

EXPERIENCES OF ASIAN AMERICAN STUDENTS IN NON-STEM FIELDS: A  
PHENOMENOLOGICAL STUDY

by

Diem Nguyen

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Liberty University

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### **Abstract**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. The theory guiding this study was Bandura's social cognitive theory, as it provided a foundation for understanding how cultural and environmental factors interact with internal motivations and interests to shape college and career choices. The study addressed the central research question: What are the lived experiences of Asian American students who have chosen non-STEM college majors? This phenomenological study used purposeful criterion sampling to select 12 Asian American participants who are pursuing a non-STEM college major or have graduated with a non-STEM degree within the past five years. The data collection methods were individual interviews, letter writing, and focus groups. The data analysis followed the steps described by Moustakas in the modification of van Kaam's data analysis method. The findings revealed a complex interplay of Asian collectivistic cultures, familial expectations, institutional influences, social media, and personal motivation in shaping educational and career choices in non-STEM fields. Internal motivation is the key theme that highlights the participants' passions and interests. The participants have navigated through various cultural differences, language barriers, pressures and stereotypes to pursue their passions in non-STEM fields that align with their interests and values.

*Keywords:* Asian American, STEM, non-STEM, social cognitive theory, culture, family, environment, social media, motivation, passion, interest

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## **Dedication**

I dedicate this dissertation to God for granting me strength, wisdom, and guidance throughout this journey. Your divine presence has been my constant source of inspiration and resilience, helping me navigate through every challenge and celebrate every success. Without Your grace, this achievement would not have been possible.

To my loving husband, whose unwavering support and encouragement sustained me during late nights and challenging moments. Your patience, understanding, and care provided the foundation I needed to persevere.

To my son, whose passion for non-STEM areas inspired my research. Watching you pursue a non-traditional career path with such enthusiasm and dedication has reinforced my belief in the value of following one's passions, regardless of societal expectations.

## **Acknowledgments**

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### **List of Abbreviations**

Central research question (CRQ)

Institutional Review Board (IRB)

Science, technology, engineering, mathematics (STEM)

Social cognitive theory (SCT)

Social cognitive career theory (SCCT)

Social learning theory (SLT)

Social learning theory of career decision-making (SLTCDM)

Sub question one (SQ1)

Sub question two (SQ2)

Sub question three (SQ3)

## **CHAPTER ONE: INTRODUCTION**

### **Overview**

The U.S. colleges have not supplied enough workers in science, technology, engineering, and mathematics (STEM) to the workforce because the demand for STEM careers has significantly increased (Khakimov, 2022; Sahin et al., 2020). Therefore, the U.S. government and educators have emphasized the importance of STEM education and tried to increase interest in STEM early before students go to college (Khakimov, 2022; J. Kim et al., 2021; K. N. Smith et al., 2021). Observably, Asian Americans show a high interest in STEM (Funk & Parker, 2018). Asian American workers with a college degree are about 10% of the U.S. workforce, but they make up 17% of college-educated STEM workers (Funk & Parker, 2018). Asian Americans are defined as all people with origins in the Far East, Southeast Asia, and the Indian subcontinent, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (The U.S. Census Bureau, n.d.). Chapter one will provide a contextual background of this study, the research problem and purpose, followed by the research's significance and the research questions. Lastly is the list of important definitions and the chapter summary.

### **Background**

Since Asian Americans have been traditionally overrepresented in STEM fields, they are underrepresented in non-STEM areas (Kang et al., 2023; Shen & Liao, 2022). The path to a successful non-STEM profession for Asian Americans, especially a leadership position, is challenging (Cooc & Kim, 2021; Kodama & Dugan, 2020). The problem is rooted in a history of Asian culture that recognizes STEM as a preferred career choice (Shen & Liao, 2022) and affects Asian American students by directing them to choose a STEM college major that will lead them



to a STEM career while some of them are interested in other fields (Kang et al., 2023; Shen & Liao, 2022). The phenomenon's historical, social, and theoretical contexts will be described below.

### **Historical Context**

The U.S. National Scientific Foundation started the STEM movement during the last decade of the 20<sup>th</sup> century using the acronym SMET and later changed it to STEM (Martin-Paez et al., 2019). The movement led to the STEM education concept, referring to an educational experience or teaching approach integrating science, technology, engineering, and mathematics (Martin-Paez et al., 2019). STEM education has become part of U.S. government policy since the beginning of the 21<sup>st</sup> century (Khakimov, 2022). However, schools in the United States have difficulties recruiting and retaining talented students in STEM (Avendano et al., 2019; Camilli & Hira, 2019; Diekman & Benson-Greenwald, 2018) while the demands for STEM workers continue to increase and require solutions to resolve the STEM shortages (Camilli & Hira, 2019; Diekman & Benson-Greenwald, 2018). One suggested solution to increase STEM labor in the United States is through immigration (Camilli & Hira, 2019) because immigrated students who are non-native English speakers tend to choose STEM fields and avoid liberal arts fields that are language-demanding (Lowinger & Song, 2017; Y. Ma, 2009). Asian American immigrant students are among the non-native English speakers who prefer STEM over other occupations, such as teaching, because some of them do not have confidence in their English skills or are afraid of being criticized for their English accent (Gordon, 2000; G. M. Kim, 2020; H. T. Nguyen, 2012). Since the traditional collectivistic Asian culture encourages harmony and humility (Hofstede, 2011), Asian Americans tend to be submissive and confirming (Lin et al., 2005; Sy et al., 2017) and are more suitable to technical careers (Pew Research Center, 2013)

than dominant leaders (Lin et al., 2005; Sy et al., 2017). Hence, while Asian Americans are overrepresented in highly technical professions, they are the least represented in management positions (J. Chen & Cheng-Cimini, 2024).

### **Social Context**

The overrepresentation of Asian Americans in STEM fields covers the existing problems related to Asian American subgroups. Since Asian Americans are usually considered a monolithic group with about seven percent of the U.S. population and have higher income and education levels than other ethnic groups (Budiman & Ruiz, 2021), the subgroups with unique characteristics become invisible and may not get the support they need in the classrooms and society (Hsieh & Kim, 2020; K. H. Nguyen et al., 2022; Riggs et al., 2023; Shih et al., 2019). Some Asian American students may face difficulties seeking institutional and social assistance because they are categorized together with the successful group and assumed they do not need help (Hsieh & Kim, 2020; Riggs et al., 2023; Shih et al., 2019; Talusan & Franke, 2019).

There is also a widespread model minority myth believing people with Asian origins have a better ability to learn and work in STEM careers than other ethnic groups (J. Lee & Zhou, 2020; Tu & Okazaki, 2021). While such stereotypes can boost Asian American students' self-efficacy, they may cause mental health issues for those who cannot meet high expectations (Hosseini & Kubavat, 2023; Lau et al., 2023). One of the reasons some Asian American students cannot perform well in STEM is that they were directed to STEM by cultural and parental influences while they were not interested (Kang et al., 2023; Shen & Liao, 2022; Tu & Okazaki, 2021). Even though some Asian American students select a STEM major or career only to please their family instead of following their motivations (Tu & Okazaki, 2021), they are still more likely to stay in STEM than non-Asian Americans (Y. L. Zhang, 2022). The students who switch

from STEM to a non-STEM degree or leave STEM without a degree tend to be older and non-Asian (Y. L. Zhang, 2022). Since both the history and social contexts have focused on STEM fields and neglected Asian American students in non-STEM areas, the need for a study for them arose. This study explored the lived experiences of Asian American students who have chosen non-STEM college majors to understand their needs and provide them with adequate assistance and support in the future.

### **Theoretical Context**

Multiple extrinsic and intrinsic factors influence career choices (Kang et al., 2023; J. Lee & Zhou, 2020; J. J. Park et al., 2020; Shih et al., 2019; Warikoo, 2020). One theory that researchers have used to explain the influences on career decision-making process is social learning theory of career decision-making (SLTCDM). John Krumboltz (1979) developed SLTCDM to explain the factors that affect career decision-making. There are four categories of influences: (a) genetic endowment and special abilities, (b) environmental conditions and events, (c) learning experiences, and (d) task approach skills (Krumboltz, 1979; Krumboltz et al., 1976). Another theory is social cognitive theory (SCT), developed by Bandura (1986). SCT views people as active agents that shape and are shaped by their environment. SCT also emphasizes observational learning and how behavior, cognition, and environment interact to influence people (Bandura, 1986). SCT is an expanded version of social learning theory (SLT) developed by Bandura (1965). SLT states that learning occurs in response to observation, imitation, and modeling (Bandura, 1965). Another theory that is used to explain career development is social cognitive career theory (SCCT). Lent et al. (1994) developed SCCT based on Bandura's SCT. SCCT provides three aspects of career decision-making: Self-efficacy beliefs, outcome expectations, and personal goals (Lent et al., 1994, 2000). The self-efficacy beliefs predict the

interests and actions of the career development activities (Lent, 2005; Lent et al., 2010). SCCT is specifically for career decision-making and is used as a theoretical framework in studies about career choices, for example, Cooc and Kim (2021), Hui and Lent (2018), and Xing and Rojewski (2018). SCT was used as the theoretical framework for this study to understand how cognitive, behavioral, and environmental factors interact with one another and influence Asian Americans' career choices. SCT provided a framework to examine how symbolic communication influences and shapes the environment. This study chose SCT over other theories to explain better how mass media or symbolic communication influences people's thoughts and actions by analyzing psychosocial factors, social networks, and social diffusion of new behavior (Bandura, 2001).

### **Problem Statement**

The problem is that Asian American students in non-STEM majors are neglected and invisible in their culture (Cooc & Kim, 2021). Since Asian culture respects STEM fields, STEM careers are overrepresented while non-STEM, especially leadership roles, are underrepresented (Cooc & Kim, 2021; Gundemir et al., 2019; Kodama & Dugan, 2020; Shen & Liao, 2022). Asian countries are in collectivistic cultures (Hofstede, 2011), where students usually make their career decisions based on the opinions or preferences of their parents, family members, or peers (Shen & Liao, 2022; Vu et al., 2019). Since science-oriented careers are prevalent in Asian culture and are considered a more reliable source of income than social-oriented careers, Asian American students usually try to please their parents by choosing a STEM major or career even when they are interested in other areas (Shen & Liao, 2022; Vu et al., 2019). The model minority myth is also a reason for Asian American students to pursue STEM majors. The myth assumes Asian Americans are naturally excellent in STEM and expect them to perform well in these fields (J. Lee & Zhou, 2020). The myth or stereotypes also believe that those good at STEM will lack

verbal, social, and leadership skills and will not succeed in the positions that require these skills (Shih et al., 2019; Tu & Okazaki, 2021). Hence, Asian American students tend to avoid unpopular or underrepresented majors for fear of failure or being criticized. Since Asian culture, surrounding people, and stereotypes cause a lot of pressure and hesitation on Asian students who want to be different, their journey to success is difficult. The model minority myth may prevent them from securing a job position in non-STEM fields after graduation or being promoted to managerial roles (Shih et al., 2019; Tu & Okazaki, 2021). There was a gap in the literature regarding Asian American students who diverge from popular college choices. It was essential to explore the experiences of these students to gain a deeper understanding of how cultural and environmental factors shape their feelings and actions. This study aimed to fill that gap by examining the lived experiences of Asian American students who have chosen non-STEM college majors.

### **Purpose Statement**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. At this stage in the research, Asian American students who have chosen non-STEM college majors are generally defined as post-secondary students who are pursuing a non-STEM college major different from science, technology, engineering, and mathematics (STEM) or graduated with a non-STEM degree within the last five years. The theory guiding this study is SCT developed by Bandura (1986).

### **Significance of the Study**

Since the U.S. workforce desperately needs more STEM workers, the education policy mainly focuses on increasing STEM interests (J. Kim et al., 2021; K. N. Smith et al., 2021). As a

result, the knowledge base related to non-STEM career choices is underrepresented, and it is worth increasing its representation. This study contributed to the existing theoretical, empirical, and practical knowledge base by discovering the lived experiences of Asian American students who have chosen non-STEM majors considered unpopular in Asian culture.

### **Theoretical**

The theoretical significance of this study is the application of SCT developed by Bandura (1986) to the career decision-making process of Asian American students. A newer theory, social cognitive career theory (SCCT), is based on Bandura's SCT and developed by Lent et al. (1994). SCCT is specifically for career decision-making and is used as a theoretical framework in studies about career choices, for example, Cooc and Kim (2021), Hui and Lent (2018), and Xing and Rojewski (2018). However, this study chose SCT over SCCT to understand how cognitive, behavioral, and environmental factors interact with one another and influence Asian Americans' decisions on college majors. Evaluating this phenomenon through SCT provided a perspective that will help educators recognize the needs of non-STEM Asian American students who are invisible in neglected in their culture (Cooc & Kim, 2021). SCT also provided a framework to explain better how mass media or symbolic communication can influence Asian American students' thoughts and actions by analyzing psychosocial factors, social networks, and social diffusion of new behavior (Bandura, 2001).

### **Empirical**

The empirical significance of this research is to fill a gap in the existing literature by contributing a study on the lived experiences of Asian Americans who choose an unpopular career path that is more difficult than the overrepresented STEM fields (Cooc & Kim, 2021; Kodama & Dugan, 2020). While studies related to non-STEM career choices exist, for example,

Whitcomb et al. (2021) and Y. L. Zhang (2022), they are for all students in general and not specifically for Asian American students. Asian Americans, in general, are overrepresented in STEM, but some subgroups are underrepresented and considered invisible in literature and society (Hsieh & Kim, 2020; Shih et al., 2019; Talusan & Franke, 2019). This study addressed Asian American students in non-STEM majors who have been neglected and invisible (Cooc & Kim, 2021).

### **Practical**

The practical significance of this research is to increase the visibility of the non-STEM group of Asian American students so that educators will be aware of them and create appropriate methods to support them in school and society. Asian Americans' overrepresentation in STEM is not bad because it provides more STEM workers to the U.S. workforce suffering from STEM shortages (Camilli & Hira, 2019). This study did not aim to discourage Asian American students from pursuing STEM careers. Instead, it sought to shed light on a different group of Asian American students who often receive insufficient attention and support. By exploring the lived experiences of Asian American students who have chosen non-STEM college majors, this study provides valuable insights into their unique challenges and motivations.

### **Research Questions**

This transcendental phenomenological study aimed to explore the lived experiences of Asian American students who have chosen non-STEM college majors. The study used (SCT) developed by Bandura (1986) as the theoretical framework. SCT emphasizes observational learning and how behavior, cognition, and environment interact to influence people (Bandura, 1986). The research questions were designed based on SCT to discover the external and internal

factors influencing Asian American students' choices of non-STEM college majors. The central research question (CRQ) and three sub-questions (SQ1, SQ2, and SQ3) are below.

### **Central Research Question**

What are the lived experiences of Asian American students who have chosen non-STEM college majors?

### **Sub-Question One**

How do cultural factors influence Asian American students in non-STEM fields?

### **Sub-Question Two**

How do environmental factors influence Asian American students in non-STEM fields?

### **Sub-Question Three**

How do internal motivations influence Asian American students in non-STEM fields?

### **Definitions**

1. *Acculturation* - Cultural and psychological change when interacting with a culture (Berry, 2005, 2019)
2. *Asian American* - All people with origins in the Far East, Southeast Asia, and the Indian subcontinent, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (The U.S. Census Bureau, n.d.).
3. *Collectivism* - A cultural dimension that integrates individuals into groups of family members, significant others, or peers. The right to privacy is discouraged. Personal opinion or decision is primarily influenced by the groups to which the individuals belong (Hofstede, 2011).
4. *Culture* - The collective programming of thinking, feeling, and acting that distinguishes one group of people from another (Hofstede, 2001, 2011).



5. *Individualism* - A cultural dimension where individuals are loosely tied to one another, the right to privacy is expected, and personal opinion or decision is encouraged and respected (Hofstede, 2011).
6. *Self-efficacy* - A person's belief in his or her ability to act and reach specific goals (Hui & Lent, 2018; Kantamneni et al., 2018).
7. *Social cognitive career theory* - Theory developed by Lent et al. (1994) based on Bandura's social cognitive theory. Social cognitive career theory provides three aspects of career decision-making: Self-efficacy beliefs, outcome expectations, and personal goals (Lent et al., 1994, 2000).
8. *Social cognitive theory* - Theory developed by Albert Bandura (1986) that views people as active agents that shape and are shaped by their environment. The theory emphasizes observational learning and how behavior, cognition, and environment interact to influence people (Bandura, 1986).
9. *Social learning theory* - Theory developed by Albert Bandura (1965) that states learning occurs in response to observation, imitation, and modeling.
10. *Social learning theory of career decision-making (SLTCDM)* - Theory developed by John Krumboltz to explain the factors influencing career decision-making. There are four categories of influences: (a) genetic endowment and special abilities, (b) environmental conditions and events, (c) learning experiences, and (d) task approach skills (Krumboltz, 1979; Krumboltz et al., 1976).

### **Summary**

The problem is that Asian American students in non-STEM majors are neglected and invisible in their culture (Cooc & Kim, 2021). Hence, Asian Americans are underrepresented in

non-STEM careers, especially in leadership roles, while they are overrepresented in STEM fields (Gundemir et al., 2019; Kang et al., 2023; Shen & Liao, 2022). This study did not try to discourage Asian Americans from pursuing STEM careers. Instead, it provided a better understanding of another group of Asian Americans who often do not receive adequate attention and assistance. The goal of this study was to discover the lived experiences of Asian American students who have chosen non-STEM college majors. By increasing the visibility of these students, the study aims to raise awareness among educators and encourage the development of appropriate support methods for them in both school and society.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Overview**

This chapter provides a literature review related to college and career choices of Asian Americans. The first section discusses social cognitive theory, which is the theoretical framework for this study. The next section is an overview of academic achievement and diversity of Asian American students in the United States, followed by a discussion of their popular college and career choices. This chapter also includes a synthesis of recent literature regarding cultural and environmental factors that influence Asian Americans' major or career choices. Environmental factors consist of institutional influences, socioeconomic status, and social media impacts. The literature also addresses the stereotypes and gender socialization that direct Asian American students to choose specific popular or overrepresented STEM careers. Lastly, the chapter describes the challenges of Asian American students who choose unpopular or underrepresented fields instead of following the popular paths. This chapter concludes with a summary of the literature review and theoretical framework and identifies a gap in the literature, showcasing the need for more research about how external and internal factors affect Asian American students who choose underrepresented non-STEM fields.

### **Theoretical Framework**

The theoretical framework exploring the educational focus of Asian American students is SCT, developed by Albert Bandura (Bandura, 1986, 2001, 2002). SCT is a comprehensive learning theory of human motivation and action from a social-cognitive perspective (Bandura, 1986). SCT aids in understanding how people actively shape and are shaped by their environment (Bandura, 1986). SCT applies to oriented social systems individually and collectively (Bandura, 2002). SCT addresses mutual causation through the interplay of cognitive,

behavioral, and environmental factors (Bandura, 1986) and adopts an agentic perspective on human development, adaptation, and change with three modes of agency: person, environment, and behavior (Bandura, 2002). SCT also emphasizes affective processes that recognize the ways feeling and desire yield coherence (Ahrens & Cloutier, 2019).

SCT is appropriate for exploring the influences of Asian culture and environment on Asian American students' choices of college majors. Since the culture appreciates science-oriented careers, students usually feel obligated to select a major in science, technology, engineering, and mathematics (Kang et al., 2023; Shen & Liao, 2022). SCT helps determine the roles played by the mental, vicarious, self-regulatory, and self-reflective processes in psychosocial functioning (Bandura, 1986) to identify how cultural and environmental factors influence the feelings and actions of these students. SCT guides this study in examining how Asian American students contribute to their motivation, behavior, and development in a network of mutually interacting influences between experiential and physiological factors (Claxton & Dolan, 2022). SCT provides a framework to examine how symbolic communication influences people's thoughts and actions by analyzing psychosocial factors, social networks, and social diffusion of new behavior (Bandura, 2001). While Asian American students who choose a STEM college major may be a result of being shaped by the environment, students who choose a different path may be able to shape the environment through the use of mass media to change other people's behaviors (Gammoudi et al., 2022).

### **Related Literature**

Asian American students tend to pursue colleges that lead to careers in science, technology, engineering, and mathematics (STEM) (Kang et al., 2023; Shen & Liao, 2022). Cultural influences, family pressures, and model minority myths are the main factors in focusing

on STEM careers among Asian Americans (Kang et al., 2023; Shen & Liao, 2022; Shih et al., 2019). Therefore, Asian American students interested in non-STEM fields may encounter many challenges and barriers to pursuing colleges and careers beyond STEM (Kodama & Dugan, 2020). Literature related to those topics follows below.

### **Overview of Asian American Students in the United States**

Asian Americans are a diverse and rapidly growing ethnic group with a population of 22 million from more than 20 countries in East Asia, South Asia, and Southeast Asia (Budiman & Ruiz, 2021). Six sub-groups comprising 85% of all Asian Americans are Chinese 24%, Indian 21%, Filipino 19%, Vietnamese 10%, Korean 9%, and Japanese 7% (Budiman & Ruiz, 2021). The Asian population in the United States nearly doubled within nine years from 2000 to 2019 and is projected to become the largest immigrant group in the United States, with 46 million people by 2060 (Budiman & Ruiz, 2021).

### ***Academic Achievement***

The growth of Asian American population leads to a significantly higher number of Asian American students in many school districts and higher education institutions. Not only getting higher in number, but Asian American students also perform better academically with higher education levels than other ethnic groups (Budiman & Ruiz, 2021). About 54% of Asian Americans ages 25 and older have a bachelor's degree or higher, compared to 33% of the U.S. population (Budiman & Ruiz, 2021). According to a survey in 2019, nearly three-quarters of Asian Americans speak English proficiently (Budiman & Ruiz, 2021). X. Chen and Graham's (2018) study of 3546 White, Black, Latino, and Asian American 8th-grade students revealed that Asian students have the highest grade point average. Cho et al. (2023) showed that students of East Asian immigrant parents have better academic achievement than native-born North

American parents. Okura (2022) reported more upbeat teacher assessments regarding Asian American students' attentiveness and performance. However, despite better academic performance, Asian American students have the lowest self-esteem among the four major ethnic groups: White, Black, Latino, and Asian (X. Chen & Graham, 2018). The reason is that Asian American students tend to set higher academic standards for success than their non-Asian peers (X. Chen & Graham, 2018). Therefore, when the outcomes do not meet their standards, such as receiving a lower grade than their expectation, Asian American students are more likely to experience achievement setbacks, resulting in lower self-esteem while they may be doing better than students in other ethnic groups (X. Chen & Graham, 2018).

J. Lee and Zhou (2017) used hyper-selectivity theory to rationalize Asian American students' academic achievement. Hyper-selectivity theory refers to a dual positive selectivity in which immigrants are highly selected and highly educated, resulting in a higher chance of graduating from college (J. Lee & Zhou, 2017; Tran et al., 2018). Tran et al. (2018) described hyper-selectivity as a critical factor determining the socioeconomic attainments of second-generation Asian Americans. For those who follow the hyper-selectivity theory, the success of Asian Americans is due to community resources associated with hyper-selectivity (C. Kim & Kim, 2023). However, other studies have proved that cultural factors and family involvements significantly affect the educational and socioeconomic success of Asian Americans (Sakamoto & Wang, 2020). Focusing only on hyper-selectivity ignores the influences of cultural heritage that contribute to the attainment of Asian Americans from families with low socioeconomic status (Sakamoto & Wang, 2020). Children of Asian immigrants, including those from lower socioeconomic backgrounds, tend to achieve higher levels of education than other ethnic groups (C. Kim & Kim, 2023). A recent study by C. Kim and Kim (2023) examined the association

between hyper-selectivity and school enrollment for the children of first-generation Asian American immigrants and found no significant evidence supporting the hyper-selectivity theory.

### ***Diversity of Asian American Ethnic Group***

Asian Americans have higher income levels than other ethnic groups (Budiman & Ruiz, 2021). The median annual household income of Asians was \$85,800 in 2019, compared to \$61,800 for all U.S. households (Budiman & Ruiz, 2021). However, it is essential to recognize that while the overall economic indicators of Asian Americans are reasonable, there is significant diversity in income and poverty rates among different groups of Asian Americans (Budiman & Ruiz, 2021; Xie, 2022; Yip et al., 2021). For example, Burmese Americans' median income was \$44,400, which is much lower than the overall Asian Americans' income of \$85,800 (Budiman & Ruiz, 2021). Mongolian Americans have a poverty rate of 25%, which is much higher than Indian Americans, with only 6% (Budiman & Ruiz, 2021). Numerous studies do not address the unique characteristics of some Asian American sub-groups but consider Asian Americans as one ethnic group (Hsieh & Kim, 2020; K. H. Nguyen et al., 2022; Riggs et al., 2023; Shih et al., 2019). Hence, there is a concern that some sub-groups of Asian American students do not receive enough institutional and social support (Hsieh & Kim, 2020; Shih et al., 2019; Talusan & Franke, 2019). Asian Americans have not received adequate scientific research either (Yip et al., 2021). The National Institutes of Health only funded 0.17% of the overall expenditures to research projects related to Asian Americans from 1992 to 2018 (Doan et al., 2019). The funding percentage is 41 times smaller than the percentage of Asian American population in the United States, which is seven percent (Budiman & Ruiz, 2021). In general, some sub-groups of Asian American students become invisible in classrooms, society, literature, and research (Hsieh & Kim, 2020; Shih et al., 2019; Talusan & Franke, 2019; Yip et al., 2021). Even though Asian

Americans are academically and economically diverse, they normally go through some common paths to college. Learning about their college and career choices can help researchers and educators better understand this group of students.

### **College and Career Choices of Asian American Students**

Recent research discussed various cultural and environmental factors influencing Asian American students' college and career choices (Kang et al., 2023; Shen & Liao, 2022; Tu & Okazaki, 2021). Cultures and environments are external factors that can interact with internal motivation and interest to determine educational pathways for Asian American students (Kang et al., 2023; Tu & Okazaki, 2021). The literature also discussed the popularity of science-oriented careers and explained why Asian American students prefer to choose a college major in science, technology, engineering, and mathematics (STEM) (Kang et al., 2023; Shen & Liao, 2022; Tu & Okazaki, 2021). Details of literature about educational pathways and career choices of Asian Americans follow below.

#### ***The Roads to College***

The roads to college are not accessible for many Asian American students, especially those with low income or the first college generation in their families (Talusán & Franke, 2019). For second-generation Asian American students who were born in the United States or one-and-a-half-generation who immigrated as youth, many of them struggle to pursue college or do not feel prepared for careers (Uy et al., 2019). Some Asian American students have a hard time finding help because responsible people assume all Asian Americans are successful and do not need assistance (Hsieh & Kim, 2020; Shih et al., 2019; Talusan & Franke, 2019). The help Asian American students usually need is related to finding financial aid and selecting a school or major (Hsieh & Kim, 2020; Talusan & Franke, 2019). Asian American students' families are generally



very supportive and influential by encouraging and expecting their children to pursue higher education (Hsieh & Kim, 2020; Talusan & Franke, 2019). However, some Asian American parents or families cannot effectively assist because they are unfamiliar with the U.S. educational system (J. J. Park & Assalone, 2019; Talusan & Franke, 2019). Parents may also have limited resources on the logistical process to help their children prepare for college (Maramba et al., 2018). Students in Asian American families primarily rely on information from their schools and educators to proceed (Talusan & Franke, 2019). Regardless of the differences among them, Asian American students tend to agree on the great value of peer mentors and influential faculty mentors (Uy et al., 2019). As a result, they believe that they need more such mentors and programs to help them navigate colleges (Uy et al., 2019). Uy et al. (2019) addressed several concerns that Asian American students share, such as insufficient finances, irregular academic counseling, and a desire for more career preparation. However, regardless of financial hardship or life challenges, Asian American students typically try to enter colleges and choose one of the STEM fields as their major (Shih et al., 2019). The reasons STEM fields are popular in the United States and specifically for Asian American students are as follows.

### ***Popular Major and Career Choices***

Continuous growth of modern technology in the world has made science, technology, engineering, and mathematics (STEM) become high demand in the United States workforce (Khakimov, 2022; Sahin et al., 2020). STEM concepts came from the U.S. National Scientific Foundation at the beginning of the 21<sup>st</sup> century, and STEM education has become part of U.S. government policy since that time (Khakimov, 2022). Today, leading universities worldwide are offering STEM programs to train capable students so that they can meet the needs of various organizations looking for employees with creative, innovative, and specialized skills (Khakimov,

2022). However, the demand for STEM occupations is still higher than the supply from United States colleges (Sahin et al., 2020). That is one of the reasons Asian Americans have seen STEM as a popular college and career choice whether they are low-income, first college generation, immigrant Asian, or born and raised in the United States (J. J. Park et al., 2020; Shen & Liao, 2022; Shih et al., 2019). There are other reasons that make STEM popular in Asian American communities. The first reason is cultural factors such as ethnic identity, Asian values, and family involvement (Shen & Liao, 2022; Warikoo, 2020). The second reason is model minority myth or stereotype (Kang et al., 2023; J. J. Park et al., 2020; Shen & Liao, 2022; Shih et al., 2019; Tu & Okazaki, 2021). The term model minority refers to the better achievement or characteristics of Asian American minority groups than those of other ethnic groups, such as successful, hard-working, and rule-abiding (Shih et al., 2019). Both cultural and stereotypical influences differ based on students' socioeconomic status, acculturation, and gender (J. J. Park et al., 2020; Shih et al., 2019). While STEM fields are popular among Asian American students, this study aimed to shed light on the lived experiences of Asians in non-STEM fields. Discussions of different influences on Asian American students are below.

### **Cultural Factors**

The Asian American population in the United States is approximately 22 million people who trace their roots to more than 20 countries in East and Southeast Asia, including Indian subcontinent (Budiman & Ruiz, 2021). Although Asian Americans have different ethnicities, languages, histories, and traditions (Budiman & Ruiz, 2021), their cultures share some common characteristics that are called collectivistic cultures (Hofstede, 2001, 2011) and significantly influence the college and career choices of Asian American students (Shen & Liao, 2022).

### ***Asian Collectivistic Cultures***

There are many definitions of culture. Hofstede (2001, 2011) defined culture as the collective programming of thinking, feeling, and acting that distinguishes one group of people from another. He also divided cultures in the world into different dimensions. One of the dimensions used to discuss students' college and career choices is individualism/collectivism (Akosah-Twumasi et al., 2018; Hofstede, 2011). In individualistic cultures, individuals are loosely tied to one another, the right to privacy is expected, and personal opinion or decision is encouraged and respected. On the other hand, collectivistic cultures integrate individuals into groups of family members, significant others, or peers. Collectivistic cultures discourage the right to privacy. Groups normally influence personal opinions and decisions of individuals (Hofstede, 2011). Based on the index scores for 76 countries in the study of Hofstede et al. (2010), Western countries such as the United Kingdom and the United States are classified as individualistic, while African and Asian countries are collectivistic. Students in Western cultures tend to select college and career based on their intrinsic motivation, while Asian students try to fulfill their family's expectations (Vu et al., 2019). Asian Americans see themselves as interdependent with family and community (Vu et al., 2019). Therefore, Asian American students lean toward the culture's norms and choose an overrepresented STEM career that their family believes to be better for them (Shih et al., 2019).

### ***Family Influences***

Family involvement plays a significant role in Asian culture and values (Shen & Liao, 2022; Tu & Okazaki, 2021). Asian American families tend to invest more strategically in education because they have higher educational expectations for their children than White parents with equivalent socioeconomic status (Y. Kim, 2021). Asian parents' educational

investments include considering schools in their residential decisions and exposing their children to extracurricular and family activities outside their homes (Y. Kim, 2021). Besides socioeconomic status, there is a significant correlation between students' immigration status and families' influence on career decisions (Kwong, 2018). Students not born in the United States are more likely to consider their family's suggestions when making career choices than those born in the States (Kwong, 2018). Additionally, students whose parents were not born in the United States are more inclined to follow their family's expectations on their career path than those whose parents were born in the country (Kwong, 2018). In addition to their immigration status, Asian American students who firmly adhere to Asian values are more likely to pursue a major or career in STEM to please their families, especially their parents, who feel that a career in this field will be more financially secure and better support their personal and professional life (Shen & Liao, 2022). For American students in general, parents also influence the students' perception of STEM, but their self-interest is still one of the top three factors that affect their college choices (Sahin et al., 2020). On the other hand, Asian American students are more willing to sacrifice their own interests or personal pleasure to choose a career based on their parents' interests (Shen & Liao, 2022). Even Asian immigrant parents who have an English language barrier or little knowledge about the U.S. education system still encourage their children to attend college and expect them to select a STEM major (Shih et al., 2019). However, Asian American students whose parents did not have college degrees are more likely to switch from STEM to non-STEM career expectations by 11<sup>th</sup> grade than students whose parents had a college education (Starr et al., 2022). Nevertheless, if students in families with non-college-educated parents receive parental STEM support, they are more likely to develop and maintain their expectations for a STEM career from 9<sup>th</sup> to 11<sup>th</sup> grade (Starr et al., 2022). Students whose parents had college

degrees are more likely to receive STEM support from their parents or attend extracurricular activities than students whose parents did not have a college education (Starr et al., 2022). In summary, STEM support from parents is a crucial factor that guides Asian American students to STEM careers. However, interest in STEM gradually decreases from one Asian American generation to another (Hanson, 2018). Second-generation Asian Americans have fewer positive attitudes regarding STEM and are more likely to choose non-STEM majors or careers than first-generation Asian Americans (Hanson, 2018). In summary, acculturation is the reason the level of family influences on Asian American students' college and career choices decreases from one generation to another.

### ***Acculturation***

There is a rise in the number of individuals who leave their country and migrate to another country, resulting in increased interactions between different cultures in the world (Akosah-Twumasi et al., 2018; Dheer & Lenartowicz, 2018). People who interact with multiple cultures normally undergo the acculturation process that involves adopting and incorporating aspects of a new culture while retaining or ignoring elements of the original culture (Berry, 2019). Acculturation plays an important role in educational experiences and career choices of Asian American students (Akosah-Twumasi et al., 2018; Dheer & Lenartowicz, 2018; Kantamneni et al., 2018). There are four possible patterns of acculturation: assimilation, integration, separation, and marginalization (Berry, 2019). Assimilation means adopting values and behaviors of the dominant culture while letting go of the heritage culture (Berry, 2019). Integration is maintaining both cultures and having a bicultural identity (Berry, 2019). Separation means keeping a solid connection with the heritage culture while minimizing contact with the

dominant culture (Berry, 2019). Marginalization occurs when there is no identification with either the dominant or heritage culture (Berry, 2019).

In the context of Asian American students, different factors that can influence acculturation patterns are family background, generation status, and age of immigration (B. S. K. Kim et al., 2023). First-generation immigrants tend to adhere to Asian cultural values more strongly than their second-, fourth-, and fifth-generation counterparts (B. S. K. Kim et al., 2023). B. S. K. Kim et al. (2023) observed significant differences in family recognition through achievement and stated that Asian American parents are more inclined to retain traditional Asian values than their children. Asian American children are less likely to keep traditional values because of continual influences of other cultural norms these children were exposed to when they were younger (B. S. K. Kim et al., 2023). When children adopt different cultural standards than their parents' traditional cultures, value discrepancies occur and cause conflicts between parents and children (B. S. K. Kim et al., 2023; Pham et al., 2020). An important piece of literature about family conflicts is *The Joy Luck Club* novel by Amy Tan (1989). *The Joy Luck Club* explores the differences between American and Chinese cultures via the stories of four Chinese immigrant mothers and their American-born daughters (H. Ma, 2023; Qi, 2023). There are different factors involved in mother-daughter conflicts, but the main aspects include language barriers that cause misunderstanding (H. Ma, 2023; Qi, 2023), Asian collectivistic culture conflicts with American individualistic culture, and different ways of emotional expression (Qi, 2023).

The process of adopting new cultural norms also results in educational issues. For instance, students who migrate from a collectivistic culture to an individualistic one or vice versa might have an issue negotiating their career needs in the new culture (Akosah-Twumasi et al., 2018). Asian American students who migrated from Asian collectivistic culture to American

individualistic culture might face that issue because of the differences between the two dimensions of cultures (Akosah-Twumasi et al., 2018). Asian American students who have lived longer in the United States or have a higher level of acculturation to American society are less likely to choose a science-oriented career or make a career decision based on family preference (Tu & Okazaki, 2021). Asian students born and raised in the United States rely more on their motivation and interests to choose their careers than Asian immigrants (Tu & Okazaki, 2021). The behaviors of these acculturated students may cause a conflict with their traditional parents, who are still accustomed to the collectivistic culture (B. S. K. Kim et al., 2023; Pham et al., 2020). The family conflict that Asian American college students experience is more likely to happen when there are high levels of differences between their cultural values and their parents' values (B. S. K. Kim et al., 2023; Pham et al., 2020). This conflict can cause lower life satisfaction and self-esteem, which mental health counselors need to consider when working with Asian American students so that they can determine how value discrepancies impact the students' and parents' relationship (B. S. K. Kim et al., 2023; Pham et al., 2020). Mental health problems are present in all ethnic groups, but each group may have a different view about it. Asian culture views mental health issues as shameful and should be hidden to save face (Hosseini & Kubavat, 2023; Lau et al., 2023). Compared to other ethnic groups in the United States, Asians are the least likely to seek help and receive mental health treatments (Hosseini & Kubavat, 2023). Therefore, researchers have explored strategies to address mental health concerns for Asian American youth, such as providing social support, educating about mental health, and seeking professional help (Wang et al., 2020).

## **Institutional Influences**

School environments and socioeconomic backgrounds are two main environmental factors that influence Asian American students' college and career choices (Kang et al., 2023). While some Asian American students are very academically successful (J. Lee & Zhou, 2020), certain groups of Asian American students do not get enough assistance from their schools to make informed decisions (Talusán & Franke, 2019). A study for historically overrepresented groups in STEM revealed that faculty members play an essential role in helping students integrate into their scientific and professional communities via social influence processes (Hernandez et al., 2020; Sahin et al., 2020). Starr et al. (2022) found that high school students who have chosen STEM fields are more likely to remain in their STEM career aspirations if they receive support from their STEM teachers, regardless of their parents' levels of education. In general, institutional influence on STEM is stronger than education levels of the parents (Starr et al., 2022). Studies of Asian American students also get similar results. Talusan and Franke (2019) discovered that the Asian American Studies department in their study helped reduce students' stress and loneliness. The research also addressed the positive experiences Asian American students have when they receive help from educators who support their cultural backgrounds and identities (Talusán & Franke, 2019). These students are more likely to succeed in college (Talusán & Franke, 2019). Another factor is the ethnic institutions Asian Americans have built, including ethnic churches, temples, and community centers that provide supplemental education and share role models that students can learn from and change their behavior (J. Lee & Zhou, 2020). Role models may include professors or advisors who present and reinforce essential information in an effective way that can change the students' ideas and beliefs about specific majors (Vu et al., 2019).



## **Socioeconomic Status**

In general, Asian Americans have established an excellent socioeconomic status in the United States (Xie, 2022). Research related to Asian Americans usually treats them as a group of intelligent, hard-working, and successful people (J. Lee & Zhou, 2020; Shih et al., 2019). Therefore, some Asian American sub-groups that live in poverty or have mental and physical issues are invisible in their schools and society (Hsieh & Kim, 2020; K. H. Nguyen et al., 2022; Riggs et al., 2023; Talusan & Franke, 2019). For instance, Asian Americans have an estimated poverty rate of 19.9% to 25.6% in New York City, which is the highest rate compared to other ethnic groups (Asian American Federation, 2018). Research and policy considerations generally do not include such Asian American sub-groups (Hsieh & Kim, 2020; K. H. Nguyen et al., 2022). Hence, these underprivileged Asian American sub-groups cannot get the assistance they need (K. H. Nguyen et al., 2022; Talusan & Franke, 2019). Financial difficulty also hinders some Asian Americans from entering their preferred college (J. J. Park & Assalone, 2019; Shih et al., 2019). Tu et al. (2019) interviewed working-class, low-income Chinese immigrants and discovered that they had limited employment options, which were usually physically demanding. As a result, these Chinese immigrants had very little time left for their families and could not actively participate in their children's education and career development (Tu et al., 2019).

## **Social Media Influences**

Social media platforms such as YouTube, Facebook, Twitter, and Instagram have become crucial to this world (Tuli et al., 2022). People gradually replaced traditional communication, such as letter writing, with modern social media (Marbun et al., 2020). Instead of waiting for a printed magazine, people can read news on Facebook, search for a job and learn new skills on LinkedIn, or watch educational and entertainment videos on YouTube (Marbun et al., 2020).

Social media usage is constantly increasing and changing everyone's academic, social, and cultural life (Akdag et al., 2019; Tuli et al., 2022). People widely use the term influencer to identify a content creator on social media who can influence or change others' behavior by encouraging them to do the same thing or make the same decision as him or her (Gammoudi et al., 2022). However, it is important to note that multiple factors that can influence the influencers are friends, family, neighbors, life coaches, travel bloggers, makeup artists, and fitness models (Gammoudi et al., 2022). Influences occur both ways, from influencers to others, and from others to influencers (Gammoudi et al., 2022). The influences can be positive or negative. For instance, social media can negatively impact younger generation because people can quickly post or spread fake news and incorrect information on social media (Bahadur, 2021; Rawath et al., 2019). Social media may promote unnecessary purchasing habits, inappropriate talking styles, or hate speech (Lim Xing Fei & Yuek Li, 2022). Many students spend too much time on social media or are addicted to it (Mujiwat & Laili, 2023). However, social media has much more positive impacts, as described in detail below.

YouTube is one of the biggest social media platforms, and many YouTubers have become powerful influencers or role models for the attitude and decision-making of young audiences (Lim Xing Fei & Yuek Li, 2022). In general, YouTubers have positive influences on undergraduate students by increasing their self-confidence and motivating them to continue learning (Lim Xing Fei & Yuek Li, 2022). YouTubers' personality, knowledge, and skills can also influence audience's behavior in terms of language, attitude, personality, relationship network, lifestyle, values, and beliefs (Lim Xing Fei & Yuek Li, 2022). Asian American students could benefit from ethnic media promoting role models with success stories (J. Lee & Zhou, 2020). The success stories make Asian American students feel that success is normative and

achievable (J. Lee & Zhou, 2020). Cultural content on social media not only helps Asian audiences but also contributes to the success of the YouTubers who create cultural content (Shahzad, 2021). Cultural identity also helps Asian Americans present their values, products, and behaviors on social media, such as Instagram posts, to reduce existing stereotypes (King & Fretwell, 2022). C. Yang (2018) examined how social media in the United States influenced Chinese American students and discovered that more frequent use of Facebook and Twitter leads to a higher level of acculturation and adaptation. In business world, many companies use social media to build their brand and attract young, talented employees (Micik & Micudova, 2018). YouTubers also affect users' purchase intention as their experience of using a product has become a reliable source (Lim Xing Fei & Yuek Li, 2022).

Kong and Ahn (2020) explored the factors influencing the attitude of information adoption. The searchers revealed that the quality of YouTube videos significantly impacts information-oriented content, while the credibility of YouTubers affects the success of entertainment-oriented content (Kong & Ahn, 2020). Besides using YouTube for seeking information and entertainment, students have used YouTube for their academic learning (Perez et al., 2023). YouTube is an effective learning tool that teachers can integrate into their courses (Perez et al., 2023). YouTube and other social media platforms are also marketing tools for schools (Dennen et al., 2020; Perez et al., 2023). Social media, in general, has an impact on the choice of study for future students (M. Chen & Xiao, 2022). In a study conducted by Akbari and Rochaety (2023), YouTube watch time of content related to admissions and academic programs significantly affects the promotion and admissions of colleges. Since social media can change people's attitudes and behaviors (Greenspan et al., 2021; Lim Xing Fei & Yuek Li, 2022; Mujiwat & Laili, 2023), it can change students' college majors or career choices (Zamroni et al.,

2019). According to the study conducted by Zamroni et al. (2019), 61% of students utilize social media to find relevant information that will help them select appropriate careers. However, few studies have directly discussed the influences of social media on the college and career choices of Asian American students. This study explored and addressed the gap identified here.

### **Stereotypes**

Model minority stereotypes, also called model minority myths, strongly influence Asian students in the United States (Kang et al., 2023; J. J. Park et al., 2020; Shen & Liao, 2022; Shih et al., 2019; Tu & Okazaki, 2021). Different factors cause model minority stereotypes. One of the causes is missing or misrepresenting Asian Americans in the United States curriculum (An, 2020). Another reason is that American television shows and movies underrepresent or stereotype Asian Americans and spread the model minority myth to American population (Besana et al., 2019; Riggs et al., 2023). Stereotypes assume that Asian Americans are naturally excellent in STEM and expect them to perform well (Tu & Okazaki, 2021). The expectations can positively or negatively impact students' self-efficacy (Ruiz et al., 2023; Tu & Okazaki, 2021).

### ***Stereotypes' Positive Impacts***

Since model minority myth portrays Asian Americans with excellent abilities in STEM, Asian American students who accept this myth may have a higher standard and expectation for themselves (Ruiz et al., 2023). Higher standards motivate Asian American students to improve performance and boost self-efficacy (Ruiz et al., 2023). Self-efficacy, in turn, influences the decision to select a STEM career (Ruiz et al., 2023; Tu & Okazaki, 2021). Stereotypes also portray Asian American students as intelligent, talented, and more likely to be successful in higher education (J. Lee & Zhou, 2020; Okura, 2022). As a result, high school teachers often treat Asian American students better than other students (Okura, 2022). Teachers see Asian

American students as attentive and high-performing and expect them to pursue higher education, at least a college degree (J. Lee & Zhou, 2020; Okura, 2022). Teachers are also more willing to recommend Asian American students for honors and Advanced Placement courses that can increase their chances of academic success (J. Lee & Zhou, 2020; Okura, 2022). For Asian American students preparing for college, there are positive stories of guidance counselors who assist them in completing college applications and financial aid forms (J. Lee & Zhou, 2020). These Asian American students also receive extra help with complex subjects from their teachers (J. Lee & Zhou, 2020). When Asian American students are in college, they are reported to have better interaction with faculty members compared to Black and Latinx peers (J. J. Park et al., 2020). As a result, STEM retention for Asian American college students is significantly higher than for other ethnic groups. Asian has 72.1% STEM retention, White has 58.9%, Latinx has 56.8%, and Black has 51.4% (J. J. Park et al., 2020). While being perceived as intelligent, hardworking, and deserving of success can result in better academic performance for Asian American students (Ruiz et al., 2023), this positive stereotype also leads to the creation of new stereotypes that hinder Asian Americans' ability to advance into leadership roles in the workplace (J. Kim et al., 2021). This phenomenon, which is sometimes referred to as the bamboo ceiling, generates an invisible barrier for Asian American professionals to be promoted to higher positions (J. Kim et al., 2021). The bamboo ceiling is discussed in detail below.

### ***Asian Americans in Leadership Roles***

One of the most significant effects of model minority stereotypes on Asian Americans is the underrepresentation of Asian American leaders in the workforce despite their high levels of leadership potential, education, and training (J. Kim et al., 2021). Employers perceive Asian Americans as diligent and focused and more suitable to be competent workers than leaders

(Gundemir et al., 2019; J. Lee & Zhou, 2020). Hence, employers are less likely to promote Asian American employees to managerial or executive positions (Gundemir et al., 2019; J. Lee & Zhou, 2020). Stereotypes describe Asian Americans as submissive and introverted people who do not have dominant characteristics that American business leaders should have, such as assertiveness, enthusiasm, and dynamism (Gundemir et al., 2019). Even in STEM fields where Asian Americans are overrepresented, they are still underrepresented in management positions (L. Zhang et al., 2019). Specifically, Asians are the second largest racial group among medical students, but they represent a very small leadership proportion (L. Zhang et al., 2019).

J. Lee and Zhou (2020) found that second-generation Asian Americans are more likely to have a college degree but less likely to obtain a professional or administrative position than native-born white Americans. There are also notable differences in the likelihood of reaching leadership roles across Asian sub-groups (Lu et al., 2019; Shao, 2022). Asian immigrants who did not receive American education or only received higher education in the United States have a much lower probability of reaching executive levels than native-born Whites and other Asians (Shao, 2022). Comparing immigrants from East Asia (e.g., China, Japan, Korea) and South Asia (e.g., Bangladesh, India, Pakistan), East Asians have a higher disadvantage in becoming leaders and are less likely to attain leadership positions (Shao, 2022). According to the results of nine studies with 11,030 participants conducted by Lu et al. (2019) to explore the leadership attainment gap between East Asians and South Asians, only East Asians face the bamboo ceiling, and it is mainly because of their low assertiveness. Since assertiveness is often seen as a prototype of leadership in the United States, employers may negatively perceive the non-assertiveness of East Asians as a lack of confidence or conviction (Lu et al., 2019). Therefore, employers usually do not consider Asian American employees for leadership opportunities (Lu et

al., 2019), while these employees tend to desire a higher status in the workplace (Wu et al., 2018). The only condition in which employers appoint more Asian American leaders is during the business decline (Gundemir et al., 2019). During declined periods, companies appoint Asian Americans as leaders two-and-a-half times more than in non-declined periods (Gundemir et al., 2019). Due to Asian Americans' self-sacrificing behaviors, companies perceive them as suitable during organizational decline (Gundemir et al., 2019). To increase students' interest in managerial levels and overcome stereotypical challenges, L. Zhang et al. (2019) suggested interventions such as exposure to influential senior-level mentors and role models, communication and collaboration with others, and career discussions with parents.

### ***Stereotypes' Other Negative Impacts***

Besides the bamboo ceiling discussed above, model minority stereotypes have other negative impacts that cause significant unpleasant experiences for Asian American students (Kang et al., 2023). Since model minority myth features Asians as math and science talents, some Asian Americans feel obligated to try extremely hard to meet the expectations that they sometimes cannot accomplish (Ruiz et al., 2023). The pressure of model minority myth can negatively affect Asian American students' mental health and academic performance (Ruiz et al., 2023). Many teachers assume that Asian American students do not need academic interventions, while many Asian American students actually need help (Hsieh & Kim, 2020; Shih et al., 2019; Talusan & Franke, 2019). D. M. Lee et al. (2017) conducted a study on Southeast Asian American students, specifically Cambodian, Laotian, and Vietnamese, to examine their math and reading performance using the CAT/6 standardized assessment and compare it with African American and White American students. The results showed that both Cambodian and Laotian

American students had lower scores than White American students, and their scores were similar to those of African American peers.

Stereotypes also assume that those who are good at STEM will lack verbal, social, and leadership skills and will not perform well in professions requiring these skills (Tu & Okazaki, 2021). That myth becomes an obstacle preventing Asian Americans from securing a job position in non-STEM fields (Kodama & Dugan, 2020; Tu & Okazaki, 2021). That myth causes Asian Americans to doubt their ability and makes them return to a stereotypically safer career pathway in STEM (Shih et al., 2019; Tu & Okazaki, 2021). Since stereotypes direct Asian American students toward STEM fields, students who are interested in non-STEM do not get much attention. This study addressed non-STEM Asian American students to increase their representation in literature.

### **Gender**

Gender is an essential factor that changes the influencing level of cultural and environmental factors on career choices. In other words, the same factor may have different influences on male and female Asian American students. Female students tend to make college choices based on another person's recommendation more than males (J. J. Park & Assalone, 2019). B. S. K. Kim et al. (2023) indicated that there is a significant gender difference when it comes to family conflicts among Asian Americans. The study revealed that Asian American women face more pressure from their parents to conform to traditional gender roles, leading to greater conflict in areas such as education, career, dating, and marriage (B. S. K. Kim et al., 2023). As a result, they are more susceptible to suffering child-parent conflicts (B. S. K. Kim et al., 2023).



### *Women in STEM*

Women, in general, are continually underrepresented in STEM fields (Y. Ma & Xiao, 2021; Varma, 2023). Mozahem (2022) discovered that female's underrepresentation is because they have lower confidence and self-efficacy in STEM. According to social cognitive theory, the four sources that develop women's perception of self-efficacy are performance achievements, emotional arousal, vicarious learning, and social persuasion (Bandura, 1986). If women do not get environmental support from those sources, their self-efficacy will be negatively impacted (Bandura, 1986). However, women are dominant in some STEM subfields, such as biology, while they are largely underrepresented in other majors, like computer science, engineering, math, and physics (Casad et al., 2019). Y. Ma and Xiao (2021) studied how changes in math and science identities are associated with switching majors between STEM and non-STEM fields. Math or science identity refers to the sense that math or science is right for a person and vice versa (Y. Ma & Xiao, 2021). When examining the impact of math and science identity changes on the decision to switch majors, Y. Ma and Xiao (2021) found that science identity changes matter more than math identity changes. However, the impact of identity changes is minor on Asian American women and significant on other racial minority groups (Y. Ma & Xiao, 2021). In summary, when researchers compare multiple ethnic groups, Asian American women are less likely to change their STEM major to non-STEM when their math and science identities change (Y. Ma & Xiao, 2021). However, when researchers compare males and females, women are more likely to leave STEM field by their senior year because faculty members think men are better in STEM and discriminate against women (J. J. Park et al., 2020). Similarly, Asian American female students in STEM doctoral programs usually experience a hostile environment (Castro & Collins, 2021). Despite the difficulties that women have encountered, they continue to

work their way through the program by resisting the hostile environment and confirming their identity (Castro & Collins, 2021). Schools can effectively narrow the gender gap by encouraging females to select a STEM major and stimulating interest in STEM by creating positive classroom and home learning environments (Sahin et al., 2020). Another method to narrow the gender gap is to expose female STEM students to competent female role models to increase their self-efficacy (Casad et al., 2019).

### ***Gender Stereotypes***

Similar to the bamboo ceiling that generates an invisible barrier for Asian American professionals to go upward to leadership positions, Asian American women experience the glass ceiling (Parvathi et al., 2022). Loden (2017) initially used the term glass ceiling during a panel discussion about women's aspirations in 1978 to refer to the invisible barriers preventing women from advancing in their careers. After more than 40 years, the glass ceiling is still a pertinent issue women face in different work environments (Parvathi et al., 2022).

In academic sector, the gender stereotype that believes males perform better in STEM than females has caused underrepresentation in STEM for both female students and faculty (Casad et al., 2021). Gender discrimination hinders hiring female faculty members and makes them lose their sense of belonging in STEM (Casad et al., 2019, 2021). In healthcare sector, Kaur and Mittal (2022) systematically reviewed 32 studies. They found that women in senior positions are still underrepresented, while the overall number of women in healthcare sector has increased (Kaur & Mittal, 2022). The main factors causing the glass ceiling in healthcare are organizational, societal, and personal (Kaur & Mittal, 2022). In construction sector, Rivera et al. (2021) indicated that the glass ceiling also persists. The nature of construction industry and the hiring process are the main causes of the glass ceiling in construction fields (Rivera et al., 2021).

The gender inequalities between women and men in construction areas perpetuate from one generation to the next (Rivera et al., 2021). In service sector, Agarwal et al. (2023) also determined the existence of the glass ceiling. Majority of female participants in the study encountered some form of discrimination (Agarwal et al., 2023). Hence, the percentage of women who get higher positions is still relatively small compared to the increasing number of women with higher education and knowledge (Agarwal et al., 2023).

The same is true for Asian American women; they also experience the glass ceiling in various industries, and it has a long-term negative impact on themselves, their families, and their communities (Shih et al., 2019; Varma, 2023). Besides gender stereotypes, Asian American women also experience racial discrimination that hinders their advancement in the workplace (Shih et al., 2019; Varma, 2023). Managers should acknowledge stereotypes and racism to develop appropriate strategies and policies to support Asian American female employees and alleviate racial inequalities (Shih et al., 2019). Agarwal et al. (2023) suggested that women can break the glass ceiling by strengthening the factors that influence their professional advancement, such as their education, skills, and abilities. Having capable mentors to provide guidance and advice will also help female workers overcome stereotypes (Agarwal et al., 2023). It is also important to note that not every Asian woman experiences the glass ceiling. In a study conducted by Sabharwal and Varma (2017), about 66% of female participants responded that they did not experience the glass ceiling. Still, those women considered themselves lacking the outspoken and confident traits that American leaders should have, so they intentionally opted out of management positions (Sabharwal & Varma, 2017).

## **Challenges of Asian American Students in non-STEM Fields**

Asian American students who plan to select a non-STEM major in college can face various challenges (Cooc & Kim, 2021; Shih et al., 2019). The challenges include pressure from Asian parents, insufficient attention and care, lack of role models and resources, and language and communication barriers. Asian Americans who are looking for non-STEM jobs, especially leadership roles, may encounter discrimination or biases in hiring and promotion (J. Chen & Cheng-Cimini, 2024). As a result, Asian Americans are the least represented in management positions (J. Chen & Cheng-Cimini, 2024). Details of the challenges follow below.

### ***Family's Pressure***

Asian American families traditionally prefer STEM fields (Kang et al., 2023; Shen & Liao, 2022). Parents pressure their children toward STEM career choices because they have more job opportunities with better salaries than liberal arts majors (Kang et al., 2023). Hence, Asian American students who are interested in pursuing a non-STEM college major or career receive less parental and social support (Cooc & Kim, 2021). Since non-STEM fields are not strongly supported, the interest in non-STEM tends to decrease over time (Cooc & Kim, 2021). In a national and longitudinal study of 2340 Asian American high school students conducted by Cooc and Kim (2021), ninth-grade students' career expectations in arts and sports were initially high but gradually decreased later, while low career expectations in business and management increased after high school. Therefore, Asian American college students may face various challenges when trying to achieve their career aspirations (Y. H. Kim & Choi, 2019).

Challenges become more pronounced if students wish to pursue a different career path than the traditionally popular careers in Asian American communities (Cooc & Kim, 2021). Disagreement on career choices is one of the main reasons for intergenerational conflict between

Asian parents and students (P.-W. W. Ma et al., 2014). Conflicts in values, traditions, and expectations make Asian students feel guilty for not following their parents' desire and pressure them to give up their career interests (P.-W. W. Ma et al., 2014; Shen et al., 2014). As a result, Asian American students tend to limit their choices to STEM fields to fulfill parental expectations (Shen et al., 2014). However, some Asian American students try to deal with parental disapproval of their occupation's interests by asking for friends' and relatives' advice, explaining to their parents about their chosen career, or compromising between their choice and their parents' wishes (P.-W. W. Ma et al., 2014).

### ***Insufficient Attention and Care***

Asian American high school and postsecondary students tend to hold high occupational aspirations in STEM fields (Cooc & Kim, 2021). People usually overlook the early experience of Asian American students in non-STEM fields because they only focus on overrepresented STEM areas (Cooc & Kim, 2021). There has been a remarkable increase in attention towards STEM education from preschool to workforce preparation in recent years (Lamb et al., 2018). Unlike traditional P-12 education, which provides students with a high school diploma but does not prepare them for college, educators introduced P-16 concept to create a public education system spanning from preschool to college completion (Lynch, 2015). However, there is usually a gap between a college degree and a capable workforce. Hence, educators developed P-20 initiatives for universities and colleges to bridge the gap by guiding students in their early careers (Lynch, 2015). P-20 STEM education led to various initiatives encouraging students to pursue STEM majors and careers, particularly in computer science and engineering (Lamb et al., 2018). As a result, research in STEM education is gaining global significance (Li et al., 2020). Since STEM fields get much attention, people often forget students in non-STEM majors (Shih et al., 2019).

### *Misconceptions About Abilities*

Stereotypes about Asian Americans being excellent in science, technology, engineering, and math lead to the misconceptions of some Asian American students that they do not have abilities in social studies or liberal arts (Shih et al., 2019). Stereotypes make students feel that STEM is the correct direction for them and prevent them from exploring other fields beyond STEM (Shih et al., 2019). Stereotypes cause underrepresentation in non-STEM occupations and strengthen the myth that Asian Americans only have abilities and talent in STEM (Shih et al., 2019). Stereotypes also impact the confidence and sense of belonging in non-STEM fields for some Asian Americans (Kwong, 2018). As a result, Asian American students are less likely to choose non-STEM as their first college major. For instance, 44% of Asian American social work students in the study conducted by Kwong (2018) stated that they did not select social work as their first or primary choice. Students who chose a non-STEM major are more likely to change their major than students in a STEM major (M. Smith & Willison, 2021). According to M. Smith and Willison's survey (2021), only 11% of students of STEM majors considered changing to non-STEM, while 31% of non-STEM students thought about switching to STEM. Of the students who considered changing majors, only 9% reported the reasons were from outside obligations such as work or family, while 20% were due to interests in other areas (M. Smith & Willison, 2021). Byrne and Cave (2020) compared STEM vs. non-STEM cultures and revealed that the culture of non-STEM fields is more bureaucratic and more resistant to change, which means a lower endorsement of innovative culture. To increase the number of students pursuing non-STEM majors, teachers and career counselors should provide more support to Asian American youth who are interested in non-STEM fields (Cooc & Kim, 2021) and encourage

them to explore their capacities and potential instead of making a predetermined decision on STEM fields (Shih et al., 2019).

In the workplace, the stereotypes assuming Asian Americans cannot work in non-STEM fields, such as social work, cause discrimination and unconscious biases that can impact the career prospects of Asian Americans and limit the hiring and promotion opportunities for them (Kwong, 2018). To help Asian Americans be confident and remain in social work, Kwong (2018) suggested implementing professional career development and growth opportunities aligning with their values and needs. That strategy requires changing social work education and encouraging a fair workplace that considers culture, practices, and conditions for Asian Americans (Kwong, 2018).

### ***Lack of Role Models and Communication***

STEM has more job opportunities than non-STEM and, in general, provides more competitive salaries and opportunities for advancement (M. Smith & Willison, 2021). Hence, students find it difficult to choose and remain in non-STEM fields (M. Smith & Willison, 2021). There are not sufficient role models or representation in non-STEM areas for Asian American students to look upon and envision a clear path to success (L. Zhang et al., 2019). According to a study of 138 Southeast and East Asian American medical students, having influential role models or mentors is one of the essential factors that increases students' interest in pursuing academic medicine careers (L. Zhang et al., 2019). L. Zhang et al. (2019) suggested additional interventions to strengthen non-STEM interest and encourage Asian Americans to become leaders, such as collaboration with others to improve communication skills, open discussions about careers with family members, and teaching and research opportunities (L. Zhang et al., 2019). However, collaboration and discussion with others may be challenging for some Asian

Americans because of their language and communication skills. A high percentage of Asian Americans from immigrant families are identified as English learners (National Center for Education Statistics, 2019). English learners who come from non-English-speaking countries feel uncomfortable with the fields of study that require strong verbal communication skills (G. M. Kim, 2020). Asian immigrants with low self-perceptions of their English ability are more likely to pursue careers that they assume require less English (Rangel & Shi, 2019). Asian American English learners are also afraid that their English accent may impact other people's perception of their English proficiency and credibility (G. M. Kim, 2020). Therefore, they try to avoid certain careers, such as teaching (G. M. Kim, 2020), and choose a STEM major or career while they are interested in a non-STEM area (Cooc & Kim, 2021).

English proficiency is also a reason for Asian students to keep quiet in the classrooms, especially in English language classes (Apple, 2021; Looney, 2020; Peng, 2023; Tao & Zhang, 2021). Nearly six in ten Asian Americans were born in another country, compared to 14% of all Americans (Budiman & Ruiz, 2021). As of 2019, 43% of foreign-born Asians were not proficient in English (Budiman & Ruiz, 2021). For those Asians who are English proficient, they speak English with an accent, which can be interpreted as poor communication skills (Sabharwal & Varma, 2017). The accent is another reason for Asians to be silent in class (Peng, 2023). Besides English proficiency and accent, culture is an important factor causing the silence of Asian students (S. Kim et al., 2016; Sasaki & Ortlieb, 2017). In Asian culture, silence means politeness (S. Kim et al., 2016). Silence is also an expected behavior in classrooms so that it will not interfere with the teacher's lecture and other students' learning (Sasaki & Ortlieb, 2017). However, American teachers may misunderstand the silence of Asian students as disengagement in classroom activities (Peng, 2023). People perceive the silence of Asian Americans as



ineligible for occupations requiring excellent verbal communication skills, including leadership positions (Sabharwal & Varma, 2017).

### **Summary**

Asian American students are more likely to select a college major in science, technology, engineering, and mathematics (STEM) than a social-type occupation (Shen & Liao, 2022; Shih et al., 2019). Since STEM is preferred and overrepresented, Asian Americans with interests and talents to pursue non-STEM majors or careers may face unique challenges and obstacles that hinder their progress (Cooc & Kim, 2021; Kodama & Dugan, 2020). Multiple cultural and environmental factors interacting with internal motivations determine the college or career choices of Asian Americans. This study used Bandura's SCT (1986) to guide in understanding the experiences of Asian Americans who have chosen non-STEM college majors. SCT helped answer the research questions by determining the roles played by mental, vicarious, self-regulatory, and self-reflective processes in psychosocial functioning (Bandura, 1986). Since Asian culture respects science-oriented careers, students may feel obligated to pursue a STEM major (Kang et al., 2023; Shen & Liao, 2022). The literature also reveals that parents or other family members influence the college and career choices of Asian American students by over-emphasizing these popular areas (Shen & Liao, 2022). Model minority stereotypes also persuade Asian American students to pursue STEM majors or careers because people believe they will only perform well in these areas (Tu & Okazaki, 2021). Asian American students try to avoid unpopular or underrepresented majors for fear of failure or criticism. A gap existed in the literature about Asian American students who decided to go against the popular trend and path. Examining their experiences provided a better understanding of how cultural and environmental factors influence the feelings and actions of these students based on the explanation from SCT.

Since Asian cultures, surrounding people, and stereotypes put a lot of pressure and doubt on people who want to be different, their journey to success is not easy. This study did not aim to take STEM careers away from Asian American students. Instead, the study increased the visibility of non-STEM Asian American students who are invisible and neglected in their culture (Cooc & Kim, 2021). The findings from this study help educators better understand the needs of Asian American students and develop appropriate plans to assist them when needed.

## **CHAPTER THREE: METHODS**

### **Overview**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. At this stage in the research, Asian American students who have chosen non-STEM college majors are generally defined as post-secondary students who are pursuing a non-STEM college major different from science, technology, engineering, and mathematics (STEM) or have graduated with a non-STEM degree within the last five years. The theory guiding this study is SCT developed by Bandura (1986). This chapter starts with the research design, followed by the research questions, the research setting, and the participants. Next, the chapter discusses the researcher's positionality, the research procedures, and the data collection plan, including methods and data analysis steps. The chapter ends with the study's trustworthiness and a summary.

### **Research Design**

My research topic was the lived experiences of Asian American students who have chosen non-STEM college majors. Since Asian culture favors STEM fields, Asian Americans are overrepresented in STEM while underrepresented in non-STEM areas. The path to a successful non-STEM career, especially a leadership role, for Asian Americans is difficult (Cooc & Kim, 2021; Kodama & Dugan, 2020). A qualitative research method was appropriate for this study because it allowed me to discover cultural and environmental influences on Asian American students' college and career choices that were hard to quantify. The participants in this study were able to share their unique stories that statistical analysis could not capture. As qualitative research describes the complex interactions of different factors in a situation (Moustakas, 1994),

it helped me to explore how external factors interact with internal motivations and affect Asian American students' behavior. Regarding research design, phenomenology was appropriate for my study of Asian American's lived experiences because phenomenological design is for studying lived experience of people who have experienced the phenomenon (Moustakas, 1994; van Manen, 2016).

I chose transcendental to bracket my experience as an Asian with the phenomenon and minimize my biased interpretation (Moustakas, 1994). The transcendental approach allowed me to freshly capture the experience of Asian American participants from their perspectives. Each participant's experience was listened to and perceived in a completely open way without prejudice (Moustakas, 1994). Hence, different perspectives and meanings were considered and examined. A transcendental phenomenological study requires the researchers to use the epoché process that sets aside prior experiences, preconceptions, and beliefs (Moustakas, 1994; van Manen, 2016). Epoché allows researchers to explore the true meaning of the phenomenon by unbiasedly recording the participants' lived experiences (Moustakas, 1994; van Manen, 2016). By employing epoché, I was able to explore the true meaning of the phenomenon by unbiasedly recording the participants' lived experiences. Besides epoché, transcendental phenomenology addresses intentionality, which refers to being conscious of something in the world (Moustakas, 1994). Acknowledging intersubjectivity requires people to interpret their intentional consciousness before they can understand others (Moustakas, 1994).

### **Research Questions**

The purpose of the research questions was to explore different factors that influence Asian American students who have chosen a non-STEM college major. The factors were based on SCT by Bandura (1986), which explains the interactions of cultural and environmental factors

with internal motivations to determine the behaviors of non-STEM Asian American students. The central research question and three sub-questions are below.

### **Central Research Question**

What are the lived experiences of Asian American students who have chosen non-STEM college majors?

### **Sub-Question One**

How do cultural factors influence Asian American students in non-STEM fields?

### **Sub-Question Two**

How do environmental factors influence Asian American students in non-STEM fields?

### **Sub-Question Three**

How do internal motivations influence Asian American students in non-STEM fields?

## **Setting and Participants**

This section provides the study's setting and my participants' profiles. The participants of this study were Asian Americans who had chosen non-STEM college majors. Since non-STEM college majors are underrepresented in Asian culture, finding enough participants at one specific location or organization may not be possible. Hence, this study looked for participants in different geographic areas. Utilizing participants in various geographic areas attained a larger range of perspectives and increased confidence in the study's results (Yin, 2016).

### **Site**

Asian Americans came from collectivistic cultures that integrate individuals into groups of family members, significant others, or peers (Hofstede, 2011). Groups influence personal opinions and decisions of individuals (Hofstede, 2011). Asian Americans also belong to ethnic churches, temples, and community centers that share role models for individuals to learn from

and change their behavior (J. Lee & Zhou, 2020). Hence, Asian individuals in an organization or a small geographic location are more likely to share the same opinions and behaviors, which may result in reaching saturation too soon. Therefore, this study did not use a particular geographic location or organization as a site. I recruited participants from different areas in the United States to have a broad range of perspectives and increase confidence in study's findings (Yin, 2016).

### **Participants**

The sample size for a phenomenological study usually ranges from three to 15 participants (Dukes, 1984). Since Liberty University requires 10 to 15 participants for qualitative research, I used purposeful criterion sampling to select 12 participants to meet the school's requirements. Purposeful criterion sampling is a sampling technique that involves selecting participants who meet specific criteria for a study (Yin, 2016). Purposeful criterion sampling ensured all participants for this study were 18 years of age or older, male or female Asian Americans, who were pursuing a non-STEM college major or graduated from a non-STEM field within the past five years. Asian Americans are defined as all people with origins in the Far East, Southeast Asia, and the Indian subcontinent, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (The U.S. Census Bureau, n.d.).

### **Recruitment Plan**

After receiving IRB approval to conduct the study (see Appendix A), I started to recruit participants by posting a recruitment announcement on LinkedIn. The recruitment post included the study's purpose, an explanation of its importance, the study's criteria, the data collection procedures, and the compensation for participation (see Appendix B). I provided my email address in the post to allow interested individuals to contact me. Using LinkedIn as the

recruitment platform for my study proved highly effective. Within 24 hours of posting, I received 1248 impressions, which was the number of times my post was displayed on someone's feed. Out of these 1248 impressions, I received 104 emails from individuals stating that they met the study's criteria, which I had specified in my recruitment post, and they expressed interest in participating in my study.

Initially in my proposal, I had planned to select demographically diverse participants to ensure a broad range of perspectives and increase confidence in the study's findings (Yin, 2016). To achieve demographic diversity, I intended to ask potential participants to fill out a demographic survey when they contacted me to express their interest in participating. I would then review the completed demographic surveys to select participants from different Asian countries, currently residing in different U.S. states, studying or having studied different non-STEM majors, and in different age ranges.

However, due to the privacy and confidentiality of the potential participants, the IRB disallowed the collection of demographic data before they signed the consent form. Therefore, I randomly selected 14 individuals from the pool of 104 who stated they met the study's criteria and were interested in participating in my study. I sent the screening survey (see Appendix C), which did not include questions about their demographic details, to the 14 potential participants. Although I already specified the study's criteria in the recruitment post on LinkedIn, completing the screening survey was a crucial step to confirm the participants' eligibility. Thirteen out of 14 potential participants returned the completed screening survey. After reviewing their completed surveys, I selected 12 people who met the study's criteria and excluded one individual who initially identified himself as meeting the study's criteria, but based on his survey's response, he did not actually study a non-STEM major. The selected participants then proceeded to the next

phase, which involved signing the consent form (see Appendix D) and filling out the demographic survey (see Appendix E) to finalize their inclusion in this study.

### **Researcher's Positionality**

Math is always my favorite subject. Both my first and second bachelor's degrees are in STEM fields. I have worked in different IT departments for more than 20 years. I had never paid much attention to non-STEM areas until I started working as a Sunday school teacher for middle and high school students at a Vietnamese church. Some of my students asked me for help because they were interested in a non-STEM college major while their parents or relatives wanted them to choose STEM. The students' stories I encountered motivated me to conduct this study. I am passionate about exploring the lived experiences of Asian American students who have decided to go against the popular trend by choosing a non-STEM major. The findings from this research could help educators better understand the needs of these students and assist them when needed. This section will explore the researcher's positionality by describing my interpretive framework, philosophical assumptions, and researcher's role.

### **Interpretive Framework**

My interpretative framework as a researcher was social constructivism, a social learning theory developed by Lev Vygotsky (Jumaat et al., 2017; Vygotsky, 1978). According to Lev Vygotsky, individuals actively construct their knowledge (Vygotsky, 1978). Since social constructivism leads researchers to look for various views instead of limiting to a few categories or ideas (Vygotsky, 1978), this framework was suitable for me to conduct a qualitative study heavily relying on different views of the participants and their interpretation of the situation. As a constructivist researcher, I facilitated discussions and interactions with participants through open-ended questions that allowed them to describe their experiences in their own words



(Moustakas, 1994). The answers to these questions helped me, as a researcher, to understand the specific contexts of the participants and effectively interpret the data based on my personal cultural and historical background.

### **Philosophical Assumptions**

Philosophical assumptions are the beliefs and views that researchers incorporate into their studies (Huff, 2009). Researchers should dynamically integrate their philosophical assumptions in developing their research questions and how they seek information to answer them (Huff, 2009). However, Coates (2021) examined 1026 mixed methods research articles in the education field and found that only 7.9% of the articles presented philosophical assumptions. It is essential to identify the aspects of philosophical assumptions that have guided the researchers to choose the problems to study, the research questions, and the theories (Huff, 2009). I address my philosophical assumptions by detailing ontological, epistemological, and axiological assumptions below.

#### ***Ontological Assumption***

Ontological assumption refers to the nature of reality and its characteristics (Guba & Lincoln, 1988). Both researchers of qualitative research and the individuals being studied hold different realities. As a Christian researcher, my ontological assumptions are based on my faith in God, who is omnipotent, omniscient, and omnipresent. God is the source of all existence, and His Word is the ultimate truth. However, the Asian American participants in my study had different realities. Hence, I recorded and addressed multiple realities and perspectives of the participants on the phenomenon.

### ***Epistemological Assumption***

Epistemology refers to the nature and forms of knowledge (Cohen et al., 2007). Epistemological assumption is concerned with how knowledge is created, obtained, and communicated (Cohen et al., 2007). Researchers acquire knowledge through the participants' views (Lincoln & Guba, 1985). Hence, researchers should be as close as possible to the participants being studied (Guba & Lincoln, 1988). The longer researchers stay in the field of the participants, the more firsthand knowledge they gain (Guba & Lincoln, 1988). As an Asian with many years of living among Asian people, I know and understand the Asian American participants better than an outsider. I could get more accurate results when observing and interpreting their responses to the interview questions.

### ***Axiological Assumption***

Axiological assumption refers to the value-laden nature of qualitative research in that researchers should actively communicate their values, natures, and biases (Guba & Lincoln, 1988). As a Christian researcher, I position myself under the Biblical worldview because "All Scripture is God-breathed and is useful for teaching, rebuking, correcting and training in righteousness, so that the servant of God may be thoroughly equipped for every good work" (II Timothy 3:16-17, *New International Bible*, 1978/2011). I ensured this study was appropriate based on Christian values and standards. I also carefully managed the biases as an Asian myself by accurately recording each participant's response and perspective. I ensured to extract the themes from the collected data, and not from my own opinions.

### **Researcher's Role**

As the human instrument in this study, I adhered to the transcendental phenomenological research design. I put aside my personal experience, biases, and prejudgments to examine the

participants' lived experiences freshly and openly (Moustakas, 1994). I used a personal journal to document my previous experiences related to the phenomenon and ensured my perspectives did not influence the data collection and analysis. One advantage I had with this study was that I did not have personal experience as a non-STEM student. I was good at math and voluntarily selected STEM majors for my two undergraduate degrees. Hence, I did not have the same experiences as the non-STEM participants, which might affect how I view or conduct the data analysis.

### **Procedures**

This study aimed to explore the lived experiences of Asian American students who have chosen non-STEM college majors. This study used a transcendental phenomenological design (Moustakas, 1994) to gain a deeper understanding of cultural, environmental, and internal factors influencing academic and career choices among Asian American students. I submitted the IRB application using Cayuse and got IRB approval (see Appendix A) before recruiting participants for this study. After IRB approval, I used LinkedIn to recruit participants. I created a social media post to announce the recruitment (see Appendix B) and posted it on LinkedIn. The post included the study's purpose, an explanation of its importance, the study's criteria, the data collection procedures, and the compensation for participation. I provided my email address in the post to allow interested individuals to contact me. Within 24 hours of posting, I received 1248 impressions, which was the number of times my post was displayed on someone's feed. Out of these 1248 impressions, I received 104 emails from individuals who stated that they met the study's criteria and expressed interest in participating in my study. I randomly selected 14 potential participants to whom I dispatched the screening survey (see Appendix C). Thirteen out of 14 potential participants returned the completed screening survey. After reviewing the

completed surveys, I selected 12 people who met the criteria to participate in my study and excluded one person who did not meet the criteria. The selected participants proceeded to the next phase, which involved signing the consent form (see Appendix D) and filling out the demographic survey (see Appendix E) to finalize their inclusion in this study. Since this study did not use a particular geographic location or organization as a site, there was no site approval.

This study used three different data collection methods: individual interview, letter writing, and focus group. Individual interview with open-ended questions is the primary data collection method for phenomenological research that allows participants to describe their experiences in detail (Moustakas, 1994). Letter letter-writing activity had a prompt for participants to write about their challenges and how to prepare better when choosing a non-STEM major. Focus groups helped me observe multiple individuals at the same time and explore their complex perspectives and concepts through their interactions within the group (Morgan, 1988). After collecting data, I used the data analysis procedures that Moustakas (1994) explained as follows. I identified and categorized themes that emerged across the collected data from three different sources. I developed a codebook that outlined the themes and sub-themes and used this to analyze the data. I achieved triangulation by combining data from individual interviews, letter writing, and focus groups to develop a comprehensive set of codes, themes, and insights. I reviewed all data and identified common themes and patterns across all data sets.

### **Data Collection Plan**

This study used the transcendental phenomenological design (Moustakas, 1994) to explore the lived experiences of Asian American students who chose a stereotypically unpopular college major. Individual interview is the primary data collection method for phenomenological research (Moustakas, 1994). Therefore, the first data source for this study was in-depth

interviews to describe and understand how cultural, environmental, and personal factors influence the major and career choices of Asian American students. This study also used letter writing activity and three focus groups after the interviews to achieve triangulation and increase the validity of the research's results (Moustakas, 1994).

### **Individual Interviews**

The first data collection method was in-depth, one-on-one interviews. I used the semi-structured interview protocol with open-ended questions that allowed participants to describe their experiences in detail (Moustakas, 1994). Semi-structured interviews, a blend of structured and unstructured interviews, provided me with flexibility to probe for more in-depth responses (Lincoln & Guba, 1986). I conducted the interviews virtually via Microsoft Teams using the list of questions in Table 1 below. These interview questions are also in Appendix F. Each interview lasted about one hour.

### **Table 1**

#### *Individual Interview Questions*

1. Please introduce yourself and your current or past non-STEM college major. CRQ
2. Why did you choose a non-STEM major? CRQ
3. What stories do you remember the most when you decided to pursue a non-STEM major?  
CRQ
4. Describe the Asian values that influenced your decision to choose a non-STEM major.  
SQ1
5. How did family involvement influence your choice of a non-STEM major? SQ1
6. How did the model minority stereotypes that assume Asian Americans are only good in STEM influence your decision to choose a non-STEM major? SQ1

7. Describe the environmental factors that influenced your decision to choose a non-STEM major. SQ2
8. How did previous schools influence your choice of a non-STEM major? SQ2
9. How did other organizations or people influence your decision to choose a non-STEM major? SQ2
10. How did social media influence your choice of a non-STEM major? SQ2
11. Describe the internal motivations that influenced your decision to choose a non-STEM major. SQ3
12. How did self-efficacy influence your decision to choose a non-STEM major? SQ3
13. How did gender influence your decision to choose a non-STEM major? SQ3
14. What else would you like to add to our discussion of your experiences when choosing a non-STEM major that we have yet to discuss? SQ3

The above questions helped answer the research question on the experiences of Asian American students in non-STEM fields. The first three questions helped establish rapport to make the participants more comfortable sharing their stories (Patton, 2015). The subsequent questions explored how the cultural, environmental, and internal factors influenced their choice of non-STEM college major. Asian parents or other family members tend to influence the college and career choices of Asian American students by directing them to the popular STEM areas (Kang et al., 2023; Shen & Liao, 2022). The model minority stereotypes also make Asian American students feel obligated to pursue STEM majors because of the belief that Asian Americans only perform well in STEM (Tu & Okazaki, 2021). Since Asian culture, surrounding people, and stereotypes put a lot of pressure and doubt on people who want to choose something

different, their journey to success in non-STEM fields would not be easy. The above questions would discover their journey.

### **Letter-Writing**

After the interviews, I emailed all participants to provide them with information for the letter-writing activity (see Appendix G). Since Asian culture respects STEM careers (Kang et al., 2023; Shen & Liao, 2022), Asian American students who choose a non-STEM field usually encounter more challenges (Cooc & Kim, 2021; Kodama & Dugan, 2020). This study used letter writing to explore how the students prepared to deal with their challenges or other particular circumstances. The prompt for the letter writing was, “What will you tell your younger self to be better prepared for choosing a non-STEM college major?” I emailed the letter prompt to all participants after the individual interviews and asked them to write a response of about 400 words and email the answer back within two weeks. A period of two weeks was a reasonable time for the participants to draft, edit, and email back the letter.

### **Focus Groups**

The third data collection method was focus groups that I conducted via Microsoft Teams. Focus groups allow researchers to discover different perspectives through interaction among participants within the group (Morgan, 1988). I informed each participant about the proposed dates and times of the focus groups after I completed the individual interviews to help them prepare. Focus groups are an excellent method to achieve triangulation and allow participants to share in-depth experiences (Morgan, 1988). The 12 participants were divided into three focus groups based on their availability. The focus groups helped me observe multiple individuals at the same time and explore their complex perspectives or concepts. The focus group sessions

lasted about 90 minutes, including an introduction, questions and answers, and a conclusion. The focus group questions are in Table 2 below and also in Appendix H.

## **Table 2**

### *Focus Group Questions*

1. What led you to choose a non-STEM major? CRQ
2. Describe the cultural challenges that you have experienced when choosing a non-STEM major. SQ1
3. How did you overcome the cultural challenges? SQ1
4. Describe the external challenges, such as people, media, and stereotypes, that you have encountered when choosing a non-STEM major. SQ2
5. How did you overcome the external challenges? SQ2
6. Describe the internal challenges that you have experienced when choosing a non-STEM major. SQ3
7. How did you overcome the internal challenges? SQ3

The focus group questions above aimed to discuss the cultural, environmental, and internal challenges that Asian Americans have encountered when pursuing non-STEM fields. Asian American students who plan to select a non-STEM college major can face various challenges (Cooc & Kim, 2021; Shih et al., 2019). After graduating with a non-STEM degree and joining the workforce, Asian Americans may encounter discrimination or biases in hiring and promotion (Kwong, 2018). Asian Americans are also the least represented in management positions (J. Chen & Cheng-Cimini, 2024). Therefore, it was critical to explore the challenges that the participants had been through and how they overcame the challenges or resolved the conflicts.



## Data Analysis

Transcendental phenomenology is a qualitative research method seeking to freshly and openly understand human experience (Moustakas, 1994). The transcendental approach requires the researcher to use the epoché process that sets aside prior experiences, preconceptions, and beliefs to explore the true meaning of the phenomenon by unbiasedly recording the participants' lived experiences (Moustakas, 1994). Therefore, I carefully documented my previous experiences by using a detailed personal journal and did not let my perspectives influence the data collection and analysis. My personal journal helped me remember to set aside my experiences with the phenomenon throughout the data analysis process. In other words, I bracketed my experiences to get to the phenomenon's essence (Moustakas, 1994).

When conducting individual interviews, I asked additional questions to verify unclear information and help me capture the essence of the phenomenon more precisely (Lincoln & Guba, 1985). Within 24 hours after the interviews, I sent the participants a copy of their transcripts along with the list of main points I extracted from their responses so that they could review and verify the accuracy of the data (Manning, 1997). I read the interview transcripts and followed the data analysis method that Moustakas (1994) described below.

The first step was to list every expression related to the experience, then determine the significant components that could be labeled and eliminate others. These steps involved reviewing the transcripts and highlighting important statements that helped me understand the phenomenon based on the research questions (Moustakas, 1994). I identified the codes that summarized the chosen statements (Saldana, 2016). These codes helped me determine the themes in the next step and validate them against the participants' original answers to ensure the themes I produced genuinely reflect their experiences (Moustakas, 1994; Saldana, 2016). After

that, I created an individual textural description of the experience for each co-researcher by describing the experience in detail, using the words of the participants (Moustakas, 1994). I also developed an individual structural description of the experience for each co-researcher by organizing the textural description into a coherent structure (Moustakas, 1994). The last step was to build a textural-structural description of the experience for each participant. Combining the textural and structural descriptions was essential to create a comprehensive analysis of the experience (Moustakas, 1994). These descriptions helped me create a composite explanation of the phenomenon and write the essence of the experiences (Moustakas, 1994). I also used Atlas.ti, a qualitative research software, as a supplementary tool to organize and manage my documents, quotations, codes, and memos. Atlas.ti only served as an aid to simplify the process of accessing my data while the core of my coding and analysis was conducted manually.

I used a similar data analysis for letter writing as I did for individual interviews. Since I received the letters from the research participants, I did not need to do the transcripts, but I could import the letters directly to Atlas.ti software. I read the letters and added appropriate codes for each letter (Saldana, 2016), then followed the analysis steps from Moustakas (1994) to divide codes into themes. Since the letter writing was based on one prompt, comparing the themes with the original letters was faster and easier to manage. After that, I developed individual textural and structural descriptions of the experiences.

Data analysis for the focus groups was the same as for individual interviews. I read the participants' responses to have a general idea of the data (Moustakas, 1994) and prepared the files to be imported to Atlas.ti software. I added memos to summarize key concepts and ideas I got from the transcripts and continued with the steps Moustakas (1994) described to choose the significant components, then labeled them with codes that summarized the selected statements

(Saldana, 2016). The codes assisted me in dividing the statements into themes and validating them against the initial responses (Moustakas, 1994). The described steps generated textural descriptions of what the participants experienced and structural descriptions of how they experienced (Moustakas, 1994).

After completing the analysis for each data source: interviews, letter writing, and focus groups, I combined all textural and structural descriptions of the participants' experiences and validated them against the transcripts (Moustakas, 1994). I triangulated the analysis by identifying and categorizing themes that emerge across three data sources (Patton, 2015). I developed a comprehensive set of codes, themes, sub-themes, and insights that were grounded in the data and validated by multiple data sources (Moustakas, 1994; Patton, 2015). Triangulation enhanced the validity and reliability of the study's findings (Patton, 2015). After that, I generated a composite report that accurately represents the phenomenon's essence for the whole group of participants (Moustakas, 1994). In summary, I completed multiple checkings, comparisons, edits, and verifications to ensure the final meanings and essences truly described the researched phenomenon (Moustakas, 1994).

### **Trustworthiness**

Critics have questioned the trustworthiness of qualitative research for many years (Shenton, 2004). Lincoln and Guba (1985) responded to the criticisms by providing a framework to ensure the rigor of qualitative research. They suggested that the researchers satisfy four criteria for their study: credibility, transferability, dependability, and confirmability. These terms are comparable with internal validity, external validity, reliability, and objectivity in quantitative research. This section describes the steps I plan to take to establish trustworthiness for my qualitative study based on the framework suggested by Lincoln and Guba (1985).

## **Credibility**

Credibility refers to the belief in the truthfulness of the research's findings or the degree to which the results accurately describe reality (Lincoln & Guba, 1985). The techniques to establish credibility include prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, and member checks (Lincoln & Guba, 1985, 1986). The three applicable techniques to my study were triangulation, peer debriefing, and member-checking, which are described below to present an accurate picture of the phenomenon I am researching.

### ***Triangulation***

Triangulation involves collecting data from multiple sources and methods to confirm findings and establish credibility (Lincoln & Guba, 1985). I analyzed the participants' responses from three collection methods: individual interview, letter writing, and focus group. I used the same analysis steps for all three collection methods to enhance accuracy and maintain consistency of the research (Lincoln & Guba, 1985). Each data collection method has its own strengths and weaknesses, but a combination of the three methods provides the balance needed to accomplish triangulation (Lincoln & Guba, 1985).

### ***Peer Debriefing***

Peer debriefing is a technique that allows me to periodically discuss the research's findings with colleagues who are not directly involved with the study (Lincoln & Guba, 1985; Manning, 1997). I looked for peers in my academic program who were familiar with my research topic to provide valuable feedback on my data analysis and findings. I learned their perspectives to clarify my understanding and ensure my analysis was based on the study's data (Lincoln & Guba, 1985; Manning, 1997).

### ***Member Checks***

Member checking is about asking the participants to review and validate the collected data (Lincoln & Guba, 1985). I did immediate member checking during the individual interviews by asking additional questions to verify unclear information (Lincoln & Guba, 1985). Immediate member checking helped me capture the essence of the phenomenon more precisely (Lincoln & Guba, 1985). Within 24 hours after the interviews, I sent the participants a copy of their transcripts along with the list of main points I extracted from their responses so that they could review and verify the accuracy of the data (Manning, 1997).

### **Transferability**

Transferability is a qualitative research concept referring to the degree to which the study's findings can be applied to other contexts or situations (Lincoln & Guba, 1985). Transferability can be accomplished when researchers provide sufficient details to help readers determine whether the current situation is similar to other situations that they are familiar with (Lincoln & Guba, 1985; Shenton, 2004). A study achieves transferability when the results can reasonably be applied to different contexts or the same context at another time (Lincoln & Guba, 1985; Shenton, 2004; Yin, 2016). I clearly described the Asian American participants for this study and their lived experiences in detail to provide enough information for others to decide whether they can apply my findings to their study.

### **Dependability**

Dependability is accomplished when the research can be replicated and findings are consistent (Lincoln & Guba, 1985). Even though qualitative research is difficult to meet the dependability criterion (Shenton, 2004), I planned to achieve it by clearly describing the procedures of my study to enable other researchers to repeat it. I developed a straightforward

research method that is easier to follow for other studies related to Asian American students. My study also underwent an inquiry audit by the dissertation committee and the qualitative research director.

### **Confirmability**

Confirmability refers to the degree of neutrality to which the research findings emerge from the data collected from the participants and not the researcher's predisposition, motivation, or interest (Lincoln & Guba, 1985; Shenton, 2004). The techniques I used for establishing confirmability include audit trail, triangulation, and reflexivity. First, I kept track of my notes and transcripts and analyzed data, reports, and related documents via a detailed audit trail. Next, I used triangulation for data collection methods. Lastly, I achieved reflexivity by bracketing my personal experiences and prejudgments to ensure they did not influence the data analysis and alter the research results (Moustakas, 1994).

### **Ethical Considerations**

Ethical considerations in qualitative research include respect for persons, beneficence, non-maleficence, and justice (Pietila et al., 2019). Researchers must ensure that their studies have the highest ethical standards and protect the rights and dignity of the participants (Pietila et al., 2019). Researchers must obtain informed consent from participants, protect their confidentiality and privacy, show respect for participants, and conduct appropriate data collection and analysis (Pietila et al., 2019). I discussed the ethical considerations for this study in the permissions section, followed by other participant protections below.

### ***Permissions***

I submitted an IRB application using Cayuse to get IRB approval (see Appendix A) before recruiting participants for this study. After IRB approval, I posted an announcement to

recruit participants on LinkedIn (see Appendix B). Within 24 hours of posting, I received 104 emails from individuals who stated that they met the study's criteria and expressed interest in participating in my study. I randomly selected 14 potential participants to whom I dispatched the screening survey (see Appendix C). Thirteen out of 14 potential participants returned the completed screening survey, and I selected 12 participants who met the study's criteria. The selected participants proceeded to the next phase, which involved signing the consent form (see Appendix D) and filling out the demographic survey (see Appendix E) to finalize their inclusion in this study. Since this study did not use a particular geographic location or organization as a site, there was no site approval. The consent letter that each participant signed and returned served as the permission.

#### ***Other Participant Protections***

I had the participants complete a consent form and informed them of my study's purpose and the time needed for participation. The consent form indicated that participating is voluntary, they could withdraw anytime, and their privacy was protected. After completing data collection via individual interviews, letter writing, and focus groups, I gave each participant a \$30 Amazon gift card to thank them for participating in the research.

I ensured data confidentiality throughout the study using pseudonyms for participants and locations. Hard-copy documents have been securely stored in locked cabinets. Electronic files have strong passwords. As Liberty University's IRB instructed, I will destroy the data three years after I complete the study. It includes permanently deleting all audio and video recordings, email communication, and any related documents on all personal devices and cloud storage. Hard-copy documents will be shredded. These measures ensure that I protect the participants' privacy and do not place them at risk.

## Summary

This transcendental phenomenological study explored the lived experiences of Asian Americans who have chosen non-STEM college majors, which are considered unpopular in Asian culture. The transcendental approach is appropriate because I wanted to examine their experiences from a fresh perspective without my previous prejudices and biases (Moustakas, 1994). My data collection included individual interviews, letter-writing, and a focus group to achieve data triangulation and trustworthiness (Lincoln & Guba, 1985). The data analysis followed the steps in the modification of van Kaam's data analysis method that Moustakas (1994) described to create textural and structural descriptions of the participants' experiences and finish with the essence of the phenomenon.



## **CHAPTER FOUR: FINDINGS**

### **Overview**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. Chapter Four describes the results of the study. The chapter begins with the participants' demographic descriptions, followed by a summary of college choices and experiences of each participant. Next, the chapter discusses the study's findings in the form of narrative themes and sub-themes, including outlier data. This chapter concludes with the responses to the research questions and a summary of the study's major themes and significant findings.

### **Participants**

Using LinkedIn as the recruitment platform for my study proved highly effective. Within 24 hours of posting, LinkedIn reported that my post had 1248 impressions, which indicated the number of times my post was displayed on someone's feed. Out of 1248 impressions, I received 104 emails expressing interest in participating in my study. From this pool, I randomly selected 14 potential participants to whom I dispatched the screening survey. I already specified the study criteria in the recruitment post on LinkedIn, but completing the screening survey was a crucial step to confirm their eligibility. Thirteen out of 14 potential participants returned the completed screening survey. After reviewing the completed surveys, I selected 12 people who met the criteria to participate in my study and excluded one person who did not meet the criteria. The selected participants proceeded to the next phase, which involved signing the consent form and filling out the demographic survey to finalize their inclusion in this study. The participants and their demographic descriptions are in Table 3 below. I replaced all participant names with pseudonyms to preserve confidentiality and protect personal identities.

**Table 3***Asian American Participants*

Participant	Original Asian Country	Current Location	Non-STEM Major	Student or Graduated	Age Range	Gender
Bob	Afghanistan	FL	Business Management	Graduated	25 - 34	M
Danilo	Philippines	NY	Business Administration	Graduated	25 - 34	M
Ethan	Singapore	TX	Business Administration	Student	25 – 34	M
Ian	Bahrain	CA	Accounting Management	Graduated	35 – 44	M
Marie	Pakistan	CA	Philosophy	Student	18 – 24	F
Nina	India	AZ	Education	Student	25 – 34	F
Rohan	Cambodia	IL	History	Graduated	25 – 34	M
Sam	Armenia	NY	History	Graduated	18 – 24	M
Tapan	Bangladesh	NY	Psychology	Student	25 – 34	M
Timur	Bahrain	VA	Education Management	Graduated	35 – 44	M
Uma	Cambodia	CA	Sociology	Graduated	25 – 34	M
Victor	Japan	GA	English	Graduated	25 – 34	M

Based on the above data, my participants came from 10 different Asian countries and are currently located in eight U.S. States. Four of them are current students, and eight graduated within the last five years. They have pursued or are pursuing 10 different non-STEM college

majors. Two participants fall within the 18 to 24 age range, eight are between 25 to 44 years old, and two are within the 35 to 44 age group. There are 10 males and two females. Below are the detailed descriptions for each participant.

### **Bob**

Bob was from Afghanistan. Bob chose a non-STEM major because it allows him to think creatively and critically, develop valuable skills like communication and empathy, and align with his interests and long-term goals. Bob's career choice was not influenced by Asian values or family involvement. He disagreed with the model minority myth and believed career choices should be based on personal motivation and interest. Various factors influenced his college choice, including passion for humanities subjects, inspiring teachers, and mentors. Social media exposure broadened his career possibilities, and gender stereotypes influenced perceptions in non-STEM fields. He believed Asian Americans faced discrimination based on societal expectations and biases but urged for closer relationships to challenge stereotypes. Bob emphasized the importance of reflecting on personal goals and seeking guidance when choosing a career path.

### **Danilo**

Danilo's origins trace back to the Philippines. Danilo chose a non-STEM major because he valued creativity and thinking outside the box. He credited his family, school counselors, community, and social media for influencing his decision. He addressed the issue of stereotyping or casting generalizations. He expressed frustration and concern over the perceived lack of visibility and action within the Asian American community in addressing issues of stigmatization and discrimination. He experienced bullying when he was in school but did not get enough attention when he reported the issue. Despite facing the model minority myth and stereotypes, he

believed in recognizing individual abilities and fighting against discrimination. He suggested that diversity in leadership is valuable and should be recognized. Danilo also stressed the need for the Asian community to speak up against stigmatization and discrimination.

### **Ethan**

Ethan originates from Singapore. Ethan chose a non-STEM major because he wanted a career goal outside the STEM field, such as humanities or art, to have the freedom to pursue other interests and potentially own a business. He acknowledged the influences from Asian cultures that prioritize STEM fields but received support from his family, especially his dad who encouraged him to consider business ventures. Ethan also received support from schools and organizations that recognized and nurtured his talents. He believed that social media did not influence his decisions and agreed with the notion that men and women excel in different areas based on their strengths. Ethan felt that Asians are often stereotyped as being focused on making money, but he strived to break free from these stereotypes through his education and experiences.

### **Ian**

Ian came from Bahrain. Ian chose a non-STEM major despite facing challenges due to cultural expectations in Asian families that prioritize STEM fields. Ian felt pressure from family, peers, and society to pursue a more conventional career path. However, with courage and resilience, he stayed true to his passion and received support from his family, teachers, and academic environment. While social media had a minor influence, Ian's decision was primarily driven by personal interests and guidance from mentors. Ian noticed discrimination against Asian individuals exists in both education and the workplace. As a non-STEM student, Ian valued the opportunity to explore, be creative, and engage deeply with his chosen field of study.

**Marie**

Marie is a native of Pakistan. Marie chose her non-STEM major for personal growth and self-awareness, even though she initially loved science when she was young. She felt influenced by the Asian culture that values STEM fields, with her family having differing opinions on her career choice. Despite societal influences, she was not pressured by others to select a STEM major. Social media influenced her decision-making process. Marie believed that gender should not dictate one's choice of major and felt confident about her chosen path, focusing on her passion. She chose not to change her major for potentially higher earnings in STEM fields and remained committed to her non-STEM path. Marie reflected on the challenges of blending with others and credited her focus on her goals for her positive experiences. She was confident about her future career prospects, feeling she had invested enough in her education to succeed.

**Nina**

Nina was from India. Nina chose an education major because of the lack of teachers in her upbringing and her family's limited educational opportunities. She faced difficulties in choosing education due to cultural differences in the U.S. but found comfort in Asian values that emphasize the opportunities education provides. Family support and affordability also influenced her decision. Nina believed in the model minority myth's partial truth, influenced by her diverse upbringing in the U.S. Peer influence and social media also played roles in her decision. She preferred a life with social media for its educational benefits. Gender had some influence, and she planned to teach higher education. Nina felt confident in her choice and was motivated to succeed in education despite potential job market challenges. Her motivation stemmed from her family's lack of educational opportunities. Nina embraced her progress and the challenges faced

by Asian students in educational settings and the workforce. She remained optimistic and focused on the present moment while embracing future opportunities.

### **Rohan**

Rohan came from Cambodia. Rohan chose the history major based on his passion and storytelling skills. He did not feel influenced by Asian culture and social media in his non-STEM choice. He received support from his family, teachers, and friends. Rohan believed in equality for both genders and pointed out the importance of pursuing passion over money in choosing a major. He highlighted the significance of raising awareness, particularly regarding the treatment of ethnic groups and minorities. He suggested persistent efforts to educate and enlighten people on the harms of discrimination to ensure positive work experiences and relationships among colleagues. Rohan emphasized the impact of discrimination on Asian Americans' mental health and academic performance.

### **Sam**

Sam originates from Armenia. Sam chose a non-STEM major due to family influence but did not enjoy the choice as it was not his passion. He intended to switch to a STEM major, particularly engineering, if given the opportunity. Sam felt uncomfortable discussing his STEM ambition with non-STEM teachers but aimed to pursue a STEM major in the future. He faced discrimination in school based on his Asian ethnicity, but authorities advised him to focus on his goals. Sam followed his parents' wishes for a non-STEM major out of respect but planned to pursue engineering in the future without external influence, learning from the impact of his parent's decision on his own happiness.

**Tapan**

Tapan is a native of Bangladesh. Tapan chose psychology as a major to help people suffering from depression during the pandemic. Despite initial resistance from family due to Asian cultural influences, he received support from siblings and a mentor. Tapan believed gender should not define academic choices and valued the impact he could make over potential earnings. He faced challenges as the only Asian American in his psychology class, experiencing moments of loneliness and racism. He expressed feelings of uncertainty and sadness about his future, particularly the fear of not working in his field of study after graduation. While unsure about his future career path, Tapan was determined to make a positive impact on society.

**Timur**

Timur came from Bahrain. Timur chose a non-STEM major based on his passion and personal interests in subjects like history despite facing resistance from family members. He believed Asian individuals pursuing non-STEM majors bring unique strengths to their fields and challenge the model minority myth that assumes Asians excel only in STEM fields. Timur's internal motivation and personal values played a significant role in his decision, along with societal and cultural influences related to gender and family expectations. He remained satisfied with his choice and highlighted the critical thinking, creativity, and interdisciplinary perspectives he gained from his non-STEM major experience.

**Uma**

Uma's origins trace back to Cambodia. Uma chose a non-STEM major focusing on languages and communication due to his proficiency in linguistic specialization and ability to interact effectively with others. While Asian culture tends to emphasize STEM fields, Uma believed in pursuing interests, passions, and cultural values in non-STEM disciplines. He

received support from his family in his choice of major and credited their guidance for his educational pursuits. Despite initial language barriers, Uma persisted and encouraged others not to shy away from decisions and to follow their instincts in choosing a career path. He believed that non-STEM majors offer flexibility, recognition, and opportunities for personal growth.

### **Victor**

Victor is a native of Japan. Victor chose the English major based on his passion and interest in subjects like writing, art, and history. Asian culture and family influences played a role in his decision, as he valued tradition, and his family members were also passionate about writing. He believed individuals should have the freedom to choose their path regardless of stereotypes. Victor's environment, social media, and gender perceptions also influenced his choice. He faced discrimination as an Asian student but believed in overcoming it through unity among Asian people, raising their voices, and encouraging one another. Victor encouraged others to pursue their passion, whether in STEM or non-STEM fields, emphasizing the importance of support and determination. He challenged the notion that non-STEM fields offer limited financial success, advocating for respecting different perspectives and embracing diversity in all fields.

### **Results**

The findings of this study emerged from a transcendental phenomenological analysis of data gathered through individual semi-structured interviews, letter-writing activities, and focus groups. A total of 12 Asian Americans participated in all three data collection methods. After multiple coding iterations of 28 documents, 390 quotes, 111 codes, and eight code groups remained. Five primary themes evolved from the eight code groups: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. The



cultural influences theme has two sub-themes: cultural challenges, and overcoming cultural challenges. The themes and sub-themes are in Table 4 below.

**Table 4**

*Themes & Subthemes*

Theme	Subthemes	
Cultural Influences	Cultural Challenges	Overcoming Cultural Challenges
Family Involvement		
Environmental Influences		
Social Media Influences		
Internal Motivation		

**Cultural Influences**

Out of 12 participants, nine reported that Asian cultures influenced their college and career choices, while three indicated that the cultures did not affect their decisions. The cultural factors affecting the participants are the societal expectations and cultural stigma associated with non-STEM fields. Bob stated, “Societal expectations in some Asian cultures may pressure to pursue traditionally high-paying and prestige careers such as medicine, engineering, and technology. As a result, I faced societal expectations to pursue these STEM majors or careers.” Ian explained, “In Asian families, there is a great emphasis on STEM fields due to their perceived stability and prestige. Anything outside of that seemed risky or unconventional.” Bob added, “Certain non-STEM fields, such as the arts and social science, may be associated with a cultural stigma, as they are perceived as less stable or lucrative career paths.” The cultural stigma causes the fear of the unknown and job market concerns. Timur said, “Non-STEM majors always

have challenges when it comes to the job market. A non-STEM field sometimes seems unpredictable compared to a STEM field.”

Besides the cultural factors that negatively affect non-STEM choice, some Asian values encourage Asian American students to choose non-STEM. Danilo highlighted the creative values and business orientation within Asian cultures. Danilo shared, "The cultural value influences my thoughts because there is a culture of being creative. My dad always tells me that he loves business." Victor discussed the respect for tradition and cultural heritage, which influenced his choice of a non-STEM major. He explained, "I respect the importance of understanding and preserving culture and heritage. I chose a non-STEM major because I feel it will allow me to explain and appreciate the rich cultural traditions." Uma mentioned a growing recognition of the importance of the humanities and non-STEM disciplines, as they "create an opportunity for self-expression, critical thinking, and cultural preservation." Rohan added, "Non-STEM majors are also very needed in society. Asian people should actually pursue what they feel like they have a passion for.”

### ***Cultural Challenges***

Elements of cultural challenges appeared across all three sources of data for most participants. The cultural challenges adversely affected the academic and professional achievements of the participants. Marie and Bob discussed the cultural differences and communication barriers in educational settings. Marie said, "The challenge I faced in school is cultural differences. We tend to bow a lot while greeting our elders, while in other countries, they tend to shake hands." Bob added, "My experience with Asian culture is the emphasis on respect for charity and modesty. We face the challenge of assertive communication in classroom discussions. A difference in communication style can create misunderstanding or lead to feelings

of exclusion." Uma stated, "I was not really fluent in English, so I had these challenges in standing up and talking things out." The participants often faced discrimination and stereotypes based on their cultural background, which affected their social interactions and academic life. Ethan said, "Asian Americans are often stereotyped as high achievers, especially in subjects like math and science." Ian noted, "The emphasis on education in my culture has often driven me to excel academically. However, this same emphasis sometimes causes immense pressure and stress to me." Ethan added, "Even my friends, most of them, get some discrimination and also academic pressure."

### ***Overcoming Cultural Challenges***

The participants who discussed the cultural challenges also shared various strategies for navigating and surmounting these challenges. Bob learned to communicate effectively within different cultural contexts by participating "in a cultural exchange that involves sharing aspects of one culture with peers to foster understanding and reduce misconceptions." Bob also sought support when needed. He stated, "I also engage in mentorship, seeking guidance from mentors who understand the cultural context and can provide much advice." Danilo developed the ability to interact with others without being negatively affected by cultural differences. He said, "I want to become self-aware and self-sufficient in terms of looking for my ability to deal with people without being negatively influenced." Marie and Timur emphasized the importance of maintaining a positive attitude and respectful behavior to form good relationships with others despite facing discrimination. Marie explained, "I tried to build a relationship with them. I tried sports activities so I could communicate and fit in." Timur added, "I will never allow the negative aspect of discrimination to weigh me down." Ian focused on navigating cultural values by "gradually learning to balance my cultural values with the expectations of my academic

environment." Tapan addressed the process of maintaining mental stability, so that he can "help other people out" and also help him to overcome the challenges. The strategies employed by these participants demonstrate proactive approaches to overcoming cultural challenges, emphasizing the importance of self-awareness, communication, mentorship, and resilience.

### **Family Involvement**

The participants' responses illustrated a spectrum of family involvement, from direct support to internal conflict and pressure, shaping individuals' decisions in pursuing non-STEM fields. Six participants received direct family support for their non-STEM majors, while two participants initially faced objections from their families but were later supported. One participant encountered resistance from their family, while another remained uninfluenced by family opinions. Additionally, one participant received varying opinions from family members but without any pressure. Lastly, there is an outlier that will be discussed in the Outlier Data and Findings section. Each participant provided a unique perspective on the role family played in educational and career choices outside of the STEM fields.

Nina, Rohan, and Victor shared experiences of familial approval and encouragement for non-traditional paths. Nina said, "My father approved that I can go for education." Rohan stated, "My family always tells me to do whatever I feel like I can do. Family is a big support for me." Victor said, "My parents and my siblings have actually acted as role models to me. They have really influenced me. They have actually supported me." Danilo added, "Yes, my family has been supportive, especially my mom and my dad." Ethan agreed by mentioning that his parents supported him financially, provided him with direction, advised him to make good decisions, and planned for his next steps. He concluded, "I have had a lot of support from my family."

Other participants received varying levels of family support for their non-STEM choice or no support at all. Marie experienced divergent family expectations. Marie stated, "Actually, my dad wanted me to be a nurse. However, my mom encouraged me to pursue non-STEM fields." Timur and Ian faced a conflict between familial expectations and internal interests. Timur explained, "Some family members influenced me to choose a STEM major. I told them why I wanted to choose a non-STEM major, and they were not really comfortable with that, but I still stood my ground. They finally allowed me to have my way." Ian shared that he encountered concerns from his family about job prospects, financial stability, and the practicality of his chosen field of study. He added, "I have to reconcile my own desires and interests with the expectations and hopes of my family." Bob emphasized personal goals over family influence by stating, "My choice of non-STEM major was based on my goals and objectives. I was basically determined to do so. There was no family influence on my choice."

### **Environmental Influences**

The environmental factors present a spectrum of influences on Asian Americans in non-STEM fields, ranging from beneficial to detrimental. Seven participants indicated that external factors such as schools, teachers, mentors, and peers positively influenced their college and career choices. In comparison, five participants did not receive or received very little external support. Bob, Ian, Victor, and Danilo highlighted the significant role that teachers and mentors played in their academic journey. Bob stated, "I have been fortunate to have had inspiring teachers and mentors who encouraged my interest in the humanities." Ian mentioned, "Professors in my department were instrumental in providing mentorship, offering valuable inside, and fostering a supportive learning environment." Victor noted, "I actually have a supportive English teacher who inspired me and got me to pursue my passion for language and literacy." Danilo

added, "Having a career counselor from the school by my side is good for me." Friends also played an essential role in shaping the academic choices of some participants. Nina shared, "My friends influenced my decision. This circle of friends is full of educators. They are a great motivation for me also to become an educator". Uma mentioned the support from a friend who helped him overcome language barriers by encouraging him not to feel ashamed when talking. Uma stated, "He was the person that gave me motivation. That was when I started studying to be able to communicate with people." In addition to the beneficial external factors, participants often faced stereotypes that negatively affected them. Danilo said, "As a minority, I often get backlash. People tell me that I am too smart or too good. I should have gone into STEM." Ian mentioned the unrealistic expectations, "People assume that I am naturally good at everything academic, which adds pressure." These external factors reflect the importance of institutional supports in mitigating stereotypes.

### **Social Media Influences**

Social media influences vary among Asian American participants. Social media platforms expose some participants to different career possibilities. As Bob explained, "Social media has definitely shaped my worldview and exposed me to different career possibilities. Seeing professionals share their experiences in fields like publishing, journalism, or academia helps me envision potential career trajectories within the humanities." Some participants reported that social media did not influence their college choices. Ethan stated, "No, I do not think social media has influenced me because I am the one making any decision." Other participants acknowledged the presence of social media but did not consider it a major influence on their career choices. Ian noted, "Social media had a relatively minor role in influencing my decision to pursue a non-STEM major." In summary, six participants agreed that social media influenced

their college and career choices, while the other six reported little or no social media influences on their decisions.

### **Internal Motivation**

Internal motivation significantly influences the non-STEM college and career choices of the participants. The word "passion" appeared 59 times, while "interest" appeared 52 times across all three sources of data for all 12 participants. On average, each participant mentioned "passion" nearly five times and "interest" more than four times in their responses. The high density of these words indicates genuine passion and interest in non-STEM majors. Bob stated, "I have always had a passion for subjects like literature, history, and philosophy." Timur noted, "My internal motivation to pursue a non-STEM major was my passion for the subject." Rohan agreed, "Yeah, the reason why I chose that major is, firstly, my passion, a personal passion for it." Victor confirmed, "It was all about passion. Yeah, I had a passion for it." Ian added, "My interests, values, and experience primarily influenced my non-STEM field." Bob believed that non-STEM fields provide a well-rounded education, as he explained, "Studying a non-STEM subject or major can provide a well-rounded education that fosters critical thinking, creativity, and empathy." Other participants also mentioned additional internal motivations. Tapan mentioned personal experiences, "During the coronavirus period, a lot of people were depressed. So that gave me the passion of majoring in psychology." Rohan mentioned strengths and skills, "I think my strengths are in that field. I also know I have strong skills in it." These quotes highlight the diverse and deeply personal reasons why the participants chose non-STEM majors, reflecting their passions, values, and personal experiences. One participant also discussed his passion, which lies in the STEM field. This participant stands out as an outlier, as described in the section below.

## **Outlier Data and Findings**

In the context of this transcendental phenomenological study on Asian American students who have chosen non-STEM college majors, one prominent outlier emerged. Sam was a participant with a strong interest in a STEM field but was compelled by parental pressure to pursue a non-STEM major. Sam's experience is considered an outlier because it deviates from the common experiences observed in this study, where Asian American students chose non-STEM majors due to their passions and interests.

### ***Parental Pressure Against STEM Field***

Sam had a passion for engineering, which aligned with the Asian cultural norms, but his parents wanted him to pursue a non-STEM major. Sam's parents worked in non-STEM fields, and they always tried to get him into their career discussions and convinced him to fall in love with their professions. He chose a non-STEM major to show he respected them and did not want to disobey them, but he said, "The non-STEM major was not my calling; it was not my goal. It was not my intention." Other family members also tried to convince his parents to let him pursue a STEM major, but his parents did not change their minds. He stated, "The decision my parents made affected my happiness and my joy." He planned to pursue his passion in engineering in the future. He said he would not let anybody influence his choice, and he would teach his future children to make their own decisions.

## **Research Question Responses**

This section provides narrative answers to the central research question and three sub-questions. The answers to the research questions use the five themes developed in the previous results section: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. The themes are the main factors that influenced Asian



American participants who have chosen non-STEM college majors. The themes reveal the interactions between cultural, external, and internal factors that shape people. Detailed answers are below.

### **Central Research Question**

What are the lived experiences of Asian American students who have chosen non-STEM college majors? The lived experiences of the Asian American participants who have chosen non-STEM college majors reveal a complex interplay of personal motivation, cultural influences, and societal expectations. These participants have navigated through various pressures and stereotypes to pursue their passions in fields that resonate with their interests and values. Bob, for instance, chose his major based on the ability to think creatively and critically, valuing skills like communication and empathy. He actively rejected the model minority myth and believed in making career choices based on personal motivation rather than societal expectations. Danilo emphasized creativity and the influence of family, counselors, and community in his decision-making process. He confronted stereotypes and advocated for the Asian community to challenge discrimination. Ethan sought a path in humanities or art to explore his interests freely, with support from his family and educational institutions. He aimed to break free from stereotypes about Asians and money-focused careers. Ian faced cultural pressures but remained true to his passion, supported by his family and mentors. He acknowledged discrimination but also saw progress in addressing it. Marie chose her path for personal growth, not succumbing to societal pressures or potential earnings in STEM. She was confident in her prospects, focusing on her passion. Nina was driven by a desire to address educational gaps, influenced by her upbringing and the value placed on education in Asian culture. She remained optimistic about her future in education. Rohan followed his passion for history and storytelling, emphasizing the

importance of pursuing interests over financial gain and highlighting the mental health impacts of discrimination. Tapan chose psychology to make a positive impact, facing loneliness as the only Asian American in his class but determined to contribute to society. Timur pursued his interests in history and other non-STEM subjects, challenging stereotypes and valuing the strengths that Asians bring to these fields. Uma focused on languages and communication, encouraged by his family and driven by the flexibility and growth opportunities in non-STEM majors. Victor chose his major based on his passion for writing, art, and history, as well as his cultural and family background. He believed in the freedom to choose one's path and overcoming discrimination through unity.

### **Sub-Question One**

How do cultural factors influence Asian American students in non-STEM fields? The study participants collectively demonstrated how cultural factors shape the educational and career paths of Asian Americans in non-STEM fields, emphasizing both the challenges and the strategies employed to navigate these influences. For instance, Bob highlighted the major influence of societal expectations and cultural stigma that pressured Asian students to pursue careers that are traditionally seen as high-paying and prestigious. This pressure often leads to a cultural stigma around non-STEM fields, which are not always viewed in the same light within some Asian cultures. Ian pointed out that Asian families emphasize the perceived stability and prestige of STEM fields. This perception often makes non-STEM fields seem risky or unconventional, which can deter individuals from pursuing their interests outside of STEM. Resistance and adaptation to the new culture in the United States while pursuing non-STEM fields can be challenging, as Marie's experience showed. The need to blend in and work with others in a new cultural setting can be a significant hurdle. Rohan addressed the misconception

that non-STEM majors are less valuable than STEM. He believed that non-STEM fields are necessary in society and that Asian individuals should follow their passions.

### **Sub-Question Two**

How do environmental factors influence Asian American students in non-STEM fields? Environmental factors have significantly influenced Asian Americans in non-STEM fields, as evidenced by the experiences and quotes shared by the participants. The guidance and encouragement from teachers and mentors are pivotal. Bob's gratitude for having "inspiring teachers and mentors" and Ian's acknowledgment of the "instrumental" role of professors in providing mentorship and fostering a supportive learning environment highlighted the profound impact educators can have on students' interests and academic paths. The social circle and peer influence are also important, as Nina's motivation to become an educator due to her friends' influence demonstrated. Uma's experience with a friend helping him overcome language barriers further emphasized the importance of peer support in academic choices. Danilo underscored the role of school and career counselors, indicating that guidance from academic professionals is a key factor in career decision-making. A strong community support system is vital. Rohan's and Marie's quotes about the supportive nature of other Asian Americans and the positive vibes they received illustrated the empowering effect of a connected community. Rohan and Danilo highlighted social media's role in providing a sense of belonging and maintaining cultural ties, showing its importance in creating global connections. A strong community support system is essential in overcoming challenges and achieving success.

### **Sub-Question Three**

How do internal motivations influence Asian American students in non-STEM fields? Internal motivations have played a crucial role in guiding Asian Americans toward non-STEM

fields. Passion for non-STEM subjects is a significant factor, such as Bob and Victor's fascination with humanities. Their enjoyment in exploring "the complexity of human thought and experience" reflected a deep-seated interest that goes beyond societal expectations. Personal values and beliefs strongly influence decisions, as Timur's choice of major aligned with his passion for "social justice, environmental sustainability, or human rights," demonstrating a commitment to personal convictions over conventional choices. A desire for a well-rounded education was evident in Bob's belief that non-STEM subjects foster "critical thinking, creativity, and empathy," underscoring the value placed on a holistic educational experience. The connection between family influence and personal motivation is also influential; as Nina stated, her motivation stemmed from her family's lack of higher education opportunities. Interest in making a meaningful impact drove Ian, whose "genuine passion for the subject matter" and desire to effect change in his field highlighted the pursuit of purpose over pragmatism. Tapan's compelling motivator was responding to societal issues. Tapan's decision to study psychology in response to the widespread depression during the pandemic showed a responsiveness to societal needs and a desire to help. Recognizing strengths and skills is another factor. Rohan's love for storytelling and belief in its importance for historians indicated a self-awareness of one's abilities and how they could be applied in a non-STEM context.

### **Summary**

The comprehensive transcendental phenomenological analysis for this study revealed five themes: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. There are two sub-themes under cultural influences: cultural challenges and overcoming cultural challenges. The themes demonstrate a complex interplay of internal motivation, cultural influences, and societal expectations. Internal motivation is the key

theme that highlights the participants' passions and interests. The participants have navigated through various cultural differences, language barriers, pressures and stereotypes to pursue their passions in non-STEM fields that align with their interests and values. Although Asian cultural norms can heavily influence the pursuit of STEM majors and cause a conflict with internal motivation toward non-STEM fields, the participants proactively find ways to overcome challenges and stay true to their passions.

## **CHAPTER FIVE: CONCLUSION**

### **Overview**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. Chapter Five offers a critical discussion of the research findings from the researcher's perspective, followed by a summary of the thematic findings. The chapter also explores the implications for policy and practice, as well as the empirical and theoretical implications of the study. Next, the chapter addresses the study's limitations and delimitations. The chapter concludes with recommendations for future research.

### **Discussion**

This section aims to offer an in-depth discussion through the lens of the five themes that emerged from this study: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. These five themes provide crucial data to answer the central research question and three sub-questions. By examining each theme, the discussion highlights how these factors interplay to shape the lived experiences of Asian American participants. In essence, the lived experiences of these Asian Americans reflect a journey of overcoming adversity, embracing their cultural identity, and pursuing their passions in non-STEM fields. They have faced discrimination and stereotypes but have also found support and inspiration that helped them thrive. Their stories underscore the need for societal changes to fully embrace diversity in education and career choices, highlighting the importance of individual choice and the value of non-STEM fields. These students advocate for a world where career paths are chosen based on personal motivation and interest, free from the constraints of stereotypes and cultural expectations. They stand as a testament to the power of resilience and

the positive impact of supportive environments in shaping the educational and professional journeys of Asian American students in non-STEM majors.

The participants' experiences illustrate the complex interplay between cultural influences and individual choices, particularly societal expectations and cultural stigma associated with non-STEM fields. Bob shared that societal expectations in some Asian cultures often pressure individuals to pursue traditionally high-paying and prestigious careers, such as those in medicine, engineering, and technology. This pressure led him to feel compelled to follow a STEM path. Ian echoed this sentiment, noting that Asian families place a great emphasis on STEM fields due to their perceived stability and prestige, making non-STEM fields seem risky or unconventional. Bob further explained that certain non-STEM fields, like the arts and social sciences, carry a cultural stigma, being viewed as less stable or lucrative. This stigma contributes to fears about the unknown and concerns about job market prospects. Timur added that non-STEM majors often face challenges in the job market, as these fields can appear unpredictable compared to the perceived stability of STEM careers. Several participants addressed the strategies they have employed to overcome cultural challenges. However, they admitted that the effort to adapt while preserving existing cultural identity is a challenging process that affects personal development and performance. Uma stated, "No matter how adaptive you are, it is not easy for you to forget about your cultural background." This statement highlights the persistent influence of Asian cultural roots, even as the participants strive to integrate into a new cultural environment.

In addition to the negative influences mentioned above, there exists a positive factor that emphasizes creativity and business orientation within Asian cultures. Danilo's reflection on the culture of creativity and his father's love for business underscore the intrinsic value placed on creative pursuits and the entrepreneurial spirit, which can inspire Asian Americans to explore

non-STEM fields. The participant demographics in my study offer empirical evidence of this trend. Five out of 12 selected participants have pursued or are pursuing non-STEM majors related to management (see Table 3). I randomly selected these participants from 104 individuals who emailed me, stating that they met the study's criteria outlined in the LinkedIn recruitment post and expressed their interest in my research. I did not know their majors at the time of selection. Due to the privacy and confidentiality of the potential participants, the IRB disallowed the collection of demographic data before they signed the consent form. I only knew my participants' majors after they signed the consent form and completed the demographic survey later.

The challenges associated with race and cultural background are significant. Tapan's encounter with subtle racism and Timur's discussion of the difficulties faced as an Asian in a non-STEM major revealed the complexities of navigating academic environments with these considerations. The negative impact of bullying, stereotyping, and discrimination is a common challenge. Danilo's and Victor's experiences with being bullied and facing microaggressions point to the hostile environments that can arise from such discrimination. Therefore, inclusive policies in educational and professional settings are crucial for creating a positive environment and supporting performance, as Bob and Victor noted. These policies promote diversity and cultural competence, which are essential for Asian Americans to thrive in non-STEM fields. Victor described the value of mentorship programs and employee resource groups, which speaks to the benefits of having role models and a sense of community within the workplace. In summary, the environmental factors present a spectrum of influences on Asian Americans in non-STEM fields, ranging from beneficial to detrimental. They highlight the importance of a



supportive network, inclusive policies, and positive representation in overcoming challenges and achieving success.

Despite the cultural and environmental obstacles mentioned above, the study participants demonstrate strong internal motivations by proactively changing perceptions and finding ways to overcome challenges. For instance, Marie's proactive approach to leadership, Danilo's desire to challenge stereotypes, Victor's focus on networking, Bob's attitude-driven change, and Ian's communication skill development. These internal motivations underscore a narrative of empowerment, where personal interests, values, and strengths lead Asian Americans to pursue non-STEM fields despite cultural challenges and societal misconceptions. Each individual's journey reflects a commitment to personal growth and a desire to make a meaningful contribution to their chosen field.

### **Summary of Thematic Findings**

The summary of thematic findings is based on the five themes that emerged from this study: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. The cultural influences theme contains two sub-themes: cultural challenges and overcoming cultural challenges. Participants often faced cultural challenges due to the strong emphasis on STEM fields within Asian collectivistic cultures, but many overcame the obstacles by following their interests and passions, showing resilience and a desire to break away from traditional expectations. Family involvement ranged from direct support to internal conflict and pressure, shaping the participants' decisions to pursue non-STEM fields. Environmental factors, such as schools, teachers, mentors, and peers, inspired several participants to explore non-STEM careers. Social media platforms have exposed students to various career paths and role models, broadening their perspectives and supporting their

decisions to follow non-traditional paths. Personal interests and intrinsic motivation are key drivers, with many participants expressing a genuine passion for their chosen fields and a desire for personal fulfillment guiding their educational choices despite external pressures. These findings highlight the complex interplay of cultural, familial, environmental, social, and personal factors in shaping the educational decisions of Asian American students.

### **Implications for Policy and Practice**

The findings from this study revealed several critical implications for policy and practice. First, this section explores the implications for policy at various levels, including school districts and state and federal policies. Next, the section delivers the implications for practice for educational institutions and support organizations, potentially extended to other contexts. These implications aim to address the identified challenges and support the success of Asian American students in non-STEM college majors. Details of the implications are as follows.

#### ***Implications for Policy***

School districts should consider developing and implementing a culturally responsive curriculum that reflects the diverse backgrounds of Asian American students. This curriculum could include literature, history, and contributions of Asian Americans in various fields, not just STEM. By doing so, students may see themselves represented in their studies, which can enhance their engagement and sense of belonging. Additionally, school districts might consider implementing digital literacy programs that address the impact of social media on students' academic and career choices. These programs could teach students to critically evaluate the information they encounter online and make informed decisions about their education and future careers. By understanding the influence of social media, students can better navigate their academic journeys.

State education departments should consider creating programs that actively involve families in the educational process. These programs could include workshops and resources to educate parents about the value of non-STEM majors and the diverse career opportunities they offer. By bridging the gap between cultural expectations and educational opportunities, families may better support their children's academic choices. Additionally, state policies could encourage inclusive career counseling services tailored to the unique needs of Asian American students. Career counselors might be trained to understand the cultural factors influencing students' choices and provide tailored advice that aligns with their interests and aspirations. This approach could help students explore a wider range of career options beyond the traditional STEM fields.

Federal policies should consider funding mentorship programs that connect Asian American students with professionals in non-STEM fields. These mentors could provide guidance, support, and networking opportunities, helping students navigate their academic and career paths. Additionally, creating support networks within schools could offer peer support and foster a sense of community among students pursuing non-STEM majors. Implementing these policies might create a more inclusive and supportive educational environment for Asian American students in non-STEM fields, helping them thrive academically and professionally.

### ***Implications for Practice***

Educators should consider integrating cultural awareness into their teaching practices by incorporating diverse perspectives and materials that reflect the backgrounds of Asian American students. For instance, including literature, case studies, and examples from various cultures can make the curriculum more relatable and engaging. While this approach is particularly relevant for institutions with significant Asian American populations, it may also benefit other diverse

student groups. Additionally, schools could develop strategies to improve communication with families, particularly those from Asian American backgrounds. Schools might offer multilingual resources, host family engagement events, and provide information about the value of non-STEM majors. By fostering a better understanding between families and educational institutions, students may receive more comprehensive support at home and school.

Educational institutions should also consider having mentorship programs that connect Asian American students with professionals in non-STEM fields. These programs could help students navigate their academic and career paths, offering insights into various industries and professions. Given the potential impact of social media on students' academic and career choices, educational institutions might implement programs that teach students to critically evaluate online information and make informed decisions about their education and future careers. Additionally, career counseling services could be inclusive and culturally sensitive, addressing the unique needs of Asian American students. Counselors might understand cultural influences on career choices and provide tailored advice that aligns with students' interests and aspirations. Although these implications for practice stem from the population and context of this study, they may also be applicable in other settings or benefit other ethnic groups of students.

### **Empirical and Theoretical Implications**

The purpose of this section is to address the study's theoretical and empirical implications. By comparing and contrasting the identified themes with the theoretical framework and literature review in Chapter Two, this section highlights how the findings align with or diverge from existing knowledge. The analysis provides insights into the cultural influences, family involvement, environmental factors, social media influences, and internal motivation that shape the academic journeys of Asian American participants. Additionally, this section explores

how these themes contribute to or challenge the assumptions of Bandura's SCT (Bandura, 1986, 2001, 2002). Ultimately, this section underscores the significance of the study's findings for informing future research, policy, and practice in higher education.

### ***Empirical Implications***

The empirical implications section examines how the study's findings align with existing literature. Overall, the study's findings with five key themes align closely with existing literature on Asian Americans' college and career choices. The themes of cultural influences, family involvement, environmental influences, social media influences, and internal motivation are well-supported by previous studies. The findings underscore the complex interplay of cultural identity, community support, and institutional policies in shaping the experiences of Asian American students. The findings also highlight the importance of support systems and inclusive policies in fostering success and mitigating the challenges posed by discrimination and stereotyping.

**Cultural Influences.** The emphasis on STEM fields due to perceived stability and prestige, as well as the stigma against non-STEM fields, is a recurring theme in the literature (Kang et al., 2023; Shen & Liao, 2022). Previous studies indicated that Asian American students often face pressure to pursue careers in STEM fields due to cultural views on the status of these occupations (Kang et al., 2023; Shen & Liao, 2022). In this study, participants like Bob and Ian highlighted societal expectations and cultural stigma associated with non-STEM fields, aligning with this broader understanding. Additionally, the recognition of cultural values that encourage creativity and respect for tradition, as noted by participants like Danilo and Victor, reflects the diversity within Asian American communities and their evolving perspectives on career choices (Cooc & Kim, 2021; J. Lee & Zhou, 2020).

**Family Involvement.** Existing literature well-documents how family expectations and support significantly shape career choices among Asian American students. Previous studies showed that family influence is a strong factor, particularly for those not born in the U.S. or whose parents are immigrants because they are still accustomed to the Asian collectivistic culture (B. S. K. Kim et al., 2023; Shih et al., 2019). This study's findings, where participants like Nina, Rohan, and Victor received direct family support while others like Timur and Ian faced conflicts between family expectations and personal interests, confirm the literature. Previous studies also highlighted the family's pressure to pursue high-paying, prestigious careers in STEM fields (Kang et al., 2023; Shen & Liao, 2022), which is consistent with the experiences shared by some participants.

**Environmental Influences.** The role of teachers, mentors, and peers in shaping the academic and career choices of Asian American students is another well-supported theme in the literature. Previous studies revealed that positive environmental influences, such as supportive teachers and mentors, can enhance self-efficacy and guide career trajectories (Hernandez et al., 2020; Kang et al., 2023; Sahin et al., 2020). In this study, participants like Bob, Ian, Victor, and Danilo highlighted the significant role of professors, teachers, mentors, and counselors that align with the literature. However, previous studies primarily focused on students in STEM fields. Therefore, this study extends the literature by including research on non-STEM students. The literature also notes the challenges posed by stereotypes and unrealistic expectations, which participants like Danilo and Ian experienced.

**Social Media Influences.** Social media platforms, especially YouTube, have become a powerful influence on the attitude and decision-making of young audiences (Lim Xing Fei & Yuek Li, 2022). YouTubers' personality, knowledge, and skills can influence audience's

behavior in terms of language, attitude, personality, relationship network, lifestyle, values, and beliefs (Greenspan et al., 2021; Lim Xing Fei & Yuek Li, 2022; Mujiwat & Laili, 2023).

However, few studies have directly discussed the influences of social media on college and career choices of Asian American students. The social media theme in this study emerged as an important factor that extends the literature. This study's findings, where some participants reported that social media exposed them to different career possibilities while others saw little to no influence, reflect the diverse ways social media can affect college and career decisions. The findings also confirm the growing recognition of social media's role in shaping career aspirations and providing access to diverse role models and career paths (Lim Xing Fei & Yuek Li, 2022).

**Internal Motivation.** Existing literature has highlighted the importance of intrinsic motivation and personal values in career decision-making among students in both STEM and non-STEM fields (Yu et al., 2018). However, I have not found any studies that specifically addressed the significance of internal motivation on college and career choices for Asian Americans in non-STEM fields. Therefore, this research extends the literature by focusing on a specific group of students within a particular area of study. The study participants' frequent mentions of "passion" and "interest" in their responses indicated their strong commitment to non-STEM majors despite cultural norms and societal pressures. Marie, Danilo, and Ian discussed their proactive approaches to overcoming challenges, such as seeking mentorship, building networks, and improving communication skills. These activities reflect their high self-efficacy and willingness to pursue challenging goals to achieve academic and professional success. The findings from the internal motivation theme diverge from previous studies that revealed low scores in self-determination or self-esteem among Asian American students compared to other ethnic groups (X. Chen & Graham, 2018; Yu et al., 2018)

### *Theoretical Implications*

The findings from this study align well with Bandura's SCT, which emphasizes the dynamic interplay between personal factors, environmental influences, and behavior (Bandura, 1986, 2001, 2002). SCT explains how individuals actively shape and are shaped by their environment, particularly in the context of motivation and action (Bandura, 1986). The participants' experiences reflect the principles of observational learning, self-efficacy, and reciprocal determinism, demonstrating how individuals actively shape and are shaped by their environment in their educational and career journeys (Bandura, 1986). This study identified five key themes: cultural influences, family involvement, environmental influences, social media influences, and internal motivation. The theoretical implications section discusses how the five themes align with SCT.

**Cultural Influences.** Participants like Bob and Ian highlighted societal expectations to pursue high-paying, prestigious careers in STEM fields due to cultural norms, aligning with SCT's concept of observational learning, where individuals learn behaviors and expectations by observing others in their cultural context (Bandura, 1986). Bob's and Ian's experiences reflect how their personal goals interact with societal pressures. Danilo and Victor emphasized cultural values that encourage creativity and respect for tradition. These cultural values influenced the choice of non-STEM majors, aligning with SCT's focus on self-efficacy, where individuals' belief in their capabilities is shaped by cultural values and support systems (Bandura, 1986). Victor's respect for cultural heritage and Uma's recognition of the humanities' importance reflect SCT's modeling principle, where observing respected cultural values and traditions influences personal choices and behaviors (Bandura, 1986). Timur's concern about the unpredictability of non-STEM careers aligns with SCT's concept of outcome expectations,



where individuals' decisions are influenced by their expectations of the outcomes (Bandura, 1986). The fear of unstable job prospects in non-STEM fields reflects how anticipated outcomes shape career choices.

**Family Involvement.** Bandura's SCT highlights the role of observational learning and modeling in shaping behavior (Bandura, 1986). The participants' experiences with family involvement reflect this principle. For instance, Nina and Rohan, who received direct support from their families, likely benefited from positive reinforcement and modeling of supportive behaviors. Such experiences align with SCT's concept of reciprocal determinism, where personal factors (e.g., individual goals and motivations) interact with environmental influences (e.g., family support) to shape behavior (Bandura, 1986). Conversely, Timur and Ian faced conflicts between family expectations and personal interests, demonstrating how environmental pressures can challenge personal motivations, requiring individuals to navigate and reconcile these influences actively.

**Environmental Influences.** The significant role of teachers, mentors, and peers in shaping participants' academic and career choices underscores the SCT principle that individuals learn and are motivated by observing others (Bandura, 1986). Bob, Ian, Victor, and Danilo's experiences with supportive teachers and mentors illustrate how positive environmental influences can enhance self-efficacy and guide career trajectories. Such experiences align with SCT's emphasis on the importance of social support systems in fostering learning and motivation (Bandura, 1986). Additionally, the presence of stereotypes and unrealistic expectations, as noted by Danilo and Ian, highlights the environmental challenges that can impact self-perception and behavior. SCT suggests that overcoming these challenges involves active engagement and

resilience, as seen in the participants' proactive strategies to mitigate negative influences (Bandura, 1986).

**Social Media Influences.** Social media's role in exposing participants to different career possibilities aligns with SCT's concept of observational learning (Bandura, 1986). Bob's experience of envisioning potential career paths through social media reflects how individuals can learn and be motivated by observing others' experiences and successes. However, the varied impact of social media, with some participants reporting little to no influence, underscores SCT's recognition of individual differences in how environmental factors are perceived and internalized (Bandura, 1986, 2001, 2002). This variability highlights the importance of personal agency in interpreting and responding to environmental stimuli (Bandura, 1986, 2001, 2002).

**Internal Motivation.** The strong emphasis on internal motivation, passion, and personal interests among participants aligns with SCT's focus on self-efficacy and intrinsic motivation (Bandura, 1986). The frequent mentions of the terms passion and interest in the participants' responses indicate that they are driven by internal factors, which SCT identifies as crucial for sustained motivation and goal achievement (Bandura, 1986). Bob's belief in the value of a well-rounded education and Tapan's motivation from personal experiences during the coronavirus pandemic illustrate how personal values and experiences shape behavior. SCT explains that individuals with high self-efficacy are more likely to set challenging goals and persist in the face of obstacles (Bandura, 1986), which is evident in the participants' commitment to their non-STEM majors despite societal pressures. Marie's leadership roles, Danilo's efforts to challenge stereotypes, and Ian's improvement of communication skills demonstrate how individuals actively shape their environment to achieve their goals. SCT suggests that individuals who

engage in self-regulatory behaviors, such as setting goals, monitoring progress, and seeking feedback, are more likely to succeed in overcoming challenges (Bandura, 1986, 2001, 2002).

**Elements Diverging from SCT.** Bob's statement that his choice of a non-STEM major was based solely on his goals and objectives, with no family influence, highlights a strong sense of personal agency. While SCT acknowledges personal agency, it typically emphasizes the interplay between personal factors and environmental influences (Bandura, 1986). Bob's experience suggests a more individualistic approach, which may not fully align with SCT's emphasis on reciprocal determinism (Bandura, 1986). Marie, who received varying opinions from family members without any pressure, indicates a neutral environmental influence. SCT generally focuses on how environmental factors actively shape behavior. In this case, the lack of significant environmental pressure suggests a more passive role of the environment, which may not fully align with SCT's dynamic interplay model (Bandura, 1986).

### **Limitations and Delimitations**

This section addresses the study's limitations and delimitations. Limitations denote circumstances that were beyond my control but made significant contributions to the research outcome. Conversely, delimitations are purposeful decisions made by the researcher. Delimitations set the boundaries of the study to ensure the credibility and reliability of the collected data, facilitating the study's replication. By clearly outlining limitations and delimitations, I aim to clarify the rationale behind the decisions that shaped the study's scope and focus.

#### ***Limitations***

Although a sample size of 12 participants met the requirements from Liberty University, this sample size is too small to capture the diversity and complexity of the Asian American

student population. Another limitation is the lack of demographic data on potential participants prior to their selection. I initially intended to select participants based on a comprehensive demographic survey. However, due to the privacy and confidentiality of the potential participants, the IRB disallowed the collection of demographic data before they signed the consent form. As a result, I randomly chose the participants from 104 individuals who stated they met the study's criteria that I specified in my recruitment post without knowing their demographic data. I could only collect the participants' demographic details after they signed the consent form. This limitation led to a sample consisting of 10 males and two females, making it challenging to adequately discuss gender-related issues within the study due to the significant disparity in the number of male and female participants.

### ***Delimitations***

This study used purposeful criterion sampling to select Asian American participants, 18 years of age or older, who are pursuing or have pursued non-STEM college majors. The purposeful criterion sampling allowed me to select participants with specific characteristics that are directly relevant to the research questions. The study only selected current students or those who have graduated within the past five years to capture recent experiences and behaviors, providing insights into contemporary educational and career decision-making processes. I conducted recruitment through LinkedIn instead of Facebook or other social media platforms because of LinkedIn's professional focus, making it easier to identify and connect with individuals based on their educational and career backgrounds.

### **Recommendations for Future Research**

Future research on Asian American students in non-STEM fields should prioritize several key areas to deepen our understanding and address existing gaps. First, it is crucial to include a

more diverse sample of Asian American students representing various ethnic subgroups, socioeconomic backgrounds, and geographic locations. By doing so, researchers can capture the heterogeneity within the Asian American community, providing a more nuanced and comprehensive understanding of their experiences. Employing mixed-methods designs that combine quantitative surveys with qualitative interviews will help gather both broad and in-depth data, enriching the overall analysis. Second, future research should include longitudinal studies. These studies should track the career trajectories of Asian American students over time, offering insights into how initial career choices evolve and the long-term impact of cultural influences, family support, and institutional policies. Longitudinal survey methods, combined with periodic in-depth interviews, can effectively monitor changes and developments, providing a dynamic view of students' career paths.

Comparative studies also play an essential role. By comparing the experiences of Asian American students in non-STEM fields with those in STEM fields, researchers can highlight unique challenges and support needs for each group. Using comparative case study designs that incorporate both qualitative and quantitative data will help explore the distinct experiences of students in different fields, shedding light on the specific factors that influence their career choices. Additionally, investigating the role of social media in shaping career aspirations and choices among Asian American students is important. Further research can clarify the extent and nature of social media's influence. Conducting experimental studies or content analysis of social media platforms can examine how exposure to different types of content affects career decisions, providing valuable insights for educators and policymakers. Lastly, examining the effectiveness of institutional policies and practices in supporting Asian American students in non-STEM fields is vital. Identifying best practices through policy analysis and case studies of institutions with

successful support programs can help create more inclusive and supportive environments. Interviews with administrators, faculty, and students will provide a thorough understanding of effective practices and areas needing improvement. By addressing these areas, future research can contribute to a more inclusive and supportive educational environment for Asian American students, helping them succeed in both STEM and non-STEM fields.

### **Conclusion**

The purpose of this transcendental phenomenological study was to discover the lived experiences of choosing a non-STEM college major for Asian American students in the United States. The study, which involved 12 Asian American participants from 10 different Asian countries, reveals significant insights into their experiences, motivations, and challenges. Contrary to the prevalent stereotype that Asian American students predominantly excel in STEM disciplines (Tu & Okazaki, 2021), the study's findings highlight a diverse range of interests and achievements in non-STEM areas. The diversity underscores the importance of recognizing and supporting Asian American students' varied academic and career aspirations.

The most important key finding is the divergence in internal motivation among Asian American students in non-STEM fields compared to previous studies. While earlier research often reported lower self-determination and self-esteem among Asian American students (X. Chen & Graham, 2018; Yu et al., 2018), this study indicates a shift towards higher levels of internal motivation. Cultural influences and family involvement continue to play a crucial role in shaping the educational paths of Asian American students. However, the study reveals that these students navigate their academic journeys with a greater sense of autonomy and personal fulfillment. This shift suggests a gradual transformation in the traditional expectations and pressures often associated with Asian American families. This study also emphasizes the need

for a broader understanding of Asian American students' academic and career trajectories. By acknowledging and supporting their diverse interests, educators and policymakers can foster more inclusive and equitable educational environments. Future research should continue to explore the evolving motivations and experiences of Asian American students across various disciplines, ensuring that their voices are heard and their contributions are valued.

## References

- Agarwal, U., Shukla, B., & Singh, S. (2023). Assessing glass ceiling and gender inequality for women employees in the service sector. *Sachetas*, 2(2), 58-66.  
<https://doi.org/10.55955/220006>
- Ahrens, A. H., & Cloutier, D. (2019). Acting for good reasons: Integrating virtue theory and social cognitive theory. *Social and Personality Psychology Compass*, 13(4).  
<https://doi.org/10.1111/spc3.12444>
- Akbari, D. A., & Rochaety, E. (2023). Analyzing the impact of YouTube watch time on higher education institution promotions and admissions. *Technium Social Sciences Journal*, 42, 123–132. <https://doi.org/10.47577/tssj.v42i1.8692>
- Akdag, S., Bicen, H., Basari, G., & Savasan, A. (2019). The impact of using social media on university students socialization: Statistical reasoning. *13th International Conference on Theory and Application of Fuzzy Systems and Soft Computing — ICAFS-2018*, 404-409.  
[https://doi.org/10.1007/978-3-030-04164-9\\_54](https://doi.org/10.1007/978-3-030-04164-9_54)
- Akosah-Twumasi, P., Emeto, T. I., Lindsay, D., Tsey, K., & Malau-Aduli, B. S. (2018). A Systematic review of factors that influence youths career choices—the role of culture. *Frontiers in Education*, 3. <https://doi.org/10.3389/feduc.2018.00058>
- An, S. (2020). Disrupting curriculum of violence on Asian Americans. *Review of Education, Pedagogy, and Cultural Studies*, 42(2), 141–156.  
<https://doi.org/10.1080/10714413.2020.1753492>
- Apple, M. T. (2021). East Asian perspectives on silence in English language education. *Asian Englishes*, 23(3), 334–337. <https://doi.org/10.1080/13488678.2020.1867955>



- Asian American Federation. (2018). Hidden in plain sight: Asian poverty in New York City. [http://www.aafederation.org/doc/AAF\\_poverty\\_2018.pdf](http://www.aafederation.org/doc/AAF_poverty_2018.pdf)
- Avendano, L., Renteria, J., Kwon, S., & Hamdan, K. (2019). Bringing equity to underserved communities through STEM education: Implications for leadership development. *Journal of Educational Administration and History*, 51(1), 66–82. <https://doi.org/10.1080/00220620.2018.1532397>
- Bahadur. (2021). A brief study on negative effects of social media on youth. *Bayan College International Journal of Multidisciplinary Research*, 1(2), 1–17. <http://www.bayancollegeijmr.com/index.php/ijmr/article/view/42/10>
- Bandura, A. (1965). Influence of models' reinforcement contingencies on the acquisition of imitative responses. *Journal of Personality and Social Psychology*, 1(6), 589–595. <https://doi.org/10.1037/h0022070>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology*, 3(3), 265–299. [https://doi.org/10.1207/S1532785XMEP0303\\_03](https://doi.org/10.1207/S1532785XMEP0303_03)
- Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology*, 51(2), 269–290. <https://doi.org/10.1111/1464-0597.00092>
- Berry, J. W. (2005). Acculturation. In W. Friedlmeier, P. Chakkarath, & B. Schwarz (Eds.), *Culture and human development: The importance of cross-cultural research for the social sciences* (pp. 263–273). Psychology Press.
- Berry, J. W. (2019). *Acculturation: A personal journey across cultures*. <https://doi.org/10.1017/9781108589666>

- Besana, T., Katsiaficas, D., & Loyd, A. B. (2019). Asian American media representation: A film analysis and implications for identity development. *Research in Human Development, 16*(3–4), 201–225. <https://doi.org/10.1080/15427609.2020.1711680>
- Budiman, A., & Ruiz, N. G. (2021, April 29). *Key facts about Asian Americans, a diverse and growing population*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2021/04/29/key-facts-about-asian-americans/>
- Byrne, Z. S., & Cave, K. A. (2020). STEM vs. Non-STEM Cultures in a R1 University. *Journal of Organizational Psychology, 20*(1), 37–50. <https://doi.org/10.1108/JOP-06-2019-0444>
- Camilli, G., & Hira, R. (2019). Introduction to Special Issue—STEM Workforce: STEM Education and the Post-Scientific Society. *Journal of Science Education and Technology, 28*(1), 1–8. <https://doi.org/10.1007/s10956-018-9759-8>
- Casad, B. J., Franks, J. E., Garasky, C. E., Kittleman, M. M., Roesler, A. C., Hall, D. Y., & Petzel, Z. W. (2021). Gender inequality in academia: Problems and solutions for women faculty in STEM. *Journal of Neuroscience Research, 99*(1), 13-23. <https://doi.org/10.1002/jnr.24631>
- Casad, B. J., Petzel, Z. W., & Ingalls, E. A. (2019). A model of threatening academic environments predicts women STEM majors' self-esteem and engagement in STEM. *Sex Roles, 80*(7-8), 469–488. <https://doi.org/10.1007/s11199-018-0942-4>
- Castro, A. R., & Collins, C. S. (2021). Asian American women in STEM in the lab with “white men named John”. *Science Education., 105*(1), 33–61. <https://doi.org/10.1002/sce.21598>
- Chen, J., & Cheng-Cimini, A. (2024, June 21). *Stop overlooking the leadership potential of Asian employees*. Harvard Business Review. <https://hbr.org/2024/06/stop-overlooking-the-leadership-potential-of-asian-employees>

- Chen, M., & Xiao, X. (2022). The effect of social media on the development of students' affective variables. *Frontiers in Psychology, 13*, 1–8.  
<https://doi.org/10.3389/fpsyg.2022.1010766>
- Chen, X., & Graham, S. (2018). Doing better but feeling worse: an attributional account of achievement —self-esteem disparities in Asian American students. *Social Psychology of Education, 21*(4), 937–949. <https://doi.org/10.1007/s11218-018-9447-9>
- Cho, I., Hosseini-Kamkar, N., Song, H., & Morton, J. B. (2023). Culture, executive functions, and academic achievement. *Frontiers in Psychology, 14*.  
<https://doi.org/10.3389/fpsyg.2023.1100537>
- Claxton, B. L., & Dolan, C. L. (2022). *A step-by-step guide to writing a literature review for doctoral research*. Kendall Hunt Publishing Company.
- Coates, A. (2021). The prevalence of philosophical assumptions described in mixed methods research in education. *Journal of Mixed Methods Research, 15*(2), 171–189.  
<https://doi.org/10.1177/1558689820958210>
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6<sup>th</sup> ed.).  
<https://doi.org/10.4324/9780203029053>
- Cooc, N., & Kim, G. M. (2021). Beyond STEM: The invisible career expectations of Asian American high school students. *American Psychologist, 76*(4), 658–672.  
<https://doi.org/10.1037/amp0000806>
- Dennen, V. P., Choi, H., & Word, K. (2020). Social media, teenagers, and the school context: A scoping review of research in education and related fields. *Education Technology Research and Development, 68*, 1635–1658. <https://doi.org/10.1007/s11423-020-09796-z>

- Dheer, R. J. S., & Lenartowicz, T. (2018). Career decisions of immigrants: Role of identity and social embeddedness. *Human Resource Management Review*, 28(2), 144–163.  
<https://doi.org/10.1016/j.hrmr.2017.05.010>
- Diekman, A. B., & Benson-Greenwald, T. M. (2018). Fixing STEM workforce and teacher shortages: How goal congruity can inform individuals and institutions. *Policy Insights from the Behavioral and Brain Sciences*, 5(1), 11–18.  
<https://doi.org/10.1177/2372732217747889>
- Doan, L. N., Takata, Y., Sakuma, K.-L. K., & Irvin, V. L. (2019). Trends in clinical research including Asian American, Native Hawaiian, and Pacific Islander participants funded by the US National Institutes of Health, 1992 to 2018. *JAMA Network Open*, 2(7), e197432.  
<https://doi.org/10.1001/jamanetworkopen.2019.7432>
- Dukes, S. (1984). Phenomenological methodology in the human sciences. *Journal of Religion & Health*, 23(3), 197–203. <https://doi.org/10.1007/bf00990785>
- Funk, C., & Parker, K. (2018, January 9). *Women and men often at odds over workplace equity*. Pew Research Center. <https://www.pewresearch.org/social-trends/2018/01/09/diversity-in-the-stem-workforce-varies-widely-across-jobs/>
- Gammoudi, F., Sendi, M., & Omri, M. N. (2022). A survey on social media influence environment and influencers identification. *Social Network Analysis and Mining*, 12(1).  
<https://doi.org/10.1007/s13278-022-00972-y>
- Gordon, J. A. (2000). Asian American resistance to selecting teaching as a career: The power of community and tradition. *Teachers College Record: The Voice of Scholarship in Education*, 102(1), 173–196. <https://doi.org/10.1111/0161-4681.00051>

- Greenspan, E., Larue, M. A., & Nielsen, C. K. (2021). Attitudes of social media users toward mountain lions in North America. *Wildlife Society Bulletin*, *45*(1), 121–129.  
<https://doi.org/10.1002/wsb.1162>
- Guba, E. G., & Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies? In D. M. Fetterman (Ed.), *Qualitative approaches to evaluation in education* (pp. 89-115). Praeger.
- Gundemir, S., Carton, A. M., & Homan, A. C. (2019). The impact of organizational performance on the emergence of Asian American leaders. *Journal of Applied Psychology*, *104*(1), 107–122. <https://doi.org/10.1037/apl0000347>
- Hanson, S. L. (2018). STEM experiences among Latinos and Asian Americans in the U.S.: Generational change and access to STEM among the two largest U.S. immigrant groups. *Asian Journal of Humanities and Social Studies*, *06*(04), 100–107.
- Hernandez, P. R., Agocha, V. B., Carney, L. M., Estrada, M., Lee, S. Y., Loomis, D., Williams, M., & Park, C. L. (2020). Testing models of reciprocal relations between social influence and integration in STEM across the college years. *PloS One*, *15*(9), 1–30.  
<https://doi.org/10.1371/journal.pone.0238250>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Sage.
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, *2*(1), 1–26. <https://doi.org/10.9707/2307-0919.1014>
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations: Software of the Mind* (3rd ed.). McGraw-Hill.

- Hosseini, H., & Kubavat, A. (2023). Why do people of Asian descent not utilize mental health treatments compared to other ethnic groups in the United States? *Hospital Topics*, 101(3), 260–265. <https://doi.org/10.1080/00185868.2022.2038748>
- Hsieh, B., & Kim, J. (2020). Challenging the invisibility of Asian Americans in education. *Review of Education, Pedagogy, and Cultural Studies.*, 42(2), 95–103. <https://doi.org/10.1080/10714413.2020.1760643>
- Huff, A. S. (2009). *Designing research for publication*. Sage.
- Hui, K., & Lent, R. W. (2018). The roles of family, culture, and social cognitive variables in the career interests and goals of Asian American college students. *Journal of Counseling Psychology*, 65(1), 98–109. <https://doi.org/10.1037/cou0000235>
- Jumaat, N. F., Tasir, Z., Halim, N. D. A., & Ashari, Z. M. (2017). Project-based learning from constructivism point of view. *Advanced Science Letters*, 23(8), 7904–7906. <https://doi.org/10.1166/asl.2017.9605>
- Kang, C., Jo, H., Han, S. W., & Weis, L. (2023). Complexifying Asian American student pathways to STEM majors: Differences by ethnic subgroups and college selectivity. *Journal of Diversity in Higher Education*, 16(2), 215–225. <https://doi.org/10.1037/dhe0000326>
- Kantamneni, N., Dharmalingam, K., Orley, G., & Kanagasingam, S. K. (2018). Cultural factors, perceived barriers, and Asian American career development: An application of social cognitive career theory. *Journal of Career Assessment*, 26(4), 649–665. <https://doi.org/10.1177/1069072717723097>

- Kaur, N., & Mittal, E. (2022). Is glass ceiling a myth or reality? a systematic review in healthcare sector. *Eurasian Journal of Business and Economics*, *15*(30), 1–24.  
<https://doi.org/10.17015/ejbe.2022.030.01>
- Khakimov, T. (2022). Educating gifted students in STEM education. *Asia Pacific Journal of Marketing & Management Review*, *11*(12), 102–105.
- Kim, B. S. K., Suh, H. N., & Subica, A. (2023). Asian American child-parent cultural value discrepancies, family conflict, life satisfaction, and self-esteem. *Journal of counseling psychology*, *70*(5), 510–521. <https://doi.org/10.1037/cou0000689>
- Kim, C., & Kim, A. T. (2023). Is hyper-selectivity a root of Asian American children's success? *Social science research*, *113*, 102886.  
<https://doi.org/10.1016/j.ssresearch.2023.102886>
- Kim, G. M. (2020). Challenging native speakerism in literacy research and education. *Journal of Literacy Research*, *52*(3), 368–375. <https://doi.org/10.1177/1086296X20939558>
- Kim, J., Jung, J., & Mlambo, Y. A. (2021). Institutional selectivity and occupational outcomes for STEM graduates: A generational comparison. *The Journal of Higher Education*, *92*(3), 435–464. <https://doi.org/10.1080/00221546.2020.1819945>
- Kim, S., Ates, B., Grigsby, Y., Kraker, S., & Micek, T. A. (2016). Ways to promote the classroom participation of international students by understanding the silence of Japanese university students. *Journal of International Students*, *6*(2), 431–450.  
<https://doi.org/10.32674/JIS.V6I2.365>
- Kim, Y. (2021). Home educational contexts of Asian American children: Disentangling the effects of structural and cultural factors. *Early Childhood Research Quarterly*, *54*, 307–320. <https://doi.org/10.1016/j.ecresq.2020.10.002>

- Kim, Y. H., & Choi, N. Y. (2019). Career decision self-efficacy of Asian American students: The role of curiosity and ethnic identity. *The Career Development Quarterly*, 67(1), 32–46. <https://doi.org/10.1002/cdq.12161>
- King, J., & Fretwell, L. (2022). Asian American Influencer Cultural Identity Portrayal on Instagram. *Journalism & Mass Communication Quarterly*.  
<https://doi.org/10.1177/10776990221077352>
- Kodama, C. M., & Dugan, J. P. (2020). Understanding the role of collective racial esteem and resilience in the development of Asian American leadership self-efficacy. *Journal of Diversity in Higher Education*, 13(4), 355–367. <https://doi.org/10.1037/dhe0000137>
- Kong, M., & Ahn, H. (2020). Information adoption on YouTube: Examining the influence of YouTube genre. *Journal of the Korea Society of Computer and Information*, 25(6), 131–141. <https://doi.org/10.9708/JKSCI.2020.25.06.131>
- Krumboltz, J. D. (1979). Social learning theory of career decision-making. In A. M. Mitchell, G. B. Jones, & J. D. Krumboltz (Eds.), *Social learning and career decision-making* (pp. 19–49). Carroll Press.
- Krumboltz, J. D., Mitchell, A. M., & Jones, G. B. (1976). A social learning theory of career selection. *The Counseling Psychologist*, 6(1), 71–81.  
<https://doi.org/10.1177/001100007600600117>
- Kwong, K. (2018). Career choice, barriers, and prospects of Asian American social workers. *International Journal of Higher Education*, 7(6), 1–12.  
<https://doi.org/10.5430/ijhe.v7n6p1>
- Lamb, R., Annetta, L., Vallett, D., Firestone, J., Schmitter-Edgecombe, M., Walker, H., Deviller, N., & Hoston, D. (2018). Psychosocial factors impacting STEM career selection. *The*



*Journal of Educational Research*, 111(4), 446–458.

<https://doi.org/10.1080/00220671.2017.1295359>

Lau, H. I., Collet, A., Nordfelt, R., Hamby, E. M., Richardson, L. S., & Udozorh, K. (2023).

Addressing anti-Asian racism and stigma towards therapy: A clinical intervention guideline. *The Family Journal*, 31(4), 555–561.

<https://doi.org/10.1177/10664807231174218>

Lee, D. M., Duesbery, L., Han, P. P., Tashi, T., Her, C. S., & Pang, V. O. (2017). Academic

needs and family factors in the education of Southeast Asian American Students:

Dismantling the model minority myth. *Journal of Southeast Asian American Education and Advancement*, 12(2), 1–31. <https://doi.org/10.7771/2153-8999.1154>

Lee, J., & Zhou, M. (2017). Why class matters less for Asian-American academic

achievement. *Journal of Ethnic and Migration Studies*, 43(14), 2316–2330.

<https://doi.org/10.1080/1369183x.2017.1315851>

Lee, J., & Zhou, M. (2020). The reigning misperception about culture and Asian American

achievement. *Ethnic and Racial Studies*, 43(3), 508–515.

<https://doi.org/10.1080/01419870.2020.1678760>

Lent, R. W. (2005). A social cognitive view of career development and counseling. In S. D.

Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 101–127). Wiley.

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., Paixao, M. P., da Silva, J. T., & Leitao, L. M. (2010). Predicting occupational interests and choice aspirations in Portuguese high school students: A test of social cognitive career theory. *Journal of Vocational Behavior*, 76(2), 244–251.  
<https://doi.org/10.1016/j.jvb.2009.10.001>
- Li, Y., Wang, K., Xiao, Y., & Froyd, J. E. (2020). Research and trends in STEM education: A systematic review of journal publications. *International Journal of STEM Education*, 7(11). <https://doi.org/10.1186/s40594-020-00207-6>
- Lim Xing Fei, F., & Yuek Li, K. (2022). A journey to explore the influence of youtuber to generation Z. *Asian Journal of Applied Communication*, 12(S2), 19-31.  
<https://doi.org/10.47836/ajac.12.s2.02>
- Lin, M. H., Kwan, V. S. Y., Cheung, A., & Fiske, S. T. (2005). Stereotype content model explains prejudice for an envied outgroup: Scale of anti-Asian American stereotypes. *Personality and Social Psychology Bulletin*, 31(1), 34–47.  
<https://doi.org/10.1177/0146167204271320>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation*, 1986(30), 73–84.  
<https://doi.org/10.1002/ev.1427>
- Loden, M. (2017, December 13). 100 Women: 'Why I invented the Glass Ceiling Phrase'. *BBC News*. <https://www.bbc.com/news/world-42026266>

- Looney, S. D. (2020). East Asian perspectives on silence in English language education. *Classroom Discourse, 13*(1), 106–109.  
<https://doi.org/10.1080/19463014.2020.1832899>
- Lowinger, R., & Song, H. (2017). Factors Associated with Asian American Students' Choice of STEM Major. *Journal of Student Affairs Research and Practice, 54*(4), 415–428.  
<https://doi.org/10.1080/19496591.2017.1345754>
- Lu, J. G., Nisbett, R. E., & Morris, M. W. (2019). Why East Asians but not South Asians are underrepresented in leadership positions in the United States. *Proceedings of the National Academy of Sciences, 117*(9), 4590–4600.  
<https://doi.org/10.1073/pnas.1918896117>
- Lynch, M. (2015, December 4). P-16 and P-20 initiatives: Critical for education reform. *The Advocate*. <https://www.theedadvocate.org/p-16-and-p-20-initiatives-critical-for-education-reform/>
- Ma, H. (2023). Seeing the struggle of relationship between Chinese mothers and America-born daughters through languages in Joy Luck Club. *Advances in Education, Humanities and Social Science Research, 4*(1), 289–295. <https://doi.org/10.56028/aehtsr.4.1.289.2023>
- Ma, P.-W. W., Desai, U., George, L. S., Filippo, A. A., & Varon, S. (2014). Managing family conflict over career decisions. *Journal of Career Development, 41*(6), 487–506.  
<https://doi.org/10.1177/0894845313512898>
- Ma, Y. (2009). Family socioeconomic status, parental involvement, and college major choices—gender, race/ethnic and nativity patterns. *Sociological Perspectives, 52*(2), 211–234.  
<https://doi.org/10.1525/sop.2009.52.2.211>

- Ma, Y., & Xiao, S. (2021). Math and science identity change and paths into and out of STEM: Gender and racial disparities. *Socius: Sociological Research for a Dynamic World*, 7, 1–15. <https://doi.org/10.1177/23780231211001978>
- Manning, K. (1997). Authenticity in constructivist inquiry: Methodological considerations without prescription. *Qualitative Inquiry*, 3(1), 93–115. <https://doi.org/10.1177/107780049700300105>
- Maramba, D. C., Palmer, R. T., Kang, H., & Yull, D. (2018). An exploratory study of college choice for Southeast Asian American students. *Journal of Student Affairs Research and Practice*, 55(2), 155–166. <https://doi.org/10.1080/19496591.2017.1417130>
- Marbun, D. S., Juliandi, A., & Effendi, S. (2020). The effect of social media culture and knowledge transfer on performance. *Budapest International Research and Critics Institute (BIRCI-Journal) Humanities and Social Sciences*, 3(3), 2513–2520. <https://doi.org/10.33258/birci.v3i3.1234>
- Martin-Paez, T., Aguilera, D., Perales-Palacios, F. J., & Vilchez-González, J. M. (2019). What are we talking about when we talk about STEM education? A review of literature. *Science Education*, 103(4), 799–822. <https://doi.org/10.1002/sce.21522>
- Micik, M., & Micudova, K. (2018). Employer brand building: Using social media and career websites to attract generation Y. *Economics & Sociology*, 11(3), 171–189. <https://doi.org/10.14254/2071-789X.2018/11-3/11>
- Morgan, D. L. (1988). *Focus groups as qualitative research*. Sage.
- Moustakas, C. (1994). *Phenomenological Research Methods* (1<sup>st</sup> ed.). Sage. <https://doi.org/10.4135/9781412995658>

- Mozahem, N. A. (2022). Social cognitive theory and women's career choices: An agent-based model simulation. *Computational and Mathematical Organization Theory*, 28(1), 1–26.  
<https://doi.org/10.1007/s10588-020-09317-6>
- Mujiwat, Y., & Laili, I. (2023). The impact of social media on changing behavior patterns of generation Z. *CEBONG Journal*, 2(3), 77-82. <https://doi.org/10.35335/cebong.v2i3.88>
- National Center for Education Statistics. (2019). *English language learners in public schools*.  
[https://nces.ed.gov/programs/raceindicators/indicator\\_rbc.asp](https://nces.ed.gov/programs/raceindicators/indicator_rbc.asp)
- New International Bible*. (2011). Zondervan. (Original work published 1978)
- Nguyen, H. T. (2012). What role do race, ethnicity, language and gender play in the teaching profession? *Race Ethnicity and Education*, 15(5), 653–681.  
<https://doi.org/10.1080/13613324.2011.624504>
- Nguyen, K. H., Akiona, A. K., Chang, C. C., Chaudhary, V. B., Cheng, S. J., Johnson, S. M., Kahanamoku, S. S., Lee, A., de Leon Sanchez, E. E., Segui, L. M., & Tanner, R. L. (2022). Who are we? Highlighting nuances in Asian American experiences in ecology and evolutionary biology. *The Bulletin of the Ecological Society of America*, 103(1).  
<https://doi.org/10.1002/bes2.1939>
- Okura, K. (2022). Stereotype promise: Racialized teacher appraisals of Asian American Academic Achievement. *Sociology of Education*, 95(4), 302–319.  
<https://doi.org/10.1177/00380407221119746>
- Park, J. J., & Assalone, A. E. (2019). Over 40%: Asian Americans and the road(s) to community colleges. *Community College Review*, 47(3), 274–294.  
<https://doi.org/10.1177/0091552119852161>

- Park, J. J., Kim, Y. K., Salazar, C., & Hayes, S. (2020). Student-faculty interaction and discrimination from faculty in STEM: The link with retention. *Research in Higher Education.*, 61(3), 330–356. <https://doi.org/10.1007/s11162-019-09564-w>
- Parvathi, R., Khemshetty, S., & .H, T. (2022). Glass ceiling for women: Does it exist in the modern environment. *Shanlax International Journal of Management*, 9(S1-Mar), 1–5. <https://doi.org/10.34293/management.v9is1-mar.4884>
- Patton, M. Q. (2015). *Qualitative evaluation and research methods* (4th ed.). Sage.
- Peng, L. (2023). Explaining the silence in seminars among Chinese undergraduate students in UK universities. *Lecture Notes in Education Psychology and Public Media*, 2(1), 902–909 <https://doi.org/10.54254/2753-7048/2/2022571>
- Perez, E., Manca, S., Fernandez-Pascual, R., & McGuckin, C. (2023). A systematic review of social media as a teaching and learning tool in higher education: A theoretical grounding perspective. *Education Information Technologies*, 28, 11921–11950. <https://doi.org/10.1007/s10639-023-11647-2>
- Pew Research Center. (2013, June 19). *The rise of Asian Americans*. <https://www.pewresearch.org/social-trends/2012/06/19/the-rise-of-asian-americans/>
- Pham, S., Lui, P. P., & Rollock, D. (2020). Intergenerational cultural conflict, assertiveness, and adjustment among Asian Americans. *Asian American Journal of Psychology*, 11(3), 168–178. <https://doi.org/10.1037/aap0000189>
- Pietila, A.-M., Nurmi, S.-M., Halkoaho, A., & Kyngäs, H. (2019). Qualitative research: Ethical considerations. In H. Kyngäs., K. Mikkonen, & M. Kääriäinen (Eds.), *The application of content analysis in nursing science research* (pp. 49–69). Springer. [https://doi.org/10.1007/978-3-030-30199-6\\_6](https://doi.org/10.1007/978-3-030-30199-6_6)

- Qi, J. (2023). Interpretation of cultural conflict in the Joy Luck Club from perspective of high-context and low-context cultures. *SHS Web of Conferences*, 171(02016), 1–4.  
<https://doi.org/10.1051/shsconf/202317102016>
- Rangel, M. A., & Shi, Y. (2019). Early patterns of skill acquisition and immigrants' specialization in STEM careers. *Proceedings of the National Academy of Sciences*, 116(2), 484–489. <https://doi.org/10.1073/pnas.1812041116>
- Rawath, S. S., Satheeshkumar, R., & Kumar, V. (2019). A study on impact of social media on youth. *Journal of Management*, 6(1), 89–96. <https://doi.org/10.34218/JOM.6.1.2019.010>
- Riggs, R. E., Melhem, S., Perez, C., Smith, C., & Punyanunt-Carter, N. M. (2023). Understanding American college students' perceptions of Asians on television. *Media Asia*, 50(1), 97-109. <https://doi.org/10.1080/01296612.2022.2116535>
- Rivera, U. B., Sánchez, Y. A., Pagan, J. P., Ballón, W. C., Jara, O. B., & Astete, R. A. (2021). Women and glass ceilings in the construction industry: A review. *South Florida Journal of Development*, 2(3), 4775–4790. <https://doi.org/10.46932/sfjdv2n3-072>
- Ruiz, N. G., IM, C., & Tian, Z. (2023, November 30). *Asian Americans and the 'model minority' stereotype*. Pew Research Center. <https://www.pewresearch.org/2023/11/30/asian-americans-and-the-model-minority-stereotype/>
- Sabharwal, M., & Varma, R. (2017). Are Asian Indian scientists and engineers in academia faced with a glass ceiling? *Journal of Ethnographic & Qualitative Research*, 12(1), 50–62.
- Sahin, A., Waxman, H. C., Demirci, E., & Rangel, V. S. (2020). An investigation of Harmony public school students' college enrollment and STEM major selection rates and perceptions of factors in STEM major selection. *International Journal of Science and Mathematics Education*, 18(7), 1249–1269. <https://doi.org/10.1007/s10763-019-10017-0>

- Sakamoto, A., & Wang, S. X. (2020). Deconstructing hyper-selectivity: Are the socioeconomic attainments of second-generation Asian Americans only due to their class background? *Chinese Journal of Sociology*, 7(1), 3–21.  
<https://doi.org/10.1177/2057150X20973802>
- Saldana, J. (2016). *The coding manual for qualitative researchers* (3<sup>rd</sup> ed.). Sage.
- Sasaki, Y., & Ortlieb, E. (2017). Investigating why Japanese students remain silent in Australian university classrooms: The influences of culture and identity. *Journal of Asian Pacific Communication*, 27(1), 85–98. <https://doi.org/10.1075/japc.27.1.05sas>
- Shahzad, M. (2021). Factors affecting a youtubers' fame among students. *European Proceedings of Social and Behavioural Sciences*. <https://doi.org/10.15405/epsbs.2021.06.02.38>
- Shao, D. (2022). Is there a bamboo ceiling? The Asian-White gap in managerial attainment for college-educated workers. *Sociology of Race and Ethnicity*, 9(1), 87–102.  
<https://doi.org/10.1177/23326492221114809>
- Shen, F. C., & Liao, K. Y.-H. (2022). Educational channeling, internalized stereotyping, expectations fulfillment and major choice on Asian Americans' major satisfaction: A moderated mediation model. *Journal of Vocational Behavior*, 132, 1–12.  
<https://doi.org/10.1016/j.jvb.2021.103647>
- Shen, F. C., Liao, K. Y.-H., Abraham, W. T., & Weng, C. (2014). Parental pressure and support toward Asian Americans' self-efficacy, outcome expectations, and interests in stereotypical occupations: Living up to parental expectations and internalized stereotyping as mediators. *Journal of Counseling Psychology*, 61(2), 241–252.  
<https://doi.org/10.1037/a0036219>



- Shenton, A. K. (2004). Strategies for Ensuring Trustworthiness in Qualitative Research Projects. *Education for Information*, 22(2), 63-75. <https://doi.org/10.3233/EFI-2004-22201>
- Shih, K. Y., Chang, T.-F., & Chen, S.-Y. (2019). Impacts of the model minority myth on Asian American individuals and families: Social justice and critical race feminist perspectives. *Journal of Family Theory & Review*, 11(3), 412–428. <https://doi.org/10.1111/jftr.12342>
- Smith, K. N., Jaeger, A. J., & Thomas, D. (2021). “Science olympiad is why I’m here”: The influence of an early STEM program on college and major choice. *Research in Science Education*, 51(S1), 443–459. <https://doi.org/10.1007/s11165-019-09897-7>
- Smith, M., & Willison, L. N. (2021). Stem obstacles in the collegiate setting. *Journal of STEM Education: Innovations and Research*, 22(4), 72–78.
- Starr, C. R., Ramos Carranza, P., & Simpkins, S. D. (2022). Stability and changes in high school students' STEM career expectations: Variability based on STEM support and parent education. *Journal of Adolescence*, 94(6), 906–919. <https://doi.org/10.1002/jad.12067>
- Sy, T., Tram-Quon, S., & Leung, A. (2017). Developing minority leaders: Key success factors of Asian Americans. *Asian American Journal of Psychology*, 8(2), 142–155. <http://dx.doi.org/10.1037/aap0000075>
- Talusan, L., & Franke, R. (2019). (Un)fulfilling requirements: Satisfactory academic progress and its impact on first-generation, low-income, Asian American students. *Journal of Critical Scholarship on Higher Education and Student Affairs*, 5(1), 15–28. <https://core.ac.uk/download/pdf/214368959.pdf>
- Tan, A. (1989). *The Joy Luck Club*. G. P. Putna’s Sons.

- Tao, W., & Zhang, Z. (2021). East Asian perspectives on silence in English language education. *Asia Pacific Journal of Education*, 41(3), 628–631.  
<https://doi.org/10.1080/02188791.2021.1897256>
- Tran, V. C., Lee, J., Khachikian, O., & Lee, J. P. (2018). Hyper-selectivity, Racial mobility, and the remaking of race. *RSF*, 4(5), 188–209. <https://doi.org/10.7758/RSF.2018.4.5.09>
- Tu, M.-C., & Okazaki, S. (2021). What is career success? A new Asian American psychology of working. *American Psychologist*, 76(4), 673–688. <https://doi.org/10.1037/amp0000807>
- Tu, M.-C., Zhou, S., Wong, S. N., & Okazaki, S. (2019). Realities of the American dream: Vocational experiences and intersecting invisibility of low-income Chinese immigrant laborers. *Journal of Vocational Behavior*, 113, 88–102.  
<https://doi.org/10.1016/j.jvb.2018.10.009>
- Tuli, B., Jyoti, Gautam, N., and Kumar, S. (2022). Impact of Social Media on Student Life. *i-manager's Journal on Information Technology*, 11(1), 35–47. <https://doi.org/10.26634/jit.11.1.18565>
- U.S. Census Bureau. (n.d.). *About the topic of race*. U.S. Department of Commerce.  
<https://www.census.gov/topics/population/race/about.html>
- Uy, P. S., Kim, S. J., & Khuon, C. (2019). College and career readiness of Southeast Asian American college students in New England. *Journal of College Student Retention: Research, Theory & Practice*, 20(4), 414–436.  
<https://doi.org/10.1177/1521025116678852>
- van Manen, M. (2016). *Phenomenology of practice meaning-giving methods in phenomenological research and writing*. <https://doi.org/10.4324/9781315422657>

- Varma, R. (2023). Being Asian American women scientists and engineers in the United States: Intersection of ethnicity and gender. *American Behavioral Scientist*, 67(9), 1139–1156. <https://doi.org/10.1177/00027642221078510>
- Vu, P., Harshbarger, D., Crow, S., & Henderson, S. (2019). Why STEM? Factors that influence gifted students' choice of college majors. *International Journal of Technology in Education and Science*, 3(2), 63–71. <https://eric.ed.gov/?id=EJ1227124>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press.
- Wang, C., Marsico, K. F., & Do, K. A. (2020). Asian American parents' beliefs about helpful strategies for addressing adolescent mental health concerns at home and school. *School Mental Health: A Multidisciplinary Research and Practice Journal*, 12(3), 523–536. <https://doi.org/10.1007/s12310-020-09362-1>
- Warikoo, N. (2020). Addressing emotional health while protecting status: Asian American and white parents in suburban America. *American Journal of Sociology*, 126(3), 545–576. <https://doi.org/10.1086/712820>
- Whitcomb, K. M., Cwik, S., & Singh, C. (2021). Not all disadvantages are equal: racial/ethnic minority students have largest disadvantage among demographic groups in both STEM and non-STEM GPA. *AERA Open*, 7(1), 1–16. <https://doi.org/10.1177/23328584211059823>
- Wu, K., Garcia, S. M., & Kopelman, S. (2018). Frogs, ponds, and culture: Variations in entry decisions. *Social Psychological and Personality Science*, 9(1), 99–106. <https://doi.org/10.1177/1948550617706731>

- Xie, Y. (2022). A bamboo ceiling in the classroom? *Proceedings of the National Academy of Sciences*, *119*(22). <https://doi.org/10.1073/pnas.2203850119>
- Xing, X., & Rojewski, J. W. (2018). Family influences on career decision-making self-efficacy of Chinese secondary vocational students. *New Waves Educational Research & Development*, *21*(1), 48–67.
- Yang, C. (2018). US-based social media use and American life: A study of Chinese students' acculturation and adaptation in America. *Global Media and China*, *3*(2), 75–91. <https://doi.org/10.1177/2059436418783765>
- Yin, R. K. (2016). *Qualitative research from start to finish* (2nd ed.). The Guilford Press.
- Yip, T., Cheah, C. S. L., Kiang, L., & Hall, G. C. N. (2021). Rendered invisible: Are Asian Americans a model or a marginalized minority? *The American psychologist*, *76*(4), 575–581. <https://doi.org/10.1037/amp0000857>
- Yu, S., Zhang, F., Nunes, L. D., & Levesque-Bristol, C. (2018). Self-determined motivation to choose college majors, its antecedents, and outcomes: A cross-cultural investigation. *Journal of Vocational Behavior*, *108*, 132–150. <https://doi.org/10.1016/j.jvb.2018.07.002>
- Zamroni, E., Mahardika, N., Rahardjo, S., & Masturi, M. (2019). Social Media as a Student Career Selection Preference. *Proceedings of the First International Conference on Technology and Educational Science*. <https://doi.org/10.4108/eai.21-11-2018.2282143>
- Zhang, L., Lee, E. S., Kenworthy, C. A., Chiang, S., Holaday, L., Spencer, D. J., Poll-Hunter, N. I., & Sánchez, J. P. (2019). Southeast and East Asian American Medical Students' Perceptions of Careers in Academic Medicine. *Journal of Career Development*, *46*, 235–250. <https://doi.org/10.1177/0894845317740225>

Zhang, Y. L. (2022). STEM Persisters, Switchers, and Leavers: Factors Associated with 6-Year Degree Attainment for STEM Aspiring Community College Transfer Students.

*Community College Journal of Research and Practice*, 46(11), 796–811.

<https://doi.org/10.1080/10668926.2021.1906784>

## Appendix A

# LIBERTY UNIVERSITY

## INSTITUTIONAL REVIEW BOARD

April 30, 2024

Diem Nguyen  
Mary Strickland

Re: IRB Approval - IRB-FY23-24-1471 Experiences of Asian American Students in Non-STEM Fields: A Phenomenological Study

Dear Diem Nguyen, Mary Strickland,

We are pleased to inform you that your study has been approved by the Liberty University Institutional Review Board (IRB). This approval is extended to you for one year from the following date: April 30, 2024. If you need to make changes to the methodology as it pertains to human subjects, you must submit a modification to the IRB. Modifications can be completed through your Cayuse IRB account.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. [45 CFR 46.101\(b\)\(2\)](#) and (b)(3). This listing refers only to research that is not exempt.)

**For a PDF of your approval letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study Details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your stamped consent form(s) and final versions of your study documents can be found on the same page under the Attachments tab.** Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

**G. Michele Baker, PhD, CIP**  
*Administrative Chair*  
**Research Ethics Office**

## Appendix B

### Social Media Post on LinkedIn

**ATTENTION FRIENDS:** I am conducting research as part of the requirements for a Doctor of Philosophy degree at Liberty University. The purpose of my research is to understand the challenges and opportunities faced by Asian American students who are pursuing a non-STEM major or have graduated with a non-STEM degree from a university in the United States (STEM means Science, Technology, Engineering, and Math. Non-STEM includes all majors that are not Science, Technology, Engineering, and Math).

To participate, you must be 18 years of age or older, Asian American, and studying a non-STEM college major or have graduated with a non-STEM degree within the past five years. If you would like to participate and meet the study criteria, please direct message me at [jeanyemmi/liberty.edu](https://www.linkedin.com/in/jeanyemmi/liberty.edu) to complete the screening questionnaire. A consent document will be emailed to you if you meet the inclusion criteria. You will have one week to sign and return it via email.

I will email you some demographic questions that will take less than 5 minutes to answer, and email me back within 2 days. After receiving your answers, I will contact you to schedule a one-hour audio and video-recorded interview via Teams Meeting (60 minutes). After that, I will email you the interview transcript to review and validate the collected data. You will have 2 weeks to provide feedback about the accuracy of the transcript. Within 2 days after the interview, I will email you a letter writing prompt about telling your younger self how to be better prepared for choosing a non-STEM college major. This will take approximately 15 minutes to complete. You will have 2 weeks to email me your completed letter. After that, all participants in this study will be randomly divided into 2 audio and video-recorded focus group sessions conducted via

Teams Meeting. Each focus group will take 1.5 hours. Within 24 hours after the focus group, I will email you the focus group transcript to review and validate the collected data. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

Participants who complete all the procedures will be given a \$30 Amazon e-gift card via email as compensation. Any participant who chooses to withdraw after completing the interview will receive a \$10 Amazon e-gift card via email. If they choose to withdraw after completing the letter writing, they will receive a \$20 Amazon e-gift card via email.



**Appendix C**  
**Screening Survey**

If you want to be considered as a participant in this study, please complete the following survey.

1. Are you 18 years of age or older?

Yes

No

2. Are you an Asian American who is studying or has graduated from a university in the United States?

Yes

No

3. Are you studying a non-STEM major or graduated with a non-STEM degree within the last 5 years? (STEM means Science, Technology, Engineering, and Math. Non-STEM includes all majors that are not Science, Technology, Engineering, and Math)

Yes

No

If you answer YES to all three questions above, you may qualify to participate in this study.

Please provide your contact information:

Name: \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

## Appendix D

### Consent Letter

**Title of the Project:** Experiences of Asian American Students in Non-STEM Fields: A Phenomenological Study

**Principal Investigator:** Diem Nguyen, Doctoral Candidate, Liberty University

#### Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be 18 years of age or older, an Asian American student pursuing a non-STEM college major or graduated with a non-STEM degree within the past five years. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

#### What is the study about and why is it being done?

The purpose of the study is to explore the lived experiences of Asian American students who have chosen non-STEM college majors that are not science, technology, engineering, and mathematics. This study will provide more positive representations of non-STEM Asian American students who are invisible and neglected in their culture.

#### What will happen if you take part in this study?

1. **Demographic Questions:** Within 24 hours after you sign and email this consent form to the researcher, I will email you a demographic survey for you to fill out and return via email within 2 days. The survey will take less than 5 minutes to complete.
2. **Interview:** After receiving the completed survey, the researcher will contact you to schedule an audio- and video-recorded interview that will be conducted virtually via Teams Meeting. The interview will take approximately 1 hour. Within 24 hours after the interview, the researcher will email you the interview transcript to review and validate the collected data. You will have 2 weeks to provide feedback about the accuracy of the transcript.
3. **Letter Writing:** Within 2 days after the interview, the researcher will email you a letter-writing prompt to tell your younger self how to be better prepared for choosing a non-STEM college major. This will take approximately 15 minutes. The letter will need to be returned via email within 2 weeks of receipt of its prompt.
4. **Focus Group:** All participants in this study will be randomly divided into 2 audio- and video-recorded focus group sessions that will be conducted virtually via Teams Meeting. Each focus group will take approximately 1.5 hours. Within 24 hours after your focus group session, the researcher will email you the transcript to review and validate the collected data. You will have 2 weeks to provide feedback about the accuracy of the transcript.

### **How could you or others benefit from this study?**

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include motivating and inspiring young Asian American students to choose non-STEM college majors. The study will also increase the visibility of non-STEM Asian American students and help educators better understand their needs to provide appropriate support for them.

### **What risks might you experience from being in this study?**

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

### **How will personal information be protected?**

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential by replacing names with pseudonyms.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Confidentiality cannot be guaranteed in focus group settings. While discouraged, other members of the focus group may share what was discussed with people outside of the group.
- Data collected from you may be used in future research studies and/or shared with other researchers. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Electronic data will be stored on a password-locked computer. Any hardcopy data will be stored in a locked cabinet. After three years, all electronic records will be deleted, and all hardcopy records will be shredded.
- Recordings will be stored on a password-locked computer for three years and then deleted. Only the researcher will have access to these recordings.

### **How will you be compensated for being part of the study?**

Participants will receive a gift of appreciation for participating in this study upon completion. Within 24 hours after the conclusion of each focus group, participants in that group will receive a \$30 Amazon e-gift card via email if they complete the demographic survey, interview, letter writing, and focus group. Any participant who chooses to withdraw after completing the interview will receive a \$10 Amazon e-gift card via email. If they choose to withdraw after completing the letter writing, they will receive a \$20 Amazon e-gift card via email.

### Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

### What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

### Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Diem Nguyen. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [REDACTED] or [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Mary Strickland, at [REDACTED].

### Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is [irb@liberty.edu](mailto:irb@liberty.edu).

*Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.*

### Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

*I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.*

The researcher has my permission to audio- and video-record me as part of my participation in this study.

---

Printed Subject Name

---

Signature & Date

## Appendix E

### Demographic Survey

Please provide some information about yourself.

1. What is your biological sex?

Male

Female

2. What is your age range?

18-24 years old

25-34 years old

35-44 years old

45 years or older

3. Which Asian country are you from? \_\_\_\_\_

4. What U.S. state are you residing in? \_\_\_\_\_

5. If you are in college, what is your major? \_\_\_\_\_

6. If you graduated, what was your major and the year you graduated? \_\_\_\_\_

7. If you are working, what is your current occupation? \_\_\_\_\_

## Appendix F

**Table 1: Individual Interview Questions**

1. Please introduce yourself and your current or past non-STEM college major. CRQ
2. Why did you choose a non-STEM major? CRQ
3. What stories do you remember the most when you decided to pursue a non-STEM major?  
CRQ
4. Describe the Asian values that influenced your decision to choose a non-STEM major.  
SQ1
5. How did family involvement influence your choice of a non-STEM major? SQ1
6. How did the model minority stereotypes that assume Asian Americans are only good in  
STEM influence your decision to choose a non-STEM major? SQ1
7. Describe the environmental factors that influenced your decision to choose a non-STEM  
major. SQ2
8. How did previous schools influence your choice of a non-STEM major? SQ2
9. How did other organizations or people influence your decision to choose a non-STEM  
major? SQ2
10. How did social media influence your choice of a non-STEM major? SQ2
11. Describe the internal motivations that influenced your decision to choose a non-STEM  
major. SQ3
12. How did self-efficacy influence your decision to choose a non-STEM major? SQ3
13. How did gender influence your decision to choose a non-STEM major? SQ3
14. What else would you like to add to our discussion of your experiences when choosing a  
non-STEM major that we have yet to discuss? SQ3

## Appendix G

### Letter Writing Prompt

For this letter-writing activity, please write a response to this question, “What will you tell your younger self to be better prepared for choosing a non-STEM college major?” The letter should be approximately 400 words and take about 15 minutes to complete. Please email your letter back to the researcher at [nguyenmliberty@uci.edu](mailto:nguyenmliberty@uci.edu) within two weeks of receiving this prompt.



## Appendix H

**Table 2: Focus Group Questions**

1. What led you to choose a non-STEM major? CRQ
2. Describe the cultural challenges that you have experienced when choosing a non-STEM major. SQ1
3. How did you overcome the cultural challenges? SQ1
4. Describe the external challenges, such as people, media, and stereotypes, that you have encountered when choosing a non-STEM major. SQ2
5. How did you overcome the external challenges? SQ2
6. Describe the internal challenges that you have experienced when choosing a non-STEM major. SQ3
7. How did you overcome the internal challenges? SQ3