survey research. In J. W. Johnston (Ed.), *Educational research competencies for analysis and applications* (pp. 183-201). Upper Saddle River, NJ: Pearson Education.

Gemici, S., Rojewski, J. W., & Lee, I. H. (2012). Treatment of missing data in workforce education research. *Career and Technical Education Research, 37*(1), 75-99. doi:10.5328/cter37.1.75

Gerbing, D. W., & Hamilton, J. G. (1996). Viability of exploratory factor analysis as a precursor to confirmatory factor analysis. *Structural Equation Modeling: A Multidisciplinary Journal, 3*(1), 62-72. doi:10.1080/10705519609540030

Ginevra, M. C., Nota, L., & Ferrari, L. (2015). Parental support in adolescents' career development: Parents' and children's perceptions. *Career Development Quarterly, 63*(1), 2-15. doi:10.1002/j.2161-0045.2015.00091.x

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Green, S. B., & Salkind, N. J. (2008). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Guo, J. (2011). Family and parent correlates of educational achievement: Migrant children in China. *Asian Social Work and Policy Review, 5*(2), 123-137. doi:10.1111/j.1753-1411.2011.00054.x

Hampton, N. Z. (2005). Testing for the structure of the Career Decision Self-Efficacy Scale-Short Form among Chinese college students. *Journal of Career Assessment, 13*(1), 98-113. doi:10.1177/1069072704270298

Hampton, N. Z. (2006). A psychometric evaluation of the Career Decision Self-Efficacy Scale-Short Form in Chinese high school students. *Journal of Career Development, 33*(2), 142-155. doi:10.1177/0894845306293540

Hannum, E., An, X., & Cherng, H. S. (2011). Examinations and educational opportunity in China: Mobility and bottlenecks for the rural poor. *Oxford Review of Education, 37*(2), 267-305. doi:10.1080/03054985.2011.559387

Hargrove, B. K., Creagh, M. G., & Burgess, B. L. (2002). Family interaction patterns as predictors of vocational identity and career decision-making self-efficacy. *Journal of Vocational Behavior, 61*(2), 185-201. doi:10.1006/jvbe.2001.1848

Hartung, P. J., Porfeli, E. J., & Vondracek, F. W. (2005). Child vocational development: A review and reconsideration. *Journal of Vocational Behavior, 66*(3), 385-419. doi:10.1016/j.jvb.2004.05.006

Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7*(2), 191-205. doi:10.1177/1094428104263675

Horn, J. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 30*(2), 179-185. doi:10.1007/BF02289447

Hou, C., Wu, L., & Liu, Z. (2014). Effect of proactive personality and decision-making self-efficacy on career adaptability among Chinese graduate students. *Social Behavior and Personality, 42*(6), 903-912. doi:10.2224/sbp.2014.42.6.903

Howard, K. A., Ferrari, L., Nota, L., Solberg, V. S. H., & Soresi, S. (2009). The relation of cultural context and social relationships to career development in middle school. *Journal of Vocational Behavior, 75*(2), 100-108. doi:10.1016/j.jvb.2009.06.013

Hsieh, H.-H., & Huang, J.-T. (2014). The effects of socioeconomic status and proactive personality on career decision self-efficacy. *Career Development Quarterly, 62*(1), 29-43. doi:10.1002/j.2161-0045.2014.00068.x

Hu, B., & Szente, J. (2009). Exploring the quality of early childhood education in China: Implications for early childhood teacher education. *Journal of Early Childhood Teacher Education, 30*(3), 247-262. doi:10.1080/10901020903084330

Hung, F.-S., Chung, Y.-P., & Ho, E. S.-C. (2000). To work or to continue to higher education? The choice of senior secondary students in Shenzhen, China. *Higher Education, 39*(4), 455-467.

Jiang, Z. (2014). Emotional intelligence and career decision-making self-efficacy: National and gender differences. *Journal of Employment Counseling, 51*(3), 112-124. doi:10.1002/j.2161-1920.2014.00046.x

Jin, L., Watkins, D., & Yuen, M. (2009). Personality, career decision self-efficacy and commitment to the career choices process among Chinese graduate students. *Journal of Vocational Behavior, 74*(1), 47-52. doi:10.1016/j.jvb.2008.10.002

Jin, L., Ye, S., & Watkins, D. (2012). The dimensionality of the Career Decision Self-Efficacy Scale–Short Form among Chinese graduate students. *Journal of Career Assessment, 20*(4), 520-529. doi:10.1177/1069072712450492

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*(1), 141-151. doi:10.1177/001316446002000116

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology, 64*(5), 402-406. doi:10.4097/kjae.2013.64.5.402

Keller, B. K., & Whiston, S. C. (2008). The role of parental influences on young adolescents' career development. *Journal of Career Assessment, 16*(2), 198-217. doi:10.1177/1069072707313206

Kelley, K., & Preacher, K. J. (2012). On effect size. *Psychological Methods, 17*(2), 137-152. doi:10.1037/a0028086

Kitchenham, B., & Pfleeger, S. L. (2002). Principles of survey research part 5: Populations and samples. *Software Engineering Notes, 27*(5), 17-20. doi:10.1145/571681.571686

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-756. doi:10.1037/a0019237

Knight, J., Shi, L., & Quheng, D. (2009). Education and the poverty trap in rural China: Setting the trap. *Oxford Development Studies, 37*(4), 311-332. doi:10.1080/13600810903305232

Komarraju, M., Swanson, J., & Nadler, D. (2014). Increased career self-efficacy predicts college students' motivation, and course and major satisfaction. *Journal of Career Assessment, 22*(3), 420-432. doi:10.1177/1069072713498484

Koumoundourou, G. A., Kounenou, K., & Siavara, E. (2011). Core self-evaluations, career decision self-efficacy, and vocational identity among Greek adolescents. *Journal of Career Development, 39*(3), 269-286. doi:10.1177/0894845310397361

Kuang, Y., & Shi, W. (2009). Developments of China's vocational education in the past thirty years: In retrospect and analysis. *International Journal of Continuing Education and Lifelong Learning, 2*(1), 15-31.

Lanzhou Government. (2010). *2010 Sixth natinoal population census data communique of Lanzhou*. Retrieved from http://tjj.lanzhou.gov.cn/tjgb_1222/201112/t20111213_100844.htm

Ledesma, R. D., & Valero-Mora, P. (2007). Determining the number of factors to retain in EFA: An easy-to-use computer program for carrying out parallel analysis. *Practical Assessment, Research and Evaluation, 12*(2), 1-11.

Lee, I. H. (2012). Strategies for handling missing data with maximum likelihood estimation in career and technical education research. *Career and Technical Education Research, 37*(3), 297-310. doi:10.5328/cter37.3.297

Lee, J., & Kim, M. (2015). Parental attachment, career decision self-efficacy, and commitment to the career choice among Korean college students. *Journal of Asia Pacific Counseling, 5*(1), 39-52. doi:10.18401/2015.5.1.3.

Leng, L., Zhang, T., Kleinman, L., & Zhu, W. (2007). Ordinary least square regression, orthogonal regression, geometric mean regression and their applications in aerosol science. *Journal of Physics: Conference Series, 78*, 1-5. doi:10.1088/1742-6596/78/1/012084

Lent, R. W. (2005). A social cognitive view of career development and counseling. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 101-127). Hoboken, NJ: Wiley.

Lent, R. W., & Brown, S. D. (1996). Social cognitive approach to career development: An overview. *Career Development Quarterly, 44*(4), 310-321. doi:10.1002/j.2161-0045.1996.tb00448.x

Lent, R. W., & Brown, S. D. (2006). Integrating person and situation perspectives on work satisfaction: A social-cognitive view. *Journal of Vocational Behavior, 69*(2), 236-247. doi:10.1016/j.jvb.2006.02.006

Lent, R. W., Brown, S. D., Brenner, B., Chopra, S. B., Davis, T., Talleyrand, R., & Suthakaran, V. (2001). The role of contextual supports and barriers in the choice of math/science educational options: A test of social cognitive hypotheses. *Journal of Counseling Psychology, 48*(4), 474-483. doi:10.1037//0022-0167.48.4.474

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior, 45*(1), 79-122. doi:10.1006/jvbe.1994.1027

Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology, 47*(1), 36-49. doi:10.1037/0022-0167.47.1.36

Lent, R. W., Lopez, F. G., Brown, S. D., & Gore, J. P. A. (1996). Latent structure of the sources of mathematics self-efficacy. *Journal of Vocational Behavior, 49*(3), 292-308. doi:10.1006/jvbe.1996.0045

Lent, R. W., Paixao, M. P., da Silva, J. T., & Leitao, L. M. (2010). Predicting occupational interests and choice aspirations in Portuguese high school students: A test of social cognitive career theory. *Journal of Vocational Behavior, 76*(2), 244-251. doi:10.1016/j.jvb.2009.10.001

Lent, R. W., Sheu, H.-B., Singley, D., Schmidt, J. A., Schmidt, L. C., & Gloster, C. S. (2008). Longitudinal relations of self-efficacy to outcome expectations, interests, and major choice goals in engineering students. *Journal of Vocational Behavior, 73*(2), 328-335. doi:10.1016/j.jvb.2008.07.005

Leong, F. T. L., Kao, E. M., & Lee, S.-H. (2004). The relationship between family dynamics and career interests among Chinese Americans and European Americans. *Journal of Career Assessment, 12*(1), 65-84. doi:10.1177/1069072703257734

Lin, T.-J., Deng, F., Chai, C. S., & Tsai, C.-C. (2013). High school students' scientific epistemological beliefs, motivation in learning science, and their relationships: A comparative study within the Chinese culture. *International Journal of Educational Development, 33*(1), 37-47. doi:10.1016/j.ijedudev.2012.01.007

Lin, Y.-C. (2011). Assessing the use of the Family Affluence Scale as socioeconomic indicators for researching health inequalities in Taiwan adolescents. *Social Indicators Research, 12*(3), 463-475. doi:10.1007/s11205-010-9683-7

Lindstrom, L., Doren, B., Metheny, J., Johnson, P., & Zane, C. (2007). Transition to employment: Role of the family in career development. *Exceptional Children, 73*(3), 348-366.

Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198-1202. doi:10.1080/01621459.1988.10478722

Liu, J., McMahon, M., & Watson, M. (2015). Parental influence on mainland Chinese children's career aspirations: Child and parental perspectives. *International Journal for Educational and Vocational Guidance, 15*(2), 131-143. doi:10.1007/s10775-015-9291-9

Liu, Y., Wang, M., Villberg, J., Torsheim, T., Tynjälä, J., Lv, Y., & Kannas, L. (2012). Reliability and validity of Family Affluence Scale (FAS II) among adolescents in Beijing, China. *Child Indicators Research, 5*(2), 235-251. doi:10.1007/s12187-011-9131-5

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84. doi:10.1037/1082-989X.4.1.84

Maneesriwongul, W., & Dixon, J. K. (2004). Instrument translation process: A methods review. *Journal of Advanced Nursing, 48*(2), 175-186. doi:10.1111/j.1365-2648.2004.03185.x

Mann, C. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency Medicine Journal, 20*(1), 54-60. doi:10.1136/emj.20.1.54

Martin, J. P., Simmons, D. R., & Yu, S. L. (2014). Family roles in engineering undergraduates' academic and career choices: Does parental educational attainment matter. *International Journal of Engineering Education, 30*(1), 136-149.

Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and how-to's. *International Journal of Psychological Research, 3*(1), 97-110.

Mau, W. C. (2000). Cultural differences in career decision-making styles and self-efficacy. *Journal of Vocational Behavior, 57*(3), 365-378. doi:10.1006/jvbe.1999.1745

Metheny, J., & McWhirter, E. H. (2013). Contributions of social status and family support to college students' career decision self-efficacy and outcome expectations. *Journal of Career Assessment, 21*(3), 378-394. doi:10.1177/1069072712475164

Musil, C. M., Warner, C. B., Yobas, P. K., & Jones, S. L. (2002). A comparison of imputation techniques for handling missing data. *Western Journal of Nursing Research, 24*(7), 815-829. doi:10.1177/019394502237390

Nakagawa, S., & Schielzeth, H. (2013). A general and simple method for obtaining R^2 from generalized linear mixed-effects models. *Methods in Ecology and Evolution, 4*(2), 133-142. doi:10.1111/j.2041-210x.2012.00261.x

Nam, S. K., Yang, E., Lee, S. M., Lee, S. H., & Seol, H. (2011). A psychometric evaluation of the Career Decision Self-Efficacy Scale with Korean students: A Rasch model approach. *Journal of Career Development, 38*(2), 147-166. doi:10.1177/0894845310371374

O'Fallon, M. J., & Butterfield, K. D. (2012). The influence of unethical peer behavior on observers' unethical behavior: A social cognitive perspective. *Journal of Business Ethics, 109*(2), 117-131. doi:10.1007/s10551-011-1111-7

Okubo, Y., Yeh, C. J., Lin, P.-Y., Fujita, K., & Shea, J. M.-Y. (2007). The career decision-making process of Chinese American youth. *Journal of Counseling and Development, 85*(4), 440-449. doi:10.1002/j.15566678.2007.tb00612.x

Osipow, S. H. (1999). Assessing career indecision. *Journal of Vocational Behavior, 55*(1), 147-154. doi:10.1006/jvbe.1999.1704

Paloş, R., & Drobot, L. (2010). The impact of family influence on the career choice of adolescents. *Procedia - Social and Behavioral Sciences, 2*(2), 3407-3411. doi:10.1016/j.sbspro.2010.03.524

Paris, C., & Lung, P. (2008). Agency and child-centered practices in novice teachers: Autonomy, efficacy, intentionality, and reflectivity. *Journal of Early Childhood Teacher Education, 29*(3), 253-268. doi:10.1080/10901020802275302

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*(4), 827-856. doi:10.1177/0149206310363732

Patil, V. H., Singh, S. N., Mishra, S., & Donavan, D. T. (2008). Efficient theory development and factor retention criteria: Abandon the 'eigenvalue greater than one' criterion. *Journal of Business Research, 61*(2), 162-170. doi:10.1016/j.jbusres.2007.05.008

Pigott, T. D. (2001). A review of methods for missing data. *Educational Research and Evaluation, 7*(4), 353-383. doi:10.1076/edre.7.4.353.8937

Preacher, K. J., Zhang, G., Kim, C., & Mels, G. (2013). Choosing the optimal number of factors in exploratory factor analysis: A model selection perspective. *Multivariate Behavioral Research, 48*(1), 28-56. doi:10.1080/00273171.2012.710386

Presti, A. L., Pace, F., Mondo, M., Nota, L., Casarubia, P., Ferrari, L., & Betz, N. E. (2013). An examination of the structure of the Career Decision Self-Efficacy Scale (Short Form) among Italian high school students. *Journal of Career Assessment, 21*(2), 337-347. doi:10.1177/1069072712471506

Restubog, S. L. D., Florentino, A. R., & Garcia, P. R. J. M. (2010). The mediating roles of career self-efficacy and career decidedness in the relationship between contextual support and persistence. *Journal of Vocational Behavior*, *77*(2), 186-195. doi:10.1016/j.jvb.2010.06.005

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing research, 45*(3), 261-279. doi:10.1509/jmkr.45.3.261

Roach, K. L. (2010). *The role of perceived parental influences on the career self-efficacy of college students.* (Master's thesis). Retrieved from http://digitalcommons.brockport.edu/edc_theses/88

Rodríguez, C., Inda, M., & Fernández, C. M. (2015). Influence of social cognitive and gender variables on technological academic interest among Spanish high-school students: Testing social cognitive career theory. *International Journal for Educational and Vocational Guidance*, Advance online publication. doi:10.1007/s10775-015-9312-8

Rogers, M. E., & Creed, P. A. (2011). A longitudinal examination of adolescent career planning and exploration using a social cognitive career theory framework. *Journal of Adolescence, 34*(1), 163-172. doi:10.1016/j.adolescence.2009.12.010

Rogers, M. E., Creed, P. A., & Glendon, A. I. (2008). The role of personality in adolescent career planning and exploration: A social cognitive perspective. *Journal of Vocational Behavior, 73*(1), 132-142. doi:10.1016/j.jvb.2008.02.002

Rojewski, J. W. (1997). Effects of economic disadvantaged status and secondary vocational education on adolescent work experience and postsecondary aspirations. *Journal of Vocational and Technical Education, 14*(1), 43-59.

Rojewski, J. W., & Kim, H. (2003). Career choice patterns and behavior of work-bound youth during early adolescence. *Journal of Career Development, 30*(2), 89-108. doi:10.1177/089484530303000201

Rubin, D. B. (1976). Inference and missing data. *Biometrika, 63*(3), 581-592. doi:10.1093/biomet/63.3.581

Ruscio, J., & Roche, B. (2012). Determining the number of factors to retain in an exploratory factor analysis using comparison data of known factorial structure. *Psychological Assessment, 24*(2), 282-292. doi:10.1037/a0025697

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology, 57*(1), 1-10. doi:10.1037/a0018082

Schmitz, B., & Wiese, B. S. (2006). New perspectives for the evaluation of training sessions in self-regulated learning: Time-series analyses of diary data. *Contemporary Educational Psychology, 31*(1), 64-96. doi:10.1016/j.cedpsych.2005.02.002

Schnohr, C. W., Kreiner, S., Due, E. P., Currie, C., Boyce, W., & Diderichsen, F. (2008). Differential item functioning of a Family Affluence Scale: Validation study on data from HBSC 2001/02. *Social Indicators Research, 89*(1), 79-95. doi:10.1007/s11205-007-9221-4

Schwartz, S. H. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology, 5*(2), 137-182. doi:10.1163/156913306778667357

Sheng, X. (2012). Cultural capital and gender differences in parental involvement in children's schooling and higher education choice in China. *Gender and Education, 24*(2), 131-146. doi:10.1080/09540253.2011.582033

Sheu, H.-B., Lent, R. W., Brown, S. D., Miller, M. J., Hennessy, K. D., & Duffy, R. D. (2010). Testing the choice model of social cognitive career theory across Holland themes: A meta-analytic path analysis. *Journal of Vocational Behavior, 76*(2), 252-264. doi:10.1016/j.jvb.2009.10.015

Shi, C., & Zhao, X. (2014). The influence of college students' copying styles on perceived self-efficacy in managing inferiority. *Social Behavior and Personality, 42*(6), 949-958. doi:10.2224/sbp.2014.42.6.949

Shiah, Y.-J., Huang, Y., Chang, F., Chang, C.-F., & Yeh, L.-C. (2013). School-based extracurricular activities, personality, self-concept, and college career development skills in Chinese society. *Educational Psychology, 33*(2), 135-154. doi:10.1080/01443410.2012.747240

Sovet, L., & Metz, A. J. (2014). Parenting styles and career decision-making among French and Korean adolescents. *Journal of Vocational Behavior, 84*(3), 345-355. doi:10.1016/j.jvb.2014.02.002

Stajkovic, A. D., & Luthans, F. (1998a). Social cognitive theory and self-efficacy: Going beyond traditional motivational and behavioral approaches. *Organizational Dynamics, 26*(4), 62-74. doi:10.1016/S0090-2616(98)90006-7

Stajkovic, A. D., & Luthans, F. (1998b). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*(2), 240-261. doi:10.1037/0033-2909.124.2.240

Stărică, E. C. (2012). Predictors for career indecision in adolescence. *Procedia - Social and Behavioral Sciences, 33*, 168-172. doi:10.1016/j.sbspro.2012.01.105

Sun, V. J., & Yuen, M. (2012). Career guidance and counseling for university students in China. *International Journal for the Advancement of Counseling, 34*(3), 202-210. doi:10.1007/s10447-012-9151-y

Sweet, S. A., & Grace-Martin, K. (2008). *Data analysis with SPSS: A first course in applied statistics* (3rd ed.). Boston, MA: Allyn and Bacon.

Tan, M., Li, X., Xie, H., & Lu, C. (2005). Urban land expansion and arable land loss in China: A case study of Beijing-Tianjin-Hebei region. *Land Use Policy, 22*(3), 187-196. doi:10.1016/j.landusepol.2004.03.003

Taylor, K. M., & Betz, N. E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*(1), 63-81. doi:10.1016/0001-8791(83)90006-4

Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard, 16*(40), 33-36. doi:10.7748/ns2002.06.16.40.33.c3214

Turner, S. L., & Lapan, R. T. (2005). Evaluation of an intervention to increase non-traditional career interests and career-related self-efficacy among middle-school adolescents. *Journal of Vocational Behavior, 66*(3), 516-531. doi:10.1016/j.jvb.2004.02.005

Wang, D. (2010). Reform and development of vocational education. In F. Cai (Ed.), *The China population and labor yearbook, volume 2: The sustainability of economic growth from the perspective of human resources* (pp. 93-110). Leiden, Netherlands: Brill.

Wang, D. (2013). A development dilemma for secondary vocational education. *Chinese Education and Society, 46*(4), 60-67. doi:10.2753/CED1061-1932460405

Wang, L., Ding, Y., Fu, Y., Lv, Y., & Chen, H. (2013). Exploration and practice of higher vocational education internationalization. *Proceedings of the 2013 International Conference on Education Technology and Information System*, 1012-1015. doi:10.2991/icetis-13.2013.232

Wardle, J., Robb, K., & Johnson, F. (2002). Assessing socioeconomic status in adolescents: The validity of a Home Affluence Scale. *Journal of Epidemiology and Community Health, 56*(8), 595-599. doi:10.1136/jech.56.8.595

Wäschle, K., Allgaier, A., Lachner, A., Fink, S., & Nückles, M. (2014). Procrastination and self-efficacy: Tracing vicious and virtuous circles in self-regulated learning. *Learning and Instruction, 29*, 103-114. doi:10.1016/j.learninstruc.2013.09.005

Whiston, S. C. (1996). The relationship among family interaction patterns and career indecision and career decision-making self-efficacy. *Journal of Career Development, 23*(2), 137-149. doi:10.1007/Bf02359293

Whiston, S. C., & Keller, B. K. (2004). The influences of the family of origin on career development: A review and analysis. *Counseling Psychologist, 32*(4), 493-568. doi:10.1177/0011000004265660

Williams, B., Brown, T., & Onsman, A. (2012). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine, 8*(3), 1-13.

Williams, M., Grajales, C., & Kurkiewicz, D. (2013). Assumptions of multiple regression: Correcting two misconceptions. *Practical Assessment, Research and Evaluation, 18*(11), 1-14.

Wright, S. L., & Perrone, K. M. (2010). An examination of the role of attachment and efficacy in life satisfaction. *The Counseling Psychologist, 38*(6), 796-823. doi:10.1177/0011000009359204

Xie, Y., & Goyette, K. (2003). Social mobility and the educational choices of Asian Americans. *Social Science Research, 32*(3), 467-498. doi:10.1016/S0049-089X(03)00018-8

Xie, Z., & Wang, W. (2006). The difference in higher education access opportunity of the children in different strata in China in the context of the popularization of higher education *Journal of Educational Studies, 2*(2), 65-96.

Ye, Y. (2014). Role of career decision-making self-efficacy and risk of career options on career decision-making of Chinese graduates. *Psychological Reports: Employment Psychology and Marketing, 114*(2), 625-634. doi:10.2466/01.17.PR0.114k20w9

Zhang, W., Hu, X., & Pope, M. (2002). The evolution of career guidance and counseling in the People's Republic of China. *Career Development Quarterly, 50*(3), 226-236. doi:10.1002/j.2161-0045.2002.tb00898.x

Zhao, Z. (2013). An overview of studies on diagnostic testing and its implications for the development of diagnostic speaking test. *International Journal of English Linguistics, 3*(1), 41-45. doi:10.5539/ijel.v3n1p41

Zhou, S., Leung, S. A., & Li, X. (2012). The meaning of work among Chinese university students: Findings from prototype research methodology. *Journal of Counseling Psychology, 59*(3), 408-423. doi:10.1037/A0028374

Zhu, M. (2007). Recent Chinese experiences in curriculum reform. *Prospects, 37*(2), 223-235. doi:10.1007/s11125-007-9026-x

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). San Diego, CA: Academic.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64-70. doi:10.1207/s15430421tip4102_2

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal, 45*(1), 166-183. doi:10.3102/000283120 7312909

Zuo, J., & Bian, Y. (2001). Gendered resources, division of housework, and perceived fairness: A case in urban China. *Journal of Marriage and Family*, *63*(4), 1122-1134. doi:10.1111/j.1741-3737.2001.01122.x

APPENDIX A

PERMISSION TO REPRODUCE THE CAREER DECISION SELF-EFFICACY SCALE

mind garden

www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her research:

Instrument: ***Career Decision Self-Efficacy Scale***

Authors: ***Nancy E. Betz and Karen M. Taylor***

Copyright: ***2012 Nancy E. Betz and Karen M. Taylor. All rights reserved.***

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

APPENDIX B

CAREER DECISION SELF-EFFICACY SCALE-SHORT FORM

Career Decision Self-Efficacy Scale Short-Form

For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks by marking your answer according to the following 5-point continuum. Mark your answer by filling in the correct circle on the answer sheet.

No Confidence at All 1	**Very Little Confidence 2**	**Moderate Confidence 3**	**Much Confidence 4**	**Complete Confidence 5**

How Much Confidence Do You Have That You Could:	**1**	**2**	**3**	**4**	**5**
1. Use the internet to find information about occupations that interest you.	o	o	o	o	o
2. Select one major from a list of potential majors you are considering.	o	o	o	o	o
3. Make a plan of your goals for the next five years.	o	o	o	o	o

APPENDIX C

PARENT CAREER BEHAVIOR CHECKLIST

Parent Career Behavior Checklist

Please answer all of the questions on this form about **one parent**. You should answer the questions about the parent who signed the form allowing you to participate. Please indicate which parent you will be referring to on this survey.

___Mother ___ Father ___ Stepmother ___ Stepfather Other: _____

Please read the following statements. Indicate the degree to which each statement applies to your parent by circling one of the options on the right side of the paper. Follow these guidelines when circling your answers.

VO = Very Often; O = Often; S = Sometime; R = Rarely; N = Never

1. My parent expresses interest in various teenage issues that are important to me.	VO	O	S	R	N
2. My parent has shown me where to find information about colleges or careers in the library or bookstore.	VO	O	S	R	N
3. My parent has encouraged me to take interest assessments or career tests offered by my school.	VO	O	S	R	N
4. My parent encourages me to make my own decisions.	VO	O	S	R	N
5. My parent tells me he/she has high expectations for my career.	VO	O	S	R	N
6. My parent has encouraged me to consider many different educational and career options.	VO	O	S	R	N
7. My parent tells me about specific careers.	VO	O	S	R	N
8. My parent helps me feel better when I tell him/her I am worried or concerned about choosing a career.	VO	O	S	R	N
9. My parent really tries to understand my thoughts, feelings and opinions about various topics.	VO	O	S	R	N
10. My parent has given me written material about specific careers.	VO	O	S	R	N
11. My parent has given me written material about specific colleges.	VO	O	S	R	N
12. My parent has talked to me about the steps involved in making difficult decisions.	VO	O	S	R	N

13. My parent has participated with me in a structured career development workshop offered by my school, church, etc.	VO	O	S	R	N
14. My parent has encouraged me to be involved in extra-curricular activities	VO	O	S	R	N
15. My parent encourages me to ask questions about different jobs.	VO	O	S	R	N
16. My parent tells me he/she loves me.	VO	O	S	R	N
17. My parent has helped me understand results from career tests interest assessments I have taken.	VO	O	S	R	N
18. My parent encourages me to try new things.	VO	O	S	R	N
19. My parent encourages me to talk to him/her about my career plans.	VO	O	S	R	N
20. My parent asks what careers I am considering for my future.	VO	O	S	R	N
21. My parent encourages me to choose whatever career I want.	VO	O	S	R	N
22. My parent tells me he/she is proud of me.	VO	O	S	R	N
23. My parent has supported me when I have told him/her that I am interested in a specific career.	VO	O	S	R	N

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

Family Influences on Career Decision-Making Self-Efficacy of Secondary Vocational Students in China

Demographic Questionnaire

Please complete the following questions. Remember, this information is confidential. I will not share your individual information with anyone. Your responses will only be reported in aggregated form.

Today's Date (MM/DD/YY) _____

1. As of your last birthday how old are you? _____

2. Please select your gender:
   - o Male
   - o Female

Please select the most appropriate answer for each of the following questions:

3. What is the residence status according to your family's permanent residence:
   - o Urban
   - o Rural

4. Does your family own a car, van or truck?
   - o No
   - o Yes, one
   - o Yes, two or more

5. Do you have your own bedroom for yourself?
   - o No
   - o Yes

6. During the past 12 months, how many times did you travel away on holiday with your family?
   - o Not at all
   - o Once
   - o Twice
   - o More than twice

7. How many computers does your family own?
   - o None
   - o One
   - o Two
   - o More than two

APPENDIX E

STUDY QUESTIONNAIRE IN CHINESE

家庭对职业决策信心影响调查问卷

亲爱的同学，此问卷是帮助你了解自己在做职业决策时的信心程度和家人对你职业决策的影响。问卷包含三个部分，请按照各部分要求填写。你的回答对于研究、分析和指导社会、家庭、个人职业选择和职业发展有着深远的意义，请根据自己的情况如实回答，谢谢你的合作。

第一部分 职业决策信心量表

指导语：请仔细阅读以下每一项陈述，根据你完成该项任务的自信程度在 1-5 中选择相对应的分数。请在问卷上涂实所选数字对应的圆圈。

你有多大信心完成以下任务：	**完全没信心**	**很少的信心**	**中度的信心**	**很大的信心**	**完全有信心**
1. 使用互联网找到你所感兴趣的职业信息	①	②	③	④	⑤
2. 从你正在考虑的将来可能主修的一系列专业中选择出一个专业	①	②	③	④	⑤
3. 为你未来五年的目标设定一个计划	①	②	③	④	⑤

第二部分 父母对择业行为列表

指导语：请回答以下问题时只围绕**一位**你的亲人。他/她应该是对你职业发展影响最大的那个人。首先，请在横线上打√标明这个人。

母亲_____ 父亲_____ 继母_____ 继父_____
其他（请在横线上写明这个人是谁，例如奶奶）_____

请仔细阅读以下陈述，**回忆这项陈述在你的生活中发生的频率**，在右侧 1-5 的频率描述中找出最符合你的情况的描述，并在问卷上涂实所选数字对应的圆圈	**从不**	**很少**	**有时**	**经常**	**非常经常**
1. 父/母在对我来说重要的各种青少年问题上表示出关心	①	②	③	④	⑤
2. 父/母向我展示如何在书店或图书馆找到与大学或职业相关的信息	①	②	③	④	⑤
3. 父/母鼓励我参加学校提供的兴趣测试或职业测试	①	②	③	④	⑤
4. 父/母鼓励我自己做决定	①	②	③	④	⑤
5. 父/母告诉我他/她对我的职业有很高的期望	①	②	③	④	⑤
6. 父/母鼓励我考虑很多不同的教育或者职业选择	①	②	③	④	⑤

7. 父/母和我讨论具体的职业	①	②	③	④	⑤
8. 当我在职业选择中感到困惑时，父/母能帮助我感觉好一些	①	②	③	④	⑤
9. 父/母真的试图理解我对很多事物的想法、感受和意见	①	②	③	④	⑤
10. 父/母给我一些关于具体职业的书面材料	①	②	③	④	⑤
11. 父/母给我一些关于具体大学的书面材料	①	②	③	④	⑤
12. 父/母告诉我关于做一些艰难决定时的步骤	①	②	③	④	⑤
13. 父/母和我一起参加由学校或其他机构组织的职业发展讲座	①	②	③	④	⑤
14. 父/母鼓励我参加课外活动，例如：体育，音乐，教堂等活动	①	②	③	④	⑤
15. 父/母鼓励我问关于不同职业的问题	①	②	③	④	⑤
16. 父/母告诉我他/她爱我	①	②	③	④	⑤
17. 父/母帮助我解读我所做过的职业测试或兴趣测试的结果	①	②	③	④	⑤
18. 父/母鼓励我尝试新鲜事物	①	②	③	④	⑤
19. 父/母鼓励我与他/她谈论我的职业规划	①	②	③	④	⑤
20. 父/母问我对于未来我在考虑什么样的工作	①	②	③	④	⑤
21. 父/母鼓励我按照自己的意愿选择职业	①	②	③	④	⑤
22. 父/母表示他/她为我感到骄傲	①	②	③	④	⑤
23. 当我告诉父/母一个我感兴趣的特定的工作，他/她表示支持我	①	②	③	④	⑤

第三部分 个人信息

指导语：请阅读以下题目，并在横线上写出答案。请记住，此信息是被保密的。我们不会将此信息与我们研究团队外的任何人分享。

今日日期（月/日/年）：_____

1．上一次生日时是你几岁生日：_____

2．你的性别：_____
A. 男
B. 女

请对以下问题选出最合适的一个答案。

3．你的家庭户口_____
A. 城市
B. 乡村

4．你家里有轿车、厢式货车或者卡车吗？_____

A. 没有
B. 有，1 辆
C. 有，2 辆或者更多

5．你家里有自己的卧室吗？_____

A. 没有
B. 有

6．在过去的 12 个月里，你和家人假日外出旅游的次数是多少？_____

A. 没有
B. 1 次
C. 2 次
D. 2 次以上

7．你家里有几台电脑？_____

A. 没有电脑
B. 1 台
C. 2 台
D. 2 台以上

问卷结束。

非常感谢你参与此次问卷！你的回答对于我们的研究非常有用！