

EXAMINING THE MODERATING EFFECTS OF
DECISION-MAKING SELF-EFFICACY AMONG
SELF-DETERMINATION AND COLLEGE AND
CAREER READINESS SELF-EFFICACY

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Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
December, 2019

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ACKNOWLEDGEMENTS

To my committee, thank you for willingly stepping into my life to simply be a support. I could not have completed this degree without help from each of you.

Dr. Khojasteh, thank you for being my advisor, teaching me analyses, and helping me enjoy this process. I value your friendship and appreciate all the time you gave me.

Dr. Sanogo, thank you for leading my committee and keeping me on task through each phase of my dissertation. Your encouragement has been felt from the start.

Dr. Montgomery, thank you for contributing your time to help me understand the dissertation process and produce quality work. I am grateful for your guidance.

Dr. Criss, thank you for guiding me in research and conference presentations. I have learned a lot from you and your willingness to share your experiences.

To my classmates, thank you for being there for me and with me through a few difficult years. Your support and friendship will forever stay with me.

To my mother, thank you for your loving encouragement and overwhelming support. You taught me how to write and how to express opinions. I learned to love education because of you and your influence. My accomplishments are a direct reflection of you and your tireless work as an educator. I am honored to receive my doctorate one year after you were posthumously awarded yours. Your legacy lives on in me, in my work, and throughout my life.

Acknowledgements reflect the views of the author and are not endorsed by committee members or Oklahoma State University.

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Date of Degree: DECEMBER, 2019

Title of Study: EXAMINING THE MODERATING EFFECTS OF DECISION-MAKING SELF-EFFICACY AMONG SELF-DETERMINATION AND COLLEGE AND CAREER READINESS SELF-EFFICACY

Major Field: EDUCATIONAL PSYCHOLOGY

Abstract:

College aspirations among adolescents are increasing (Roderick, Nagaoka, & Coca, 2009), but many barriers still exist in the college and career process for adolescents (Barnes & Slate, 2010). Hindrances diminish self-efficacy and the ability to persist (Ali & McWhirter, 2006). Readiness programs benefit students, but the need for assistance continues to outweigh the efforts provided (Venezia & Jaeger, 2013). Readiness indicators are needed to help students succeed (Roderick et al., 2009), and studies have shown that programs focused on improving decision-making can help bridge the divide between high school and college (Gibbons & Shoffner, 2004).

The purpose of this study was to examine the moderating effects of college and career decision-making self-efficacy among self-determination and college and career readiness self-efficacy in adolescent students. The data (N=556) collected were analyzed in a fully latent structural equation model to examine how the satisfaction of autonomy, competence, and relatedness create overall levels self-determination, how self-determination predicts college and career readiness self-efficacy, and how college and career decision-making self-efficacy moderates that relationship.

This study found that self-determination significantly and positively predicted college and career readiness self-efficacy, and this relationship was significantly and negatively moderated by college and career decision-making self-efficacy. These findings suggest that as levels of self-determination increase, levels of college and career readiness self-efficacy increases. Additionally, these findings suggest that as levels of college and career decision-making self-efficacy increase, levels of college and career readiness self-efficacy is be less dependent on levels of self-determination. Future research on college and career readiness should further explore the development of decision-making self-efficacy to fully understand the support needed by adolescents in this process.

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CHAPTER I

INTRODUCTION TO THE STUDY

College aspirations have increased among high school students, but major disparities exist in the college transition process (Roderick, Nagaoka, & Coca, 2009). “To turn college aspirations into college attainment, high schools and teachers need clear indicators of college readiness and clear performance standards for those indicators” (Roderick et al., 2009, p. 185). While some students who enter college are unable to persist to graduation (Conley, 2007), the ability to effectively transition into the collegiate environment is as much of a barrier as academic deficiencies (Barnes & Slate, 2010). To combat this gap between high school preparation and college expectation, high schools need college-focused environments, counselors need adequate resources, and parents need information. While many college preparation programs are working with some success, the effort is small in relation to the need (Venezia & Jaeger, 2013).

The college and career process considers academic achievement, social and emotional development, and career trajectory (Patterson, 2014). This process encompasses the transition out of high school, readiness indicators, relevant decisions required of adolescents, and supports and barriers encountered along the way. Self-efficacy is defined as a personal belief in one’s ability to execute necessary behaviors and actions to produce specific outcomes (Bandura, 1977, 1986, 1997). Self-efficacy is task-specific and thus found at each step in a student’s transition into postsecondary life.

Whether determining interests or planning for goals, self-efficacy is closely related to the objective at hand and can be influenced by many factors.

Students often lack the self-efficacy needed to make the critical decisions that lead to career exploration, planning, and goal-setting (Rogers, Creed, & Glendon, 2008).

Additionally, as there are differences between schools, students and even parents have trouble understanding the various collegiate requirements for each institution, the steps required to seek admission, and the factors to consider in making this major life decision (Rogers et al., 2008). The perception of barriers like financial limitations and a lack of support from school personnel, family, and peers may lead to a disparity between students' goals for the future and actual expectations (Flores, Navarro, & DeWitz, 2008).

As adolescents face barriers in the college and career process, decision-making plays a large role in the transition out of high school. Informational programs for students and parents on making the right choices and submitting the necessary requirements can help bridge this divide, but students from lower socioeconomic statuses do not have access to this assistance and often go overlooked (Gibbons & Shoffner, 2004). Furthermore, Ali and McWhirter (2006) demonstrated that as these hindrances increase, a student's self-efficacy and ability to persist to and through college decreases. However, solely focusing efforts on low-performing schools raises those students to a level of new challenges while neglecting struggling students in higher-performing schools, which further demonstrates the need for universal interventions (Hassel & Hassel, 2010).

Students need to be adequately prepared for the transition out of high school and the decisions required during this stage of life. Choices made in adolescence can lead to a certain college, major, and career path, potentially defining one's life into retirement. The lack of

understanding of options and requirements in these choices is evidenced by the rates of transition along the educational path. Despite the relatively stable nature of college-going rates from 2000-2015 (National Center for Education Statistics, 2017b) and overall graduation rates from 2000-2015 (ACT, 2015), students who change their majors graduate at a consistent 4-6% higher than students who do not (EAB, 2016). As many as 80% of students are reported to change their major at least once (Straumsheim, 2016). The production of a higher graduation rate demonstrates the benefit of spending more time, receiving more assistance, and gaining more experience before making a final decision on a life career path. However, changing majors increases the time it takes to attain a degree and the cost it requires to do so (Farner, 2016). This exemplifies the need in students to focus more on their college and career readiness before entering college in order to create the benefit of receiving more help in establishing a better plan without the cost of a longer and more expensive education. There remains a critical need for students to receive the proper experiences and necessary information before decisions must be made.

Seeking to understand motivation and choice in the college and career decision-making process, Leggett et al. (2018) conducted a qualitative study to interview six adults about experiences in the transition out of high school. Participants made these important life decisions for simple reasons, like attending a college because that is what an older sibling did, going to a specific college because parents would only pay for their alma mater, and even enrolling in a college because it was across the street from the high school. Participants expressed that they felt they had to go to college to keep up with peers and societal expectation and that college was the only way to get a good job. Two of the six never graduated, and two others were not working in the field of their degrees. Every participant

discussed a lack of understanding of college and career process and a lack of support from high school counselors (Leggett et al., 2018).

Informal interviews with local high school provide anecdotal information regarding the high school student readiness for postsecondary decisions. For example, one local, private, college preparatory K-12 school has been spread thin in counseling and is currently short-staffed. The counseling office collects the typical information from students – demographics, grades, standardized test scores, class schedule, attendance, as well as qualitative data from meetings between students and counselors when they occur. These student snapshots fall short of providing key information needed for counselors to effectively guide and support student decisions. Furthermore, counselors are outnumbered by students and overwhelmed by many responsibilities beyond college and career preparation. Furthermore, anecdotes from a local, public high school faces a similar difficulty in managing the overwhelming student-to-counselor ratio. One counselor defined this issue when stating that she has 400 students assigned to her and could never fully keep up with each student. She went on to explain that unless the student is in her office seeking help, she does not know what the student needs and is unable to provide assistance. Secondary schools want to help students prepare for the next step after high school, but it is difficult for counselors to keep up with the different requirements for each college and the many needs of each student.

Local schools have an aspect of their mission or strategic plan that includes the preparation of students for postsecondary life. Tulsa Public Schools (TPS) maintains an objective that they strive to “prepare every student for the greatest success in college, careers, and life” (Tulsa Public Schools, n.d.). Broken Arrow Public Schools (BAPS) lists in their

core beliefs and in their strategic plan the stance that “all students will be college or career ready” (Broken Arrow Public Schools, 2017). Union Public Schools (UPS) boasts *The Union Way* that cites a goal of “100 percent graduation, college and/or career ready” (Union Public Schools, n.d.). These schools represent a few of the largest school systems in the state of Oklahoma, all of which place high importance on preparing students to graduate high school ready for a college and career path. However, the graduation rates and college readiness scales told a different story. U.S. News & World Report (2019) evaluates graduate rates and college readiness for schools across the country. The College Readiness Index Value (CRI) is out of 100 and considers Advanced Placement (AP) and International Baccalaureate (IB) test data. For the 11 schools in the district, TPS showed an average graduation rate of 74.5%, ranging from 40% to 100% and an average CRI of 21.43, ranging from 5.9 to 57.9. BAPS showed a graduation rate of 85% and a CRI of 19. UPS showed a graduation rate of 90% and a CRI of 18.2 (U.S. News & World Report, 2019). While these statistics are preliminary and represent many factors that influence student success, they demonstrate the disparity in reaching the college and career readiness levels desired.

Personal experiences working in admission offices at multiple local colleges have provided an understanding of the support students receive when transitioning out of high school. Just as high school counselors tend to retrieve basic student data and qualitative information through conversational meetings, college and university admission counselors collect basic information before encouraging students to enroll. Admission counselors discuss major and career options with prospective students, but most undecided students are referred to advisement and career services to receive more in-depth information. Not one of these departments along the way require further assessment before approving enrollment.

The obstacles are overwhelming for students even before they get through the door, especially those from disadvantaged groups like low-income and first-generation (Tierney et al., 2009).

In addition to indecision and amotivation, unprepared students may face academic obstacles. Regardless of which institution a student chooses to attend after high school, certain requirements must be met for admission. A determining factor in acceptance is a standardized test. Whether the ACT or the SAT, a poor performance on the standardized test can dramatically decrease the choices available to a student. Open enrollment institutions accept students with any ACT or SAT score, which often use the score for placement purposes rather than acceptance. Depending on their scores, students might be required to complete certain remedial courses in math, English, science, or reading before receiving permission to enroll in college-level courses. This process of remediation aims to bridge the gap between high school preparation and college expectation for academically deficient students (D'Agostino & Bonner, 2009). These students graduated with the same high school diploma, but colleges do not let them take entry-level courses until they have completed these developmental, or zero-level, courses. These courses take time, require effort, and cost money, but they do not count toward the official transcript. Additionally, there exists a disparity in rigor between high school environments and college coursework, even in zero-level courses, that can be too overwhelming for students to overcome (Hoyt & Sorenson, 2001). Often, these students require more semesters to matriculate through graduation, even after successfully completing remediation (Horn et al., 2009).

Students continue to dream, but any lack of developed resources, opportunities, and support begins to create an expectation of failure. While these barriers explain a disparity

between student dreams and expectations (Flores et al., 2008), Social Cognitive Career Theory provides a framework for progress through the postsecondary transition (Lent, Brown, & Hackett, 1994). SCCT can benefit high school counselors as they help students pursue opportunities, overcome obstacles, and explore potential paths (Olsen, 2004). Efficacy-based interventions support students in developing interests and making critical college and career decisions (Lent et al., 2008b). The research is clear that efficacy can rise and fall with supports and barriers and is even influenced by the perception of either (Lent et al., 2001; Lent et al., 2008a). One's environment and social structure influence self-efficacy, as well as vocational development and choice implementation, playing a pivotal role in overall college and career readiness (Lent, Brown, & Larkin, 1986). As hindrances increase, self-efficacy decreases, along with the ability to persist through education (Rodriguez, Inda, & Fernandez, 2014). However, increased self-efficacy has shown to have a direct and positive effect on a student's ability to plan, decide, and act, successfully navigating the latter stages of the SCCT model. Strengthening the supports a student experiences and helping the student cope with barriers benefits both the self-efficacy of the student and the student's ability to persist (Lent et al., 2001; Lent et al., 1986; Lent et al., 2008a; Rodriguez et al., 2014). Similar to Rogers et al. (2008), these studies help to demonstrate the strong effect of hindrances and barriers, as well as social supports and assistance on self-efficacy related to college and career situations. Whether the lack of readiness manifests as indecision or academic deficiency, students face lengthened collegiate experiences and increased expenses in situations that elicit a feeling of falling behind peers (Bailey & Jaggars, 2016) and necessitate increased support in order to yield student success (Zavarella & Ignash, 2009). Considered as precursors to some of life's most important decisions, social experiences are

influential to one's self-efficacy, which in turn drives outcome expectations and goals (Britner & Pajares, 2006). Therefore, this study examines the moderating interaction of decision-making self-efficacy to understand the relationship among self-determination and readiness efficacy beliefs, which fills gap not previously addressed in research.

Theoretical Framework

Psychological theories in adolescent development guide the way for educators to help students through high school and into postsecondary opportunities. This study had as its aim to discover what is needed for adolescents to feel ready for educational opportunities after high school. A student's self-efficacy represents the confidence held toward a particular situation or task (Bandura, 1997). College and career readiness self-efficacy captures how prepared a student feels (Baker & Parikh Fox, 2012), and college and career decision-making self-efficacy signifies one's confidence in the decisions necessary during this process (Taylor & Betz, 1983). Self-determination holds the satisfaction of basic psychological needs and can operate as a driving force in motivation and choice (Ryan & Deci, 2000). This study investigated these constructs and how they interact within adolescent students as they navigate the college and career process. Specifically, the potential of college and career decision-making self-efficacy to moderate the relationship of self-determination to college and career readiness self-efficacy was of interest.

College and Career Readiness Self-Efficacy

College and career readiness has emerged as a critical factor in the postsecondary process for adolescents (Lent et al., 1986). College and career readiness has been defined in numerous ways. The ACT (2010) outlined academic benchmarks that identify readiness, while Conley (2010) presented readiness as competency in skills required by entry-level

college coursework. The American School Counselor Association (ASCA; 2012) outlined readiness as a goal for high school counselors with career preparation as a role of their position. ASCA has posited that career planning results in students making connections between school situations and overall life experiences in order to acquire the relevant knowledge necessary for college and career choices (American School Counselor Association, 2013). Students have a desire to achieve after high school, but those in authority do not have clear indicators of what constitutes readiness (Roderick et al., 2009). College entrance does not equate to college persistence (Conley, 2007), and making the transition from high school to college has become a barrier to some students (Barnes & Slate, 2010). Students and parents do not understand the college requirements and steps (Rogers et al., 2008). While informational programs exist and do work (Gibbons & Shoffner, 2004), the need for assistance outweighs the efforts available (Venezia & Jaegar, 2013). Students exit high school underprepared for the step into college, creating a responsibility on the institutions of higher education to expand services to a wider selection of students (Laskey & Hetzel, 2011). Academic deficiencies create a need for remedial education (Barnes & Slate, 2010). The inability of a student to maintain pace with peers diminishes the student's self-efficacy, especially in underprepared students navigating college (Biermann & Sarinsky, 1993). Baker et al. (2017) outlined a readiness scale with items regarding procedural and financial challenges, positive personal characteristics, academic competence, and potential to achieve future goals. Within these categories exists a strategy for counselors and those in authority to approach college and career preparation for students. While readiness lays a foundation of knowledge and understanding in college and career situations, decision-making

encompasses the ability to execute choices based on motivation. Using these concepts, this study analyzes influences on college and career readiness self-efficacy.

College and Career Decision-Making Self-Efficacy

Students may lack the self-efficacy needed to make college and career decisions (Rogers, et al., 2008). Barriers explain the disparity between a student's dream to achieve and any contradictory expectations (Flores et al., 2008). As hindrances increase, a student's self-efficacy, as well as the ability to persist in education, decreases (Ali & McWhirter, 2006). Even perceptions of social support can positively influence self-efficacy, interests, and goals (Lent et al., 2001). Similarly, perceptions of social barriers can negatively impact the interest-to-goal transition (Lent et al., 2008a). Counselors can help students overcome various obstacles by developing student self-efficacy (Olsen, 2004). Efficacy-based interventions can help students develop interests and make college major and career path choices (Lent et al., 2008b). Self-efficacy has been shown to improve a student's ability to make plans for the future, make college and career decisions, and take action toward choice goals (Lent et al., 1986). Immediate surroundings influence self-efficacy and college and career choices (Rodriguez et al., 2014), and social environments play a role in these life decisions (Rogers et al., 2008). Strengthening supports and resolving barriers further develops student self-efficacy (Lent et al., 2008b). Support and engagement during adolescence allows students to visualize a future throughout the college planning process (Shaefer & Rivera, 2012). This study examines how confidence in choice interacts with overall confidence in readiness derived from self-determination levels.

Self-Determination

Self-efficacy encompasses how one is motivated, how one processes thoughts, and how one behaves (McCoach, Gable, & Madura, 2013). One's self-regulation of motivation and thought, one's affective and physiological states, and the ability to determine one's actions combine to form efficacy beliefs (Bandura, 1997). Motivation can be an intrinsic or extrinsic drive that causes individuals to behave in certain ways (Deci & Ryan, 1985). In the self-determined continuum of motivation established by Deci and Ryan (1985), it is ideal for individuals to possess intrinsic regulation to operate out of self-determined motivation. According to Self-Determination Theory (SDT; Ryan & Deci, 2000, 2008), this state of motivation derives from the satisfaction of three basic needs: autonomy, the need to control aspects of one's life; competence, the need to be effective in one's environment; and relatedness, the need to have support through close relationships. People possess a need to control aspects of life. Autonomy provides a freedom for individuals to have the final say in their behaviors, decisions, and actions (Deci & Ryan, 2008). People have a need to feel capable and effective in their environment. People need to be competent in order to achieve and excel due to knowledge and skills (Deci & Ryan, 2008). While autonomy allows people to be the master of their destiny, competence allows people to master important tasks (Deci & Ryan, 2008). People must feel a sense of belonging and connectedness to others. There exists a need to have support through close relationships (Deci & Ryan, 2008). Guay et al. (2003) established that the satisfaction of these basic needs of self-determination can give way to increased self-efficacy in college and career situations. Understanding the benefit of self-determination, this study utilizes a structural equation model to examine relationships among self-efficacy and self-determination variables.

Statement of the Problem and Purpose of the Study

Students may not have the necessary readiness and decision-making abilities to effectively transition out of high school. Readiness self-efficacy is inhibited by barriers to persistence, and decision-making self-efficacy is weakened by the lack of proper support. The purpose of this study was to understand the influence of self-determination, evidenced by the satisfaction of needs in autonomy, competence, and relatedness, on the college and career readiness self-efficacy of adolescents. Primarily, this study sought to identify if college and career decision-making self-efficacy moderates the relationship between self-determination variables and college and career readiness self-efficacy. Simply put, this study investigated if the satisfaction of the three basic needs of self-determination yields an increased self-efficacy in college and career readiness and if that relationship is then influenced by self-efficacy levels in college and career decision-making. While research has observed elements of student self-determination and self-efficacy in the college and career process, there is a gap in research focusing on how college and career decision-making self-efficacy moderates the influence of self-determination on college and career readiness self-efficacy. The application of structural equation modeling to define these interactions has not been utilized in previous studies and will likely elicit new insights.

As adolescents step into vocational settings, it will be beneficial to understand what factors into readiness and how decisions are ultimately made. Readiness will motivate informed decisions to facilitate the transition from high school into a desired college or career setting. Parents, guardians, high school counselors, college admission advisors, and career service professionals will also benefit from clear readiness indicators and a deeper understanding of decision-making in adolescence. To fill gaps in previous research and

contribute to the existing knowledge in this field, this study examined the moderating effects of decision-making self-efficacy among self-determination and college and career readiness self-efficacy.

Research Questions

1. Does the satisfaction of the three basic needs of self-determination – autonomy, competence, and relatedness – predict college and career readiness self-efficacy?
2. Does college and career decision-making self-efficacy moderate the relationship between self-determination and college and career readiness self-efficacy?

CHAPTER II

REVIEW OF RELEVANT LITERATURE

The purpose of this study was to examine the moderating interaction of college and career decision-making self-efficacy on the influence of self-determination on college and career readiness self-efficacy in adolescents. This chapter reviews literature related to the theoretical influences of Social Cognitive Theory (SCT; Bandura, 1986) and Self-Determination Theory (SDT; Ryan & Deci, 2000) attempt to chart these variables of internal and external influence. Furthermore, this chapter examines developmental transformations during adolescence to understand these constructs in relation to this study.

Adolescent Development

Adolescence is a time of development marked by cognitive, emotional, moral, and social changes (Steinberg & Morris, 2001). Adolescents encounter transformations throughout this period, including physical changes during puberty (Susman & Rogol, 2004), an advancement of social perspective taking capabilities (Selman, 1980), an exploration of self-identity (Mezulis et al., 2011), and a growth of brain functioning into the mid-twenties (Paus, 2009). Adolescents seek autonomy separate from parental relationships in an effort to establish individuality (Longmore, Manning, & Giordana, 2013). Parents are viewed more as peers, and peer relationships are intentionally sought out and built on trust and mutual interest (Keating 2004). Individuals perceive a

diminishing parental authority and begin to take an increased ownership over personal decisions (Smetana, 2000). The transitional period of adolescent development coincides with experiences in high school and is signified by transformations from intellectual to career interests, self-involvement to self-identification, parental independence to peer support, and idea expression to independent decision-making (Spano, 2004).

Developmental Theories

People develop, through proactive or reactive actions, within social settings of constant influence (Bandura, 1997). Despite similar circumstances and environments, individuals remain individual. Each person has a unique combination of background context, learning experiences, and socialization (Lent et al., 2004). Moreover, each person carries inimitable thoughts and abilities. Some of these speak to efficacy beliefs and competency while others highlight abilities and goals (Schaub & Tokar, 2005). All of these constructs come together to create a comprehensive look at one's motivation (Ryan & Deci, 2000). Theories in educational psychology review these variables and chart their influence on individuals.

Social Cognitive Theory

Social Cognitive Theory (SCT; Bandura, 1986) defines the acquisition of knowledge as a triadic reciprocal causation, involving personal experience, social interactions, and outside influences. SCT demonstrates the importance of self-efficacy in various circumstances, including the college and career process endeavored by adolescent students. Bandura (1999) describes this relationship as follows:

Each of the major interactants in the triadic causal structure – personal, behavioral, and environmental – functions as an important constituent in the

transactional system. The personal determinant is indexed by the self-beliefs of efficacy, cognized goals, quality of analytic thinking, and affective self-reactions. The options that are actually executed in the management of the organizational environment constitute the behavioral determinant. The properties of the organizational environment, the level of challenge it prescribes, and its responsiveness to behavioral interventions represent the environmental determinant. (p. 158)

In the triadic depiction, there exists a reciprocating relationship between personal factors, such as cognitive, affective, and biological events; environmental factors, such as social norms and peer influence; and behavioral factors, such as skills and practice (Bandura, 1997). These three components of SCT are not always found to be equal in strength, usage, or timeliness; however, the personal factor of self-efficacy has emerged as universally influential (Bandura, 1997).

Self-efficacy is a key component in SCT and defined as, “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Furthermore, one’s self-efficacy can lead to subsequent action toward specific goals. Efficacy beliefs create a variance in outcomes both within one person completing different tasks and between multiple, potentially similar people completing the same task. Efficacy beliefs influence one’s approach to a task, one’s expectation of outcome, one’s relevant interest, and one’s decision to act (Bandura, 1997). A strong sense of self-efficacy for a particular task will spawn an active producer who approaches difficult tasks as challenges to be mastered. Inversely, a low sense of self-efficacy will yield passivity causing the same person to view difficulty as a

threat to be avoided. However, in either scenario, self-efficacy is related to personal causation in that it is specific to a task and could be vastly different for a different task (Bandura, 1997). “Efficacy beliefs should be measured in terms of particularized judgments of capability that may vary across realms of activity, across different levels of task demands within a given activity domain, and under different situational circumstances” (Bandura, 1997, p. 42). In other words, each particular domain or task can potentially hold a different level of efficacy beliefs from each individual. These beliefs can give one a general idea of self-efficacy even though efficacy beliefs are not generalizable. For instance, based on similarities in certain undertakings, one can surmise self-efficacy from previous experiences. Regardless, mastery experiences can bolster self-efficacy and give a sense of generalized efficacy beliefs through certain similar processes, like related subskills, similar development, and parallel structures (Bandura, 1997).

Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT; Lent et al., 1994) builds on the work of SCT to explain the need for and use of self-efficacy throughout each step one encounters when developing interests, goals, and actions toward college and career objectives. Developed out of SCT, SCCT incorporates the development of one’s interests, choices, and achievements to provide an explanation of the college and career decision-making process. SCCT overviews how personal inputs and environmental contexts influence learning experiences that work together to shape one’s self-efficacy and outcome expectations. Self-efficacy remains a central factor in SCCT, as it is in SCT, with SCCT holding that self-efficacy, in conjunction with the outcome expectations formed, impacts

one's interests, goals, and actions, with each component influencing the next (Schaub & Tokar, 2005). A belief found in this theory is that self-efficacy is pivotal enough to be targeted as a catalyst to affect the development of interests and goals, and to motivate the action necessary for successful attainment within the specific performance domain of college and career decision-making (Schaub & Tokar, 2005). However, external factors, such as perceived supports and barriers, play a crucial role in the SCCT process and can promote or inhibit the critical thinking, planning, and goal-setting required during the transition out of high school (Lent et al., 2001; Lent et al., 2008a; Rogers et al., 2008).

Lacking the knowledge and understanding necessary to be considered college and career ready and to navigate the college and career decision-making process creates a severe inability for many students to proceed (Rogers et al., 2008). However, persistence has been found to cultivate from early exposure to college-and-career-related activities and environments (Venezia & Jaeger, 2013). While one's perception of supporting influences may benefit self-efficacy, autonomous environments combined with such efficacy beliefs yield the concept of work volition, which encompasses the inclusion of choice despite constraints. Work volition has been found to significantly moderate the relation of self-efficacy to both outcome expectations and goals, much aligned with SCCT (Duffy et al., 2014). The SCCT model has been shown to extend not just the development of college and career interests and goals but also to satisfaction in both educational and vocational domains (Lent & Brown, 2006, 2013). Lent et al. (2005) demonstrated that self-efficacy can predict satisfaction in academic settings, as well as overall life satisfaction. Similarly, Foley and Lytle (2015) determined self-efficacy to be a component in vocational behavior and work experiences.

Within the construct of both SCT and SCCT, self-efficacy encapsulates one's beliefs in what can be accomplished. Research has demonstrated the importance of self-efficacy in approaching tasks, and self-efficacy remains central in making long-term plans (Bandura, 1986, 1997, 1999). As self-efficacy is specific to particular individuals, situations, and activities, it becomes a key component in the college and career process, with potentially different experiences in decision-making tasks and overall readiness. The literature has shown the need for increased self-efficacy in the various situations encountered in a student's transition out of high school (Lent et al., 1994; Rogers et al., 2008; Schaub & Tokar, 2005; Venezia & Jaeger, 2013).

Self-Determination Theory

Self-Determination Theory (SDT; Ryan & Deci, 2000, 2008) defines the need for autonomy, competence, and relatedness in a student's journey through the college and career process. SDT was developed to understand motivation and performance through the satisfaction of basic psychological needs of autonomy, competence, and relatedness. SDT views motivation as a continuum anchored on one side by amotivation, which is the lack of motivation and intentionality. This inaction may be due to a lack of self-efficacy or competence impeding one's belief in the attainment of potential desired outcomes, or it may derive from a lack of interest or value in the task at hand (Ryan & Deci, 2017). The motivation continuum continues through levels of extrinsic motivation, including external regulation, or motivation based on outside consequences; introjection, or motivation based on internal outcomes from outside influences; identification, or the attribution of personal value; and integration, or the alignment of task with individual value. Anchoring the other end of the continuum is intrinsic motivation which encompasses those activities

completely based on interest and enjoyment (Ryan & Deci, 2017). This scale of motivation comprises the approach of SDT to the concept of autonomy, holding controlled motivation aligned with amotivation and autonomous motivation aligned with intrinsic motivation (Ryan & Deci, 2017).

Autonomy is one of three elements discussed in SDT that are of need to individuals, with the other two being competence and relatedness (Ryan & Deci, 2000). Autonomy speaks to one's need to control the course of life. Competence relates to one's need to be effective and capable in life. Relatedness aligns with socialization and the need to have meaningful relationships. Each of these three factors is needed, to some degree, by every individual. The satisfaction of these needs directly relates to one's motivation and engagement (Ryan & Deci, 2017). In other words, the needs of autonomy, competency, and relatedness will foster and facilitate motivation, including one's volition and engagement, leading to improved performance and persistence (Ryan & Deci, 2000). Studies have found that these perceptions of autonomy support correspond to increased engagement even in cultures that are historically controlling, demonstrating the benefit of interest-aligned choice despite environmental context (Hassan & Al-Jubari, 2016).

In summary, the literature surrounding SDT demonstrates the need for autonomy, competence, and relatedness to exist and be satisfied as an influence of motivation. One's interests and engagement help to create and are driven by one's motivation. These are crucial factors in a student's transition out of high school. The environment in which a student explores potential future paths must support the development of self-determination, and the satisfaction of autonomy, competence, and relatedness will yield

an increased ability to understand requirements and necessary decisions in the college and career process, producing a benefit to overall readiness.

Overlap of Relevant Theories

Social Cognitive Theory (SCT; Bandura, 1986), including Social Cognitive Career Theory (SCCT; Lent et al., 1994), and Self-Determination Theory (SDT; Ryan & Deci, 2000) intersect on topics pertaining to development, motivation, and choice. The major differences are found in the root of the motivation. The efficacy beliefs of an individual within a particular domain motivate the action under SCT and SCCT, whereas, motivation derives from the need for autonomy, competence, and relatedness under SDT. However, these dual sources of motivation have both been found to yield positive outcomes within similar settings. For instance, when predicting attrition for high school students, Parr and Bonitz (2015) found that drop-out rates were lower for those students who believed school was important. Additionally, the researchers demonstrated that a higher sense of self-determination related to lower intentions to drop out of school. Within a uniform domain, both elements correspond to positive motivation with self-efficacy holding equivalence to one's evaluation of competence (Parr & Bonitz, 2015).

Agency and autonomy are discussed in SCT and SDT, respectively, and possess similar influences on motivation and action; however, they are often incorrectly used interchangeably. Agency is simply the capacity to act (Buss, 2013). It is rooted in the idea of exerted control and capability, it encompasses self-efficacy and intentional action, and it is characterized by an objective of shaping future plans and courses of action; however, it does not speak to the motivation behind such actions (Bandura, 2001; Buss, 2013). Autonomy is the concept of self-government and the infusion of motivation to agency

(Buss, 2013). In other words, “autonomy is distinct and is achieved by motivating agency” (Luck & d’Inverno, 1995, p. 254). Agentic expression driven by external influences speaks to a controlled motivation, whereas autonomy is differentiated from heteronomy through self-definition and self-direction in any given context (Abrams, 1999). Hasselberger (2012) clearly articulated the association of agency and autonomy with the perspective that, “agency is a capacity for spontaneous or self-initiated goal-directed behavior. Any animal is an agent” (p. 257). Hasselberger (2012) continued to differentiate that autonomy is found when agents “govern their own lives from their own perspectives” (p. 257). This distinction illustrates that autonomy is a form of agency. The relationship between the two concepts is such that agency is required for autonomy to exist, but autonomy is not a given with agency. One can govern one’s life through volition and intentionality, but it is rooted in external motivations, or heteronomy.

Autonomous agents must operate within social contexts. The idea of self-definition does not stem from removing one’s self from socialization, but rather it is from possessing an awareness of social influences imbued into self-conception. Self-conception leads to self-definition which gives way to self-direction, allowing for self-determination (Abrams, 1999). Autonomy is a step toward and an essential element of self-determination (Prigmore, Taylor, & De Luca, 2016). Deci and Ryan (1985) outlined three orientations of causality – autonomy which has an internal locus of causality, control which has an external locus of causality, and impersonal which has a locus of causality deemed outside the one’s control. Autonomous orientation not only involves the concept of self-direction but also includes the act of seeking out opportunities for self-determination. These experiences encompass intrinsic choice and internal perceived locus

of causality, highlighting the benefit of self-motivated goals while categorizing external rewards as affirmations to competence and effectance (Deci & Ryan, 1985).

The relative autonomy continuum found in SDT is anchored by autonomous and intrinsic motivation on one end and amotivation on the other (Ryan & Deci, 2000). The idea of autonomy in SDT corresponds with concepts of self-efficacy and agency in SCT. The degree to which an agent, capable of exerting control over life decisions, acts out of self-motivation relates directly to the level of autonomy involved and necessitates some level of relevant self-efficacy (Bandura, 1997; Ryan & Deci, 2017). The construct of amotivation posits two outcomes. First, one operating in amotivation does not act due to a lack of competence or self-efficacy or due to a lack of interest or value. Second, one operating in amotivation does act but does not know why (Ryan & Deci, 2017).

Furthermore, this individual operating out of amotivation does not expect to be successful (Sheldon et al., 2017). Similarly, Bandura (1997) proposed that self-efficacy is the key factor in agency, citing that people will not try what they do not believe they can do. He noted that efficacy beliefs are central to competence, demonstrating that incompetence or perceived incapability will yield avoidance, particularly in unknown or difficult contexts.

Environmental influences are considered in both theories. Unlike any other animal, humans have the capacity and capability to become many things. In this evolution of being, societal systems instill self-efficacy and foster competencies (Bandura, 2001). Social Learning Theory (SLT; Bandura, 1977), which gave way to SCT, held that motivation derived from efficacy beliefs which were developed from mastery experiences or performance accomplishments, vicarious experiences or observing others perform and accomplish similar tasks, verbal persuasion or influence

directly from others, and emotional arousal or diminishing anxiety from previously feared or failed situations. Vicarious experiences hold a strong influence on efficacy beliefs through the idea of collective efficacy. Individuals are unlikely to act unless they believe they can achieve desired outcomes (Bandura, 2000). However, Bong and Skaalvik (2003) found that mastery experiences outweigh vicarious experiences as well as verbal persuasion and physiological reactions. Moreover, the researchers determined that prior mastery experiences increase self-efficacy. Repeated failures undermine the development of self-efficacy, but efficacy beliefs strengthened by successes can withstand temporary failures (Bong & Skaalvik, 2003). Competency is a similar concept to mastery experiences in that it is developed through self-efficacy. Competency encompasses self-efficacy, knowledge, usage, and motivation, and is developed by self-efficacy (Britt & Hatten, 2016). Ryan and Deci (2000) outlined the need for such competency as a motivating factor. Personal agency of causality maintains a true influence on outcomes, rather than attempting to decrease any outside forces contrary to choice goals. In fact, a high sense of self-efficacy will yield the ability to perform even threatening tasks with little to no reservation (Bandura, 1982).

In summary, research has demonstrated the need for adolescents to feel capable of making college and career decisions, and moreover, free to make their own choices (Bandura, 1997; Deci & Ryan, 1985; Ryan & Deci, 2000, 2008). These elements of autonomy and competence help to create the self-efficacy necessary in the college and career process (Bandura, 1982; Ryan & Deci, 2017). Educational psychology theories reveal how autonomous agents feeling competent and supported by others will possess increased confidence in college and career readiness (Buss, 2013; Hasselberger, 2012).

Furthermore, studies show that the ability to effectively discern options, make decisions, and establish plans has the potential to increase this overall readiness in adolescent students (Bandura, 2001; Sheldon et al, 2017).

Overview of Related Constructs

Theories of educational psychology provide a framework in which personal inputs and learning experiences establish one's self-efficacy and self-determination levels (Lent et al., 1994; Ryan & Deci, 2000). A student's internal constructs interact with home and school settings (Wigfield & Eccles, 2002). Environmental influences affect motivation and choice variables that yield efficacy beliefs in readiness (Bandura, 1997; Reeve, Ryan, & Deci, 2004).

Motivation

Motivation is a core element in the ideas of college and career readiness and college and career decision-making; however, it is discussed by SCT and SDT in different ways. SCT holds that individuals are motivated when they believe desired outcomes are attainable (Bandura, 1997). This motivation is facilitated by outside support and through the absence of outside barriers. Environmental factors and experiences play less of a role than internal beliefs; however, both hold an ongoing influence on self-efficacy (Bandura, 1997). SDT maintains that individuals are motivated by the satisfaction of needs in autonomy, competence, and relatedness (Ryan & Deci, 2000). As outlined under the concept of relatedness, socialization benefits efforts toward specific tasks and bolsters connectedness to others. One's need for both autonomy and competency can be influenced positively by a sense of relatedness (Ryan & Deci, 2017). Agency holds the intersection of capacity and capability. In other words, people may

believe they can act according to intrinsic motivations and may even have the ability to do so, whether or not that ability is exercised (Bandura, 1997). The motivation that influences agency into autonomy is rooted in self-efficacy (Buss, 2013; Hasselberger, 2012; Luck & d’Inverno, 1995). Not only will one not act in self-governance unless capability is believed to exist (Ryan & Deci, 2017; Sheldon et al., 2017), one will not act according to internal motivations unless the outcome expectations are favorable (Bandura, 1997). Agentic behaviors can predict one’s capacity for and potential in vocational endeavors (Chen, 2006). Exercising career human agency will influence an individual in a decision, including a student processing college and career options (Curry, Belser, & Binns, 2013). Acting toward a specific task has the opportunity to yield a performance attainment measure that cycles back to influencing self-efficacy. This mastery experience creates and further supports competency, which in turn increases related efficacy beliefs (Bandura, 2000; Bong & Skaalvik, 2003; Britt & Hatten, 2016). In other words, attempting and repeating similar tasks increases one’s ability to perform and confidence in the outcome. The exposure to certain activities begins the development of competency and self-efficacy within those same activities, in this case, activities related to the college and career process.

SCT and SDT speak to similar constructs with overlapping influences. Intrinsic motivation is rooted in self-efficacy (Bandura, 1997). Autonomy is a precondition for motivation and is necessary for the development and achievement of goals (Xianghu, 2014). Greater autonomy in motivated efforts yields a greater sense of well-being. In other words, an individual appreciates the journey more if it stems from autonomy, and the individual will, in turn, have a greater likelihood for success when operating out of

intrinsic motivation (Nie et al., 2015). This concept differentiates the ideas of effort and ability. Walls and Little (2005) posited that effort is rooted in self-efficacy while ability can be subject to physical limitations and outside influences. However, faith placed in efforts over abilities has the capacity to benefit achievement above motivation alone (Walls & Little, 2005). Following these studies, decisions made from internal motivations have the potential to be more effective, in this case, college and career choices.

Choice

Under the premise of SDT, one who is self-determined acts based on internal motivations (Reeve et al., 2004). In addition to initiating action in life, self-determined individuals are able to make their own choices (Deci & Ryan, 1985). Guay et al. (2003) discussed how SDT holds that autonomy is central to optimal functioning more so than perception of capabilities, while SCT maintains self-efficacy as foundational to understanding outcomes. The researchers studied the two perspectives of SCT and SDT through the lens of self-efficacy and autonomy, respectively, to determine influence on career indecision. The study found significance in both with career decision-making self-efficacy more strongly related than career decision-making autonomy to career indecision.

Guay et al. (2003) posited that career indecision encompasses one's inability to make effective decisions pertaining to career elements. The researchers showed intraindividual constructs related to career indecision through previous studies, including a positive link to perfectionism, self-consciousness, fear of commitment, and anxiety, and a negative link to rational decision-making style, self-efficacy, and ego identity. Additionally, they demonstrated peer and family support to relate negatively to career

indecision. Therefore, these findings hold a direct influence on this study in understanding the supports relevant to decision-making. Guay et al. (2003) established a similarity between competence and self-efficacy by using measures of career decision-making self-efficacy to represent competence. Using the theoretical perspectives of SCT and SDT, along with the established research on the matter, Guay et al. (2003) found that autonomy-supportive environments, based on peer and family support, interest, and influence, benefit the development of confidence in regard to career decision-making. Furthermore, their study demonstrated that peers hold a closer relationship, and subsequent influence, than parents. The researchers concluded that due to the strong influence of autonomy and stronger influence of self-efficacy on career decision making, school counselors should consider both decision-making capabilities and influential people in the lives of each student. Counselors providing autonomy in their efforts to develop career decision-making self-efficacy may find a heightened ability to connect with and to motivate students (Guay et al., 2003). Therefore, this study builds on previous research to examine how autonomy and relatedness ultimately interact with decision-making capabilities and self-efficacy in producing readiness self-efficacy levels.

Thompson and Beymer (2015) posited that choice is beneficial when eliciting feelings of competence and autonomy. Moreover, understanding the value of a particular activity will promote motivation through autonomy, which is further strengthened when a direct relationship to interests and goals is evident (Thompson & Beymer, 2015). Katz and Assor (2006) established that self-realization is necessary for choice to contain intrinsic motivation. Similarly, Patall, Sylvester, and Han (2014) demonstrated the role of prior knowledge in decision-making activities. The researchers explained that prior

knowledge influences competency which, in turn, influences inclination to choose. Motivation can be positively or negatively impacted by this, leading to either a desire for choice or an avoidance thereof (Patall et al., 2014). Iyengar and Lepper (2000) studied choice overload, postulating that complex decisions are often made through strategies of elimination based on simple heuristics when the options are numerous or the topic is unfamiliar. The researchers showed how people tend to rely on previous experiences to rule out options, especially if these eliminations can be made with little information. Furthermore, Sela, Berger, and Liu (2009) found that when faced with a large number of choices, individuals will lean toward a selection that is easy to justify. Simonson (1989) determined that some may compromise on a choice if they believe they may need to justify their selection. Correspondingly, an overload of choices may lead to dissatisfaction regardless of outcome (Iyengar & Lepper, 2000). The college and career process is full of choices that lead to goals. Achieving desired goals creates a satisfaction in the decision-making process that can yield increased confidence in subsequent decisions (Heitmann, Lehmann, & Herrmann, 2007).

Studies have demonstrated the need for adolescents to have confidence in making college and career decisions (Reeve et al., 2004; Guay et al, 2003). The way in which choices are presented and navigated is as crucial as the choice itself. Adolescents must feel supported and free to choose their own path while also being guided in a way that promotes competence and self-efficacy in the process. This study examines variables associated with choice in a student's engagement with college and career options.

Environment

Motivational influences vary with each individual, and contexts in which elements of motivation are found elicit different responses (Bandura, 1997; Ryan & Deci, 2000). Wigfield and Eccles (2002) concluded motivation derived from the amalgamation of environmental contexts, including encounters both at home and in school. Brooks and Young (2011) demonstrated that motivation is both an individual's feeling and an outcome of environmental factors. Individuals face various situations and social circumstances. SDT is concerned with both the individual development in response to the environment and the social scenarios that may antagonize these processes (Ryan & Deci, 2017). School contexts that seek to control students through overwhelming rules and regulations can be regarded as limiting the potential for motivation (Brooks & Young, 2011). Reeve et al. (2004) discussed pragmatic approaches to fostering autonomous motivation in students, supporting the idea that school personnel hold influence on students. This belief that counselors and teachers are central to student motivation aligns with SDT tenets that posit a student's need for autonomy. Understanding the interaction of variables examined in this study benefits the support provided by high school personnel.

Brooks and Young (2011) showed that students have intrinsic motivations as well as an understanding of the value of school, regardless of teacher consistency. Student-driven assignments may produce stronger feelings of autonomy within students, but the researchers found that both student-driven and teacher-directed assignments can foster a student's need for autonomy. The primary factor that levels the playing field between these two approaches is that students are confident in their understanding of what the

teacher expects. An inconsistency of assignment type combined with a lack of understanding expectations will serve to obstruct student motivation and autonomy-supportive experiences (Brooks & Young, 2011).

Patall, Cooper, and Wynn (2010) studied choice in the school context when teachers grant students options in homework assignments. The researchers found that student interest, enjoyment, and motivation increased, as well as assignment scores. Pintrich (2003) evaluated aspects of goal-setting, collaboration, and choice, finding that choice held the strongest influence on intrinsic motivation. Similarly, in a meta-analysis of 41 previous studies, Patall, Cooper, and Robinson (2008) found that choice consistently enhanced not only intrinsic motivation, but also effort, performance, and self-efficacy. The benefits of choice to an individual are evident, but Gray and Rios (2012) presented an obstacle in social assimilation. Adolescents have a need to fit in, and their choices may be a reflection of that need rather than of true desire when the two are in conflict. Thompson and Beymer (2015) cautioned teachers to consider the various factors and outcomes of choice in order to promote autonomy and competence without creating overwhelming environments. This study further explores the influences of self-determination variables on efficacy beliefs in decision-making and readiness.

Students are faced with a sizeable and life-long decision after high school in choosing a career path (Bozick & DeLuca, 2005). Hossler, Braxton, and Coopersmith (1989) posited that the college and career choice is likely the first complex decision one makes that spans multiple life stages. Furthermore, the career choice encompasses many sub-choices, including whether to attend college, which college to attend, which major to pursue, and so on (Kortesoja, 2009). Additionally, the determining value of career paths

and of attending college may include internal beliefs (Perna, 2000), school and social environments (McDonough, 1997), and family and peer influences (Hossler & Stage, 1992). Many students lack understanding and awareness regarding post-secondary options (Bardick et al., 2004). Students who lack meaningful experience in career exploration may make college and career decisions without sufficient understanding of their options. With minimal relevant knowledge, students may embark on career paths with low outcome expectations (Gaylor & Nicol, 2016). Gaylor and Nicol (2016) studied students enrolled in a career and work exploration course through the lens of motivation as explained by Deci and Ryan (1985) and of self-efficacy as explained by Bandura (1977). The course sought to enhance student understanding of career awareness, exploration, and experience. The researchers found that enrollment in a career exploration course promoted both motivation and self-efficacy. Furthermore, the researchers found an increased benefit to student self-efficacy (Gaylor & Nicol, 2011). Similarly, Suri et al. (2014) found that influence augmented motivation when enacted near the point of choice. In other words, the more exposed to college and career options a student is, especially near high school graduation, the more capable that student will be in making effective college and career decisions.

Jung (2013) found that college indecision corresponds with amotivation with the college decision-making process. Moreover, the study showed that amotivation may derive from a lack of valuing the interest and enjoyment of going to college, a lack of valuing the economic benefits of completing college, a lack of valuing an increased career opportunity, a lack of healthy outcome expectations, or a lack of positive family and peer influences. Improving the nature of social support for students through family

and peer relationships will help to also improve the self-efficacy associated with academic achievement and career choice (Jiang & Zhang, 2012). Lent et al. (2008b) demonstrated the benefit of efficacy-based interventions in developing student interest for college and career choice. This increase in confidence has been shown to hold a positive effect on student ability to carry out choices with meaningful action (Germeijs & Verschueren, 2007). Lent et al. (1986) maintained that promoting career exploration would bolster self-efficacy in the college and career decision-making process. This perspective has been proven to be effective in how counselors approach student needs by prioritizing self-efficacy (Olsen, 2004) and in how early college and career self-efficacy is fostered in students even as young as middle school (Schaefer & Rivera, 2012). Counselor and school intervention, family support, and peer influence all play important roles in the decisions of adolescents, advancing a student's knowledge of options, ability to understand potential career paths, and confidence to make effective decisions (Rodriguez et al., 2014).

Jung (2013) outlined the need to consider these factors not only in the individual's decision-making process, but also in the way receiving institutions view adolescents. Whether one is applying to college or seeking a job after high school, categorizing individuals by motivation in order to more accurately target groups for support could lead to more meaningful decisions (Jung, 2013). Focusing on one's development of motivation and considering significant influences, such as environment, peer, and family, will facilitate a deeper understanding of one's choice interests, goals, and actions. Student amotivation is more easily minimized by focusing outreach programs on both the student and the family, and by understanding the role of families in college entrance decisions

(Jung, 2013). The onus, however, is shared. In studying hindrances to student success, it was found that student support services after high school alleviate the at-risk nature of some students, positing that the responsibility shifts to the institutions of higher education (Laskey & Hetzel, 2011). Therefore, this study sought to understand how college and career decision-making can be better supported while a student is in high school.

The gap between high school and postsecondary opportunities continues to grow when factoring in academic abilities and social pressures. High school students have been found to struggle in core subjects, especially numeracy and literacy, and they also experience great difficulty in assimilating to life in college (Barnes & Slate, 2010). Exit exam scores and other indicators of academic readiness have been shown to misalign with the requirements of colleges. This disconnect in high school preparation and college expectation necessitates remediation (D'Agostino & Bonner, 2009). Deficiencies are evidenced by the retention and graduation rates of students. The percentage of high school students that enter college bears a stark difference from the percentage of students that graduate in four to six years. An obvious gap between high school and college exists and continues to hinder students from finding success. The effort placed on postsecondary preparation in high school must increase in order to positively affect the overall outcome of students and increase the likelihood of persisting through to graduation (Conley, 2007). Students are influenced by many factors throughout the transition out of high school, including grade-point average, standardized test scores, high school type, locations, assistance received, and personality traits (Laskey & Hetzel, 2011). These perceptions of ability speak to the constructs found in SCT and SDT, and

they hold influence over individual motivation. Situational factors may overwhelm intrinsic drive and impede choice aspirations.

Social Cognitive Theory (Bandura, 1986) and the subsequent Social Cognitive Career Theory (Lent et al., 1994) offer a look into individual motivation through elements of self-efficacy and outcome expectations. These factors derive from background influences, contextual developments, and social scenarios that play essential roles in the construction of both knowledge and motivation. In the college and career decision-making process, self-efficacy drives action through belief. In regard to the job search process, much like the career decision process generally, one's capability is influenced by one's perceived efficacy (Bandura, 1997). Self-Determination Theory (Ryan & Deci, 2000, 2008) holds that needs drive motivation, specifically the needs for autonomy, competency, and relatedness. Ryan and Deci (2017) described how these needs play critical roles in career decision, stressing the importance of autonomy support. The researchers discussed the alignment of career exploration experiences with career choice, recognizing that the perception of competence influenced one's interest, which subsequently predicted the possibility of entering a career field (Ryan & Deci, 2017). Many factors go into career choice, which has been shown to be a major life decision. These factors of perceived self-efficacy, outcome expectations, perceived competence, and autonomy support encompass both internal beliefs and external influences and are evident in this transitional process.

In summary, the literature has demonstrated an association between one's environments and one's confidence in the college and career process. Furthermore, studies have shown exposure to college and career activities will increase a student's self-

efficacy in the college and career process through increased perceived competence. Additionally, counselors, teachers, parents, and peers hold influence on a student's relationship with and interpretation of this process, highlighting the importance of autonomous yet supportive school and home contexts in which these choices are explored.

Readiness

Students encounter many factors that constitute readiness, including procedural knowledge, financial responsibility, personal characteristics, academic competency, interests and goals, and environmental support and barriers (Baker et al., 2017; Flores et al., 2008; Lent et al., 2008b). It is necessary for students to possess knowledge about the options available and the life on the other side of each choice (Hooker & Brand, 2010). The need to overcome academic deficiencies can become a barrier for students (Barnes & Slate, 2010), which can, in turn, lessen one's self-efficacy in college and career situations (Biermann & Sarinsky, 1993). The slightest misstep in this process can leave students feeling inadequate among peers (Bailey & Jaggars, 2016) and can increase attrition as students shy away from a rigorous college setting (Parr & Bonitz, 2015). These factors are universal, but readiness is individual (Conley, 2012).

A person who is ready for college and career can qualify for and succeed in entry-level, credit-bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs without the need for remedial or developmental coursework. However, not every student requires the same proficiency in all areas. A student's interests and post-high school aspirations influence the precise knowledge and skill profiles necessary to be ready for

postsecondary studies. Therefore, a single cut score on a test given to high school students does not take into account this individualization of the match between knowledge and skills on the one hand, and aspirations on the other. (p. 1)

Readiness is a general term used to describe the nature of preparation specific to college and career avenues for each student. Students need to be able to think as expected in college, to understand concepts in major academic subjects, to own their learning process, and to apply education in situations throughout their career and life (Conley, 2012). In addition to content knowledge and learning capabilities, studies have shown a significant positive correlation between perceived self-efficacy and college and career decision-making (Crişan & Turda, 2015). Furthermore, a lack of career readiness predicts indecisiveness (Gaffner & Hazler, 2002).

Studies have demonstrated high school counselors can benefit college and career readiness in students through the development of skills associated with self-determination (Temple et al., 2015). Similarly, different approaches to high school curriculum have elicited the amelioration of college and career readiness factors using self-determination as a guide, along with student grades, engagement, and awareness (Perry, Wallace, & McCormick, 2018). Additionally, studies have shown that self-determination factors can predict higher scores on exams, similar to the standardized tests used for college entrance (Flitcroft & Woods, 2018).

Interaction of Examined Variables

Self-efficacy is a task-specific construct that is influenced by relevant experiences and exposure to pertinent information (Bandura, 1977, 1997). The satisfaction of autonomy, competence, and relatedness has been shown to impact the development of

self-efficacy as it, in turn, affect one's pursuit of interests and goals (Bandura, 1997; Lent et al., 1994; Ryan & Deci, 2008). College and career readiness self-efficacy is developed through supportive environments, exposure to information, and connection to peers (Baker et al., 2017; Flores et al., 2008; Lent et al., 1994). As adolescent students may lack the necessary self-efficacy to make effective decisions toward careers (Rogers et al., 2008), there is a need for college and career readiness support with a specific focus on developing decision-making abilities (Gibbons & Shoffner, 2004; Venezia & Jaeger, 2013).

Moderation

In structural equation modeling, a moderating variable affects the relationship between a predicting variable and the outcome variable (Baron & Kenny, 1986). The predicting variable specifies the condition within which the moderating variable is operationalized, and the interaction between the two to influence the outcome variable represents the moderating effects (Baron & Kenny, 1986). Moderation is a causal model that analyzes the influence of three exogenous variables in predicting a task performance result (Kline, 2012). Baron and Kenny (1986) depicted the analytic procedure in testing moderation by measuring the impact of the predictor, the moderator, and the interaction between the predictor and moderator. This interaction is depicted as a product term to measure moderation but holds no causal strength on its own, merely serving as a representation of the interaction between the predictor and the moderator (Edwards, 2009). In examining the interaction of autonomy support on self-efficacy and state flow, previous research demonstrated that selected moderating effects should hold a buffering role and to facilitate the outcome (Datu & Mateo, 2016). Schmidt and DeShon (2010)

utilized moderation analyses to determine the relationship between self-efficacy and performance was negatively related under high levels of performance ambiguity but positively related under low levels of performance ambiguity. The use of moderation aims to understand the influence of the interaction of two variables on the relationship between a predicting and the outcome variable (Baron & Kenny, 1986). There are no previous studies that examine moderating effects with the variables in this study.

Deriving from prior studies (Bandura, 1997; Flores et al., 2008; Lent et al., 1994), this study first analyzes levels of self-determination as the predicting variable on college and career readiness self-efficacy as the outcome variable. Previous research has recommended the exploration of decision-making self-efficacy as an influence on overall readiness self-efficacy (Gibbons & Shoffner, 2004; Venezia & Jaeger, 2013). After establishing the relationship between the predictor and the outcome variables, this study examines college and career decision-making self-efficacy as the moderating variable. Adolescents are entering a period of individual choice (Smetana, 2000), yet high school students often lack the self-efficacy to make important decisions during college and career preparation (Rogers et al., 2008). This study hypothesizes that self-determination will hold a positive and significant prediction of college and career readiness self-efficacy and that college and career decision-making self-efficacy will hold a positive and significant moderating effect on that relationship.

Summary of Relevant Literature

The literature presented here demonstrates the need for readiness before exiting high school. This readiness is developed in school and home environments and impacted by social supports and barriers. These situations influence how a student approaches the

college and career process and how a student makes the necessary decisions in preparation for life after high school. Satisfaction of the three basic psychological needs of self-determination – autonomy, competence, and relatedness – will influence the overall development of self-efficacy. As a student feels more capable of the steps ahead, feelings of readiness will similarly increase.

Research has been conducted with self-determination and concepts related to college and career readiness; however, the basic needs scale used in this study has not been analyzed alongside the college and career readiness self-efficacy measures employed. Furthermore, there remains a gap in literature to understand how college and career decision-making self-efficacy moderates the relationship between self-determination and readiness self-efficacy. This study investigated if the satisfaction of the three basic needs of self-determination – autonomy, competence, and relatedness – predicts college and career readiness self-efficacy. Primarily, this study had as its purpose to determine if college and career decision-making self-efficacy moderates the relationship between self-determination and college and career readiness self-efficacy. Utilizing a moderation model fills in gaps in previous research to specify the nature of readiness and decision-making efficacy beliefs. In examining the relationships among these variables, this study aims to explain how levels of self-determination, readiness self-efficacy, and decision-making self-efficacy develop and interact in adolescent students navigating the college and career process.

Research Questions

1. Does the satisfaction of the three basic needs of self-determination – autonomy, competence, and relatedness – predict college and career readiness self-efficacy?
2. Does college and career decision-making self-efficacy moderate the relationship between self-determination and college and career readiness self-efficacy?

CHAPTER III

METHODOLOGY

The current study utilized a non-experimental, survey research design to investigate how the three basic psychological needs of self-determination – autonomy, competence, and relatedness – influenced college and career readiness self-efficacy. This calculation was done in order to examine how college and career decision-making self-efficacy moderated the relationship between self-determination and college and career readiness self-efficacy. This was accomplished using a structural equation model to measure latent variables through responses to scales in self-determination, college and career readiness self-efficacy, and college and career decision-making self-efficacy.

Structural equation modeling (SEM) measures the relationships between exogenous and endogenous variables within a predefined model (Ullman & Bentler, 2013). SEM is viewed as a hybrid between factor analysis and path analysis (Kline, 2011). Latent variables are analyzed through the measurement of observed variables. Moderation is used to examine how variables interact. This form of SEM analyzes the influence of one variable on the relationship between two other variables (Kline, 2011).

Research Questions

Two research questions guided the design of this study. The first research question examined the potential influence of self-determination – as the satisfaction of autonomy, competence, and relatedness – on college and career readiness self-efficacy.

To accomplish this, a scale containing items related to the three needs of Self-Determination Theory (SDT; Ryan & Deci, 2000, 2008) provided levels of self-determination for each participant. Participants completed a scale containing items related to college and career readiness to determine the college and career readiness self-efficacy. The responses to items of self-determination were analyzed with the responses to items of college and career readiness self-efficacy to determine the relationship between the two variables. The second research question examined the influence of college and career decision-making self-efficacy on the relationship between self-determination and college and career readiness. College and career decision-making self-efficacy served as the moderating variable in this SEM.

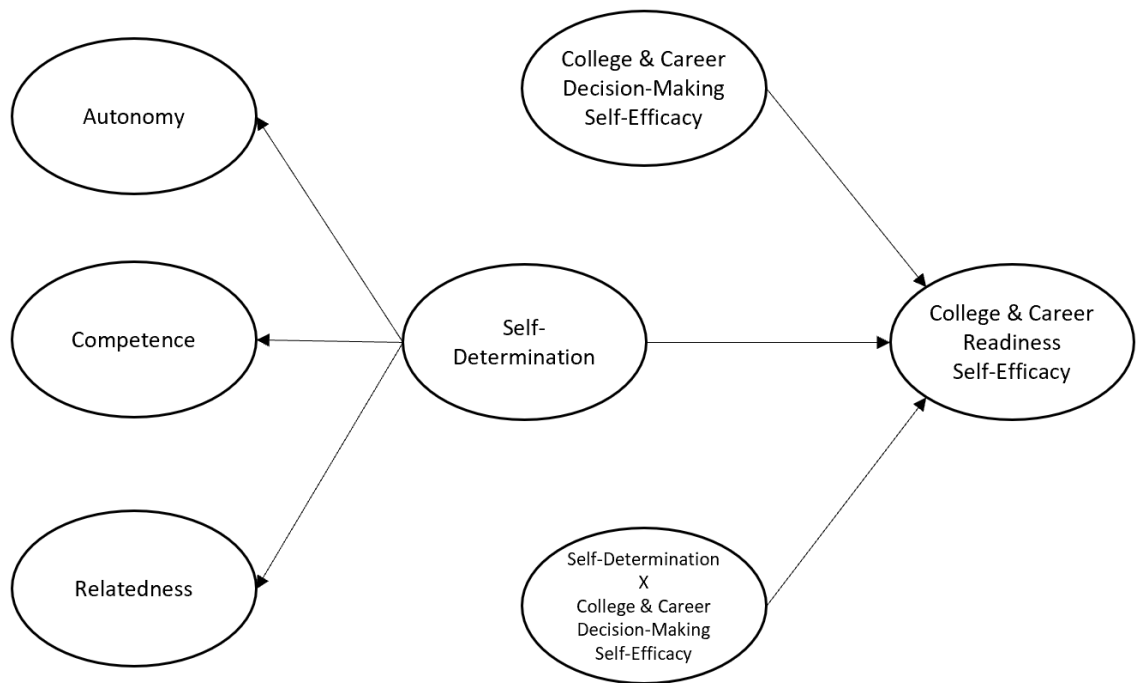


Figure 3.1. Hypothesized model representing the higher-order nature of participant Self-Determination as a function of Autonomy, Competence, and Relatedness and its path to College & Career Readiness Self-Efficacy, moderated by College & Career Decision-Making Self-Efficacy.

Following the hypothesized model found in Figure 3.1, this study was executed under the belief that self-determination would positively and significantly influence

college and career readiness self-efficacy among adolescent high school students. This study also held the belief that the relationship between self-determination variables and college and career readiness self-efficacy would be stronger under high levels of college and career decision-making self-efficacy. In other words, a student with increased levels of college and career decision-making self-efficacy would experience a greater sense of college and career readiness self-efficacy, stemming from elements of self-determination.

Participants

Adolescents were recruited for participation from grades 9 through 12 in a large high school in the South region of the United States. Data reported to the National Center for Education Statistics (2017a) shows the school district is 71% white, 5% black, 7% Hispanic or Latino (of any race), 7% Asian, 4% American Indian or Alaskan Native, 0% Hawaiian or Pacific Islander, 0% some other race alone, and 5% two or more races. The high school has 3,398 students in grades 9-12 with a 20:1 student-teacher ratio (National Center for Education Statistics, 2017a).

Procedure

With help from the school's research office and high school principal, high school students from grades 9-12 were recruited for participation. The high school distributed a consent form via email to all parents and guardians with two weeks to opt-out their student. After parent and guardian opt-out responses were collected and factored into the student list, the high school sent out to all remaining students a recruitment notification via email with a link to participate in the online survey, conducted through Qualtrics survey software. All participants had the opportunity to decline involvement or stop the survey at any moment. There was no compensation for participation, and the study did

not pose any risk to the participants above that ordinarily encountered in daily life. The approval granted by the Oklahoma State University Institutional Review Board is included in Appendix A.

Measures

Three questionnaires were used to measure the three key constructs of this study: self-determination, college and career readiness self-efficacy, and college and career decision-making self-efficacy. Instruments were chosen based on previous use in relevant literature and appropriate psychometric characteristics. The Basic Needs Satisfaction in General Scale (BNSG-S; Deci et al., 2001; Ilardi, Leone, Kasser, & Ryan, 1993; Kasser, Davey, & Ryan, 1992) was used to measure the satisfaction of basic psychological needs outlined in Self-Determination Theory: autonomy, competence, and relatedness (Deci & Ryan, 2000). The Career and College Readiness Self-Efficacy Inventory (CCRSI; Baker & Parikh Fox, 2012) was used to measure participant self-efficacy in factors of college and career readiness. The Career Decision-Making Self-Efficacy Scale – Short Form (CDMSES-SF; Taylor & Betz, 1983) was used to measure college and career choice.

Self-Determination Measures

Self-Determination was analyzed as three constructs – Autonomy, Competence, and Relatedness. Each was individually operationalized with portions of the BNSG-S, then analyzed to determine participant levels of self-determination.

Basic Needs Satisfaction in General Scale (BNSG-S)

Measuring the satisfaction of basic psychological needs under SDT, the 21 items of the BNSG-S loaded onto three factors: Autonomy, Competence, and Relatedness (Deci et al., 2001; Ilardi et al., 1993; Kasser et al., 1992). The *autonomy* subscale

contains 7 items (e.g. *I feel like I am free to decide for myself how to live my life.*). The *competence* subscale contains 6 items (e.g. *I have been able to learn interesting new skills recently.*). The *relatedness* subscale contains 8 items (e.g. *I get along with people I come into contact with.*). Each item is scored on a 7-point Likert-type scale from 1 (*not true at all*) to 7 (*very true*). Reported measures of internal consistency for this scale ranged from .84 to .90 (Gagné, 2003; Meyer et al., 2007; Vansteenkiste et al., 2006; Wei et al., 2005). Regarding the subscales, the following measures of internal consistency have been reported: Autonomy ranged from .61 to .81, Competence ranged from .60 to .86, and Relatedness ranged from .61 to .90 (Conroy & Coatsworth, 2007a, 2007b; Gagné, 2003; Kashdan et al., 2006, 2009; Meyer et al., 2007; Niemiec, Ryan, & Deci, 2009; Thøgersen-Ntoumani & Ntoumanis, 2007; Vansteenkiste et al., 2006; Wei et al., 2005). The practice of using three constructs to identify a total needs scale eliminates the need for Cronbach's alpha in interpreting reliability due to the dimensionality of the measurement (Johnston & Finney, 2010).

Self-Efficacy Measures

Self-efficacy was measured both in college and career readiness and in college and career decision-making. Two scales were operationalized to determine participant self-efficacy in each of these areas.

Career and College Readiness Self-Efficacy Inventory (CCRSI)

Measuring the overall sense of readiness in the college and career process for adolescents, the Career and College Readiness Self-Efficacy Inventory (CCRSI; Baker & Parikh Fox, 2012) contains 14 items regarding procedural and financial challenges, positive personal characteristics, academic competence, and potential to achieve future

goals. Each item is scored on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Reported Cronbach's alpha reliability coefficient for the total scale was .857. Regarding the subscales, the following measures of internal consistency have been reported: the *procedural and financial challenges* subscale was .795, the *positive personal characteristics* subscale was .687, the *academic competence* subscale was .752, and the *potential to achieve future goals* subscale was .508 (Baker et al., 2017).

Coefficient alphas above .70 are considered acceptable evidence of internal consistency reliability (Lee & Lim, 2008). In further studies, Baker et al. (2017) conducted a confirmatory factor analysis (CFA) yielding a reliability integer of .96.

Career Decision-Making Self-Efficacy Scale – Short Form

Measuring self-efficacy in the college and career decision-making process, the Career Decision-Making Self-Efficacy Scale – Short Form (CDMSE-SF; Taylor & Betz, 1983) contains 25 items regarding self-appraisal, occupational information, goal selection, planning, and problem solving. Each item is scored on a 5-point Likert-type scale from 1 (*no confidence at all*) to 5 (*complete confidence*). Reported reliability measurement for the total short form scale was a coefficient alpha value of .94, compared to .97 for the long form. The short form also provided the following coefficient alpha values for each factor: *self-appraisal* was .73, *occupational information* was .78, *goal selection* was .83, *planning* was .81, and *problem solving* was .75 (Betz, Klein, & Taylor, 1996).

Demographic Questions

In addition to the aforementioned scales, demographic information was collected from the participants, including gender, ethnicity, and grade. For future research in

understanding the background contexts, each participant was asked about family composition, household income, and living permanency. Additionally, in order to gauge other factors of college and career readiness in future studies, participants were asked about GPA, ACT scores, if they have toured any institutions of higher education, submitted any applications for postsecondary education, and applied for federal financial assistance for college.

Analysis

This study utilized a full structural equation model to explain the relationships between the higher-order nature of Self-Determination represented by lower-order factors of Autonomy, Competence, and Relatedness. Additionally, this study used the model to examine the structural relationships among Self-Determination, College and Career Readiness Self-Efficacy, and College and Career Decision-Making Self-Efficacy. On the full survey responses collected, correlational analyses were conducted in Microsoft Excel, and the structural equation model was analyzed using R 3.6.1 statistical software. Within R, the model was estimated using the lavaan (latent variable analysis) (Rosseel, 2012) and the semTools (Jorgensen et al., 2019) packages. Model fit was assessed against recommended common fit indices for chi-squared value, comparative fit index ($CFI > .95$), standardized root mean residual ($SRMR < .08$), and root mean square error of approximation ($RMSEA < .06$) (Hu & Bentler, 1999).

CHAPTER IV

RESULTS

The purpose of this study was to examine three constructs of self-determination – autonomy, competence, and relatedness – and their influence on college and career readiness self-efficacy. Furthermore, this study sought to determine how college and career decision-making self-efficacy moderated the relationship between self-determination and college and career readiness self-efficacy.

Participants

A total of 886 students participated in the survey. Sixty-three percent of these participants answered every item in the scales utilized. Therefore, these 556 participants were analyzed in the model. The participant demographics are provided in Table 4.1.

Table 4.1

Descriptive Statistics of Participant Demographics

Variable	<i>n = 556</i>	
	Frequency (<i>n</i>)	Percent (%)
<u>Gender</u>		
Male	214	38.5
Female	314	56.5
Other	14	2.5
Missing	14	2.5
<u>Grade</u>		
12	154	27.7
11	167	30.0
10	219	39.4
9	5	.9
Missing	11	2.0
<u>Race/Ethnicity</u>		
Caucasian or White	339	61.0
African American	37	6.7
Hispanic or Latino (of any race)	34	6.1
Asian	59	10.6
American Indian or Alaskan Native	38	6.8
Native Hawaiian or Pacific Islander	2	.4
Some other race alone	3	.5
Two or more races	23	4.1
Other		
Missing	21	3.8

Analysis

First, this study analyzed how Autonomy (A), Competence (C), and Relatedness (R) presented Self-Determination (SD) levels for each participant. Subsequently, this study examined the influence of Self-Determination on College and Career Readiness Self-Efficacy (CCR). This derived from the initial research question:

1. Does the satisfaction of the three basic needs of self-determination – autonomy, competence, and relatedness – predict college and career readiness self-efficacy?

From the extensive literature on adolescent self-determination factors and on college and career readiness, this study tested the relationship of Self-Determination to College and Career Readiness Self-Efficacy under the hypothesis that Self-Determination would have a positive, significant influence on College and Career Readiness Self-Efficacy.

Next, this study examined how this relationship of Self-Determination and College and Career Readiness Self-Efficacy is potentially moderated by College and Career Decision-Making Self-Efficacy (CCDM) to satisfy the second research question:

2. Does college and career decision-making self-efficacy moderate the relationship between self-determination and college and career readiness self-efficacy?

There is a gap in literature focusing on the relationships among these three constructs, examining a moderating influence therein. However, based on theoretical interpretations of existing research and empirical experience in education, a prediction was made that College and Career Decision-Making Self-Efficacy would significantly and positively moderate the relationship between Self-Determination and College and Career Readiness Self-Efficacy. That is, a participant with higher levels of College and Career Decision-Making Self-Efficacy would possess a stronger relationship between Self-Determination and College and Career Readiness Self-Efficacy.

Means, standard deviations, and bivariate correlation coefficients are reported in Table 4.2. Consistent with the theoretical conceptualization of self-determination, the results demonstrate very strong and statistically significant positive relationships among Autonomy, Competence, and Relatedness. Additionally, statistically significant and strong relationships were found between the latent factors of Self-Determination and College and Career Readiness Self-Efficacy and College and Career Decision-Making

Self-Efficacy. However, it was noted that the relationships between the three factors of Self-Determination were more strongly correlated with College and Career Readiness Self-Efficacy than with College and Career Decision-Making Self-Efficacy.

Table 4.2

Descriptive statistics and bivariate correlations for participant variables

College & Career Variables	Mean	SD	A	C	R	CCR	CCDM
Autonomy	4.37	.95	.69	.74*	.67*	.62*	.40*
Competence	4.69	1.06		.74	.73*	.65*	.47*
Relatedness	5.26	1.03			.82	.67*	.45*
College & Career Readiness Self-Efficacy	3.78	.74				.90	.54*
College & Career Decision-Making Self-Efficacy	3.68	.77					.96

Note. *p<.001. n = 556. Means for the measured variables are the average item response for survey questions. Latent factor reliabilities are placed on the diagonal. Factor reliability for higher-order SD was .92.

Results from the fully latent structural model appear in Figure 4.1. Parameter estimates for the observed indicators were omitted for clarity; however, detailed parameter estimates are outlined in Table 4.3. The sample size was adequate, exceeding an acceptable minimum of 200 participants (Barrett, 2007). Each variable was checked for normality and found to be in an acceptable range of +/- 2 for skewness and kurtosis (George & Mallery, 2010). The model examined fit the data well, supporting the hypothesis that Self-Determination is a higher-order factor comprised of the lower-order factors, Autonomy, Competence, and Relatedness. Specifically, CFI was .747, SRMR

was .082, RMSEA was .071 with a 90 percent confidence interval of .069 to .072. Coefficient omega was used measure reliability of a latent factor, as proposed by McDonald (1985, 1999). Measuring against a desired threshold of .7, the factor coefficient omega for each latent variable were as follows: Autonomy was .69, Competence was .74, Relatedness was .82, College and Career Readiness Self-Efficacy was .90, College and Career Decision-Making Self-Efficacy was .96, and the higher-order factor of Self-Determination was .92. Omega is based on factor loadings and considers the strength of associations between items, rather than deriving from the correlations between observed variables. Therefore, determining the coefficient omega has been found to be a better reliability measure than Cronbach's alpha in structural equation modeling (Zinbarg et al., 2005).

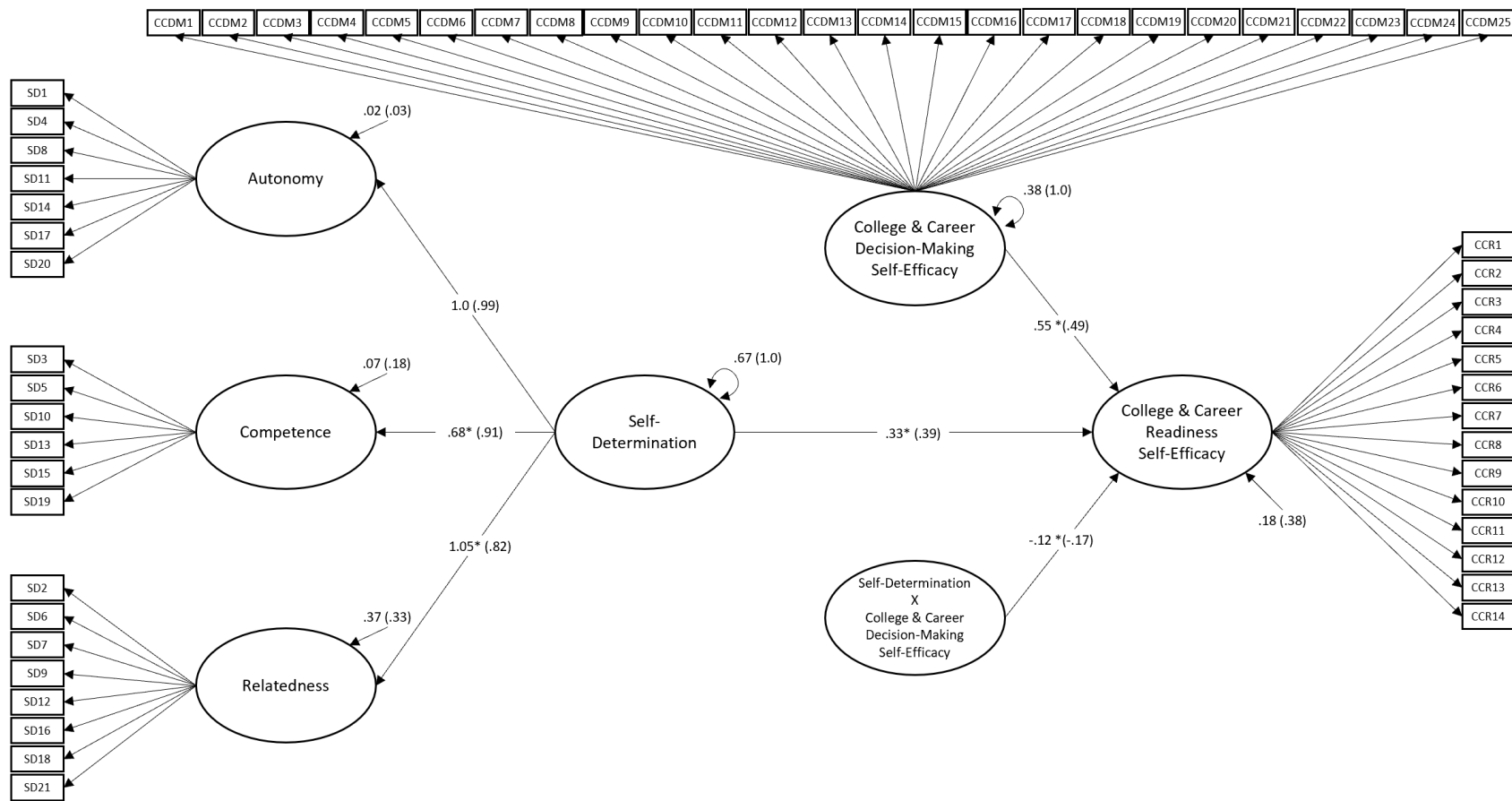


Figure 4.1. Full structural equation model representing the higher-order nature of participant Self-Determination as a function of Autonomy, Competence, and Relatedness and its path to College & Career Readiness Self-Efficacy, moderated by College & Career Decision-Making Self-Efficacy. Both unstandardized and (standardized) parameter estimates are presented. Observed indicators are omitted for clarity of presentation. Refer to Table 4.3 for the observed, first-order measurement model parameter estimates. $n = 556$; $\chi^2(1763) = 6539.945$, $p < .001$; CFI = .753; SRMR = .068; RMSEA = .070, 90% CI (.068, .072); * $p < .001$.

Table 4.3

Parameter Estimates with Unstandardized (Standard Errors), Standardized, and Significance Levels for the First-Order Measurement Model

Parameter Estimate	Unstandardized (SE)	Standardized	<i>p</i>
A → SD1	1.000	0.832	
A → SD4	0.774 (.103)	0.644	< .001
A → SD8	1.145 (.104)	0.953	< .001
A → SD11	-0.008 (.082)	-0.006	NS
A → SD14	1.260 (.107)	1.048	< .001
A → SD17	1.360 (.115)	1.131	< .001
A → SD20	0.880 (.107)	0.732	< .001
C → SD3	1.000	0.617	
C → SD5	1.320 (.174)	0.814	< .001
C → SD10	1.602 (.204)	0.988	< .001
C → SD13	1.946 (.232)	1.201	< .001
C → SD15	1.120 (.167)	0.691	< .001
C → SD19	1.759 (.222)	1.085	< .001
R → SD2	1.000	1.058	
R → SD6	0.855 (.054)	0.905	< .001
R → SD7	0.736 (.077)	0.779	< .001
R → SD9	0.942 (.059)	0.996	< .001
R → SD12	.998 (.058)	1.056	< .001
R → SD16	0.805 (.083)	0.851	< .001
R → SD18	0.757 (.059)	0.800	< .001
R → SD21	.871 (.053)	0.921	< .001
CCR → CCR1	1.000	0.708	
CCR → CCR2	0.938 (.088)	0.664	< .001
CCR → CCR3	1.018 (.087)	0.721	< .001
CCR → CCR4	1.036 (.092)	0.734	< .001
CCR → CCR5	0.926 (.084)	0.656	< .001
CCR → CCR6	0.875 (.074)	0.620	< .001
CCR → CCR7	0.933 (.075)	0.660	< .001
CCR → CCR8	0.939 (.072)	0.665	< .001
CCR → CCR9	1.074 (.084)	0.760	< .001
CCR → CCR10	0.986 (.081)	0.698	< .001
CCR → CCR11	0.953 (.080)	0.675	< .001
CCR → CCR12	0.995 (.080)	0.705	< .001
CCR → CCR13	1.007 (.077)	0.713	< .001
CCR → CCR14	1.001 (.076)	0.709	< .001
CCDM → CCDM1	1.000	0.618	
CCDM → CCDM2	1.172 (.093)	0.724	< .001
CCDM → CCDM3	1.347 (.100)	0.832	< .001
CCDM → CCDM4	1.255 (.094)	0.775	< .001
CCDM → CCDM5	1.198 (.091)	0.740	< .001
CCDM → CCDM6	1.272 (.094)	0.785	< .001

CCDM → CCDM7	1.269 (.093)	0.784	< .001
CCDM → CCDM8	1.084 (.084)	0.670	< .001
CCDM → CCDM9	1.333 (.099)	0.823	< .001
CCDM → CCDM10	1.353 (.101)	0.836	< .001
CCDM → CCDM11	1.249 (.089)	0.771	< .001
CCDM → CCDM12	1.146 (.093)	0.708	< .001
CCDM → CCDM13	1.101 (.093)	0.680	< .001
CCDM → CCDM14	1.260 (.091)	0.778	< .001
CCDM → CCDM15	1.137 (.088)	0.702	< .001
CCDM → CCDM16	1.205 (.100)	0.744	< .001
CCDM → CCDM17	1.175 (.094)	0.726	< .001
CCDM → CCDM18	1.229 (.094)	0.759	< .001
CCDM → CCDM19	1.295 (.099)	0.800	< .001
CCDM → CCDM20	1.263 (.091)	0.780	< .001
CCDM → CCDM21	1.315 (.094)	0.812	< .001
CCDM → CCDM22	1.088 (.084)	0.672	< .001
CCDM → CCDM23	1.229 (.092)	0.759	< .001
CCDM → CCDM24	1.231 (.094)	0.760	< .001
CCDM → CCDM25	1.200 (.091)	0.741	< .001

Note. $n = 556$. Self-Determination (SD); Autonomy (A); Competence (C); Relatedness (R); College & Career Readiness Self-Efficacy (CCR); College & Career Decision-Making Self-Efficacy (CCDM)

In addition to good model fit, parameter estimates for the structural relationships among the latent variables were statistically significant and strong. The standardized regression coefficients appear in parentheses next to the unstandardized estimates. Self-Determination had a large and positive effect on College and Career Readiness Self-Efficacy ($\beta = .39$, $df = 1763$, $p < .001$), explaining approximately 62 percent of the variance. This demonstrates that one standard deviation increase in Self-Determination was associated with .39 standard deviation increase in College and Career Readiness Self-Efficacy. In other words, high levels of Self-Determination will yield high levels of College and Career Readiness Self-Efficacy. When examining the influence of college and career decision-making self-efficacy, College and Career Decision-Making Self-Efficacy had a significant moderating effect on this relationship ($\beta = -.17$, $df = 1763$, $p < .001$). In other words, College and Career Decision-Making Self-Efficacy negatively moderated the relationship between Self-Determination and College and Career Readiness Self-

Efficacy. Therefore, high levels of College and Career Decision-Making Self-Efficacy will allow for high levels of College and Career Readiness Self-Efficacy despite low levels of Self-Determination.

Limitations

This study was not without limitations. Regarding methodology, all participants were from the same public, suburban high school in the South region of the United States. The sample size was significantly reduced due to impartial survey submissions. As always, a larger sample size would be more representative of the population. Regarding theory, the model fit was not excellent, but it was not a poor fit necessitating rejection. SRMR and RMSEA were adequate, but CFI should exceed .90 (Hu & Bentler, 1999). The scale utilized for determining self-determination seemed more suitable for adult subjects. One item was not significant on the parameter estimates – Item 11 on the Basic Needs Satisfaction in General Scale (Deci et al., 2001; Ilardi et al., 1993; Kasser et al., 1992). Upon further review of the question, the weakness could derive from how an adolescent may read the question compared to an adult. Adjustments to the scales could improve model fit.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The purpose of this non-experimental study was to investigate the influence of self-determination – as the satisfaction of autonomy, competence, and relatedness – on college and career readiness self-efficacy in order to examine the moderating effects of college and career decision-making self-efficacy. Decision-making self-efficacy has not been studied as a moderator in relation to the influence of self-determination on college and career readiness self-efficacy. Furthermore, the implementation of a structural equation model to explore how college and career readiness self-efficacy is constructed, with specific focus on the influence of self-determination and college and career decision-making self-efficacy, is needed. By examining readiness self-efficacy separate from decision-making self-efficacy, this study aimed to understand how these variables develop within adolescents and how they relate to one another. Previous studies have agreed that high school students are influenced by individuals and environments in home and school contexts as they approach long-term college and career decisions, but studies continue to discuss the need for increased focus on how to support students through this important phase of life. Understanding the relationships among self-determination and various self-efficacy measures is an important aspect to answering the charge from Roderick et al. (2009): “to turn college aspirations into college attainment, high schools and teachers need clear indicators of college readiness and clear performance standards for those indicators” (p. 185).

This chapter presents a summary of the findings of this study and situates the conclusions in relation to other studies on self-determination and self-efficacy. Implications for how this study benefits the understanding of college and career readiness self-efficacy and contributes to unexplored areas in literature. Following the summary of the study and a delineation of conclusions from the findings is a discussion of implications for theory, practice, and future research.

Summary of Study

In this study, self-determination was examined as the representation of three basic psychological needs: autonomy, competence, and relatedness. The study sought to answer the following research questions:

1. Does the satisfaction of the three basic needs of self-determination – autonomy, competence, and relatedness – predict college and career readiness self-efficacy?
2. Does college and career decision-making self-efficacy moderate the relationship between self-determination and college and career readiness self-efficacy?

To satisfy the initial research goal, a fully latent structural equation model was utilized to examine the influence of self-determination on college and career readiness self-efficacy. The findings aligned with the hypothesis in that self-determination had a significantly strong and positive influence on college and career readiness self-efficacy. Additionally, the model considered college and career decision-making self-efficacy as a moderating influence on the relationship between self-determination and readiness self-efficacy. The study found that college and career decision-making self-efficacy significantly and negatively moderated the relationship between self-determination and college and career readiness self-efficacy, partially aligning with the study's hypothesis. This demonstrates

that readiness self-efficacy is less reliant on the satisfaction of autonomy, competence, and relatedness when higher levels of decision-making self-efficacy are present.

Conclusions

Self-determination and self-efficacy are driving forces in motivation and choice among adolescents approaching a crucial phase of college and career decision-making. As many barriers can exist between students and their future goals, the ability to persist must derive from careful attention to how self-determination and self-efficacy develop. This study presents four conclusions based on the model and correlational analyses conducted. These conclusions outline a suggested approach to how adolescent students develop self-determination and self-efficacy traits during the college and career process.

Self-Determination Is Foundational to Readiness Self-Efficacy

The first conclusion of this study is that increased levels of self-determination facilitate the development of college and career readiness self-efficacy. The model demonstrated that the satisfaction of autonomy, competence, and relatedness in adolescents was linked to increased levels of readiness self-efficacy. Students interact with the college and career process in school and home settings. The findings show that when students feel supported through autonomy, empowered through competence, and connected through relatedness, they experience increased confidence in readiness for the next step out of high school.

This finding was expected as previous research has shown that students need to feel ready through support in school and home settings, through exposure to information and mastery experiences, and through a connection to peers (Baker et al., 2017; Flores et al., 2008; Lent et al., 2008b). Adolescence is a time of transformation marked by a

coinciding dependency on parental support and desire for autonomy and individuality (Longmore et al., 2013; Spano, 2004). Autonomy and competence have been examined as task-specific factors that link to efficacy beliefs toward the same objectives (Bandura, 1997). Similarly, autonomy and relatedness have been found to be connected to support factors that facilitate the growth of self-efficacy (Guay et al., 2003). Even the perception of supports or barriers can greatly influence self-efficacy (Lent et al., 2001; Lent et al., 2008a; Rogers et al., 2008). This study's conclusion aligned with previous literature and further demonstrated that students will experience increased college and career self-efficacy through the development of self-determination factors.

Focus Shifts to Decision-Making Self-Efficacy

The second conclusion of this study is that as a student is more confident in making decisions, college and career readiness self-efficacy will be less dependent on self-determination variables. The model demonstrated that as college and career decision-making self-efficacy increases, the relationship between self-determination and college and career readiness self-efficacy diminishes. The first conclusion demonstrated that self-determination will benefit the growth of readiness self-efficacy. This second conclusion builds on the first to show that students will benefit from increased decision-making self-efficacy as they approach the pivotal transition out of high school. This marks a shift in what students need. The need to satisfy autonomy, competence, and relatedness becomes less important as the need to feel more confident in making decisions increases.

This finding of a significant moderating effect was anticipated as the need to develop college and career decision-making is established in literature (Gibbons & Shoffner, 2004); however, the outcome of a negative interaction was contrary to this

study's hypothesis. Previous research has shown that readiness indicators are lacking (Roderick et al., 2009). As prior studies have not investigated the moderating influence of decision-making self-efficacy, a practical assumption could be that developing decision-making self-efficacy would strengthen the relationship between self-determination and readiness self-efficacy. However, this study's finding demonstrates the need to shift focus from developing self-determination to developing decision-making self-efficacy to adequately prepare students for college and career choices. As high school students develop through adolescence, they perceive a diminishing parental authority and an increase in decision-making responsibility (Smetana, 2000). Choice has been shown to stem from prior knowledge and experience (Patall et al., 2014). Furthermore, understanding the options available in a decision can yield choice confidence, while choice overload leads to avoidance and amotivation (Iyengar & Lepper, 2000). Increased self-efficacy has been shown to produce the ability to overcome barriers and complete difficult tasks (Bandura, 1982), and self-determined individuals are more able to take action based on internal motivations (Reeve et al., 2004; Sheldon et al., 2017). Early in the college and career process, students may need to understand options and experience college-and-career-related situations to build a sense of self-determination. These experiences lead to critical choices that require increased levels of decision-making self-efficacy. Shifting the focus from developing self-determination to developing decision-making self-efficacy will help students improve the skills needed at each stage in the college and career process.

Efficacy Beliefs in Readiness and Decision-Making Develop Together

The third conclusion of this study is that self-determination benefits the growth of both college and career readiness self-efficacy and decision-making self-efficacy as they develop alongside one another. Correlational analysis revealed significantly positive relationships between the self-determination variables of autonomy, competence, and relatedness and self-efficacy variables of college and career readiness and decision-making. Students in supportive environments that focus on satisfying the needs of autonomy, competence, and relatedness will experience facilitated growth in efficacy beliefs. This finding aligns with previous research that self-determination influences self-efficacy (Bandura, 1997). Furthermore, the development of self-determination is beneficial to college and career preparation efforts and to career decision-making self-efficacy (Guay et al., 2003; Temple et al., 2015). This third conclusion adds specific focus to previous research by showing that levels of readiness self-efficacy and decision-making self-efficacy both relate to the satisfaction of self-determination variables.

One interesting aspect of the correlational analyses is how readiness self-efficacy and decision-making self-efficacy develop alongside one another, rather than in succession. Prior studies have shown that self-efficacy is task-specific but that mastery experiences benefit efficacy beliefs in similar tasks (Bandura, 2000; Bong & Skaalvik, 2003; Britt & Hatten, 2016); however, research has not examined measures of readiness self-efficacy and decision-making self-efficacy together. Building upon this study's first and second conclusions, self-determination establishes a foundation for readiness self-efficacy. Decision-making self-efficacy begins to develop from self-determination. Students need self-determination to develop a strong foundation of self-efficacy, but they

eventually find increased benefit from shifting focus to further developing decision-making self-efficacy. This is discussed more in the forthcoming section on future research as additional information is necessary to fully understand the developmental timeline of readiness self-efficacy and decision-making self-efficacy.

Self-Determination and Self-Efficacy Are Task-Specific

The fourth conclusion of this study is that self-determination and self-efficacy variables are necessary at each stage in the college and career process and must adapt accordingly. Correlational analysis showed that autonomy, competence, relatedness, readiness self-efficacy, and decision-making self-efficacy each held a significant and positive relationship with one another. This conclusion holds that students develop these traits simultaneously; the growth of one benefits the growth of any other. Social Cognitive Career Theory (SCCT; Lent et al., 1994) established the college and career process as a succession of determining outcome expectations, developing interests, setting goals, and taking action. As students progress through this process, levels of relevant self-determination and self-efficacy must adapt to the specific needs of each step.

This finding was surprising as previous research has not fully investigated how self-determination and self-efficacy manifest at each stage in the SCCT model. SCCT holds self-efficacy as the core influence in each phase; however, it does not incorporate self-determination variables. Other studies have shown some overlap in self-determination and self-efficacy (Abrams, 1999; Crişan & Turda, 2015) with both developing out of task-specific experiences and exposure to relevant information (Bandura, 1997, 2001; Britt & Hatten, 2016). Choice derived from autonomy and

competence can benefit the establishment of interests and goals (Thompson & Beymer, 2015), while intrinsic motivation driven by autonomy can lead to an increased ability to achieve goals (Nie et al., 2015; Xianghu, 2014). The attainment of choice goals will yield a satisfaction in the decision-making process, benefitting self-efficacy (Heitmann et al., 2007). Previous research has demonstrated that factors of self-determination and self-efficacy work together in task-specific situations.

This fourth conclusion postulates that the needs for autonomy, competence, and relatedness along with the need for self-efficacy adapt at each stage of the SCCT model – outcome expectations, interests, goals, actions. Studies have demonstrated the benefit of self-determination separate from the benefit of self-efficacy. Both maintain task-specific aspects and can be adjusted to support the expectations at each step in the college and career process. Previous research has shown that readiness programs are necessary to help combat the many hindrances in the college and career process (Ali & McWhirter, 2006; Barnes & Slate, 2010; Flores et al., 2008; Venezia & Jaeger, 2013). This conclusion suggests that efforts to develop task-specific self-determination and self-efficacy will create an increased benefit to student readiness and decision-making abilities. This is discussed more in the forthcoming section on implications for educational theory.

Implications for Theory, Practice, and Future Research

This study contributes to the field of educational psychology with an emphasis on college and career readiness by highlighting a need for decision-making intervention efforts for high school students. The purpose of this study was to examine the relationships between self-determination, readiness self-efficacy, and decision-making

self-efficacy. The model analyzed found meaningful relationships among these variables, yielding the four conclusions, which hold valuable insight into how adolescents prepare for the college and career process. The conclusions can be utilized to augment current theory, improve common practices, and influence future research.

Educational Theory Regarding Self-Determination and Self-Efficacy

Social Cognitive Theory (SCT; Bandura, 1986) and Self-Determination Theory (SDT; Ryan & Deci, 2000) outline how constructs of autonomy, competence, and relatedness, along with efficacy beliefs, influence motivation and choice. Social Cognitive Career Theory (SCCT; Lent et al., 1994) builds on SCT and posits self-efficacy as the catalyst to outcome expectations and the derivation of interests, goals, and actions. As self-efficacy is task-specific, this model adapts with each situation. The integration of the SCCT model with the findings of this study reveals that students with high levels of readiness self-efficacy can expect to know the necessary requirements, achieve the required academic prerequisites, and understand the possible options. For instance, a student that understands the options ahead but does not feel adequately prepared for upper-level mathematics may begin to shy away from fields like engineering, accounting, and statistics. As these interests develop from self-efficacy, the student establishes goals and begins to take action. Similarly, high levels of decision-making self-efficacy leads students to expect to be able to navigate their options and make good choices. A student with strong decision-making self-efficacy recognizes if more information is needed to make a decision, which will in turn benefit readiness self-efficacy. Readiness self-efficacy and decision-making self-efficacy are separate

constructs; however, students seem to develop these simultaneously as they define interests, determine goals, and decide on actions.

Students need to feel satisfied in areas of autonomy, competence, and relatedness in order to develop task-specific self-efficacy. Students then need to feel motivated to establish outcome expectations and develop interests leading to goals and actions. The motivation continuum outlined in SDT holds that intrinsic motivation will produce the best outcomes in choices made (Ryan & Deci, 2008). As self-efficacy is developed with intrinsic motivation, the subsequent stages of outcome expectations, interests, goals, and actions will cycle through this same motivational process. The closer the motivation is to intrinsic when developing self-efficacy and subsequent outcome expectations, the better positioned a student is to create intrinsically motivated interests and goals. Actions will follow a similar path, rooted in self-efficacy and the compilation of motivation levels at each of the previous stages. This leads to feelings of college and career readiness and confidence in the decision-making required throughout this process. The ideal scenario for a student is to experience satisfaction of autonomy, competence, and relatedness in creating motivation and developing self-efficacy, followed by the satisfaction in autonomy, competence, and relatedness and the development of self-efficacy relevant to outcome expectations, then toward interests, then again toward goals, and lastly toward actions.

Internal and external factors bolster the development of self-determination and self-efficacy. Autonomy and relatedness depend more on environmental influences, while competence and self-efficacy stem from intrinsic beliefs. An environment of autonomy and relatedness, combined with the development of competence, allows self-efficacy to

emerge. High school counselors and families can create supportive environments that satisfy the need for autonomy and peer connections that satisfy the need for relatedness. As students learn more about the college and career process, the need for competence will be satisfied and these learning experiences will increase task-specific self-efficacy. Together, the environmental influences of autonomy (A) and relatedness (R) will work with the task-specific development of competence (C) and self-efficacy (S) to help students create outcome expectations, explore interests, set goals, and take action. These ARCS of influence will shift with each step of the SCCT process. The support needed to create an environment of autonomy and relatedness will adjust to facilitate the development of competence and self-efficacy relevant to each phase. The stages of outcome expectations, interests, goals, and actions each necessitate a different environment of autonomy and cohort of relatedness. Similarly, competence and self-efficacy need to be developed specific to each task throughout the process. A preliminary model of this amalgamation of SDT and SCCT can be found in Appendix B.

Educational Practice Regarding College and Career Preparation

This study found that self-determination predicts readiness self-efficacy. Students benefit from the satisfaction of autonomy, competence, and relatedness, which will, in turn, facilitate the development of readiness self-efficacy. High school officials can place effort into establishing a sense of autonomy, improving competence specific to college and career tasks, and creating an environment of relatedness in order to benefit the feelings of readiness in students. The environment created within the high school setting will have an enormous impact on how supported a student feels, and in turn, how ready that student believes he or she is to take the first step out of high school. Students need to

feel like college and career decisions are up to them while simultaneously feeling supported. Creating an autonomous, yet supportive environment will help students explore options on their own with a sense of security in the choices they make, knowing their counselors and teachers are available for assistance. Students need to know how to find information and make effective decisions as much as they need to know specific collegiate requirements. Understanding their options will improve awareness, leading to increased competence. Similarly, exposure to college and career activities will give way to mastery experiences, leading to the development of self-efficacy. As students could begin to feel overwhelmed with more information and decisions, high school counselors can connect adolescents with other students in the same stage of preparation to combat amotivation and indecision. Students will have peer-based support and feel more autonomous in asking questions of other students rather than a counselor. A sense of relatedness and belonging will help students persist. Simply, students need to be led through this process without feeling like they are alone while also feeling empowered to be on their own. Increased self-determination and self-efficacy will benefit this outcome.

This study found that decision-making self-efficacy held a negatively moderating influence on the relationship between self-determination and readiness self-efficacy. As students transition through high school and simultaneously through the college and career process, they will be faced with an increasing number of difficult decisions. From selecting career interests to submitting college applications, decision-making self-efficacy becomes more necessary. Choice confidence carries students through difficult decisions. As students aim to understand options and explore career paths, it all leads to the same place for every student – a choice. Even indecision is a choice to not act.

Decision-making is crucial to this process and must be supported. Students can make decisions with very little or even incorrect information, and these decisions may hold an impact throughout life. It is just as essential to assure students are confident in their choices as it is to assure they have all the relevant information. As decisions escalate in complexity and consequence, feelings of readiness will be promoted by confidence in decision-making. As decision-making self-efficacy increases, readiness self-efficacy becomes less dependent on the satisfaction of autonomy, competence, and relatedness. This shift of focus from satisfying needs of self-determination to enhancing decision-making self-efficacy follows the natural progression of individuality in adolescent development. Furthermore, it outlines the importance of improving decision-making capabilities and self-efficacy as a student nears the critical stages of college and career choice.

While readiness self-efficacy is predicted by self-determination, the findings of this study indicate readiness self-efficacy is benefited by the development of decision-making self-efficacy. Confidence in readiness relies on understanding the options and achieving the academic requirements, but confidence in decision-making necessitates an added focus on how to make proper choices. High schools can affect how autonomy, competence, and relatedness are satisfied while a student is still in school, but decisions could be made outside of these structured environments, necessitating increased levels of decision-making self-efficacy. As a student progresses through the college and career process during high school, the focus will shift from the need to feel ready to also include the need to feel ready to make decisions. A strong focus on decision-making as self-determination develops in adolescents will increase feelings of readiness and improve a

student's certainty as they transition out of high school and into environments where they might be on their own. Understanding how the ARCS of influence shift to directly benefit each stage of the SCCT model will allow high school counselors, teachers, and parents to support their students in meaningful ways. Task objectives can be implemented at each step to create a scaffolding throughout this process. This will allow students to increase decision-making self-efficacy from the harmless exploration of interests to the critical action items that can bear long-term ramifications. This understanding of theory in practice will guide high school officials and parents toward effectively supporting students throughout this process and into the early stages of postsecondary life.

Future Research in the College and Career Process

There is ample opportunity for future research in self-determination and self-efficacy in the college and career process. This study collected demographic information that was not directly utilized in the analysis. Understanding self-determination and self-efficacy relevant to demographic categories would benefit the efforts implemented toward high school students. Furthermore, this study collected responses from students in grades 9 through 12 at one public, suburban high school in the South region. Greater insight would come from a larger and more diverse sample, especially one containing students from public and private schools in urban, suburban, and rural areas across the country. Additionally, collecting qualitative data along with the quantitative measures utilized in this study would greatly increase the understanding of how readiness is experienced and how decisions are made.

This study focused on how self-determination influenced college and career readiness self-efficacy and how college and career decision-making self-efficacy

moderated that relationship. It was noted that self-determination predicted readiness self-efficacy as hypothesized but also held a strong correlation with decision-making self-efficacy. Fully analyzing this model could produce meaningful insight into how college and career decision-making self-efficacy is developed alongside college and career readiness self-efficacy. The proposed structural equation model for future research is outlined in Appendix C.

Another avenue for future research would be to establish a longitudinal study for students experiencing each stage of the SCCT model throughout high school and into postsecondary life. The study could follow students as they establish outcome expectations, explore interests, define goals, and take action steps, measuring self-determination and self-efficacy levels along the way. Utilizing a control group, this study could analyze the effects of different college counseling approaches and techniques, including the ARCS of influence proposed in this chapter. A longitudinal model would yield greater insight into the development of self-determination, readiness self-efficacy, and decision-making self-efficacy as adolescents navigate the college and career process.

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APPENDICES

APPENDIX A



Oklahoma State University Institutional Review Board

Date: 09/09/2019
Application Number: ED-19-108
Proposal Title: Self-Determination and Self-Efficacy in the College and Career Decision-Making Process

Principal Investigator: Caleb Leggett
Co-Investigator(s):
Faculty Adviser: Jam Khojasteh
Project Coordinator:
Research Assistant(s):

Processed as: Expedited
Expedited Category:

Status Recommended by Reviewer(s): Approved

Approval Date: 09/09/2019

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

This study meets criteria in the Revised Common Rule, as well as, one or more of the circumstances for which continuing review is not required. As Principal Investigator of this research, you will be required to submit a status report to the IRB triennially.

The final versions of any recruitment, consent, and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a status report to the IRB when requested
3. Promptly report to the IRB any harm experienced by a participant that is both unanticipated and related per IRB policy.
4. Maintain accurate and complete study records for evaluation by the OSU IRB and, if applicable, inspection by regulatory agencies and/or the study sponsor.
5. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 405-744-3377 or irb@okstate.edu.

Sincerely,
Oklahoma State University IRB

Appendix B

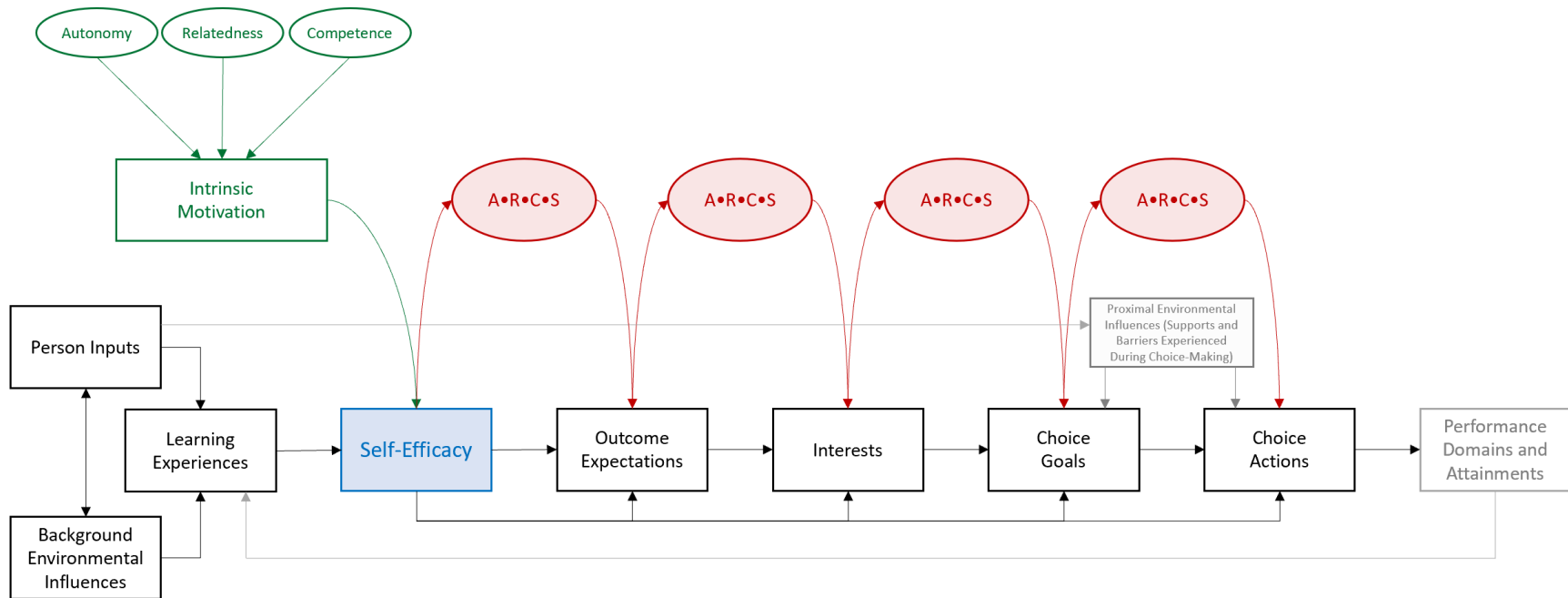


Figure 5.1. Proposed theoretical model representing the amalgamation of Self-Determination Theory and Social Cognitive Career Theory to establish ARCS of influence – autonomy, relatedness, competence, and self-efficacy.

APPENDIX C

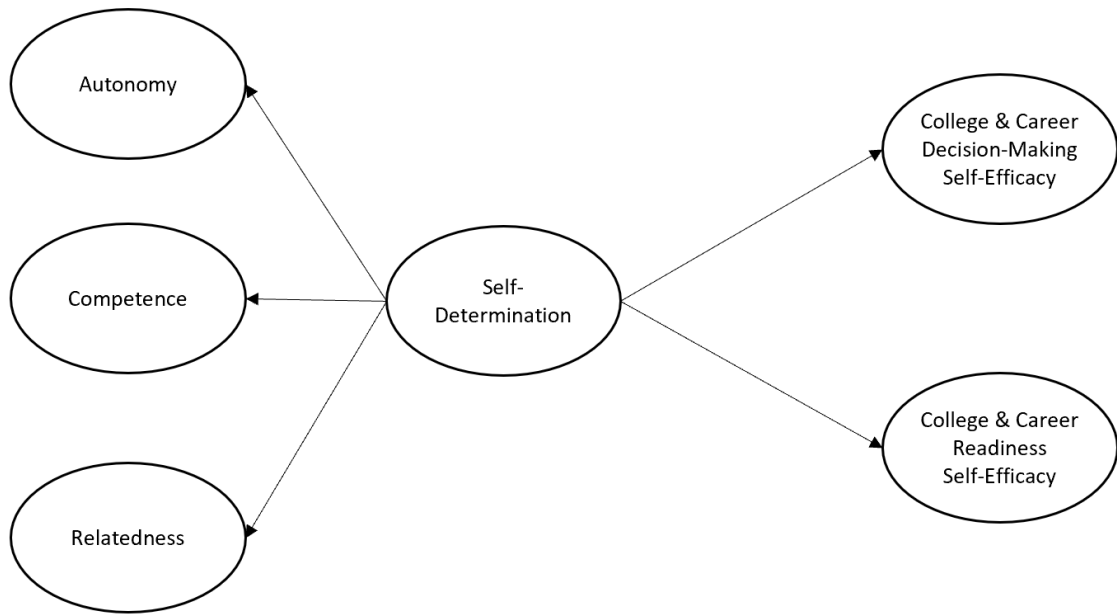


Figure 5.2. Hypothesized model for future research representing the higher-order nature of participant Self-Determination as a function of Autonomy, Competence, and Relatedness and its path to College & Career Readiness Self-Efficacy and to College & Career Decision-Making Self-Efficacy.

VITA

Caleb A. Leggett

Candidate for the Degree of

Doctor of Philosophy

Dissertation: EXAMINING THE MODERATING EFFECTS OF DECISION-MAKING SELF-EFFICACY AMONG SELF-DETERMINATION AND COLLEGE AND CAREER READINESS SELF-EFFICACY

Major Field: Educational Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in Educational Psychology at Oklahoma State University, Stillwater, Oklahoma in December, 2019.

Completed the requirements for the Master of Science in Higher Education Leadership at Northeastern State University, Tahlequah, Oklahoma in 2013.

Completed the requirements for the Bachelor of Science in Business Administration at Oklahoma State University, Stillwater, Oklahoma in 2006.

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Experience: Graduate Teaching Associate in Educational Psychology at Oklahoma State University (2017-2019). Courses taught include Competency Motivation, Child and Adolescent Development, and Psychology of Adolescence. Adjunct Professor in Mathematics and Behavioral Statistics at Oklahoma Wesleyan University (2017-2019). Writer/Editor of Educational Curriculum (2010-2019). Ten years of experience in College Admissions, Recruitment, and Retention.