ACADEMIC SATISFACTION AMONG EAST ASIAN INTERNATIONAL STUDENTS IN THE U.S.: AN EXAMINATION OF SCCT

A Dissertation

Presented to

the Faculty of the Graduate School

University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

---

by

XINLING LIU

University of Missouri-Columbia

Dr. Patrick Rottinghaus, Dissertation Supervisor

July 2023

The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

ACADEMIC SATISFACTION AMONG EAST ASIAN INTERNATIONAL STUDENTS IN THE U.S.: AN EXAMINATION OF SCCT

presented by Xinling Liu,

a candidate for the degree of doctor of philosophy,

and hereby certify that, in their opinion, it is worthy of acceptance.

_____

Professor Patrick Rottinghaus

_____

Professor Joan Hermsen

_____

Professor Ze Wang

_____

Professor Christopher Slaten

DEDICATION

First, this dissertation is dedicated to my beloved parents, Mingqi Liu and Hongzhuan Liu. I am eternally grateful for your sacrifices that allow for me to complete this degree. Thank you, father, for your unwavering positivity, trust and wisdom. It has been inspiring me to be kind to myself and care for others. Mom, thank you for the unconditional love no matter in my ups or downs. Your compassionate care has been empowering me to persevere when it felt difficult. I also want to dedicate this work to my partner, Dr. Jesse Wyatt. Going through your process in becoming a Ph.D. and leaning on you have helped me go through the highs and lows. Your refusal to let me see myself as nothing else but amazing has helped me become the person and professional I am. Love you! Finally, I also want to dedicate this work to all the students who participated in this study and shared their journey with me. Thank you!

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude and appreciation to my wonderful mentors, without whom the work would not have accomplished. First of all, I want to appreciate my academic advisor and dissertation chair, Dr. Patrick Rottinghaus. Thank you for taking me in your team and guiding me through this long and meaningful journey. Your support has meant the world to me. Throughout the training, you helped me not only learn about theories and studies, but also support and empower me to pursue my own research/clinical interest, for which I am greatly appreciated for. I feel grateful to have you as my advisor and mentor!

I would also like to appreciate my mentors on or not on my committees: Drs. Sonia Dhaliwal, Ze Wang, Craig Benson, Joan Hermsen, Patti Fleck, Beasley Brittney, Francisco Sanchez, and Christopher Slaten. All your guidance and support helped me overcome countless challenges and complete my degree. I hope I can keep this energy forward in my next chapter and help the next-generation counseling psychologist.

TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF ILLUSTRATIONS

Figure Page

ACADEMIC SATISFACTION AMONG EAST ASIAN INTERNATIONAL STUDENTS IN THE U.S.: AN EXAMINATION OF SCCT

Xinling Liu

Dr. Patrick Rottinghaus, Dissertation Supervisor

ABSTRACT

With the Asian Hate outbreak during the COVID-19 pandemic, East Asian international students experience more overt racial discrimination and attack while seeking education afar from home. Despite the increased emphasis on social justice and multiculturism in the educational program development, East Asian international students may have more experiences of isolation, alienation, and marginalization due to their accent, skin color, ancestry, and religion, which is similar yet distinctive compared to that against racial minorities in the United States. The current study examined factors that contribute to these students' academic satisfaction, based on the well-being model of Social Cognitive Career Theory. Perceived discrimination was used as an environmental barrier in the model as its relevance to these students. Data from 324 East Asian international students (M_{age} = 22.30, SD_{age} = 4.82; n_{female} = 155, n_{male} = 162) were collected through Qualtrics. Multigroup measurement invariance and multigroup structural equation modeling were used to examine the gender differences in measurement constructs and relationship. The result showed that two gender groups were equivalent at the scalar level and the proposed model fit the data in two sample groups well. Significant gender differences in several latent factors and pathways were observed. Implications, limitations and future research were discussed.

CHAPTER I

INTRODUCTION

This chapter introduces the present study on approaches to moderate the negative effect of perceived discrimination on the academic satisfaction of East Asian international students. First, there is an overview of the East Asian international student situation in the U.S., such as the group number, major choices, and gender breakdown. Second, the importance of academic satisfaction is addressed. Lastly, the theoretical background and the goals of the study are presented.

East Asian International Students in the United States

The United States is one of the top choices for study abroad. According to Institute of International Education (IIE), the total number of international students' enrollment from the worldwide is around one million (851, 957) in the 2019-2020 academic year (IIE, 2020). Their attendance in higher education contributed $41 billion dollars in 2018-2019, with two-thirds of them were without the sources of funding within the United States (NAFSA, 2019). Due to the travel limitations imposed during the COVID-19 pandemic in 2020-2021, American higher education facilities had potentially lost nearly $1.8 billion in the year of 2020, mostly due to COVID-19 (NAFSA, 2020). This suggests that most international students are in a privileged social economic status and contribute tremendous financial benefits for U.S. higher education institutions (Zhao, 2019).

With the growing emphasis on internationalization in higher education within the globalization background, the number of international students in an institution can be more than the number of students in a medium-size college. For example, in 2018-2019

New York University had enrolled 21,093 international students, University of Southern California had enrolled 17,491, and University of Texas – Dallas had enrolled 8,787. Among those students, 67.0% international students self-identified as Asian, and 64% Asian international students were from East Asia (i.e., China, Japan, South Korea, Hong Kong, Macau, Taiwan, Mongolia) (IIE, 2020). Compared with the previous academic year (2018-2019), although the proportion of East Asian international students decreased 5.4%, the number of students remained increased (IIE, 2020). This indicates that research must incorporate the growing opportunities for international students to pursue a satisfying academic experience, which can better prepare them vocationally and psychologically.

It is necessary to recognize the diversity and complexity of East Asian international students. For example, although all the international students face some similar challenges, the difference in academic level may influence the type of support and adversities they experienced (Elder & Shanahan, 2006). For example, graduate students are found to have higher academic connection (Han et al., 2017), but higher work avoidance (Kim & Ra, 2015) than undergraduate students. In addition, most undergraduate and graduate international students are in different life stages (e.g., a 20-year-old single college student versus a 30-year-old student with a spouse and child), which influence their expectations towards academic work and self-evaluation standard.

Along with cultural factors, gender is an important predictor of academic experiences. Considering the major fields in the United States, the majority of international students choose STEM fields (i.e., 21.1% in Math and Computer Science, 19.8% in Engineering, 8.30% in Physical and Life Sciences, and 3.4% in Health

Professions; IIE, 2021) that have been traditionally characterized by underrepresentation of women (Lord et al., 2005). Even though 49% of bachelor's degree recipients in STEM as a whole are female, significant gender differences are still found in Engineering (16.7% female), Physical and related sciences (26.8% female), and Computer and mathematical sciences (23.7% female; NCSES, 2021). The gender ratio among international students is 5:4 (Male: Female). Furthermore, international students in general are less likely to access to mental health services due to stigmas and cultural concerns (Hwang et al., 2014). Among those who visited mental health services, there is a large gender discrepancy where female clients are more likely to seek help (e.g., Sheu & Sedlacek, 2004). This indicates that there can be a great need to assist international students with mental health services and different approaches may be necessary for providing services for different genders.

In the era of the global pandemic, even though the number of international students has declined slightly, the number of East Asian international students will likely continue to grow for at least in the next few years (IIE, 2018; QS, 2020). However, Lai et al. (2020) found that compared those who chose to return to their home countries, students who stayed in their host countries reported higher stress due to COVID-19-related stressors, including individual, interpersonal, and environmental factors, that led to negative impacts on their performance and mental health. Therefore, it is necessary to understand the East Asian international student experiences in the era of the global pandemic.

The Importance of Academic Satisfaction

Academic satisfaction is perceived as a domain-specific satisfaction that concerns students' satisfaction with their current major and classes. It was originally developed as a parallel concept of job satisfaction because of its similarity to a work environment (Allen, 1996). Yet, job satisfaction is more distal for the college student population. Therefore, academic satisfaction becomes the main outcome measure, defined as "enjoyment of one's role or experiences as a student" (Lent et al., 2007, p. 87). Many studies identified academic satisfaction as one of the key factors that can contribute to an individual's well-being (Franzen et al., 2021), social contact (Tian, Zhang, & Huebner, 2018), and academic experiences (e.g., academic performance, career preparation; Shirazi, 2017). The following section reviews the role of academic satisfaction for East Asian international students during the era of global pandemic in this section.

A positive relationship between academic satisfaction and *overall well-being* has been empirically documented (Tran et al., 2020). Aristovinik and their colleagues (2020) found that compared with students with other backgrounds, those from Asia were significantly less satisfied with their academic life during the global pandemic. Considering the stronger association between academic satisfaction and overall well-being among Asian samples (Sheu et al., 2020), East Asian international students presented high levels of anxiety (Lin et al., 2022) and isolation (Chen et al., 2020) during the pandemic. Professionals must recognize the harm and isolation experienced among East Asian international student during the global pandemic, and boosting their mental well-being and academic satisfaction are critical. As suggested by Lent (2004), satisfaction with more valued life domains is expected to have more impact on one's

overall life satisfaction. Promoting East Asian international students' academic satisfaction may especially be meaningful for their well-being during the difficult time.

Additionally, academic satisfaction can promote *social connection* (Gopalan et al., 2019). Coffman and Gilligan (2002) suggested that students with low satisfaction are more likely to withdraw from college prematurely, especially those who are isolated with limited academic contact. In addition, most East Asian international students are non-native English speakers. Therefore, coming from a different language system and cultural background often results in greater challenges to connect with native English-speaking peers and professors in or out of the classroom. Feeling accomplished academically may boost their confidence in living in a different country and system and is likely to generalize to other domains (Tian et al., 2018). During the global pandemic, the encouragement to work from home and quarantine further isolated international students. The importance of promoting academic satisfaction emerged as one of the most important factors to facilitate building connections during the global pandemic.

Further, the overlap between academic experiences and *career preparation* has become an important consideration in one's career development journey (Nauta, 2007). Super (1980) highlighted the importance of the connection and continuity of life stages in career development, indicating that the previous stage in life set the foundation for the next. Studies also found that academic satisfaction emerged as a strong predictor to the current expectation of one's level of career preparation (Martin & Frenette, 2017). For East Asian international students, many are motivated to obtain work experiences in the U.S. because of financial gains, family expectations, and the relatively liberal political environment (Lin & Flores, 2011); therefore obtaining a satisfactory academic experience

may boost their career-related self-efficacy. During the global pandemic, the situation did not get any easier, with fewer job opportunities and lower chances of obtaining sponsorship for legal status (e.g., obtaining H1B work visa). The changing environment of an international student's home and host country require them to adjust, adapt, and revisit their career and citizenship planning (Hari, et al., 2020). With an increased level of career ambiguity brought by the global pandemic, building confidence and satisfaction in their current academic experiences emerged to be critical. Indeed, satisfactory academic experiences could serve to strengthen their resilience when facing the adversity and hardship of the career preparation during the pandemic.

Thus, academic satisfaction has a multidimensional positive influence on East Asian international students. Understanding how to enhance their academic satisfaction will promote their academic performance, increase career preparation, and boost their overall well-being during the global pandemic.

Critical Issues in the Existing Literature

Studies have explored many factors that may contribute to academic satisfaction; however, limited research has examined pathways in the context of perceived discrimination based on the Social Cognitive Model of Well-Being Model (SCWB; Lent, 2004). This scarcity limits the knowledge base necessary for helping East Asian international students attain and maintain psychological well-being and life satisfaction, especially in the era of the global pandemic.

Most studies suggest developing a stronger racial identity commitment as a buffer against perceived discrimination; however, this effect was found to be less strong among Asian international individuals than other people of color (Yip et al., 2019). Notably,

racial identity awareness has been widely discussed in the social context of the United States, yet not in East Asia (Yip et al., 2019). Strategies, including fostering positive interracial climate (Benner & Graham, 2012), establishing a cooperative learning program to establish a common group identity (Gaertner & Dovidio, 2000), and increasing educator's racial awareness (Benner & Graham, 2012), that aim to decrease the racial discriminatory distress may not apply to international students, due to their unique core social identity (i.e., racial identity versus nationality identity). Additionally, the existing literatures based on SCWB addressing domain satisfaction targeting people of color are mainly focused on the acculturation process (e.g., Hui et al., 2013; Ojeda et al., 2011). Although some research investigated the academic environmental factors (e.g., support, barriers) with Asian populations (Sheu et al., 2014; Sheu et al., 2017) or without (Lent, et al., 2014; Ezeofor & Lent, 2014), no studies have considered perceived discrimination as an environmental barrier.

Another critical issue in the existing vocational literature is the lack of attention to international students. Most studies focused on international students are related to adjustment issues, such as interpersonal concerns (Popadiuk & Arthur, 2014), intrapersonal stress and acculturation (Wei et al., 2007), language proficiency (Sawir et al., 2012) and academic adaptation (Wang et al., 2012). Less attention has been paid to their academic satisfaction. This may be because East Asian students have consistently outperformed their counterparts in the U.S. (PIZA, 2020); however, the exceptional academic achievement does not guarantee satisfying academic experiences (Bucker et al., 2018). To increase academic experiences among international students, scholars have proposed training programs targeting skill development, such as increasing language

proficiency (Wongtriat, 2010), longer time staying in the States (Zhang & Goodson, 2011), and improving teaching methods (Smith, 2020). However, these interventions are far beyond the capacity of mental health providers.

Therefore, there is a need to explore factors that can contribute to East Asian international students' academic satisfaction. Existing research has failed to explain international students' academic experiences (e.g., discrimination). Therefore, building on the SCWB model, this study aims to address these gaps by examining the role of discrimination on academic satisfaction among East Asian international students.

Theoretical Background

The Social Cognitive Well-Being model (SCWB; see Figure 1; Lent, 2004) is a recently developed model of the broader Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994). SCCT is perceived as "an ongoing effort to create a unifying framework for understanding career development phenomena" (Sheu et al., 2020, p. 681), which was developed by Lent and his colleagues based on Bandura's (1986, 1997) general social cognitive theory of motivation and behavior. This theory integrates the career-related components, such as self-efficacy, outcome expectations and personal goals, with personal factors (e.g., personality, gender, race/ethnicity) and contextual factors (e.g., environmental supports and barriers).

Furthermore, the theory currently has five interlocking and interrelated models with five different emphases (i.e., interest, choice, performance, satisfaction, and process of career decision making). The first four models have been examined with multiple meta-analytic studies, with findings largely supporting hypotheses regarding interest development (e.g., Rottinghaus, Larson, & Borgen, 2003), career-related choices (Lent et

al., 2018; Sheu et al., 2010), performance and persistence in academic and occupational contexts (Brown et al., 2011), sources of STEM-related self-efficacy and outcome expectations (Sheu et al., 2018), and satisfaction and well-being in diverse populations (Sheu et al., 2020). The latest SCCT model established by Lent and Brown (2006), self-management, has also shown promising results in career decision-making among college students (Lent, Ezeofor, Morrison, Penn, & Ireland, 2016), and workplace sexual identity management (Tatum, Formica, & Brown, 2017).

The SCWB incorporates social-cognitive variables with personality, behavioral and social elements and subjective and psychological well-being (Lent & Brown, 2006). The model posits that individuals with higher levels of well-being are more likely to be engaged with their valued activities, interact with people in their support system, set and make progress towards their goals, and reinforce their personality traits and emotional status (Lent & Brown, 2008). Sheu et al. (2020) regarded this model as being both integrative and practice-friendly, not only because of its inclusion of personality, social and developmental issues, but also due to its direct applicability to inform psychological interventions.

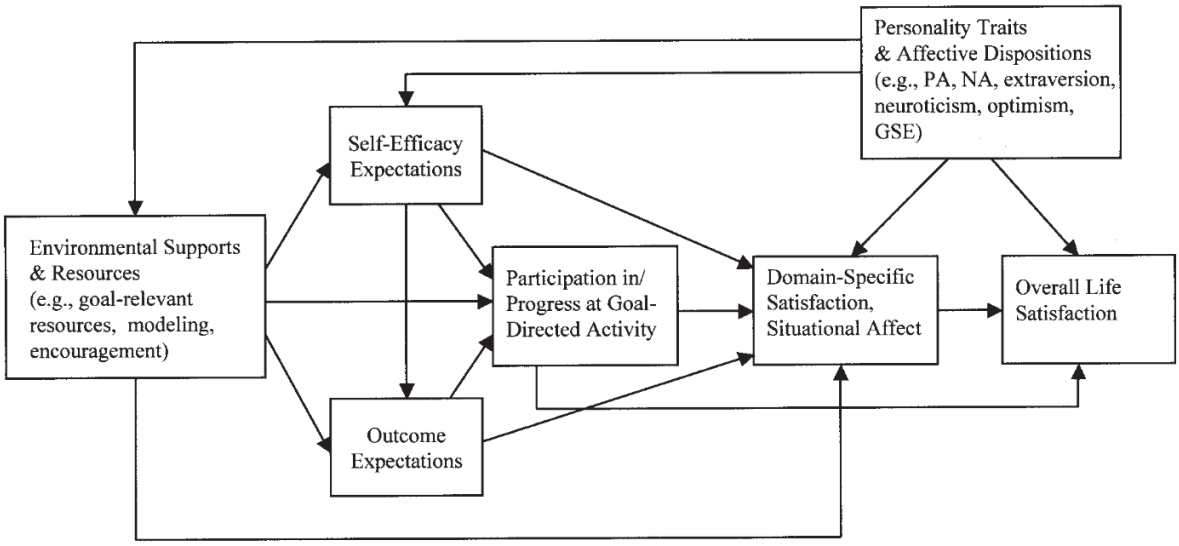

Figure 1. Social Cognitive Model of Normative Well-being *(Lent et al., 2006)*

In spite of the SCCT model's wide application, limited study has focused on how specific contextual barriers interact with the key components of the SCWB model. For East Asian international students, it should come as no surprised that perceived discrimination and stereotype can be a problem when studying in the U.S. Generally speaking, perceived discrimination refers to any different treatment or conduct directed at individuals or groups due to their race, ethnicity, or national origin (Pager & Shepherd, 2008). For international students, their perceived discrimination is more related to their accent, skin color, ancestry, and religion (Wei & Bunjun, 2021). East Asian international students reported the most frequent discriminatory behaviors are negative and hostile verbal insultation (e.g., "go home"), direct confrontations and physical attacks (Lee & Rice, 2007; Wei & Bunjun, 2021). In academic settings, their perceived discrimination can be related to class group projects, for example, where they are excluded, rejected, devalued, or ignored by faculty members or peers (Hanassab, 2006; Heng, 2017). Studies

have shown that perceived discrimination can produce numerous negative consequences, ranging from reducing working memory capacity (Schmader, Johns, & Forbes, 2008) to deteriorating academic self-perception and persistence (Reynolds et al., 2010).

It is noteworthy that this research is revised with the rise in Asian Hate sentiment in popular press and incidents across the United States due to the COVID-19 pandemic (Misra, Le, Goldmann, & Yang, 2020). The hostile and aggressive stereotypes against Asian descent has only deepened the experiences of psychological distress (Benner & Kim, 2009). Therefore, the present study examined the possible environmental variables on East Asian international students' academic experiences within the SCWB model (Lent, 2004).

Goal of the Current Study

Following the call to expand the multicultural vocational research of SCWB model (Sheu et al., 2020), the current study aims to understand the extent to which SCWB model can apply on East Asian international student population in the United States. With the growing of internationalization in higher education, obtaining an international academic experience is valued. Research must increase the understanding East Asian international student's academic experience in the U.S., especially during the global pandemic.

Another goal of the present study is to expand the existing SCWB model by incorporating perceived discrimination. Data were collected through an online platform, which includes questions on demographic information, and measures of academic satisfaction, academic and barrier coping self-efficacy, academic support, goal progress,

outcome expectations, and perceived discrimination. Structural equation modeling was used to test an adapted SCWB model.

CHAPTER II

LITERATURE REVIEW

This chapter provides an overview of the key theories and concepts that are related to the current study. First, subjective well-being of East Asian international students is introduced. Second, a brief description of the theoretical framework, including an overview and summary of research addressing the SCWB model, is discussed (Lent & Brown, 2006, 2008). Third, the additional variable (i.e., perceived discrimination) is reviewed.

Subjective Well-Being and Culture

Since ancient times, scholars have been exploring how to have a good life or to obtain optimal development. Such discussions have enriched the understanding of well-being and have generated various models across numerous fields (e.g., psychology, sociology, and medicine). In the field of psychology, Ryan and Deci (2001) defined well-being as "a complex construct that concerns optimal experience and functioning" (p. 141), with two distinctive but related philosophical roots - hedonic view and eudaimonic view – serving as the cornerstones.

In the hedonic view, well-being serves to pursue personal and sensational pleasure, which has generated the study of subjective emotional well-being (SWB; Diener & Lucas 1999; Lent et al., 2008). Subjective well-being may be defined as the subjective evaluation of one's life both in affective and cognitive aspects, which consists of three distinctive but related elements: (a) life satisfaction, (b) positive affect, and (c) (the absence of) negative affect (Diener et al., 2002). Life satisfaction refers to a global or cognitive evaluation of one's life based on the person's subjective chosen criteria (e.g., "I

feel satisfied with my life overall"; Neto, 1995), whereas positive and (the absence of) negative affect focus more on the affective and emotional aspects of SWB (e.g., excited, bad, happiness). Despite each component of SWB is substantially correlated, they can be studied separately (Diener, Suh, Lucas, & Smith., 1999).

In the eudaimonic view, well-being, inspired by Aristotle, is more than personal happiness. For Ryff (1995), eudaimonic well-being means "the striving for perfection that represents the realization of one's true potential" (p. 100), which consists of six components (i.e., self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth). The eudaimonic well-being is concerned with individual's thoughts and actions, rather than emotions, which has spawned the study of psychological well-being (PWB) (Lent et al., 2008). Lent et al. (2006) proposed that psychological well-being cannot be achieved without subjective well-being (Lent et al., 2006). This is certainly true in the case of our life experiences. To enhance one's subjective well-being, an individual needs to engage in their valued activities, interact with people in their support system, set and make progress towards their goals, as well as reinforce one's personality traits and emotional status (Lent et al., 2008). As this case very clearly demonstrated, it is important to recognize the functional role of subjective satisfaction in working towards one's valued goal (Brown & Lent, 2019).

What could underline the mechanism of subjective well-being development? Despite a long debate over the nature of subjective well-being (nature vs nurture), subjective well-being is a malleable variable that can differ individually and societally (Diener et al., 2017). For example, studies have shown that environment change can

impact on subjective well-being even long after the event happened (e.g., marriage, unemployment; Hofmann & Lucas, 2012). A meta-analysis of 13 studies also found an average genetic heritability of 0.40 impacting on the variability of subjective well-being (Nes & Roysamb, 2015), indicating 60% of impacted variability is not accounted by genetics. Similarly, the influence of environment on SWB can also be found in different regions (e.g., Oishi, Kesebir, & Diener, 2011). This may indicate that environmental factors, such as cultural norms, may have been an important factor in shaping one's SWB.

Among all the cross-cultural studies on well-being, the comparison between European American and East Asian cultural groups has been emphasized in existing research. This may be because the concept of well-being is inextricably tied to the definition of self and relation to others (e.g., Christopher, Wendt, Marecek, & Goodman, 2014); Markus, & Kitayama, 1991; Uchida & Kitayama, 2009), and the definition of self in East Asian and European cultures are in sharp contrast. Traditionally, European cultures value autonomy and independence, with a good life deriving from those who can maximize their personal qualities. Whereas East Asian cultures emphasize interdependent as well as social harmony, and their perception of "good life" is dependent on their social connections and interpersonal relationship. Therefore, compared to European cultures, people growing up in East Asian cultures are more likely to be sensitive to and value the contextual cues in the environment (Morris & Peng, 1994), especially when making decisions that may affect others in the group (Leung & Bond, 1984).

Well-Being among East Asian International Students

East Asian international student, leading their life in both Eastern and European background, often times present with extensive mental health concerns due to the cross-cultural navigation. For example, the potential conflict between personal interest and family expectation in major decision may exaggerate East Asian international student's stress. Unlike people of color in the U.S., East Asian international students, especially those who study in the U.S. for the first time, may not aware of the resources or language skills in navigating this process in a new academic system, which may contribute to sense of meaningless and lack of a sense of belonging. Studies found that East Asian international students have a higher need in assisting career decision-making (Lin & Flores, 2013; Nadermann & Eissenstat, 2018) and adjusting their performance in higher education (Gang et al., 2010). East Asian international students have also reported a higher level of difficulties in mood adjustment (e.g., anxiety, depression; Zhang & Goodson, 2011), and host culture adjustment (e.g., Sam, 2001; Wei et al., 2007).

However, study results around East Asian international student's academic experiences are inconsistent. For instance, Misra and Castillo (2004) found that international students have less academic stress than local American students, even with all the challenges mentioned above. It is likely that self-disclosure of personal problems may be perceived as a sign of weakness and immaturity in some countries (Uba, 1994), which may skew what Misra and Castillo (2004) found in their study. But Misra and Castillo's study also reminded the researchers that the current literature may possibly pathologize international student population (Yoon & Portman, 2004) and the negative emphasis on international student's academic experiences can deepen the stereotype and

cause more harm. Therefore, more studies are needed to understand international student experiences in the U.S., beyond a pathological lens.

Among the few theoretical frameworks developed to explain human strengths and positive adjustment, the social cognitive model of well-being (SCWB) developed by Lent (2004) can be useful. SCWB provides an integrative framework explaining how cognitive, social personality, and behavioral variables interact with each other to predict well-being outcomes. Despite previous efforts that have been paid in exploring the application of SCWB across gender, cultural/racial groups and nationalities, the literature falls short of examining cross-cultural validity of such models.

Theoretical Framework: Social Cognitive Career Theory Well-Being Model

Since its inception 29 years ago, Social Cognitive Career Theory (SCCT; Lent et al., 1994) has provided a holistic framework in understanding one's career development across the life span (Brown & Lent, 2019; Lent & Brown, 2019; Sheu et al., 2020). Based on general Social Cognitive Theory (Bandura, 1986, 1997), SCCT was extended to explain and predict the types of interest that people develop, the types of work and educational choice they pursue (Lent et al., 1994), the performance and satisfaction they achieve in school and at work, and how people negotiate planned or unplanned challenges in their life (Brown & Lent, 2019). SCCT not only considers the career-related variables, such as self-efficacy, outcome expectation and personal goals, but also takes into consideration both personal factors (e.g., personality, gender, race/ethnicity) and contextual factors (e.g., environmental supports and barriers).

The first three SCCT models (academic and career interest development model; choice model; and performance and persistence model) have drawn substantial empirical

studies and meta-analyses have supported hypotheses related to interest development, choice, performance, and persistence in academic and occupational context (Lent & Brown, 2019). The SCCT self-management model (Lent & Brown, 2013), moving away from the content of career development (e.g., choice model, interest model), focuses more on process. In other words, this model focuses more on *how* people make school- and work-related decisions while managing other important tasks, challenges, and crises. The SCCT self-management model has three core constructs: self-efficacy, outcome expectation, and goals. Although SCCT self-management model is a relatively new model, studies have shown promising results in topics of career decision making in a longitudinal study (Lent, Morris, Penn, & Ireland, 2019) and workplace sexual identity management (Tatum et al., 2017).

Social Cognitive Career Theory of well-being model (SCWB; Brown & Lent, 2019) extended the original SCCT framework to the field satisfaction and well-being in both academic and working field. Three core concepts in SCCT model are believed to be important contributors to academic and working satisfaction: (a) self-efficacy belief, (b) work conditions or outcomes, and (c) goals mechanisms (Brown & Lent, 2019). It assumes that a person is more likely to enjoy or feel happy with work/academic experiences with a higher self-efficacy and positive hope for work outcome (i.e., outcome expectation) while working toward their valued goals (e.g., high GPA, high salary). In addition, this model also acknowledges the role of personality traits and environmental factors (e.g., resources, barriers) on career development, as shown in Figure 1. To be more specific, the key variables that construct this model are: (a) work/academic satisfaction, (b) personality and affective traits, (c) goal-directed activity, (d) self-

efficacy, (e) work condition or outcome, and (f) goal-relevant environmental support and obstacles.

Empirical Studies Related to SCCT Well-Being Model

Although the SCWB is relatively new, it has drawn extensive attention across a variety of populations and life domains, especially in academic and career-related context (Brown & Lent, 2019; Sheu et al., 2020). For example, a recent meta-analysis (Sheu, et al., 2020) reviewed 100 studies with 154 samples using the SCWB models found the model had an overall acceptable fit in both academic and work domain, with culture-modified model yielding an adequate fit across gender, racial/ethnic groups, and different nationalities samples. It is notable that there were some differences across domains and nationalities. For example, the positive relationship between environmental support to well-being was stronger in the academic setting, whereas the pathways from working condition to goal progress and well-being were stronger in the working context. Similarly, the positive relationship between support and well-being was stronger among the non-U.S. sample, whereas the relationship between goal progress and well-being was stronger among the U.S. sample. These moderating effects of the academic field and samples from non-U.S. countries suggest the need for more studies focusing on non-U.S. samples in the academic field.

Another interesting result from this meta-analysis is that it suggests that environmental supports and self-efficacy play a more salient role in promoting well-being in students rather than working adults (Sheu et al., 2020). It is possible that the different nature of two environmental and performance experiences lead to this difference in the study. For example, students' perception of academic satisfaction mainly depends on the

perceived feedback on their test or resources of switching majors, or subjective perceived competence on their schoolwork. Whereas working adults' satisfaction may be differentially sensitive to different types of competence across fields (e.g., written communication as an editor versus listening as a counselor) and compensation (e.g., day off or extra money during holiday). For international students, Sam (2001) argued that they are more in the mode of "students" rather than "foreigners" or "workers" in the process of adjustment, which may suggest a functional role of environmental support for international students as well.

Outcome Variables

The SCWB model posits that people are more like to feel satisfied within a life aspect when they (a) engage and make progress towards their valued personal goal, (b) see themselves as efficacious at the behaviors that they are required to perform successfully, (c) receive or anticipate positive outcome as a result of their engagement, (d) have environmental supports and resources needed to pursue their personal goals and develop their efficiency, (e) possess favorable levels of affects, and (f) are generally satisfied with their life as a whole.

The understanding of domain satisfaction based on SCWB has been widely studied and the main predictors and paths (e.g., person-cognitive variables, contextual variables) indicated significant path coefficients to domain satisfaction (Brown & Lent, 2019). Those predictors account for 54% of the variance of academic satisfaction and 43% of the variance of work satisfaction (Brown & Lent, 2019). However, it is also notable that some meaningful differences in parameters were among samples across race/ethnicity and nationalities. For example, two meta-analyses (Sheu et al., 2018, 2020)

found that students with interdependent/collectivistic cultural orientations tended to receive more support which more strongly impacted on academic satisfaction, and their academic satisfaction further functioned as a main predictor of global satisfaction. Whereas goal progress is found to be strongly linked to academic satisfaction among U.S. samples, and minority samples yielded a larger path size of this link than majority samples. These differences suggest the potential different needs contributing to academic satisfaction in specific populations.

Person-Cognitive Variables

Self-efficacy. First proposed by Bandura (1977), self-efficacy refers to a person's beliefs about one's capability to perform given actions or courses of behaviors (Lent & Brown, 2013). Self-efficacy is proposed to have three behavioral consequences and four sources of efficacy information. Three behavioral consequences of self-efficacy are: (1) approach versus avoidance behavior; (2) quality of performance; and (3) persistence in facing obstacles. People with higher efficacy are postulated to have an approach behavior, have better quality of performance, and tend to be persistent when faced with failure or discouragement. Those behavioral consequences make self-efficacy an important construct in understanding behavior. With regards to the sources of self-efficacy, four elements were assumed as following: (1) mastery experience refers to the experience of successfully performing the behavior; (2) vicarious learning or modeling; (3) social persuasion, such as the encouragement and support from others; and (4) less negative emotion arousal, such as less anxiety. These sources of self-efficacy are important not only because of its initial development, but are also meaningful to build and strengthen self-efficacy in a certain domain (Betz, 2000).

A positive relationship between self-efficacy and academic outcomes through the SCCT model has been empirically documented. A meta-analysis study conducted with 143 studies over a 30-year period (1983 through 2013) further found that self-efficacy yielded a medium path to outcome expectations, interest and goals in the SCCT choice model across gender and ethnicity (Lent et al., 2018). In a literature review consisting of 41 independent samples from 21 countries (Sheu & Bordon, 2017), researchers found robust evidence of the mediating role of self-efficacy on academic and job satisfaction, with successful past experiences and physiological state as the key sources. Among limited studies on academic-related self-efficacy conducted on international populations, self-efficacy was found to be positively associated with English proficiency (Wang et al., 2018), academic achievement (Khan et al., 2016) and psychological well-being and life satisfaction (Bulgan & Çiftçi, 2017).

Outcome expectations was conceptualized as one's anticipated consequences of attaining one's goals or performing one's work role (Bandura, 1986; Lent & Brown, 2008), which is emphasized in the SCCT interest, choice and performance models. In the SCWB model, the outcome expectations focuses on the prospective outcomes initially (Lent, 2004) and then was expanded to a broader scale, including either received (i.e., work condition) or upcoming (i.e., outcome expectation) rewards (Brown & Lent, 2019). Lent and Brown (2008) explained that the rewards that people received or are currently receiving may carry forward to their future expectation or outcomes. An example of work conditions or expectations can be the person-environmental fit and job security (Sheu et al., 2020).

Outcome expectations is closely related to one's self-efficacy. Often, people may have a positive and optimistic expectation of their future when they have a high self-efficacy. However, self-efficacy may sometimes outweigh the expectation. People may still hold a negative expectation towards their future, if one is with a high capability in achieving the task (Ezeofor & Lent, 2014; Lee & Flores, 2019).

However, the current literature presented inconsistent results towards the impact of outcome expectation in the SCCT model. Academic outcome expectations were found to be predictive of goal progress and academic satisfaction among women engineers in the U.S. (Lee & Flores, 2019), and African college students in the U.S. (Ezeofor & Lent, 2014). However, this effect was not found in other samples, such as Mexican American college students (Ojeda et al., 2011) and college students in Singapore, Taiwan and China (Sheu, Chong, Chen, & Lin, 2014; Sheu et al., 2017). Meta-analyses indicated that outcome expectation produced a medium-size path in the association from self-efficacy and environmental support to career interest and choice goals (Sheu et al., 2010), and in the SCWB model, outcome expectations had a relatively small (mostly <.10) effect on the pathway to goal progress and domain satisfaction (Sheu et al., 2020).

This small-size effect is likely to be a result of cultural sensitivity. As Bandura (1986) indicated, outcome expectation is likely to be more desirable when it fits their culture. For people who favor an individualistic culture, individual rewards may be more attractive, whereas those who are in interdependent/collectivistic cultures may value more on the societal recognition and interpersonal harmony (Sheu et al., 2020). Therefore, it would be interesting to explore the role of outcome expectation among East

Asian international students, a group in a cross-cultural setting with mixed individualistic and collectivistic cultures.

Goal-related behavior is the third key concept in the SCWB model, in addition to self-efficacy and outcome expectation. The process of obtaining a personal goal involves various cognitive endeavors, including cognitive evaluation (e.g., self-efficacy, outcome expectations) on the goal feasibility, and cognitive determination to affect an outcome or to attain the level of performance (Bandura, 1986). In SCCT, goals are seen as the key role linking choice and performance behavior (Lent et al., 1994), and the SCWB model emphasizes on subjective evaluation of goal progress in the given domain life.

Existing research has indicated that goal progress presented a small-to-medium effect size on the association of social-cognitive variables to domain satisfaction across samples (Ezeofor & Lent, 2014; Hui et al., 2013a; Lent et al., 2014; Ojeda et al., 2011; Sheu et al., 2014). Result of a meta-analysis identified goal progress as the important mediator in linking self-efficacy and outcome expectations to domain satisfaction (Sheu et al., 2020).

Contextual Variables

As noted previously, a variety of **goal-related contextual supports and constraints** can be important sources of satisfaction. Goal-oriented environmental supports can be divided into two types, objective environment (e.g., economic conditions, parental behaviors, and peer influences) and subjective psychological environment (i.e., subjective interpretation of a particular environment variable; Lent et al., 2000). In other words, although environmental support is related to one's objective conditions, it can also

be determined through a person's understanding of their environment (e.g., the support from social settings or academic settings).

Contextual support has been linked to goals, actions, and outcomes across SCCT models directly or indirectly. For example, social support appeared to provide an essential platform for development of self-efficacy and outcome expectation. Sexual minorities who are in the affirmative work climate are more likely to disclose their sexual identities which will yield positive outcomes for their work satisfaction (Tatum, 2018). In addition, contextual support systems can also promote students' perceived confidence in solving specific tasks. Sources of self-efficacy (e.g., encouragement, role model) can, to some extent, be a source of environmental support (Bandura, 1986; Lent et al., 1994). The absence of environmental support is assumed to diminish satisfaction both directly or indirectly through self-efficacy and outcome expectations (Sheu et al., 2010). In other words, when lacking environmental support, an individual's satisfaction may decrease through low confidence and low outcome expectations. However, when one perceives environmental support, they are more likely to have a lasting change of positive affection, which can, in turn, promote their satisfaction (Lent et al., 2009, 2012).

Although the SCWB has included several aspects that were not covered in previous models, such as satisfaction, there are still pieces that need to be examined. For example, although research shows that nationality may serve as a moderator for various pathways of SCCT (Sheu et al., 2020), no research has focused on exploring possible ways in which nationality interacts with contextual factors such as discrimination. Examining new constructs with existing factors in the SCWB model will help further

exploration of the model's application, as well as provide a more well-rounded understanding of an individual's career development.

Perceived Discrimination

Perceived discrimination refers to overweighing members of group characteristics through the construction of social, cultural, and psychological significance (James et al., 2010), which denies the equal opportunities to access power, benefits, and privileges just because of the discrimination. African Americans, Latinx, American Indians/ Alaskan natives, Asians, Pacific Islanders, and other communities of color have been derogated and discriminated due to their skin color, which happens not only interpersonally, but is across levels. At an individual level, how people feel, believe, and interact with others would express negative evaluations on historically excluded groups. At the organizational level, the policy, rules and the expectations from the public and system may be beneficial for some groups of people and disadvantageous for other groups of people. At the societal level, how people believe what is right or wrong may also reflect on others. Extensive meta-analyses have established significant relationships between perceived discrimination and various consequences of health, including depression, anxiety, and posttraumatic stress with effect sizes ranging from 0.20 and 0.34 (A. D. Benner et al., 2018; Paradies et al., 2015; Schmitt, Branscombe, Postmes, & Garcia, 2014).

Although educators and college leaders have advocated for the racial justice into program development, students of color and other marginalized populations have indicated the academic environment remains questionable with regards to their needs. A longitudinal experimental study echoed that students of color still experience negative treatment from peers, instructors, advisors, and others in college (Haskins & Singh,

2014). For those who are from underrepresented minority groups, their physical appearance also appeared to be a predictor for persistence in fields of science, technology, engineering, and mathematics (STEM) through college graduation, as well as being viewed as having less STEM ability for advanced courses (Williams, George-Jones, & Hebl, 2019). Moreover, marginalized students continue to experience isolation, alienation, and marginalization in the classroom, and they often were taken as the representative voice for their own race/ethnicity/nationality or culture (Haskins & Singh, 2014).

When considering these experiences of isolation, alienation, and marginalization, one of the most common issues facing international students is that of language barrier. This can be especially true among those students from East Asian countries, whose language system can differ greatly when compared to European languages (e.g., pronunciation, grammar, syntax). This language barrier can become a functional cover of perceived discrimination in excluding and isolating international students in a subtle yet distressing way. For example, international students can be excluded from a study group because of the presumption that lack of English fluency is often deemed detrimental to the group's overall performance (e.g., cost more time and energy in editing group work). These presumptions among local students can expand and reinforce the feeling of being excluded and marginalized and can produce larger structural barriers if those beliefs are embedded in teachers and employers, such as employment opportunities and academic achievement. The exclusion across levels can pose serious strains on the mental health and well-being of international students (Ahmed, 2012).

It is noteworthy that the experiences of perceived discrimination against international students can be similar yet distinctive when compared to perceived discrimination against racial minorities in the United States. Perceived discrimination against international students is more related to their accent, skin color, ancestry, and religion (Wei & Bunjun, 2021). For example, the experiences of discrimination can be more direct among peers, such as exclusion in the classroom, verbal insults such as "go home", direct confrontations and physical attacks (Lee & Rice, 2007). In the academic setting, international students have encountered shock and distressed in seeing their own culture or country being labeled as "backward" and "violent" in the course materials (Wei & Bunjun, 2021). In group discussions or group projects, their contributions have been devalued, ignored or rejected by faculty members or peers (Hanassab, 2006; Heng, 2017). Researchers also noticed the perceived discrimination can be overt and subtle, such as Islamophobia (Gholami, 2021), xenophobia (Yeo, Mendenhall, Harwood, & Huntt, 2019), and sexual and gender-based violence (Bonistall Postel, 2020; Forbes-Mewett & McCulloch, 2016).

Regarding experiences of perceived discrimination, researchers also noticed the heterogeneity within international student group. For example, two studies, 10 years apart, have drawn a consistent conclusion that students from non-English speaking countries (e.g., China) reported having more perceived discrimination experiences than those from European countries (Lee & Rice, 2007; Park et al., 2017). This may indicate the need to differentiate international students' experiences based on their original countries and cultures. In addition, Tsai and Wei (2018) found that the strategies of coping with perceived discrimination among students from China was moderated by

gender. Females are more likely to internalize the cause of discrimination, whereas males are more likely to externalize and challenge the acts of racism against them.

This study adopted SCWB model to understand East Asian international students' experiences of perceived discrimination, highlighting to what extent perceived discrimination impacts their academic satisfaction in the context of U.S. universities. This is especially relevant as U.S. universities rely on the enrollment and retention of international students, where academic progress and well-being are crucial. Under the SCCT framework, perceived discrimination has been found to be a strong contextual predictor that is negatively associated with physical and mental health, and educational outcomes (Hall, Nishina, & Lewis, 2017). Therefore, it is reasonable to add perceived discrimination into the SCWB model as a contextual variable for this study.

Summary

The SCWB model provides a solid framework in understanding to what extent that cognitive and contextual variables can contribute to one's well-being. Given that the SCWB model is primarily based on an individualistic social norm, many studies have tested and continuously advocated for the importance of cultural consideration of this model in its use with culturally diverse populations. Due to East Asian international students' tendencies to be exposed to both collectivistic and individualistic cultures, an additional purpose for selecting this theory is to examine its applicability to an understudied group in the well-being literature.

The current study is the first to test the SCWB model with a sample of East Asian international students. The main purpose of this study is to examine social cognitive predictors of academic satisfaction with a sample of East Asian international college

students. The specific SCWB model factors that were tested herein include: (a) academic satisfaction, (b) academic support, (c) academic self-efficacy, (d) coping self-efficacy, (e) academic goal-progress, (f) academic outcome expectations, and (g) perceived discrimination. The following hypotheses are proposed (see Figure 2):

Hypothesis 1: The hypothesized structural model will provide a good fit to the overall data, with achieving configural, metric, and scalar invariance across gender samples.

Hypothesis 2: The multigroup structural model will fit the data from East Asian international male, female and overall samples to an acceptable level.

Hypothesis 2a: Academic support will have positive effect on academic satisfaction and will be partially mediated by self-efficacy, outcome expectation, and goal progress.

Hypothesis 2b: Self-efficacy will have positive effect on academic satisfaction and will be partially mediated by outcome expectation and goal progress.

Hypothesis 2c: Outcome expectation will have positive effect on academic satisfaction and will be partially mediated by goal progress.

Hypothesis 2d: Goal progress will have positive effect on academic satisfaction.

Hypothesis 2e: Perceived discrimination will have negative effect directly and indirectly on academic satisfaction through self-efficacy, outcome expectation, and goal progress.

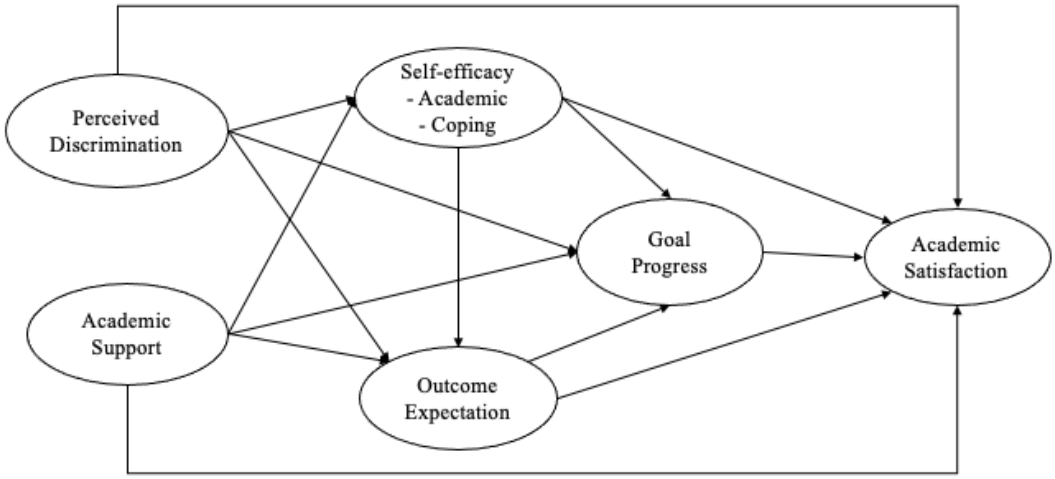

Figure 2. Proposed research model

CHAPTER III

METHOD

The present chapter presents an overview of the study method and procedure. First, the target population, recruitment strategy, and data collection procedure will be discussed. Next, the measurements included in the questionnaire will be introduced. Finally, the data analysis plan will be presented.

Participants

A total of 324 East Asian international students who have been studying in the U.S. attended the study. Of these participants, 155 identified as female (5.0%), 162 identified as male (47.5%), 7 identified as transgender (2.2%) and one identified as nonbinary (0.3%). Their age ranged from 18-49 with a mean of 22.3 (*SD* = 4.82). In terms of their region of origin, 207 (63.8%) reported from China, 25 (7.7%) were from Japan, and 78 (24.1%) were from South Korea.

Among these participants, 37 (11.5%) reported as a freshman, 95 (29.5%) reported as sophomores, 66 (2 .5%) identified as juniors, 52 (16.1%) identified as seniors, and 72 (22.4%) reported as graduate students. In terms of English level, 80 (24.8%) reported a very high level of English proficiency, 136 (42.1%) reported a high level, 103 (31.9) reported a low level of English proficiency and 4 (1.2%) reported as very low.

In terms of their experiences in the U.S., their time staying in the U.S. ranged from 1-22 years with a mean of 5.1 years (*SD* = 4.52). A total of 273 (84.5%) participants identified as a first-generation international student, whose parents or family members have never received higher education in the U.S.

Procedure

Approval to collect data was secure with the Institutional Review Board. The study was conducted in compliance with a protocol highlighting six unique methodology issues in research with immigrants and refugees (Pernice, 1994). The six unique methodology issues are contextual issues, conceptual issues, linguistic issues, sample, cultural etiquette, and personality characteristics. Although East Asian international students are different from immigrants and refugees, they shared similar characteristics, such as language barriers, cross-cultural challenges, and lack of support. Thus, this study adopted this framework and addressed these six aspects throughout the data collection process.

First, it is important to provide a safe space to not feel exposed to risk and to protect participants' confidentiality. The demographic survey did not collect names, emails, or other identifying information.

Second was to consider recruiting participants based on their cultural etiquette. Given that people are more likely to complete the survey with individual requests, participants initially were recruited using a snowball sampling method utilizing personal, social, and professional contacts in the state of Missouri. Distribution of flyers was done through emails to the local East Asian student government, and asked participants to forward the information to other East Asian international students. Further, the researcher distributed the information through social media platforms which are popular among East Asian international students (e.g., Facebook, WeChat, Instagram), and reached out to more participants by sending additional emails to East Asian student organizations at the top 20 universities in the U.S. that host the most international students listed in the Open

Door Report (2018). The recruitment flyers and emails included a link and QR code leading to the online questionaries, noting that this is a research study that focuses on "the educational experiences of East Asian international students." *Further*, to make sure to a better understanding East Asian international students' experiences in completing the survey, personal feedback was collected from peers to improve the survey quality.

The recruitment criteria for eligible participants included: (a) Be a full-time student (≥18 years old) currently enrolled in an American college or university; (b) Be an international student currently holding a student visa (i.e., F-1, M-1, J-1 visa); (c) Originally come from East Asian countries and regions (e.g., China, South Korea, Japan, Hong Kong, Macau, Taiwan); (d) Not a full-time employee of any company; (e) Currently studying in the U.S. at the time of the survey. Two validity items were designed to detect any invalid responses in the survey. For example, the instructions will state "Please choose '1 = *strongly disagree*' for this item." Participants will be included in the sample when appropriately completing these three validity items.

The online questionnaire included a virtual informed consent that covered an introduction and goals of the current study; potential risks and benefits; and contact information of the researcher and IRB office. The survey took around 20-25 minutes to complete. Based on the agreement, participants can join a raffle when completing the questionnaires. The prize was a $5 Amazon gift card for the first 50 respondents, and $15 Amazon gift card for the rest of the participants with a 17% odd of winning. If participants decided to join the raffle, they have left their contact information (i.e., email address). The contact information was only used for the purpose of compensation.

Measures

Demographic and Career Aspiration Questionnaire

Participants were asked to indicate their gender, race, age, nationality, academic level, academic field, career aspiration, location of their institution, relationship status, whether they have been to the United States before, and the length of time in the United States. See Appendix B for the full list of questions.

Academic Support

Academic Support was assessed with a 9-item measure developed by Lent et al. (2005), which indicates endorsement of a series of statements related to available support in their intended major (refer to Appendix B with full scale). The example items are "At the present time, I feel support from important people in my life for pursuing my current course of study" and "I can get helpful assistance from my advisor." Higher scores indicate better perceptions of support for their academic efforts. Responses on both scales were obtained along a 5-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5). Studies reported coefficient alpha values of .81 and .84 among the students in U.S. (Lent et al., 2005), a value of .79 among college students in Taiwan and Singapore (Sheu, et al., 2014), and a value of .82 among college students in China (Sheu, et al., 2017). Previous studies indicated that the variable was correlated with academic self-efficacy, and outcome expectations across countries (Lent et al., 2005; Sheu, et al., 2014, 2017). In this study, the Cronbach's alpha for scale score on the East Asian international student's perceived academic support was .86.

Self-Efficacy

Self-efficacy measurements include two sub-scales: academic milestone self-efficacy and Academic Coping Efficacy Scale (Lent et al., 2005). The two types of self-efficacy are to be tested as separated, yet correlates, constructs. Academic self-efficacy was assessed with a 5-item measure referring to students' confidence in their ability to perform well academically (e.g., "How much confidence do you have in your ability to excel in your intended major over the next semester?"). Academic Coping Efficacy Scale was tested with 7 items tapping participants' confidence in overcoming barriers in the academic setting (e.g., "Cope with a lack of support from professors or advisors"). Participants responded both scales on a 10-point Likert scale, ranging from 0 (*no confidence at all*) to 9 (*complete confidence*) scale. Lent et al. (2005) reported internal consistency estimates of .89. and .88 for academic milestone self-efficacy and .81 and .85 for academic coping efficacy in college student in U.S. Shue et al. (2014) reported .85 as the overall internal consistency estimates as the general reliability value of academic self-efficacy scale among college students in Taiwan and Singapore. Later, Shue et al. (2017) reported .90 as the overall reliability value of academic self-efficacy in college students in China. Previous studies found academic self-efficacy was predictive of academic outcome expectation and goal progress in college student samples across nations (Lent et al., 2005; Sheu, et al., 2014, 2017). In this study, the Cronbach's alpha for scale scores on the East Asian international student's academic self-efficacy and barrier coping self-efficacy were both .90.

Academic Outcome Expectations

The 10-item academic outcome expectations scale (Lent et al., 2003) was used in this study, which was originally developed by Lent et al. (2003) to test participants' expectation in obtaining favorable outcome after receiving higher education in the United States. Data was collected with a 9-point scale, ranging from 0 (*Strongly disagree*) to 9 (*Strongly agree*). Higher scores indicate a higher expectation of favorable education outcome. Sample items include "earning an attractive salary" and "receiving a good job (or graduate school) offer." Previous studies have reported reliability estimates of .91 in a college student sample in U.S. (Lent et al., 2003), .91 in a college student sample in Taiwan and Singapore (Sheu, et al., 2014), and .94 in a college student sample in China (Sheu, et al., 2017). This variable was found to be positively correlated with academic supports and well-being outcomes in Taiwan and Singapore (Sheu et al., 2014). In this study, the Cronbach's alpha for scale scores on the East Asian international student's academic outcome expectation was .95.

Academic Goal Progress

A 7-item instrument developed by Lent et al. (2005) was used to test how much progress students believe they are making toward their academic goals (e.g., "Completing all course assignments effectively"). Responses were obtained along a 5-point scale, ranging from 1 (*no progress at all*) to 5 (*excellent progress*). Higher scores indicate greater progress towards those goals. Previous studies reported internal consistency estimates ranging from .84 to .86 among college students in the U.S. (Lent et al., 2005), .90 among college students in Taiwan and Singapore (H. Bin Sheu et al., 2014), and .87 among college students in China (Sheu et al., 2017). Previous studies have found

that goal progress was predictive of academic well-being across nations (Lent et al., 2005; Sheu, et al., 2014, 2017). In this study, the Cronbach's alpha for scale scores on the East Asian international student's academic goal progress was .87.

Academic Satisfaction

An 8-item measure was adopted to assess participants' level of satisfaction with different aspects of their academic experience along a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. A sample items is, "I like how much I have learned in my classes" (Lent et al., 2005). Higher score indicates better satisfaction. The studies reported reliability estimate of .86 and .87 among college students in the U.S. (Lent et al., 2005), .89 in a college student sample in Taiwan and Singapore (Sheu, et al., 2014), and .88 in a college student sample in China (Sheu, et al., 2017). Studies showed that academic satisfaction was positively correlated with academic supports and goal progress as well as life satisfaction across nations (Sheu, et al., 2014, 2017). In this study, the Cronbach's alpha for scale scores on the East Asian international student's academic satisfaction was .87.

Perceived Discrimination

A nine-item measure adapted from the Everyday Discrimination Scale (EDS; Williams et al., 1997) was used in this study. This subscale assesses of perceived common discrimination in daily life (Barnes et al., 2004). Sample items are "You are treated with less courtesy than other people", and "You are threated or harassed". Each item will be rated on a 4-point scale, ranging from 1 (*Never*) to 4 (*Often*). Higher scores indicate greater stress from discrimination. In a sample of Asian American, Gee et al. (2007) reported a high internal consistency of the total scores of EDS (Cronbach's $\alpha = .91$). This scale has also significantly predicted self-reported ill health, well-being, and

psychological distress (Williams et al., 1997). In the current study, the Cronbach's alpha for scale scores on the East Asian international student's perceived discrimination was .89.

Data Analysis

The collected data were analyzed with SPSS 23.0 and R 1.3.1 to test the research hypotheses. First, the amount of missing data of each item were reported (percentage or range). Second, Cronbach's alpha and descriptive statistics such as mean, standard deviation, skewness, and kurtoisis were calculated. The bivariate correlations among variables were also tested with the whole sample and male and female samples separately. Then, before testing the measurement model, item parcels were created following Rogers and Schmitt's (2004) factor algorithm.

For the model fit testing, this study followed Anderson and Gerbing's (1988) two-step modeling approach. The measurement model was first assessed to see if it shows acceptable fit for the structural model and then assessed the model fit. The model fit test was examined for both the whole sample and male and female samples separately. The following fit indices were used to evaluate the model it: root-mean-square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). According to Hu and Bentler's (1999) recommendations, RMSEA values less than .08 will be considered as a fair fit, and values less than .05 will be an acceptable fit; and CFI and TLI values larger than .90 will be considered acceptable fit and values greater than .95 as a good fit.

Next, measurement invariance of the measurement model was examined in male and female samples, following three steps: configural invariance, metric invariance, and

scalar invariance. The Chi-square difference test has been used traditionally as an indicator of significant differences nested in two different models. If the Chi-square model fit test is not statistically significant between two models, this indicates that the more restrictive model was supported. Once the scalar invariance was achieved, latent means were compared across groups. Male sample was the referent group, where the factor means and variance were set as 0 and 1, respectively. Wald test and Cohen's d values were calculated to assess the significance of the latent mean differences between samples (Putnick & Bornstein, 2016). Then, the structural model with proposed paths was assessed in male and female samples. Once the model was finalized, multigroup invariance of each path was tested and the direct and indirect paths were also examined for male and female groups.

CHAPTER IV

RESULTS

This chapter presents the data analysis procedures employed and results for the current study. First, data screening and missing data analysis procedures are explained and conducted. Second, item parceling, and structural equation modeling (SEM) were used to test the proposed model of East Asian international students' academic satisfaction. Third, measurement invariance and latent means differences across male and female samples were conducted and presented. Finally, the direct and indirect effects from the proposed model in male, female and the total samples are presented through multigroup SEM analysis.

Missing data, Data Screening and Preliminary Analyses

The data were first screened at the item level. To clean the data, cases with more than 20% missing data were removed (n = 986; Peng et al., 2006). In addition, another 53 individuals were also excluded from the preliminary analysis because (a) they missed indicating agreement on the research contract (n = 24), (b) their responses to validity items were incorrect (n = 25), and (c) their country of origin is not located in East Asia (n = 4). After data screening, a total of 325 cases were used for study.

Means, standard deviations, skewness and kurtosis, and Cronbach's alpha internal consistency estimates for each study variable and intercorrelations between study variables are presented in Table 1. Among the study variables, skewness and kurtosis values did not exceed the absolute value of 1 (Byrne, 2010), indicating the data met the hypothesis of univariate normality. Academic satisfaction showed significant positive correlations with academic support (r = .64, p<.001), academic self-efficacy (r = .68.,

p<.001), barrier coping self-efficacy (r = .64, p<.001), outcome expectation (r = .73, p<.001), and goal progress (r = .73, p<.001), and showed significant negative correlation with perceived discrimination (r = -.17, p<.001).

Table 1

Means, Standard Deviations, Correlations, and Internal Consistency Estimates among Observed Variables

Variables	1	2	3	4	5	6	7
1. Academic support	--	.64***	.48***	.65***	.56***	.64***	-.25***
2. Academic self-efficacy		--	.75***	.80***	.77***	.68***	-.27**
3. Coping self-efficacy			--	.78***	.66***	.64***	-.14*
4. Outcome expectation				--	.74***	.73***	-.23***
5. Goal progress					--	.73***	-.19**
6. Academic satisfaction						--	-.17**
7. Perceived discrimination							--
M	3.62	7.10	6.70	6.97	3.63	3.72	2.30
SD	.68	1.86	1.59	1.74	.68	.69	.63
α	.86	.90	.90	.95	.87	.87	.89
Skewness	-.33	-.32	-.24	-.23	-.17	-.26	-.19
Kurtosis	.40	-.53	.01	-.61	.02	.08	-.47

Note. *p <.05, **p < .01, ***p< .001

Item Parceling and Assessment of Measurement Model

Following Matsunaga's (2008) guidelines, three parcels were created for each latent variable, through a factorial algorithm (Rogers & Schmitt, 2004). To be more specific, each parcel sequentially comprised the items with the highest to lowest factor loadings upon the given measure and alternated the direction of taking turns through the parcels. This would allow capitalizing the item distribution evenly across the parcel. The factor loadings of parcels in the measurement model are presented in Table 2. Standardized factor loadings ranged from .786 to .954 across factors and were significant at p < .001, suggesting successful creation of item parcels. Correlations among factors are also shown in Table 3.

Table 2

Factor Loadings of the Measurement Model (N = 325)

Factor	B (SE)	*β* (SE)	*p*
Academic Satisfaction			
Parcel 1	1.000 (.000)	.835 (.021)	<.001
Parcel 2	.649 (.036)	.837 (.021)	<.001
Parcel 3	.685 (.038)	.836 (.021)	<.001
Academic Support			
Parcel 1	1.000 (.000)	.853 (.021)	<.001
Parcel 2	.910 (.055)	.798 (.025)	<.001
Parcel 3	.932 (.055)	.827 (.023)	<.001
Perceived Discrimination			
Parcel 1	1.000 (.000)	.877 (.017)	<.001
Parcel 2	.656 (.038)	.786 (.024)	<.001
Parcel 3	.729 (.038)	.832 (.021)	<.001
Goal Progress			
Parcel 1	1.000 (.000)	.877 (.014)	<.001
Parcel 2	2.137 (.078)	.954 (.008)	<.001
Parcel 3	2.188 (.086)	.927 (.010)	<.001
Outcome Expectations			
Parcel 1	1.000 (.000)	.928 (.011)	<.001
Parcel 2	.957 (.036)	.901 (.013)	<.001
Parcel 3	.498 (.023)	.819 (.021)	<.001
Academic Self-Efficacy			
Parcel 1	1.000 (.000)	.898 (.015)	<.001
Parcel 2	.671 (.033)	.852 (.019)	<.001
Parcel 3	.635 (.034)	.810 (.022)	<.001
Barrier Coping Self-Efficacy			
Parcel 1	1.000 (.000)	.855 (.021)	<.001
Parcel 2	1.048 (.057)	.873 (.020)	<.001
Parcel 3	1.000 (.057)	.841 (.022)	<.001

Table 3

Correlations and Standard Errors of Latent Variables in the Measurement Model (N = 325)

Variables	1	2	3	4	5	6	7
1. Academic Satisfaction	-	.739 (.034) ***	-.177 (.062) **	.843 (.025) ***	.810 (.025) ***	.749 (.031) ***	.726 (.034) ***
2. Academic Support		-	-.282 (.059) ***	.644 (.041) ***	.715 (.033) ***	.717 (.034) ***	.552 (.047) ***
3. Perceived Discrimination			-	-.208 (.061) **	-.237 (.058) ***	-.283 (.057) ***	-.153 (.061) **
4. Goal Progress				-	.805 (.025) ***	.858 (.022) ***	.747 (.032) ***
5. Outcome Expectation					-	.847 (.020) ***	.847 (.021) ***
6. Academic Self-Efficacy						-	.821 (.025) ***
7. Barrier Coping Self-Efficacy							-

Note. All estimates are standardized. *p<.05, **p<.01, ***p<.001.

The measurement model with the inclusion of created parcels showed an acceptable fit with the data. As presented in Table 4, the model demonstrated good fit [X^2/df < 3, CFI values >.95, and RMSEA <.08] for the overall group, and both male and female groups separately. Hence, the proposed model will be used for further analyses.

Table 4

Confirmatory Factor Analysis for female, male and the whole sample

	CFI	TLI	RMSEA [90% CI]	SRMR	X^2	df	X^2/df	*p*
Total Sample	.974	.967	.053 [.045, .062]	.028	323.091	168	1.923	<.001
Female	.960	.949	.065 [.051, .079]	.038	277.745	168	1.653	<.001
Male	.955	.944	.073 [.059, .085]	.035	309.823	168	1.844	<.001

Measurement Invariance and Latent Mean Differences

The measurement invariance of the model by gender, across female and male samples, was conducted. First, configural invariance was tested, which is to examine if the model structure is identical across gender samples without constraining any model parameters across groups. As shown in Table 4, this model fit the data well. Second, metric invariance was examined by constraining factor loadings to be identical across the gender groups. Achieving metric invariance suggests the relationship between items and their associated latent factors are equivalent across the gender groups. The metric invariance showed good model fit (see Table 5), indicating items are interpreted the same way by each group. When comparing the configural invariance, the chi-square model fit test of metric invariance was not statistically significant, ΔX^2 (Δdf) = 19.298 (14), ΔCFI = -.001, p = .154, indicating the metric invariance model is supported. Following metric invariance, scalar invariance was the next level of the measurement invariance analysis. Scalar invariance constrains item intercepts to be equal across groups. The resulting model showed a good model fit without statistically significance as compared to the metric model, ΔX^2 (Δdf) = 21.245 (14), ΔCFI = -.001, p = .096. Therefore, scalar invariance was achieved, suggesting that it is plausible to examine gender differences by these measurements.

Table 5

Model Fit Indices and Comparison for Configural, Metric, and Scalar Invariance Models (N= 325)

	X^2	*df*	*P*	RMSEA [90% CI]	CFI	TLI	SRMR	Nested Model Comparison		
								ΔX^2 (Δdf)	ΔCFI	*p*
Configural	578.779	336	<.001	.069 [.060, .079]	.956	.946	.038	-	-	-
Metric	598.077	350	<.001	.069 [.059, .078]	.956	.947	.047	19.298(14)	-.001	.154
Scalar	619.322	364	<.001	.068 [.059, .077]	.954	.947	.048	21.245(14)	-.001	.096

Because scalar invariance was met for each measurement, latent factor means can be compared across groups (Gregorich, 2006). To compare between male and female groups, the male sample was set as the reference group where the factor means and variance were set as 0 and 1, respectively. As shown in Table 6, participants in both gender groups reported a similar level in academic satisfaction, goal progress, outcome expectation, academic self-efficacy, barrier coping self-efficacy and perceived discrimination. However, males reported statistically significant higher levels of barrier coping self-efficacy than female sample (Cohen's *d* = .378).

Table 6

Gender Differences in Latent Mean Differences, with Male as Referent Group

Latent Factor	Latent mean	*SE*	*p*	Cohen's *d*
Academic Satisfaction	-.126	.125	.316	-.124
Academic Support	.001	.125	.994	.001
Goal Progress	-.120	.123	.326	-.121
Outcome Expectation	-.224	.117	.055	-.228
Academic Self-efficacy	-.075	.121	.553	-.075
Barrier Coping Self-efficacy	-.345	.114	.002	-.378
Perceived Discrimination	-.184	.118	.119	-.191

Multigroup Structural Equation Modeling

Having established the proposed research model, multigroup structural equation modeling was used to examine if there were any substantive differences in the structural relationships between gender groups. Overall, the model showed a fair fit with the data

(see Table 7), X^2 (168) = 323.09, p <.001; CFI = .974, TIL = .967, SRMR = .028, RMSEA = .053, 90% CI [.045,.062]. The model explained 3.5%, 52.1%, 82.1%, 75.9% and 81.6% of the variance in barrier coping self-efficacy, academic self-efficacy, outcome expectation, goal progress and academic satisfaction in the whole sample. Then, differences in gender groups were examined at the sample level, while constraining the paths to equality. If the path-constrained model resulted in a significant difference, the path will be denoted as having significant differences across gender groups. As showed in Table 6, no significant differences were found, indicating the model fit does not have significant gender differences at the sample level. The model path coefficient estimates for the two-samples are presented in Figure 3.

Table 7

Model Fit Indices for overall samples (N= 325) and comparison for Models with or without Constraint for two samples (N= 317)

	X^2	*df*	*p*	RMSEA [90% CI]	CFI	TLI	SRMR	Nested Model Comparison		
								ΔX^2 (Δdf)	ΔCFI	*p*
All	323.09	168	<.001	.053 [.045, .062]	.974	.967	.028	-	-	-
Two samples*	628.57	363	<.001	.068 [.059, .077]	.955	.948	.045	-	-	-
Two samples**	661.13	385	<.001	.067 [.059, .076]	.953	.949	.078	32.56(21)	-.002	.051

Note. Two samples* indicates that the model constrained the loadings and intercepts; Two samples** indicates that the model constrained the loadings, intercepts as well as regression and correlation paths.

Next, the model was examined for each gender group separately. First, the model showed acceptable fit in male sample: X^2 (168) = 309.823, p <.001; CFI = .955, TLI = .944, SRMR = .035, RMSEA = .072, 90%CI [.059, .085]; and acceptable fit in female group as well: X^2 (168) = 277.745, p <.001; CFI = .960, TLI = .949, SRMR = .038, RMSEA = .065, 90% CI [.051, .079]. In the male sample, the model explained 4.3%, 53.8%, 84.7%, 76.9%, and 73.9% of the variance in barrier coping self-efficacy,

academic self-efficacy, outcome expectation, goal progress and academic satisfaction and for the female sample, 2.8%, 52.0%, 78.2%, 74.6% and 91.7% in the same sequence. The model path coefficient estimates for male and female sample is presented in Figure 4 and Figure 5.

Table 8

Model Fit Indices and Comparison for male (N= 155) and female (N= 162)

	X^2	*df*	*p*	RMSEA [90% CI]	CFI	TLI	SRMR
Male	309.823	168	<.001	.072 [.059, .085]	.955	.944	.035
Female	277.745	168	<.001	.065 [.051, .079]	.960	.938	.038

Direct Effects

As shown in Figure 3, perceived discrimination did not predict any factors in the two samples. It only showed a significant negative correlation with academic support. Academic support appeared to be a stronger predictor that was positively regressed on almost every variable of this study at the .001 level, except for the goal progress. Barrier coping self-efficacy and academic self-efficacy were positively and highly correlated with each other and they were both positively regressed on outcome expectation. Only academic self-efficacy emerged as a positive, direct predictor for goal progress (β = .633, p < .001), but yielded a moderate, and statistically significant, negative path to academic satisfaction in this sample. This could indicate statistical suppression given the bivariate relationships between variables. The same suppression effect was also presented in other groups (male and female samples in Future 2 and 3). Furthermore, academic satisfaction was positively predicted by goal progress (β = .622, p < .001) and academic support (β = .351, p < .001), and outcome expectations also was regressed on goal progress (β = .282, p = .007).

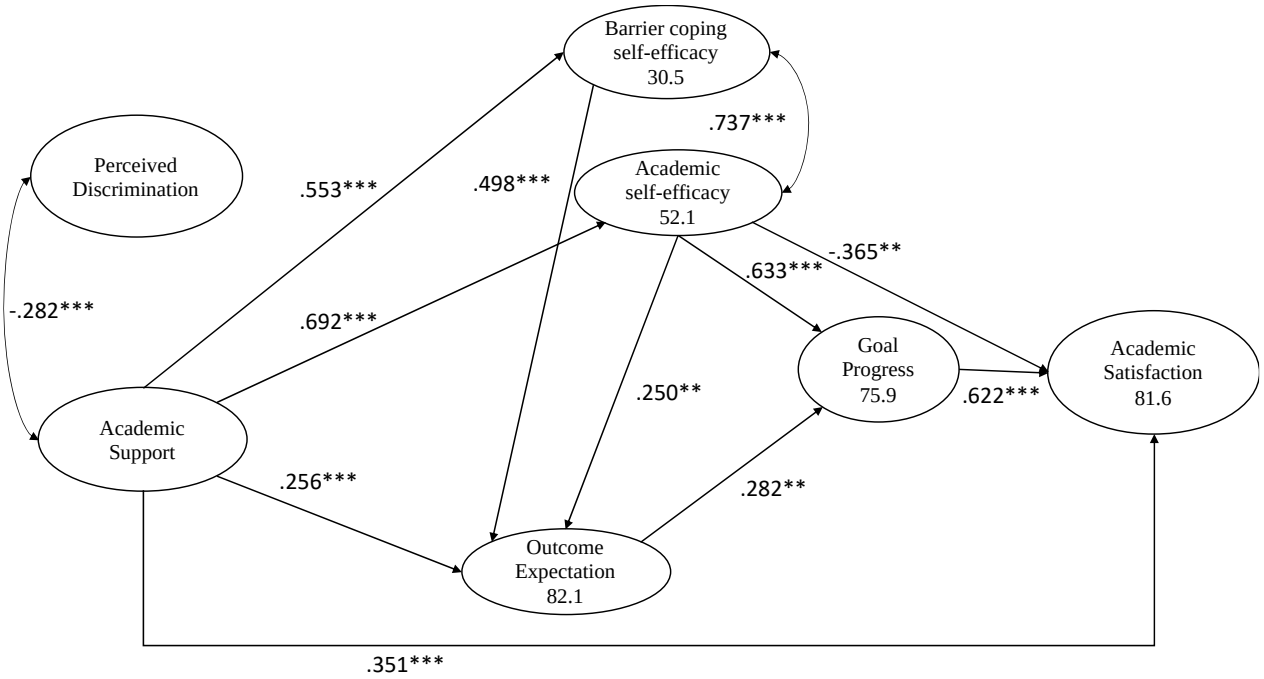

Figure 3. Structural model with East Asian International Students (N = 325). Only latent factors and significant paths are shown for clarity of presentation. All the estimates for path coefficients are standardized. *p<.05, **p<.01, ***p<.001.

Next, the model structure was examined separately in male and female samples (see Figure 4 and Figure 5). In the male sample, consistent to the results in the whole-sample analyses, perceived discrimination did not regress on any factors of the model. In the female sample, perceived discrimination is a source of their academic self-efficacy (β = -.258, p = .001). Whereas academic support was a source of four variables in both samples: academic self-efficacy (β_{male} = .740, p_{male} < .001; β_{female} = .591, p_{female} < .001), barrier coping self-efficacy (β_{male} = .643, p_{male} < .001; β_{female} = .415, p_{female} < .001), outcome expectation (β_{male} = .198, p_{male} = .005; β_{female} = .309, p_{female} < .001) and academic satisfaction (β_{male} = .395, p_{male} < .001; β_{female} = .305, p_{female} = .001).

The predictors of outcome expectations and goal progress were also examined. For outcome expectations, other than academic support, barrier coping self-efficacy (β_{male} = .356, p_{male} = .017; β_{female} = .521, p_{female} < .001) was also a source for both samples,

and academic self-efficacy was an additional source of outcome expectation in male students (β_{male} = .426, p_{male} = .012). Whereas goal progress was predicted by academic self-efficacy in both samples (β_{male} = .808, p_{male} = .001; β_{female} = .558, p_{female} < .001), and outcome expectation is an additional predictor in female sample (β_{female} = .382, p_{female} = .005).

As for the predictors of academic satisfaction, both academic support (β_{male} = .392, p_{male} < .001; β_{female} = .305, p_{female} < .001) and goal progress (β_{male} = .475, p_{male} = .003; β_{female} = .779, p_{female} < .001) in both male and female groups yielded positive associations. In addition, female students also reported a statistically significant association between academic self-efficacy and academic satisfaction (β_{female} = -.394, p_{female} = .006).

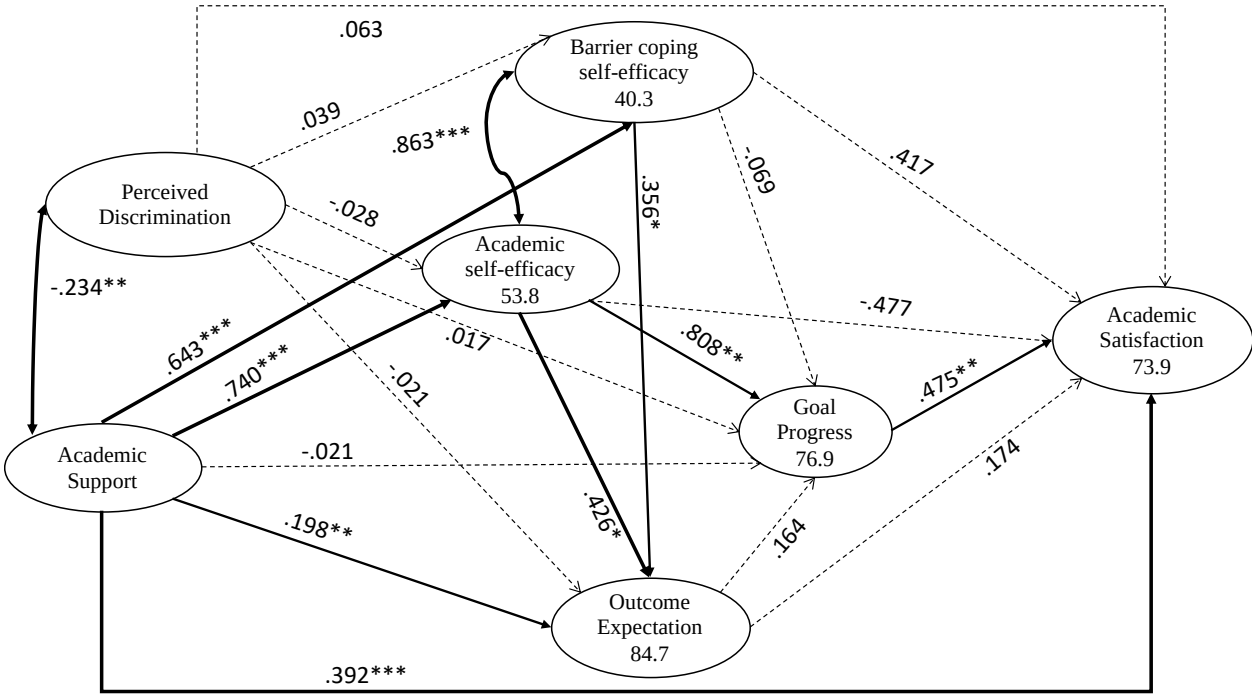

Figure 4. Structural model with the *male* East Asian International Students sample (*n* = 155). Values in circles are percentage of the variances explained. All the estimates for path coefficients and correlations are standardized. *p<.05, **p<.01, ***p<.001. Thick

lines indicate significance in the male sample and dashed lines indicate no significance in male sample.

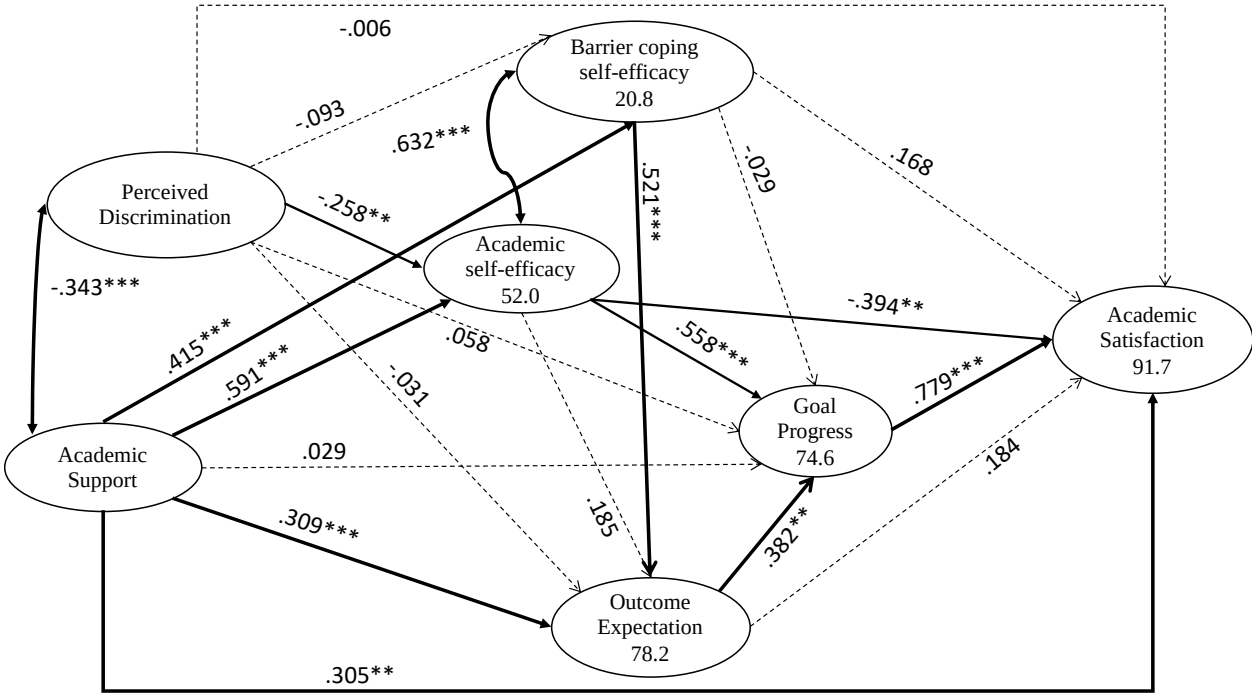

Figure 5. Structural model with the *female* East Asian International Students sample (*n* = 162). Values in circles are percentage of the variances explained. All the estimates for path coefficients and correlations are standardized. *p<.05, **p<.01, ***p<.001. Thick lines indicate significance in the female sample and dashed lines indicate no significance in female sample.

Indirect Effects

Having examined the direct paths among the latent factors, the indirect effects were also tested and presented in Tables 9-11. In the whole sample, academic satisfaction was predicted by academic support through academic (β = -.253, p = .006) and barrier coping self-efficacy (β = -.202, p = .006). In addition, academic satisfaction was also predicted by academic support through paths academic self-efficacy and goal progress (β = .272, p < .001), barrier coping self-efficacy and goal progress (β = .218, p < .001), academic self-efficacy, outcome expectation and goal progress (β = .030, p = .042), as well as barrier coping self-efficacy, outcome expectation and goal progress (β = .024, p

= .045). Furthermore, academic support can also indirectly link to academic satisfaction through outcome expectations and goal progress (β = .045, p = .031). Outcome expectations also showed an indirect association with academic satisfaction through goal progress (β = 4.223, p = .007).

In East Asian international male students, no statistically significant indirect paths were found in the model. However, in the female group, academic satisfaction was predicted by both perceived discrimination (β = .102, p = .032) and academic support (β = -.233, p = .009) indirectly through academic self-efficacy. Both perceived discrimination (β = -.112, p = .018) and academic support (β = .092, p = .035) can indirectly regress on academic satisfaction through both academic self-efficacy and goal progress. In addition, academic support can also indirectly link to academic support through barrier coping self-efficacy (β = -.164, p = .015), barrier coping self-efficacy and goal progress (β = .181, p = .006) or outcome expectations and goal progress (β = .092, p = .035) in the female sample. Academic satisfaction was also indirectly linked to outcome expectation through goal progress in the female group (β = 5.723, p = .005).

Table 9

Parameter Estimates for the Indirect Effects in East Asian International students (N = 325)

Parameter	*β*	SE	95 CI	*p*
Perceived Discrimination ->Academic self-efficacy -> Academic Satisfaction	.032	.022	[-.01, .074]	.136
Perceived Discrimination -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	-.035	.022	[-.077, .008]	.111
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	-.005	.004	[-.013, .003]	.254
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.004	.003	[-.01, .002]	.187
Perceived Discrimination -> Barrier coping self-efficacy -> Academic Satisfaction	-.001	.021	[-.043, .041]	.958
Perceived Discrimination -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	.001	.023	[-.044, .047]	.958
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	.000	.003	[-.006, .006]	.958
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.000	.003	[-.005, .005]	.958
Academic support ->Academic self-efficacy -> Academic Satisfaction	-.253	.092	[-.433, -.073]	.006**
Academic support -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	.272	.071	[.134, .411]	<.001***
Academic support -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	.036	.024	[-.01, .083]	.128
Academic support -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.030	.015	[.001, .059]	.042*
Academic support -> Barrier coping self-efficacy -> Academic Satisfaction	-.202	.074	[-.346, -.058]	.006**
Academic support -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	.218	.058	[.104, .331]	<.001***
Academic support -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	.029	.019	[-.009, .067]	.132
Academic support -> Barrier coping self-efficacy -> Outcome Expectation	.024	.012	[.001, .048]	.045*

-> Goal progress -> Academic Satisfaction				
Perceived Discrimination -> Outcome Expectation -> Academic Satisfaction	-.004	.007	[-.018, .01]	.597
Perceived Discrimination -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.003	.006	[-.015, .009]	.595
Perceived Discrimination -> Goal progress -> Academic Satisfaction	.024	.026	[-.027, .074]	.365
Academic support -> Outcome Expectation -> Academic Satisfaction	.054	.028	[-.002, .109]	.059
Academic support -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.045	.021	[.004, .085]	.031*
Academic support -> Goal progress -> Academic Satisfaction	.002	.043	[-.082, .087]	.957
Outcome Expectation -> Goal progress -> Academic Satisfaction	4.223	1.570	[1.145, 7.301]	.007**

Note. CI = confidence interval; *p<.05, **p<.01, ***p<.001.

Table 10

Parameter Estimates for the Indirect Effects in Male East Asian International students (N = 155)

Parameter	*β*	SE	95% CI	*p*
Perceived Discrimination ->Academic self-efficacy -> Academic Satisfaction	-.013	.034	[-.080, .054]	.698
Perceived Discrimination -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	.011	.027	[-.042, .064]	.692
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	.002	.006	[-.009, .013]	.713
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.001	.002	[-.004, .006]	.709
Perceived Discrimination -> Barrier coping self-efficacy -> Academic Satisfaction	-.019	.038	[-.093, .056]	.621
Perceived Discrimination -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	.015	.030	[-.043, .074]	.613
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	.003	.007	[-.010, .016]	.655
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.001	.003	[-.004, .007]	.646
Academic support ->Academic self-efficacy -> Academic Satisfaction	-.353	.243	[-.829, .124]	.147
Academic support -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	.284	.149	[-.007, .576]	.056
Academic support -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	.055	.065	[-.071, .181]	.394
Academic support -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.025	.026	[-.026, .075]	.339
Academic support -> Barrier coping self-efficacy -> Academic Satisfaction	-.307	.210	[-.718, .105]	.144

Academic support -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	.247	.129	[-.007, .501]	.056
Academic support -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	.048	.056	[-.062, .158]	.395
Academic support -> Barrier coping self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.021	.022	[-.022, .065]	.340
Perceived Discrimination -> Outcome Expectation -> Academic Satisfaction	-.004	.008	[-.020, .012]	.656
Perceived Discrimination -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.002	.004	[-.009, .006]	.657
Perceived Discrimination -> Goal progress -> Academic Satisfaction	.008	.027	[-.045, .061]	.766
Academic support -> Outcome Expectation -> Academic Satisfaction	.035	.035	[-.033, .103]	.319
Academic support -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.015	.018	[-.019, .050]	.381
Academic support -> Goal progress -> Academic Satisfaction	-.010	.050	[-.108, .088]	.841
Outcome Expectation -> Goal progress -> Academic Satisfaction	2.454	2.430	[-2.308, 7.216]	.312

Note. CI = Confidence interval.

Table 11

Parameter Estimates for the Indirect Effects in Female East Asian International students (N = 162)

Parameter	*β*	SE	95 CI	*p*
Perceived Discrimination ->Academic self-efficacy -> Academic Satisfaction	.102	.047	[.009, .195]	.032*
Perceived Discrimination -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	-.112	.048	[-.205, -.019]	.018*
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	-.009	.009	[-.027, .009]	.341
Perceived Discrimination -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.014	.010	[-.034, .006]	.169
Perceived Discrimination -> Barrier coping self-efficacy -> Academic Satisfaction	.037	.040	[-.042, .115]	.358
Perceived Discrimination -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	-.041	.043	[-.125, .044]	.348
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	-.003	.005	[-.012, .006]	.482
Perceived Discrimination -> Barrier coping self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.005	.006	[-.017, .007]	.410
Academic support ->Academic self-efficacy -> Academic Satisfaction	-.233	.090	[-.409, -.057]	.009**
Academic support -> Academic self-efficacy -> Goal progress -> Academic Satisfaction	.257	.083	[.094, .42]	.002**
Academic support -> Academic self-efficacy -> Outcome Expectation -> Academic Satisfaction	.020	.020	[-.020, .060]	.320
Academic support -> Academic self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.033	.022	[-.010, .075]	.133
Academic support -> Barrier coping self-efficacy -> Academic Satisfaction	-.164	.067	[-.295, -.032]	.015*

Academic support -> Barrier coping self-efficacy -> Goal progress -> Academic Satisfaction	.181	.065	[.052, .309]	.006**
Academic support -> Barrier coping self-efficacy -> Outcome Expectation -> Academic Satisfaction	.014	.015	[-.014, .043]	.330
Academic support -> Barrier coping self-efficacy -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.023	.016	[-.008, .054]	.149
Perceived Discrimination -> Outcome Expectation -> Academic Satisfaction	-.006	.012	[-.028, .017]	.621
Perceived Discrimination -> Outcome Expectation -> Goal progress -> Academic Satisfaction	-.009	.018	[-.044, .026]	.610
Perceived Discrimination -> Goal progress -> Academic Satisfaction	.045	.053	[-.058, .149]	.390
Academic support -> Outcome Expectation -> Academic Satisfaction	.057	.043	[-.027, .141]	.181
Academic support -> Outcome Expectation -> Goal progress -> Academic Satisfaction	.092	.044	[.006, .177]	.035*
Academic support -> Goal progress -> Academic Satisfaction	.023	.075	[-.124, .17]	.761
Outcome Expectation -> Goal progress -> Academic Satisfaction	5.723	2.047	[1.71, 9.735]	.005**

Note. CI = Confidence interval; *p<.05, **p<.01, ***p<.001.

CHAPTER V

DISCUSSION

The goal of this study was to examine the East Asian international students' academic experiences based on Social Cognitive Career Theory satisfaction model (Lent & Brown, 2006) in the era of a the COVID-19 pandemic. Overall, this study found that after aggregating three parcels for each individual instrument (e.g., academic satisfaction, outcome expectations), the data fit the model well with achieving configural, metric and scalar measurement invariance across female and male groups. Mean difference tests were also examined across two gender groups. Additionally, no significantly predictive role of perceived discrimination was found on socio-cognitive constructs directly in the model. Lastly, theoretical and practical implications, limitations and directions for future research are also discussed in this chapter.

Measurement Invariance and Latent Mean Differences

This study was the first to test Lent and Brown's (2006) SCCT satisfaction model among a sample of East Asian international students in the United States. The finding enriches the current studies of SCCT satisfaction model by showing the data fit the model well with achieving configural, metric and scalar measurement invariance across female and male groups (Hypothesis 1). This indicates that the pattern of factor structure, item loadings, and item intercepts can be considered the same between these two groups. The data also indicate a good fit in both male and female gender groups (Hypothesis 2). This result is consistent with previous studies (Lent et al., 2018; Sheu et al., 2020), supporting the generalizability of the SCCT satisfaction model across gender. However, as the items were aggregated into three parcels of each instrument, this result cannot suggest the

measurement invariance of each individual instrument. To fulfill this hypothesis, all items should be included as separate indicators without item aggregation.

The comparison of latent mean difference tests showed that female and male students adopted similar academic experiences in academic satisfaction, academic support, goal progress, outcome expectation, and academic self-efficacy, and similar levels of perceived discrimination with regard to race (Table 6). However, males reported a statistically higher level of barrier coping self-efficacy than female students. The higher score may suggest that male students overall feel more capable in coping with challenges than their female peers. This may be a result of gender socialization that males are expected to be strong and self-defensive in face of adversity, whereas females are expected to be receptive, compromising, cooperative, and to solve a conflict through a relational approach (Sizoo, 2000). Tsai and Wei (2018) found a similar result that Chinese international male students are more likely to use behavior-oriented coping skills when perceiving discrimination than female students. Therefore, in the face of perceived discrimination, under the cultural expectations and societal pressure, male students can feel empowered to act as "expected of a man," whereas female students have a greater tendency to respond less or not respond at all.

Overview of Findings in the Model

Overall, the SCCT satisfaction model fits the data well both in the total sample, and female and male samples separately. In particular, academic support played a significant role in this SCCT model. This result is consistent with previous studies (e.g., Hui et al., 2013; Sheu et al., 2017) that reported academic satisfaction is related to the environmental factors, such as perceived support.

Also, academic support significantly predicted outcome expectations, and academic and barrier coping self-efficacy. These findings are consistent with previous studies indicating that stronger self-efficacy in both academic performance and barriers copings, as well as more positive outcome expectations are all related to favorable environmental atmosphere (e.g., Ojeda et al., 2011; Sheu et al., 2014). The results imply that East Asian international students who have a favorable academic environment are more likely to feel confident in academic work, coping with challenges and maintain a positive outlook for their future.

Goal progress is one of the major predictors of academic satisfaction and had a strong association with academic self-efficacy in this sample of East Asian international students. The results are consistent with previous studies as well as the SCCT satisfaction theoretical framework (Lent, 2004) that life satisfaction is influenced by goal progress. Many studies reported that students are more likely to feel satisfied, especially when they were confident to a short-term goal and received immediate feedback on their progress through exams and tests (Lent et la., 2005).

However, goal progress was not associated with academic support, or perceived discrimination. This shows that students' goal progress in the present sample is not predicted by contextual supports or barriers. This founding is inconsistent with the theoretical hypothesis that contextual supports and barriers had direct effects on goals (Lent et al., 2008), but was consistent with previous studies conducted in Asia (Sheu et al., 2014, 2017). They also found a nonsignificant relationship between contextual factors and goal progress among college students in China (Sheu et al., 2017) and Taiwan, but not in the Singapore college sample (Sheu et al., 2014). Due to the inconsistent findings

within the Asian population, it again highlights the complex sub-cultures within the broader Asian population. For East Asian international students, academic self-efficacy played a more important role than academic support in promoting goal progress, which can be practically meaningful in terms of future development of intervention (Sheu et al., 2014).

One of the critical cognitive variables in the SCCT model, outcome expectations, did not predict academic satisfaction directly, but indirectly through goal progress. Upon closer examination, it was only female students in this sample who perceived a more positive outcome that were more likely to make progress on their work, and indirectly predict academic satisfaction via progress, but not among their male counterparts. The role of outcome expectations was unclear in the current literature. Some studies found that outcome expectations can be useful in predicting interest or major choice (e.g., Byars-Winston et al., 2010; Quimby, Seyala, & Wolfson, 2007), but researchers also found its insignificant association with interests, goals, and persistence (e.g., Lent et al., 2005; Lent et al., 2001). Lent et al. (2011) argued the accuracy of the outcome expectations measurement in capturing the essence of the expected outcomes among college students, whereas Sheu et al. (2020) argued that the relation from outcome expectations to academic satisfaction is largely mediated through indirect effects rather than direct effects. Considering the inconsistent results about the role of outcome expectations, more studies related to the effect of outcome expectations in the academic field is needed.

The direct effects of perceived discrimination on the cognitive variables in the SCCT model were also not fully supported in this study. This suggests that subjective

perceived discrimination does not necessarily translate to academic experiences. This result is inconsistent with the existing literature (e.g., Xu et al., 2021; Wei et al., 2012, 2021) that perceived discrimination does negatively impair international students' academic functioning. The result in the current study may reflect the complex and nuanced relationship between perceived discrimination and academic experiences. It is possible that the essence of the perceived discrimination matters. The Perceived Discrimination Scale (Williams et al., 1997) was to examine daily discrimination in social relationships, the mismatching domains making it hard for students to translate across contexts (e.g., from the unfair treatment experiences in the restaurant to the study group exclusion). It may be helpful to use a measurement specifically testing their academic discriminatory experiences, such as perceived language discrimination.

Another possible reason of nonsignificant role of perceived discrimination can be the unique racial experience of East Asian international students. Participants in this study have had less exposure to living experiences as a racial minority, and they may expect to be treated differently as relocating to a foreign country. A study also found non-U.S.-born Asian students have higher well-being levels than U.S.-born Asian students under the similar level of discrimination act (Wang et al., 2019). It is possible that different racial experiences in the early childhood can alleviate the minority distress in the U.S.

Moreover, the East Asian values and philosophy carried by international students may cultivate adaptability, perseverance and resilience. Students are more likely to persevere and be motivated to perform well academically due to the value placed on education in the East Asian culture. This implies that students may experience stronger

positive activating emotions (e.g., hope, contentment) and less negative emotions (e.g., shame and anxiety; Datu & Fong, 2018) when achieving their academic goals, which, in turn, can cultivate resiliency and hardiness in their life.

However, it is still concerning to notice that the perceived discrimination significantly affected female students' satisfaction indirectly via the cognitive variable (i.e., academic self-efficacy) and its pathways (i.e., academic self-efficacy and goal progress). This result indicates that female students are more likely to internalize the external barriers than male counterparts, and this process can further prevent females from making progress towards their goals and achieving satisfaction in their work. Tsai and Wei (2018) reported a similar result that female Chinese international students were more likely to use internalization as a coping strategy in facing discrimination. However, they interpreted internalization as a way for self-improvement, which may help them avoid being preoccupied by their experiences of racial discrimination and instead redirecting their focus to their cultural values (e.g., relationship harmony). Different from this study result, the "self-examination" over perceived discrimination does not help with self-improvement. It instead lowers their self-beliefs in approaching their goals and feeling satisfied with their academic experiences. Due to the inconsistent findings in the relationship between perceived discrimination and self-efficacy, more studies are needed.

Lastly, despite the failure of perceived discrimination to predict any constructs in this study, its significantly negative correlations with all the variables still deserve attention. As shown in Table 1, perceived discrimination played a profound role in academic experiences, showing statistically negative correlations with all the other

academic variables. Therefore, addressing the negative impact of discrimination on East Asian international students is especially important.

Despite the evidence of overall model-data fit, several individual paths did not meet the criteria for statistical or practical significance. For example, the mediation direction of the academic support, academic self-efficacy and academic satisfaction as opposed to what previous studies indicated, showing a change in direction of relationships (i.e., direction of regression coefficients compared to respective bivariate correlations), which suggested goal progress acts as a suppressor in this sample (MacKinnon, Krull, & Lockwood, 2000; Maassen & Bakker, 2001; Yang, Haydon, & Miller, 2013). A suppression effect refers to when the "magnitude of the relationship between an independent variable and a dependent variable becomes larger when a third variable is included" (Mackinnon et al., 2000, p. 2). But this result is consistent with a meta-analysis examining the SCCT satisfaction model. Sheu et al. (2020) proposed that it is possible that the relation of self-efficacy to academic satisfaction are largely mediated by goal progress rather than being direct. Therefore, future study should examine the role of academic self-efficacy, goal progress and academic satisfaction. Caution should be taken when interpreting this direct effect in this study.

Practical Implications

This study provides new insight into the role of perceived discrimination in the U.S. higher education setting. The East Asian international students in this study did not report a significant negative association between perceived discrimination and their academic functioning. As surprising as it is, it implies the unique characteristics of international students. Coming from a different country with a different upbringing than U.S.-born

minorities, East Asian international students may hold another way of understanding and coping with discrimination. Practitioners and professors may need to cautiously examine international students' experiences, not pathologizing or overlooking the unique strength of international students in the U.S.

However, it is also concerning to note the negative role of discrimination on academic self-efficacy among female students. In considering the significant associations between academic self-efficacy and other socio-cognitive variables, it is important to provide appropriate intervention to increase self-efficacy. Based on Bandura's (1977) four sources of self-efficacy, there are various strategies that mental health professionals might use to enhance East Asian international students' self-efficacy. For example, it can be helpful to host workshops to teach step-by-step strategies to cope with common challenges (e.g., academic goal setting, expected communication with professors, presentation skills, group discussion skills). East Asian international students may also benefit from learning skills in seeking academic feedback and support proactively to promote academic satisfaction, joining affect management workshops or interventions (Sheldon, & Lyubomirsky, 2006) as well as obtaining acknowledgment on their own holiday to promote positive affect. These activities to increase self-efficacy may allow East Asian international students to achieve a positive academic environment and increased perceived institutional support.

Consistent with previous research, this study again highlights the critical role of institutional atmosphere and support on the academic experiences for students of color. This study specifically highlighted the protective function of support to enhance international students academic satisfaction. Administrators of international students

organizations can develop more tailored and supportive programs that focus on their unique challenges and barriers (e.g., writing program, career decision making program, communication skills, language barriers), with teachers and other students across gender and nationality, cultivating a sense of "family" that people are working towards a common goal. Conchas (2001) found that this collaborative and inclusive atmosphere can foster a sense of belongness, which can be a key to improve the academic experiences of students of color. Academic institutions (e.g., international center, women's center) should acknowledge the unique challenges among female students, who are more vulnerable to discrimination. Administrators and organizations need to create programs that challenge the gender roles, provide the provision of role models, develop workshops for domestic students to enhance understanding and for international students to challenge negative self-talk when facing unfair treatment.

Limitations and Directions for Future Research

Despite its contribution to the literature, this study still has a number of limitations that can inform future studies. First, the participants in this study may not be appropriate to generalize to all East Asian international students in the U.S. Although this study has taken a step further than previous studies in differentiating Asian international students, it is incumbent for researchers and clinicians to acknowledge the heterogeneity of this broad group. A large portion of the current sample self-identified as binary gender identity, and this study may not represent the experiences of non-binary gender identified individuals. Similarly, the majority of the participants identified as heterosexual, and this study may not represent the experiences of sexual minorities. Relatedly, educational level (undergraduate vs graduate students) and academic programs (STEM vs non-STEM)

were also introduced as additional factors and potential mediators between environmental support/barriers and traditional socio-cognitive variables of SCCT. Researchers are encouraged to consider adding those variables in future studies based on the SCCT satisfaction model. It would be also interesting to apply this model to a narrower level, such as cultural heritage identification and intersectional perspectives. Thus, future studies should consider investigating the complex intersectionality of identities by gathering larger samples.

Second, this study did not support including perceived discrimination to the SCCT satisfaction model due to its insignificant association with other variables, but future research is necessary. For example, specifying the perceived discrimination content can be helpful to understand East Asian international student's academic experiences, such as language discrimination or the sense of safety. Also, qualitative methodologies can be used to capture the unique lived experiences and the nuances of academic satisfaction, racial identity development and perceived discrimination in this specific population. Furthermore, institutional factors can also be helpful to add in the model. The contextual factors (e.g., academic support, perceived discrimination) of the current study still remain at the person level. Considering higher levels of context such as institution type (e.g., predominantly white institutions) may have added more insight on the academic experiences of East Asian international students.

Another limitation of the current study is its cross-sectional nature, which does not allow for examination of causal relationships. Therefore, longitudinal, experimental or intervention studies can be helpful to test causality relationships, as well as the model's practical use in the reality among this population, such as ways in promoting self-

efficacy, facilitate goal progress, environmental support. In addition, this study did not include affect variables or psycho-social factors (e.g., anxiety, adjustment) in the current population. Future studies may also add those variables in the SCCT satisfaction model and re-examine the relationship between goal progress and academic satisfaction, considering the suppressor role of academic self-efficacy in this study.

Conclusion

East Asian international students are a unique group with great complexity and diversity that need more attention and services from academic institutions, which include the mental health professionals in university counseling centers. Even though the number of international students dropped slightly due to the COVID-19 global pandemic, the number of East Asian international students will likely continue to grow at least in next few years (IIE, 2018; QS, 2020). This is because the overseas academic credentials and experiences will provide unique skills which provide them advantages for future employment (Arthur & Flynn, 2011). Thus, the primary purpose of the present study was to test Lent's (2004) Social Cognitive Career Theory satisfaction model among East Asian international students in the era of the COVID-19 pandemic.

This study found that the SCCT satisfaction model was generally applicable to all the samples, as well as male and female samples separately. Meaningful gender differences were found in the latent mean differences of the main constructs and their pathways. However, perceived discrimination was not a significant factor to academic satisfaction among East Asian international students. This result suggested that East Asian international students are unique in perceiving their racial identity and experiences, and mental health providers and psychologists should be careful when steering them

towards academic satisfaction. Most importantly, this study highlighted the protective role of academic support and provides vital information and suggestions for implications, for both institutional and individual levels, to increase East Asian international students' academic satisfaction, and how this effort can be specified to the needs of different gender groups. If institutions can change towards celebrating diversity and inclusivity, the next generation of East Asian international students will receive a more positive message when making their effort and participation globally.

References

Ahmed, S. (2012). *On being included [electronic resources]: Racism and diversity in institutional life*. Duke University Press.

Allen, M. L. (1996). Dimensions of educational satisfaction and academic achievement among music therapy majors. *Journal of Music Therapy*, *33*(2), 147-160. http://dx.doi.org/10.1093/jmt/33.2.147

Arthur, N., & Flynn, S. (2011). Career development influences of international students who pursue permanent immigration to Canada. *International Journal for Educational and Vocational Guidance*, *11*(3), 221-237. http://dx.doi.org/10.1007/s10775-011-9212-5

Aristovnik, A., Keržič, D., Ravšelj, D., Tomaževič, N., & Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability*, *12*(20), 8438.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411.

Balkis, M. (2013). Academic procrastination, academic life satisfaction and academic achievement: the mediation role of rational beliefs about studying. *Journal of Cognitive & Behavioral Psychotherapies*, *13*(1).

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behaviroal change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1007/978-3-319-75361-

4

Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Cheng, Y. P. (2018). Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist*, *73*(7), 855–883. https://doi.org/10.1037/amp0000204

Benner, A. D., & Graham, S. (2013). The antecedents and consequences of racial/ethnic discrimination during adolescence: Does the source of discrimination matter?. *Developmental Psychology*, *49*(8), 1602. http://dx.doi.org/10.1037/a0030557

Benner, A., & Kim, S. Y. (2009). Experiences of discrimination among Chinese American adolescents and the consequences for socioemotional and academic development. *Developmental Psychology*, *45*(6), 1682–1694. https://doi.org/10.1037/a0016119

Betz, E. L., Klingensmith, J. E., & Menne, J. W. (1970). The measurement and analysis of college student satisfaction. *Measurement and Evaluation in Counseling and Development*, *3*, 110–118. https://files.eric.ed.gov/fulltext/ED041953.pdf

Betz, N. E. (2000). Self-efficacy theory as a basis for career assessment. *Journal of Career Assessment*, *8*(3), 205–222. http://dx.doi.org/10.1177/106907270000800301

Brown, S. D., & Lent, R. W. (2019). Social cognitive career theory at 25: Progress in studying the domain satisfaction and career self-management models. *Journal of Career Assessment*, *27*(4), 563–578. https://doi.org/10.1177/1069072719852736

Brown, S. D., Lent, R. W., Telander, K., & Tramayne, S. (2011). Social cognitive career theory, conscientiousness, and work performance: A meta-analytic path analysis. *Journal of Vocational Behavior*, *79*(1), 81–90. https://doi.org/10.1016/j.jvb.2010.11.009

Brown, S. D., Roche, M., Abrams, M., Lamp, K., Telander, K., Daskalova, P., Tatum, A., & Massingale, M. (2018). Relationships among supports and barriers and career and educational outcomes: A meta-analytic investigation. *Journal of Career Assessment*, *26*(3), 395–412. https://doi.org/10.1177/1069072717714537

Bücker, S., Nuraydin, S., Simonsmeier, B. A., Schneider, M., & Luhmann, M. (2018). Subjective well-being and academic achievement: A meta-analysis. *Journal of Research in Personality*, *74*, 83-94. http://dx.doi.org/10.1016/j.jrp.2018.02.007

Bulgan, G., & Çiftçi, A. (2017). Psychological adaptation, marital satisfaction, and academic self-efficacy of international students. *Journal of International Students*, *7*(3), 687–702. https://doi.org/10.5281/zenodo.570028

Byars-Winston, A., Estrada, Y., Howard, C., Davis, D., & Zalapa, J. (2010). Influence of social cognitive and ethnic variables on academic goals of underrepresented students in science and engineering: a multiple-groups analysis. *Journal of counseling psychology*, *57*(2), 205.

Cadaret, M. C., Hartung, P. J., Subich, L. M., & Weigold, I. K. (2017). Stereotype threat as a barrier to women entering engineering careers. *Journal of Vocational Behavior*, *99*, 40-51.

Chen, J. H., Li, Y., Wu, A. M., & Tong, K. K. (2020). The overlooked minority: Mental

health of International students worldwide under the COVID-19 pandemic and beyond. *Asian Journal of Psychiatry*, *54*, 102333.

Christopher, J. C., Wendt, D. C., Marecek, J., & Goodman, D. M. (2014). Critical cultural awareness: Contributions to a globalizing psychology. *American Psychologist*, *69*(7), 645–655. https://doi.org/10.1037/a0036851

Coffman, D. L., & Gilligan, T. D. (2002). Social support, stress, and self-Efficacy: Effects on students' satisfaction. *Journal of College Student Retention: Research, Theory & Practice*, *4*(1), 53–66. https://doi.org/10.2190/bv7x-f87x-2mxl-2b3l

Conchas, G. (2001). Structuring failure and success: Understanding the variability in Latino school engagement. *Harvard Educational Review*, *71*(3), 475-505.

Constantine, M. G., Okazaki, S., & Utsey, S. O. (2004). Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, *74*(3), 230–241. https://doi.org/10.1037/0002-9432.74.3.230

Ezeofor, I., & Lent, R. W. (2014). Social cognitive and self-construal predictors of well-being among African college students in the US. *Journal of Vocational Behavior*, *85*(3), 413-421.

Danielsen, A. G., Breivik, K., & Wold, B. (2011). Do perceived academic competence and school satisfaction mediate the relationships between perceived support provided by teachers and classmates, and academic initiative?. *Scandinavian Journal of Educational Research*, *55*(4), 379-401. http://dx.doi.org/10.1080/00313831.2011.587322

Datu, J. A. D., & Fong, R. W. (2018). Examining the association of grit with test emotions among Hong Kong Chinese primary school students. *School Psychology International*, *39*(5), 510-525.

Diener, E., Heintzelman, S. J., Kushlev, K., Tay, L., Wirtz, D., Lutes, L. D., & Oishi, S. (2017). Findings all psychologists should know from the new science on subjective well-being. *Canadian Psychology/Psychologie Canadienne*, *58*(2), 87–104. https://doi-org.proxy.mul.missouri.edu/10.1037/cap0000063

Diener, E., Suh, E., Lucas, R., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 276–302. https://doi.org/10.1006/pupt.1998.0157

Elder, G. H., & Shanahan, M. J. (2006). *The life course and human development*. In (6th ed.). R. M. Lerner, & W. Damon (Vol. Eds.), The handbook of child psychology: Theoretical

Ensher, E. A., Grant-Vallone, E. J., & Donaldson, S. I. (2001). Effects of perceived discrimination on job satisfaction, organizational commitment, organizational citizenship behavior, and grievances. *Human Resource Development Quarterly*, *12*(1), 53–72. https://doi-org.proxy.mul.missouri.edu/10.1002/1532-1096(200101/02)12:1<53::AID-HRDQ5>3.0.CO;2-G

Fass-Holmes, B. (2016). International undergraduates' retention, graduation, and time to degree. *Journal of International Students*, *6*(4), 933–955. https://doi.org/10.32674/jis.v6i4.327

Fass-Holmes, B., & Vaughn, A. A. (2014). Are international undergraduates struggling

academically? *Journal of International Students*, *4*(1), 60–73. https://doi.org/10.32674/jis.v4i1.497

Franzen, J., Jermann, F., Ghisletta, P., Rudaz, S., Bondolfi, G., & Tran, N. T. (2021). Psychological distress and well-being among students of health disciplines: The importance of academic satisfaction. *International Journal of Environmental Research and Public Health*, *18*(4), 2151.

French, B. H., Lewis, J. A., Mosley, D. V., Adames, H. Y., Chavez-Dueñas, N. Y., Chen, G. A., & Neville, H. A. (2020). Toward a psychological rramework of radical healing in communities of Color. *Counseling Psychologist*, *48*(1), 14–46. https://doi.org/10.1177/0011000019843506

Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup identity model*. Philadelphia, PA: Psychology Press. G

Gang, L., Wei, C., & Jinglin, D. (2010). Determinants of international students' academic performance: A comparison between Chinese and other international students. *Journal of Studies in International Education*, *14*(4), 389–405. https://doi.org/10.5089/9781484383032.001

Gopalan, N., Beutell, N. J., & Middlemiss, W. (2019). International students' academic satisfaction and turnover intentions: Testing a model of arrival, adjustment, and adaptation variables. *Quality Assurance in Education*.

Hari, A., Nardon, L., & Zhang, H. (2021). A transnational lens into international student experiences of the COVID‐19 pandemic. *Global Networks*.

Hanassab, S. (2006). Diversity, international students, and perceived discrimination:

Implications for educators and counselors. *Journal of Studies in International Education*, *10*(2), 157–172. https://doi.org/10.1177/1028315305283051

Han, S., Pistole, M. C., & Caldwell, J. M. (2017). Acculturative stress, parental and professor attachment, and college adjustment in Asian international students. *Journal of Multicultural Counseling and Development*, *45*, 111–126. http://dx.doi.org/10.1002/jmcd.12068

Haskins, N. H., & Singh, A. (2015). Critical race theory and counselor education pedagogy: Creating equitable training. *Counselor Education and Supervision*, *54*(4), 288–301. https://doi.org/10.1002/ceas.12027

Hofmann, W., & Lucas, R. E. (2012). Subjective well-Being and adaptation to life events: A meta-analysis on differences between cognitive and affective well-being. *Journal of Personality and Social Psychology*, *102*(3), 592–615. https://doi.org/10.1037/a0025948

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hui, K., Lent, R. W., & Miller, M. J. (2013). Social cognitive and cultural orientation predictors of well-being in Asian American college students. *Journal of Career Assessment*, *21*(4), 587–598. https://doi.org/10.1177/1069072712475289

Hwang, B., Bennett, R., & Beauchemin, J. (2014). International students' utilization of counseling services. *College Student Journal*, *48*(3), 347-354.

Institute of International Education (IIE). (2020). *Enrollment trends*.

https://opendoorsdata.org/data/international-students/enrollment-trends/

Khan, A., Hamdan, A. R., Ahmad, R., Mustaffa, M. S., & Mahalle, S. (2016). Problem-solving coping and social support as mediators of academic stress and suicidal ideation among Malaysian and Indian adolescents. *Community Mental Health Journal*, *52*(2), 245–250. https://doi.org/10.1007/s10597-015-9937-6

Kort, M. (2005). *The Handbook of East Asia*. Twenty-First Century Books.

Kim, W. H., & Ra, Y.-A. (2015). Acculturative stress: The experience of korean heritage college students. *Journal of Asian Pacific Counseling*, 5, 65–76.

Lai, A. Y. K., Lee, L., Wang, M. P., Feng, Y., Lai, T. T. K., Ho, L. M., ... & Lam, T. H. (2020). Mental health impacts of the COVID-19 pandemic on international university students, related stressors, and coping strategies. *Frontiers in Psychiatry*, *11*, 584240.

Lee, H. S., & Flores, L. Y. (2019). Testing a social cognitive model of well-being with women engineers. *Journal of Career Assessment*, *27*(2), 246–261. https://doi.org/10.1177/1069072717748668

Lee, J. J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination. *Higher Education*, *53*(3), 381–409. https://doi.org/10.1007/s10734-005-4508-3

Lee, J. S., Koeske, G. F., & Sales, E. (2004). Social support buffering of acculturative stress: A study of mental health symptoms among Korean international students. *International Journal of Intercultural Relations*, *28*(5), 399–414. https://doi.org/10.1016/j.ijintrel.2004.08.005

Lent, R. W. (2004). Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. *Journal of Counseling Psychology*, *51*(4), 482–509. https://doi.org/10.1037/0022-0167.51.4.482

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

Lent, R. W., & Brown, S. D. (2008). Social cognitive career theory and subjective well-being in the context of work. *Journal of Career Assessment*, *16*(1), 6–21. https://doi.org/10.1177/1069072707305769

Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, *60*(4), 557–568. https://doi.org/10.1037/a0033446

Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25: Empirical status of the interest, choice, and performance models. *Journal of Vocational Behavior*, *115*. https://doi.org/10.1016/j.jvb.2019.06.004

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

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

Lent, R. W., Brown, S. D., Schmidt, J., Brenner, B., Lyons, H., & Treistman, D. (2003). Relation of contextual supports and barriers to choice behavior in engineering

majors: Test of alternative social cognitive models. *Journal of Counseling Psychology*, *50*(4), 458–465. https://doi.org/10.1037/0022-0167.50.4.458

Lent, R. W., do Céu Taveira, M., Pinto, J. C., Silva, A. D., Blanco, Á., Faria, S., & Gonçalves, A. M. (2014). Social cognitive predictors of well-being in African college students. *Journal of Vocational Behavior*, *84*(3), 266-272. http://dx.doi.org/10.1016/j.jvb.2014.01.007

Lent, R. W., Ezeofor, I., Morrison, M. A., Penn, L. T., & Ireland, G. W. (2016). Applying the social cognitive model of career self-management to career exploration and decision-making. *Journal of Vocational Behavior*, *93*, 47–57. https://doi.org/10.1016/j.jvb.2015.12.007

Lent, R. W., Morris, T. R., Penn, L. T., & Ireland, G. W. (2019). Social–cognitive predictors of career exploration and decision-making: Longitudinal test of the career self-management model. *Journal of Counseling Psychology*, *66*(2), 184–194. http://dx.doi.org/10.1037/cou0000307

Lent, R. W., Sheu, H. B., Miller, M. J., Cusick, M. E., Penn, L. T., & Truong, N. N. (2018). Predictors of science, technology, engineering, and mathematics choice options: A meta-analytic path analysis of the social-cognitive choice model by gender and race/ethnicity. *Journal of Counseling Psychology*, *65*(1), 17–35. https://doi.org/10.1037/cou0000243

Lent, R. W., Singley, D., Sheu, H. B., Schmidt, J. A., & Schmidt, L. C. (2007). Relation of social-cognitive factors to academic satisfaction in engineering students. *Journal of Career Assessment*, *15*(1), 87–97.

https://doi.org/10.1177/1069072706294518

Lent, R. W., Singley, H. D., Sheu, H. B., Gainor, K. A., Brenner, B. R., Treistman, D., & Ades, L. (2005). Social cognitive predictors of domain and life satisfaction: Exploring the theoretical precursors of subjective well-being. *Journal of Counseling Psychology*, *52*(3), 429–442. https://doi.org/10.1037/0022-0167.52.3.429

Lent, R. W., do Céu Taveira, M., & Lobo, C. (2012). Two tests of the social cognitive model of well-being in Portuguese college students. *Journal of Vocational Behavior*, *80*(2), 362-371. https://doi.org/10.1016/j.jvb.2011.08.009

Lent, R. W., do Céu Taveira, M., Pinto, J. C., Silva, A. D., Blanco, Á., Faria, S., & Gonçalves, A. M. (2014). Social cognitive predictors of well-being in African college students. *Journal of Vocational Behavior*, *84*(3), 266–272. https://doi.org/10.1016/j.jvb.2014.01.007

Lent, R. W., do Céu Taveira, M., Sheu, H. B., & Singley, D. (2009). Social cognitive predictors of academic adjustment and life satisfaction in Portuguese college students: A longitudinal analysis. *Journal of Vocational Behavior*, *74*(2), 190–198. https://doi.org/10.1016/j.jvb.2008.12.006

Leung, K., Ang, S., & Tan, M. L. (2014). Intercultural competence. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 489–519. https://doi.org/10.1146/annurev-orgpsych-031413-091229

Leung, K., & Bond, M. H. (1984). The impact of cultural collectivism on reward allocation. *Journal of Personality and Social Psychology*, *47*(4), 793–804. https://doi.org/10.1037/0022-3514.47.4.793

Lin, C., Tong, Y., Bai, Y., Zhao, Z., Quan, W., Liu, Z., ... & Dong, W. (2022). Prevalence and correlates of depression and anxiety among Chinese international students in US colleges during the COVID-19 pandemic: A cross-sectional study. *Plos one*, *17*(4), e0267081.

Lin, Y. J., & Flores, L. Y. (2013). Job search self-efficacy of East Asian international graduate students. *Journal of Career Development*, *40*(3), 186–202. https://doi.org/10.1177/0894845311418655

Maassen, G. H., & Bakker, A. B. (2001). Suppressor variables in path models: Definitions and interpretations. *Sociological Methods & Research*, *30*(2), 241-270.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, *1*(4), 173-181.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, *1*(4), 173-181.

Martin, N. D., & Frenette, A. (2017). Lost in transition:College resources and the unequal early-career trajectories of arts alumni. *American Behavioral Scientist, 61*(12), 1487-1509. http://dx.doi.org/10.1177/0002764217734273

Misra, R., & Castillo, L. G. (2004). Academic stress among college students: Comparison of American and international students. *International Journal of Stress Management, 11*(2), 132–148. https://doi.org/10.1037/1072-5245.11.2.132

Misra, S., Le, P. D., Goldmann, E., & Yang, L. H. (2020). Psychological impact of anti-Asian stigma due to the COVID-19 pandemic: A call for research, practice, and policy responses. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(5), 461–464. https://doi.org/10.1037/tra0000821

Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology*, *67*(6), 949–971. https://doi.org/10.1037/0022-3514.67.6.949

National Association of Foreign Student Advisers (NAFSA). (2019). *New NAFSA data: Despite stagnant enrollment, international students contribute nearly $41 billion to the U.S. economy*. https://www.nafsa.org/about/about-nafsa/new-nafsa-data-despite-stagnant-enrollment

National Association of Foreign Student Advisers (NAFSA). (2020). *Fall 2020 survey: Financial impact of COVID-19 on international education*. https://www.nafsa.org/policy-and-advocacy/policy-resources/fall-2020-survey-financial-impact-covid-19-international-education

National Center for Science and Engineering Statistics (NCSES). (2021). *National survey of college graduates: 2019*. NSF 22-310 Alexandria, VA: National Science Foundation. https://ncses.nsf.gov/pubs/nsf22310/

Nadermann, K., & Eissenstat, S. J. (2018). Career decision making for Korean international college students: Acculturation and networking. *The Career*

Development Quarterly, *66*(1), 49-63. https://doi.org/10.1002/cdq.12121

Nauta, M. M. (2007). Assessing college students' satisfaction with their academic majors. *Journal of Career Assessment*, *15*(4), 446–462. https://doi.org/10.1177/1069072707305762

Neto, F. (1995). Predictors of satisfaction with life among second generation migrants. *Social Indicators Research*, *35*(1), 93–116. http://dx.doi.org/10.1007/BF01079240

Oishi, S., Kesebir, S., & Diener, E. (2011). Income inequality and happiness. *Psychological Science*, *22*(9), 1095–1100. https://doi.org/10.1177/0956797611417262

Ojeda, L., Flores, L. Y., & Navarro, R. L. (2011). Social cognitive predictors of mexican American college students' academic and life satisfaction. *Journal of Counseling Psychology*, *58*(1), 61–71. https://doi.org/10.1037/a0021687

Pager, D., & Shepherd, H. (2008). The sociology of discrimination: racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology*, *34*, 181–209. https://doi-org.proxy.mul.missouri.edu/10.1146/annurev.soc.33.040406.131740

Paradies, Y., Ben, J., Denson, N., Elias, A., Priest, N., Pieterse, A., Gupta, A., Kelaher, M., & Gee, G. (2015). Racism as a determinant of health: A systematic review and meta-analysis. *PLoS ONE*, *10*(9), 1–48. https://doi.org/10.1371/journal.pone.0138511

Parent, M. C. (2013). Handling item-level missing data: simpler is just as good. *The Counseling Psychologist*, *41*(4), 568–600.

https://doi.org/10.1177/0011000012445176

Park, E., Klieve, H., Tsurutani, C., & Harte, W. (2017). International students' accented English—Communication difficulties and developed strategies. *Cogent Education*, *4*(1). https://doi.org/10.1080/2331186X.2017.1314651

Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71-90.

Popadiuk, N. E., & Arthur, N. M. (2014). Key relationships for international student university-to-work transitions. *Journal of career development*, *41*(2), 122-140. http://dx.doi.org/10.1177/0894845313481851

Quimby, J. L., Wolfson, J. L., & Seyala, N. D. (2007). Social cognitive predictors of African American adolescents' career interests. *Journal of Career Development*, *33*(4), 376-394.

Rottinghaus, P. J., Larson, L. M., & Borgen, F. H. (2003). The relation of self-efficacy and interests: A meta-analysis of 60 samples. *Journal of Vocational Behavior*, *62*(2), 221–236. https://doi.org/10.1016/S0001-8791(02)00039-8

Rogers, W. M., & Schmitt, N. (2004). Parameter recovery and model fit using multidimensional composites: A comparison of four empirical parceling algorithms. *Multivariate Behavioral Research*, *39*(3), 379-412.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*,

52, 141–166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryff, C. D. (1995). Well-Being in Adult Life. *Current Directions in Psychological Science*, *4*(4), 99–104.

Sawir, E., Marginson, S., Forbes-Mewett, H., Nyland, C., & Ramia, G. (2012). International student security and English language proficiency. *Journal of Studies in International Education*, *16*(5), 434-454. http://dx.doi.org/10.1177/1028315311435418

Sam, D. L. (2001). Satisfaction with life among internationl students: An exploratory study. *Social Indicators Research*, *53*(3), 315–337. https://doi.org/10.1023/A:1007108614571

Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an acculturative stress scale for international students: preliminary findings. *Psychological Reports*, *75*(1), 435–448. https://doi.org/10.2466/pr0.1994.75.1.435

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

Schmitt, M. T., Postmes, T., Branscombe, N. R., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, *140*(4), 921–948. https://doi.org/10.1037/a0035754

Sheldon, K. M., & Lyubomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualizing best possible selves. *The Journal of Positive Psychology*, *1*(2), 73-82.

Sheu, H. B., Chong, S. S., Chen, H. F., & Lin, W. C. (2014). Well-being of Taiwanese and Singaporean college students: Cross-cultural validity of a modified social cognitive model. *Journal of Counseling Psychology*, *61*(3), 447–460. https://doi.org/10.1037/cou0000018

Sheu, H. B., Lent, R. W., Lui, A. M., Wang, X. T., Phrasavath, L., Cho, H. J., & Morris, T. R. (2020). Meta-analytic path analysis of the social cognitive well-being model: Applicability across life domain, gender, race/ethnicity, and nationality. *Journal of Counseling Psychology*, *67*(6), 680–696. https://doi.org/10.1037/cou0000431

Sheu, H. B., Lent, R. W., Miller, M. J., Penn, L. T., Cusick, M. E., & Truong, N. N. (2018). Sources of self-efficacy and outcome expectations in science, technology, engineering, and mathematics domains: A meta-analysis. *Journal of Vocational Behavior*, *109*, 118–136. https://doi.org/10.1016/j.jvb.2018.10.003

Sheu, H. B., Liu, Y., & Li, Y. (2017). Well-being of college students in China: Testing a modified social cognitive model. *Journal of Career Assessment*, *25*(1), 144–158. https://doi.org/10.1177/1069072716658240

Sheu, H. B., & Bordon, J. J. (2017). SCCT research in the international context: Empirical evidence, future directions, and practical implications. *Journal of Career Assessment*, *25*(1), 58–74. https://doi.org/10.1177/1069072716657826

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

Sheu, H. B., & Sedlacek, W. H. (2004). An exploratory study of help-seeking attitudes and coping strategies among college students by race and gender. *Measurement and Evaluation in Counseling and Development*, *37*(3), 130-143. http://dx.doi.org/10.1080/07481756.2004.11909755

Smith, C. (2020). International students and their academic experiences: student satisfaction, student success challenges, and promising teaching practices. *Rethinking Education Across Borders* (pp. 271-287). Springer, Singapore. http://dx.doi.org/10.1007/978-981-15-2399-1_16

Sizoo, E. (2000). *Moving beyond disparities: a yin-yang approach to gender and development*. Development in Practice, 10(1), 44-58.

Suh, H. N., Flores, L. Y., & Wang, K. T. (2019). Perceived discrimination, ethnic identity, and mental distress among Asian international students in Korea. *Journal of Cross-Cultural Psychology*, *50*(8), 991–1007. https://doi.org/10.1177/0022022119874433

Suldo, S. M., Riley, K. N., & Shaffer, E. J. (2006). Academic correlates of children and adolescents' life satisfaction. *School Psychology International*, *27*(5), 567-582. http://dx.doi.org/10.1177/0143034306073411

Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of vocational behavior*, *16*(3), 282-298. http://dx.doi.org/10.1016/0001-8791(80)90056-1

Shirazi, M. (2017). Student satisfaction analysis and its factors (2014 to 2016). *Education*, *7*(4), 71-81.

Tatum, A. K., Formica, L. J., & Brown, S. D. (2017). Testing a social cognitive model of workplace sexual identity management. *Journal of Career Assessment*, *25*(1), 107–120. https://doi.org/10.1177/1069072716659712

Tran, T., Hoang, A. D., Nguyen, Y. C., Nguyen, L. C., Ta, N. T., Pham, Q. H., ... & Nguyen, T. T. (2020). Toward sustainable learning during school suspension: Socioeconomic, occupational aspirations, and learning behavior of vietnamese students during COVID-19. *Sustainability*, *12*(10), 4195.

Tsai, P. C., & Wei, M. (2018). Racial discrimination and experience of new possibilities among Chinese international students. *Counseling Psychologist*, *46*(3), 351–378. https://doi.org/10.1177/0011000018761892

Tian, L., Zhang, X., & Huebner, E. S. (2018). The effects of satisfaction of basic psychological needs at school on children's prosocial behavior and antisocial behavior: The mediating role of school satisfaction. *Frontiers in psychology*, *9*, 548. http://dx.doi.org/10.3389/fpsyg.2018.00548

Uchida, Y., & Kitayama, S. (2009). Happiness and unhappiness in East and West: themes and variations. *Emotion*, *9*(4), 441–456. https://doi.org/10.1037/a0015634

Wang, C. H., Harrison, J., Cardullo, V., & Lin, X. (2018). Exploring the relationship among international students' English self-efficacy, using English to learn self-efficacy, and academic self-efficacy. *Journal of International Students*, *8*(1), 233–250. https://doi.org/10.5281/zenodo.1134299

Wang, K. T., Heppner, P. P., Fu, C. C., Zhao, R., Li, F., & Chuang, C. C. (2012). Profiles of acculturative adjustment patterns among Chinese international students. *Journal of Counseling Psychology*, *59*(3), 424–436. https://doi.org/10.1037/a0028532

Wang, K. T., Wong, Y. J., & Fu, C. C. (2013). Moderation effects of perfection- ism and discrimination on interpersonal factors and suicide ideation. *Journal of Counseling Psychology*, 60, 367–378. https://doi.org/10.1037/a0032551

Wang, L., Bordon, J. J., Wang, K. T., & Yeung, J. G. (2019). Acculturation, enculturation, perceived discrimination, and well-being: A comparison between US-raised and non–US-raised Asian students. *Asian American Journal of Psychology*, *10*(1), 22.

Wang, L., Wang, K. T., Heppner, P. P., & Chuang, C. C. (2016). Cross-national cultural competency among Taiwanese international students. *Journal of Diversity in Higher Education*, *10*(3), 271–287. https://doi.org/10.1037/dhe0000020

Wei, M., Wang, K. T., Heppner, P. P., & Du, Y. (2012). Ethnic and mainstream social connectedness, perceived racial discrimination, and posttraumatic stress symptoms. *Journal of Counseling Psychology*, 59, 486–493. https://doi.org/10.1037/a0028000

Wei, M., Heppner, P. P., Mallen, M. J., Ku, T. Y., Liao, K. Y. H., & Wu, T. F. (2007). Acculturative stress, perfectionism, years in the United States, and depression among Chinese international students. *Journal of Counseling Psychology*, *54*(4),

385–394. https://doi.org/10.1037/0022-0167.54.4.385

Wei, M. L., & Bunjun, B. (2021). “We Don’t Need Another One in Our Group”: Racism and interventions to promote the mental health and well-being of racialized international students in Business Schools. *Journal of Management Education*, *45*(1), 65–85. https://doi.org/10.1177/1052562920959391

Wilkins-Yel, K. G., Roach, C. M. L., Tracey, T. J. G., & Yel, N. (2018). The effects of career adaptability on intended academic persistence: The mediating role of academic satisfaction. *Journal of Vocational Behavior*, *108*, 67–77. https://doi.org/10.1016/j.jvb.2018.06.006

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of health psychology*, *2*(3), 335-351.

Wilson, J., Ward, C., Fetvadjiev, V. H., & Bethel, A. (2017). Measuring cultural competencies: The development and validation of a revised measure of sociocultural adaptation. *Journal of Cross-Cultural Psychology*, *48*(10), 1475–1506. https://doi.org/10.1177/0022022117732721

Wongtrirat, R. (2010). English language proficiency and academic achievement of international students: A meta-analysis. [Doctoral dissertation, Old Dominion University]. *Education Foudations & Leadership*.

Xu, J., Sun, G., Cao, W., Fan, W., Pan, Z., Yao, Z., & Li, H. (2021). Stigma, discrimination, and hate crimes in Chinese-speaking world amid Covid-19 pandemic. *Asian Journal of Criminology*, *16*(1), 51-74.

Yang, M., Haydon, K. C., & Miller, M. J. (2013). The relationship between intergenerational cultural conflict and social support among Asian American and Asian international female college students and their parents. *Asian American Journal of Psychology*, *4*(3), 193.

Yoon, E., & Portman, T. A. A. (2004). Critical issues of literature on counseling international students. *Journal of Multicultural Counseling and Development*, *32*(1), 33–44. https://doi.org/10.1002/j.2161-1912.2004.tb00359.x

Yip, T., Wang, Y., Mootoo, C., & Mirpuri, S. (2019). Moderating the association between discrimination and adjustment: A meta-analysis of ethnic/racial identity. *Developmental Psychology*, *55*(6), 1274. http://dx.doi.org/10.1037/dev0000708

Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations*, *35*(2), 139–162. https://doi.org/10.1016/j.ijintrel.2010.11.011

Zhao, C. J. (2019). Exploring the Moderation Mechanisms of the Association between Acculturative Stress and Social Self-efficacy among Asian International Students (Publication No. 13895932) [Doctoral dissertation, University of Denver]. *ProQuest Dissertations Express*.

Appendix A

Consent Form to Participate in a Research Study

Researcher's name: Xinling Liu, M.A.
Advisor: Patrick J. Rottinghaus, Ph.D.

Project Title: Expanding Social Cognitive Career Theory: Academic Satisfaction among East Asian International students in the U.S.

My name is Xinling Liu, a doctoral student in the Counseling Psychology program at the University of Missouri-Columbia. I am inviting you to participate in a research study to examine factors that influence academic satisfaction of East Asian international students in the U.S. Xinling Liu will be supervised by Patrick J. Rottinghaus, Ph.D., who is an Associate Professor at the University of Missouri-Columbia (Email: rottinghausp@missouri.edu).

Your participation is voluntary. The submission of this form indicates your agreement to participate. You will be asked to complete an online survey including various aspects of your academic experiences as an East Asian international student in the United States. The survey may take approximately 20-25 minutes of your time and you may discontinue the survey at any time. Compensation will be randomly drawn from participants through a raffle. Specifically, the first 50 respondents will get a $5 Amazon gift card, and a $15 Amazon gift card will be randomly drawn from the rest of the participants with a 17% odd of winning.

To be included in this study, you must meet the following criteria:

(1) You are a student ($\geqslant$18 years old) currently enrolled in an American college or university as a full-time student;
(2) You are an international student currently holding a student visa (i.e., F-1, M-1, J-1 visa);
(3) You are originally from East Asian countries and regions (e.g., China, Japan, Mongolia, North Korea, South Korea, Hong Kong, Macau, and Taiwan; Kort, 2005);
(4) You are not a full-time employee of any company;
(5) You are currently studying in the U.S. at the time of the survey.

The collected data will be stored anonymously in a secured online storage system and only the researchers will be given assess to them. The data collected from this study will be used only for the purpose of academic communication (e.g., dissertation, meetings, academic publications). Presented data will be in summary or aggregate form only and no reference will be made in oral or written reports that could be linked to your identity.

If you have any questions regarding this research study, or wish to receive further information before consenting to participate, you may contact Xinling Liu at

xld3y@umsystem.edu. If you have any questions about your rights as a participant, you may also contact the Institutional Review Board (IRB) at the University of Missouri-Columbia at irb@missouri.edu or (573) 882-3181.

Thank you for taking the time to participate in this research.

Xinling Liu, M.A.
Department of Educational, School and Counseling Psychology
University of Missouri–Columbia

____Yes, I consent to participate in the study.
____ No, I do not consent and I will not participate in the study.

Appendix B

QUESTIONNAIRES

Demographics

1. Are you an international student from East Asia? Yes / No
   - International Student: F1 Student Visa holder without U.S. citizenship
   - East Asia: China, Hong Kong, Taiwan, Macau, Japan,Mongolia, North Korea, and South Korea
2. Location of your college/university:
Midwest (IA, IL, IN, KS, MI, MN, MO, NK, NE, OH, SD, WI)/ Northeast (CT, MA, ME, NH, NJ, NY, PA, RI, VT)/ South (AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV) / West (AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY)
3. Please indicate your age in years: _____
4. Gender: Male / Female / Transgender/ Nonbinary /
   Other (Please specify:_____)
5. Sexual orientation: Heterosexual / Lesbian / Gay / Bisexual / Queer /
   Other (Please specify:_____)
6. Country/Region of origin: China/ Japan/ Hong Kong/ Macau/ South Korea/ Taiwan
   Other (Please specify:_____)
7. What is your college major? _____
8. Year in college:
First year / Sophomore / Junior / Senior / Graduate student
Other (Please specify:_____)
9. Where do you want to work after graduation?
Stay in the U.S./ Home country/ Other countries/ Other (Please specify:_____)
10. What do you plan to do after graduation?
Further Education/Searching for jobs (industrial position)/ Searching for jobs (Academia)/take a gap year/ I have no clue at all/ Other (Please specify:_____)
11. Have you been to United States before? Yes / No
12. How many years have you been attending school in the U.S.? (e.g., 1, 2, 3, etc.)
13. How many years have you been living in the U.S.? (e.g., 1, 2, 3, etc.)
14. Are you currently living in the United States? Yes / No
15. How do you describe your English fluency? Very High/High/Average/Low/Very low
16. Are you a first-generation college student (i.e., neither parent nor guardian has earned a bachelor's degree)? Yes/No/Other (Please specify_____)
17. Are you a first-generation international student (i.e., neither parent nor guardian has earned a bachelor's degree from a U.S. institution)? Yes/No/Other (Please specify_____)

Academic Support Scale (Lent, Singley et al., 2005)

Instructions: Many factors can either support or hinder students' academic and social adjustment. Here we are interested in learning about the types of situations that may support your progress in your intended major. Using the 1-5 scale, please indicate how much you agree or disagree with each of the following statements.

At the present time, I…	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1. Have access to a "role model" (e.g., someone I can look up to and learn from by observing) in my academic major	1	2	3	4	5
2. Feel support from important people in my life (e.g., teachers) for pursuing my intended major	1	2	3	4	5
3. Feel that there are people "like me" in this academic field	1	2	3	4	5
4. Get helpful assistance from a tutor, if I felt I needed such help	1	2	3	4	5
5. Get encouragement from my friends for pursuing my intended major	1	2	3	4	5
6. Get helpful assistance from my advisor	1	2	3	4	5
7. Feel that my family members support the decision to major in my intended field	1	2	3	4	5
8. Feel that close friends or relatives would be proud of me for majoring in my intended field	1	2	3	4	5
9. Have access to a "mentor" who could offer me advice and encouragement	1	2	3	4	5

Academic Self-Efficacy Scale (Lent, Singley et al., 2005)

Part I. Instructions: The following is a list of major steps along the way to completing an undergraduate degree. Please indicate how much confidence you have in your ability to complete each of these steps in relation to the academic major that you are most likely to pursue. Use the 0-9 scale below to indicate your degree of confidence.

How much confidence do you have in your ability to:	No Confidence				Some Confidence					Complete Confidence
1. Remain enrolled in your intended major over the next semester.	1	2	3	4	5	6	7	8	9	10
2. Remain enrolled in your intended major over the next two semesters.	1	2	3	4	5	6	7	8	9	10
3. Excel in your intended major over the next semester.	1	2	3	4	5	6	7	8	9	10
4. Excel in your intended major over the next two semesters.	1	2	3	4	5	6	7	8	9	10
5. Complete the upper level required courses in your intended major with an overall grade point average of B or better	1	2	3	4	5	6	7	8	9	10

Part II. Instructions: Here we are interested in knowing how well you believe you could cope with each of the following barriers, or problems, that students could possibly face in pursuing an undergraduate degree. Please indicate your confidence in your ability to cope with, or solve, each of the following problem situations.

How confident are you that you could:	No Confidence				Some Confidence					Complete Confidence
1. Cope with a lack of support from professors or your advisor.	1	2	3	4	5	6	7	8	9	10
2. Complete a degree despite financial pressures.	1	2	3	4	5	6	7	8	9	10
3. Continue on in your intended major even if you did not feel well-liked by your classmates or professors.	1	2	3	4	5	6	7	8	9	10
4. Find ways to overcome communication problems with professors or teaching assistants in your courses.	1	2	3	4	5	6	7	8	9	10
5. Balance the pressures of studying with the desire to have free time for fun and other activities.	1	2	3	4	5	6	7	8	9	10

6. Continue on in your intended major even if you felt that, socially, the environment in these classes was not very welcoming to you.	1	2	3	4	5	6	7	8	9	10
7. Find ways to study effectively for your courses despite having competing demands for your time.	1	2	3	4	5	6	7	8	9	10

Academic Outcome Expectation (Lent, Singley et al., 2005)

Instructions: Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements.

Graduating with an undergraduate/graduate degree will likely allow me to:	Strongly Disagree		Disagree		Unsure		Agree		Strongly Agree	
1. ... receive a good job (or graduate school) offer	0	1	2	3	4	5	6	7	8	9
2. ... earn an attractive salary	0	1	2	3	4	5	6	7	8	9
3. ... get respect from other people	0	1	2	3	4	5	6	7	8	9
4. ... do work that I would find satisfying	0	1	2	3	4	5	6	7	8	9
5. ... increase my sense of self-worth	0	1	2	3	4	5	6	7	8	9
6. ... have a career that is valued by my family	0	1	2	3	4	5	6	7	8	9
7. ... do work that can “make a difference” in people’s lives	0	1	2	3	4	5	6	7	8	9
8. ... go into a field with high employment demand	0	1	2	3	4	5	6	7	8	9
9. ... do exciting work	0	1	2	3	4	5	6	7	8	9
10. ... have the right type and amount of contact with other people (i.e., “right” for me)	0	1	2	3	4	5	6	7	8	9

Academic Goal Progress (Lent, Singley et al., 2005)

Instructions: Now we would like for you to rate each of the same goal statements in terms of how much progress you are making toward each one at this point in time. That is, indicate how effectively you feel you are meeting or working toward each goal at present, regardless of how important the goal is for you.

How much progress are you making toward each of these goals at this point in time (i.e., so far this semester:	No Progress At All	A little Progress	Fair Progress	Good Progress	Excellent Progress
1. Excelling at your academic major	1	2	3	4	5
2. Completing all course assignments effectively	1	2	3	4	5
3. Studying effectively for all of your exams	1	2	3	4	5
4. Remaining enrolled in your academic major	1	2	3	4	5
5. Completing academic requirements of your major satisfactorily	1	2	3	4	5
6. Achieving / maintaining high grades in all of your courses	1	2	3	4	5
7. Learning and understanding the material in each of your courses	1	2	3	4	5

Academic satisfaction scale (Lent, Singley et al., 2005)

Instructions: Using the scale below, indicate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
1. I feel satisfied with the decision to major in my intended field.	1	2	3	4	5
2. I am comfortable with the educational atmosphere in my major field.	1	2	3	4	5
3. For the most part, I am enjoying my coursework.	1	2	3	4	5
4. I am generally satisfied with my academic life.	1	2	3	4	5
5. I enjoy the level of intellectual stimulation in my courses.	1	2	3	4	5
6. I feel enthusiastic about the subject matter in my intended major.	1	2	3	4	5
7. I like how much I have been learning in my classes.	1	2	3	4	5

Perceived Discrimination Scale (Williams et al., 1997)

Instructions: How often in your daily life have you been discriminated against in each of the following ways **because of such things as your race and ethnicity**?

	Never	Rarely	Sometimes	Often
1. You are treated with less courtesy than other people.	1	2	3	4
2. You are treated with less respect than other people.	1	2	3	4
3. You receive poorer service than other people at restaurants or stores.	1	2	3	4
4. People act as if they think you are not smart.	1	2	3	4
5. People act as if they are afraid of you.	1	2	3	4
6. People act as if they think you are dishonest.	1	2	3	4
7. People act as if they think you are not as good as they are.	1	2	3	4
8. You are called names or insulted.	1	2	3	4
9. You are threatened or harassed.	1	2	3	4

VITA

Xinling Liu was born in Jilin, China, on July 20, 1992, as the daughter of Hongzhuan Liu and Mingqi Liu. She earned the Bachelor of Science in Psychology at Northeast Normal University in 2014, and her bachelor's thesis was motivated to learn current career exploration class among high school students. In 2017, she earned her Master of Art in Applied Psychology at Northeast Normal University, under the mentorship of Dr. Runkai Jiao. Her master's thesis focused on career decision making style and cross-cultural psychology. In 2023, she earned her Ph.D. in Counseling Psychology at University of Missouri-Columbia, under the mentorship of Dr. Patrick Rottinghaus. Her main research interests lie in multicultural issues in vocational psychology and mental health. She is currently completing a psychology internship at the University of Michigan Counseling and Psychology Services.