POSTSECONDARY ACADEMIC ATTAINMENT OF ASIAN AMERICANS: ANALYSES OF NELS1988-2000

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POSTSECONDARY ACADEMIC ATTAINMENT OF ASIAN AMERICANS:
ANALYSES OF NELS1988-2000

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ABSTRACT

Academic attainment is generally one of the social indicators representing individual success in both social and economic status. However, not all students have the opportunity to access and success postsecondary education. There is a wide variety of factors that contribute to obstacles and barriers to a higher education for minority such as Asian subgroups. This study attempts to examine factors that differentiate postsecondary academic attainment within minority populations, especially Asian Americans, under the scope of the ecological perspective. By using National Educational Longitudinal Study database (NELS), the main purpose is to identify differentiating factors among Asian groups and to elicit factors that should be considered in higher education policy and other educational programs, for Asian subgroups in particular. The result shows that there is significant difference in academic attainment within Asian Americans. However, the patterns of attainment varied in accordance with ecological educational factors. Multivariate analysis showed that, when controlling all educational factors, academic attainment does not differ within Asian subgroups for bachelor’s degree or higher. However, for certificate/associate’s degree, the Southeast Asian group was more likely to attain certificate/associate’s degree compared to high school degree. The limitations, implications, and recommendations for future study are discussed.
DEDICATION

This dissertation is dedicated to my grandparents, Dr. Phanom and Boonmee Smitananda. The greatest inspiration of my life.
ACKNOWLEDGEMENTS

I would like to acknowledge many people for helping me during my doctoral work. I would especially like to express my deeply gratitude to my advisor, Dr. Sonia Alemagno, for her excellent guidance, commitment and all assistance that she gave me to complete this educational journey. I am also very grateful for having an exceptional doctoral committee and wish to thank Dr. Margaret Stephens for her expertise in statistical method and insights, Dr. Peter Leahy, Dr. William Bowen for comments and suggestions and Dr. Huey-Li Li, for her time and expertise to better my work. I thank them for their contribution and their good-natured support. It is truly my pleasure to have them on my committee.

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CHAPTER I

INTRODUCTION

Academic attainment is the milestone of educators and policy makers in creating education policies. U.S. educational attainment has reached an all time high. According to the U.S. Census report, approximately 80 percent of the population age 25 and over report that they have obtained at least a high school diploma or more in the year 2000 (Bauman & Graf, 2003). Four commonly achieved education levels were high school (28.6%), associate’s degree (6.3%), bachelor’s degree (15.5%) and advanced degree (8.9%). However, more than 20 percent pursued postsecondary education, but did not possess a postsecondary degree (Bauman & Graf, 2003). Academic attainment is generally one of the social indicators representing individual success in both social and economic status. Students with postsecondary education are more likely to have a higher economic or social status than those who have only a high school degree or less. For example, the 2000 Census reported that the average annual income for people who have at least a bachelor’s degree is $65,000, while those who have only high school diplomas earn on average $33,000 (Weinberg, 2004). Moreover, past research shows that a more selective institution is associated with higher graduation rates, as well as higher income,
which means that the more desired the university (i.e. elite education institution),
the better graduation rate and earning for both minority and non-minority
students (Kane, 1998, as cited in Long, 2004).

Apparently, not all students have the opportunity to access selective
colleges or postsecondary education. There is a wide variety of factors that
contribute to obstacles and barriers to a higher education for minority and
disadvantaged students. This study attempts to examine factors that differentiate
postsecondary academic attainment within minority populations, especially Asian
Americans, under the scope of the ecological perspective.

This chapter discusses the importance of diversity in education,
particularly higher education. Second, the model minority stereotype is
discussed and how it influences American society, policy makers, and educators
in creating national policy for Asian American students. Subsequently, academic
differences within Asian groups and the theoretical rationale behind academic
difference are discussed. In order to explore the differences among the Asian
American population, the ecological framework is employed to explain diversity in
academic attainment of Asian Americans. Also, factors that differentiate within
Asian American groups with regard to academic attainment are discussed. In the
next section, culturally relevant and responsive education is discussed. Policy
issues and programs on minority education are discussed in the following
section. Federal TRIO programs and admission policy under race-neutral
alternatives are discussed in terms of what policies or programs regarding higher
education of Asian American are being implemented and what constitutes those
policies. Further, factors that are being used to determine educational programs and the application process in postsecondary education institutes are discussed. Finally, the statement of the problem, purpose of study and the significance of study are presented.

Importance of Diversity in Education

Many people may ask “Why does diversity matter in the educational system and U.S. society?” A number of reasons can be put forth to look at why diversity is important for an education system and society. According to Bollinger (2007), first, diversity enriches the educational experience. Students can learn from different experiences, beliefs, and perspectives that are unique from their own. Second, diversity challenges stereotyped preconceptions; therefore, it promotes critical thinking and helps students learn to communicate effectively with people from various backgrounds. Third, diversity also strengthens communities and the workplace. Education within a diverse setting prepares students to become good citizens in a complex society and encourages mutual respect and teamwork. Fourth, diversity in education should be brought in line with the rapidly changing demographic make-up of the country, where minority may become non-minority in the future due to the fast growing rate of minority population (Niemann & Maruyama, 2005). The minority groups need to be educated in order to balance equality in the workforce. If there is a lack of diversity in higher education, “the risk is that the workforce will become more divided as an even more elite and more homogeneous group of people graduate
from the most selective institutions of higher education to take on the most influential jobs in the workforce” (Bial & Rodriguez, 2007). Fifth, diversity is vital to economic and cultural mobility since it will enhance the economic competitiveness. In order to sustain the U.S.’s prosperity in the globalized society, it is necessary to make effective use of the talents and abilities in work settings that bring together individuals from diverse backgrounds and cultures.

Although minority youths have shown steady gains in many academic indicators in the past decades, they lag behind their white peers (James, Jurich, & Estes, 2001). For Asian American students in particular, the term “minority” typically disguises the fact that the proportion of non-white students in American’s public schools is rising and already represents the majority of students in some areas. According to the National Center of Education Statistics in 2003, minority students in public school outnumbered white students in the South and West region of the United States.

One of many reasons for recent diversity in the U.S. is demographic changes. Like other minority groups, there has been a sharp growth of the Asian American population in the U.S. This population grew by 3.3 million or 48 percent during 1990 and 2000 (Barnes & Bennett, 2002). As a result, the prosperity of the nation will be increasingly dependent on the knowledge and contribution of minority young people including Asian American youths.
Model Minority Stereotype

Due to a substantial difference existing in the levels of education attained in Asian American subgroups, a major barrier in developing and implementing education policies for Asian Americans is the perception of policy makers and the majority of American people that perceive Asian Americans as a “model minority.” Incorrectly believing that all Asians are the same and that all Asian students have achieved high academic successes, scholars frequently consider Asian Americans as the “model minority,” referring to Asian Americans as a minority group that has economic and educational success (Lee, 2006). Yu (2006) pointed out that the model minority stereotype has had a profound influence in many areas such as race relations, social policy, and education reform. By aggregating data on all Asian subgroups, many researchers showed that, overall, Asian Americans appeared to succeed academically in comparison with other ethnic groups. Thus, it is hard to argue the model minority stereotype still widely perceived in American society. Since 1960 the success stories of Asian Americans portrayed by the media are not only based on their educational and economic achievement, but also involve their unique characteristics and values (Ngo, 2006). Interestingly, some of these values and characteristics are compatible with the values of the dominant American middle class culture (Slaughter-Defoe, Nakagawa, Takanishi & Johnson, 1990). Some typical characteristics of Asian Americans that have been perceived by the majority include politeness, respect for authority and parental wishes, sense of duty to community, and diligence. However, Yu (2006) argued that the success story
attached to the model minority concept hardly represents the story of the entire Asian American group. Scholars also agreed that the model minority thesis seems to misguide mainstream society, politicians and policy-makers in understanding the reality of Asian Americans (Yang, 2003; Ngo, 2006).

In addition, Yu (2006) claimed that in the political perspective, the model minority stereotype is used to deflect people’s attention, particularly educators and policy makers, away from social and structural problems such as racism and class division, and to perpetuate an unequal social system. The author also emphasized that the implications of the model minority stereotype go beyond Asian Americans and reach deeply to the center of race and power relations in America. Hence, this stereotype serves a political purpose to maintain the hierarchical race relations. Yu (2006) strongly argued that the model minority narrative reflects the sociopolitical interests of the dominant white group and serves as a tool of their ideological control. To support this viewpoint, Suzuki (2002) also pointed out that Asian Americans were being promoted as the model minority to discredit the protests and demands for social justice of other minority groups. In comparison to other minority groups, political control groups may believe that if Asian Americans can make it or can fit into the system, other minority groups should be able to as well.

On the contrary, this positive stereotype also tends to work against Asian Americans. Those Asian Americans in need of assistance are often ignored because of the perception that they have fewer problems than other minority groups. In addition, Asian Americans were initially not included as a
protected minority group under federal affirmative action regulation (Suzuki, 2002). And even recently, they are still excluded from the considerations of many universities in constructing categories for minority scholarships and in recruiting minority students for admission (Yu, 2006). The Higher Education Research Institute emphasizes that:

“It is important to recognize the discrepancies among Asian American ethnic subgroups in their educational attainment and to address the challenges that especially low-income Asian American students face in higher education...to point out the problems associated with an unrestrained mischaracterization of Asian American educational success, which uncritically take achievement for granted (the Higher Education Research Institute, 2007, p. 3)”.

With the existing issues derived from higher education policies (i.e. admission policy) and problems related to the model minority stereotype, it is vital to identify factors that influence postsecondary academic attainments for the Asian minority along with factors that differentiate within Asian Americans.

Academic Differences within Asian Population

In the United States, the Asian ethnic group has been frequently considered to be the racial/ethnic group that most highly attained postsecondary education. According to the National Center for Education Statistics or NCES (2000), Asians are a leading group in most types of postsecondary education attainment (See Figure 1.1). Approximately 90 percents of Asian students receive a regular on-time diploma—more likely than White, Blacks, and
Hispanics (NCES, 2003). Those Asian students who graduated from high school with a regular on-time diploma were also more likely than other ethnic groups to immediately enroll in a postsecondary institutions. In 2003, the NCES also reported that Asian and White students were more likely to have higher attainment rates than Black and Hispanic students. Overall, Asian students had the highest academic achievement rates in attainment of a high school diploma, enrollment in a postsecondary institution within the year following high school graduation, and attainment of postsecondary credentials within the scheduled time frame, compared to other minority groups.

![Image of bar chart showing educational attainment by race/ethnicity]

Figure 1.1: Educational Attainment of the Population 25 Years and Over in by Race/Ethnicity: Year 2000

However, the statistics provided earlier are somewhat misleading. Available statistics showed that Asian and Pacific Islander groups not only tend to have higher education than other ethnic groups, but they are also more likely to have less than a ninth-grade education and to have no formal schooling (Reeves & Bennett, 2003) (See Table 1.1). Apparently, the image of high academic success fails to take the vast diversity (i.e. ethnicity, socioeconomic, generation, and gender issues) within the Asian groups into consideration (Um, 2003; Ngo, 2006). This may provide a general misperception to the public about academic achievements of Asian Americans. As a result, educators and a majority of society typically perceive Asian American students as a “Model Minority” and this perception seems to overshadow the barriers and difficulties that subgroups of Asian Americans have encountered.
Table 1.1: Comparison of 2000 Education Attainment of People Aged 25 and Over in the U.S. by Ethnicity\(^2\)

<table>
<thead>
<tr>
<th></th>
<th>No Formal Schooling</th>
<th>High School Or Higher</th>
<th>Some College or Higher</th>
<th>Bachelor’s Degree or Higher</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>0.9</td>
<td>83.4</td>
<td>54.0</td>
<td>25.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Black</td>
<td>1.7</td>
<td>71.3</td>
<td>42.2</td>
<td>14.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6.6</td>
<td>51.7</td>
<td>29.9</td>
<td>10.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Native American</td>
<td>2.1</td>
<td>74.5</td>
<td>46.6</td>
<td>14.3</td>
<td>0.7</td>
</tr>
<tr>
<td>All Asian</td>
<td>4.2</td>
<td>80.6</td>
<td>64.1</td>
<td>42.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Chinese</td>
<td>5.3</td>
<td>77.6</td>
<td>63.6</td>
<td>46.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Japanese</td>
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<td>91.4</td>
<td>69.2</td>
<td>40.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Korean</td>
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<td>86.4</td>
<td>64.8</td>
<td>43.1</td>
<td>2.4</td>
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<td>Filipino</td>
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<td>87.4</td>
<td>71.2</td>
<td>41.7</td>
<td>0.6</td>
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<td>Southeast Asian</td>
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<td>Cambodian</td>
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<td>Laotian</td>
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<td>Vietnamese</td>
<td>8.0</td>
<td>61.9</td>
<td>42.9</td>
<td>19.5</td>
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Theoretical Rationale Behind Academic Differences

Generally, characteristics and behaviors of individuals are developed differently due to their backgrounds and knowledge that they have been taught or perceived not only by their parent or family, but also by the environment that surrounded them where they are raised. Different behaviors and values are shaped through the rearing process and individual interaction with the surrounding environment. Therefore, differences in educational outcomes, such as attainment or failure, are based upon how individual characteristics or values are formed which lead to individuals' learning behaviors and how individuals interact with environment or society. The current study focuses on factors that contribute to academic differences among Asian Americans in postsecondary education. Based on the ecological model of human development, academic achievement among youth is influenced not only by factors such as teaching practices and social processes in their immediate classroom environments, but also by aspects of their family environments (Bronfenbrenner, 1979 as cited in Steward, 2006).

Bronfenbrenner (1977) introduced the idea of ecology of human development which explains the relation and interaction between human or individual and environments where individuals actually live and grow. The author proposed a theoretical conception of the changing relation between person and environment in system terms. The concept of the ecological environment includes: 1. Microsystem, 2. Mesostystem, 3. Exosystem, and 4. Macrosystem. In brief, according to Bronfenbrenner, Microsystem is the complex of relations 
between the developing person and environment in an immediate setting
containing that person such as home, school, and workplace...etc. Mesosystem
comprises the interrelation among major setting containing the developing
person at a particular point in her or her life. Therefore, a Mesosystem is also a
system of Microsystems. Exosystem is an extension of the mesosystem
embracing other specific social structures that do not themselves contain the
developing person but impinge upon or encompass the immediate settings in
which that person is found and influence. Thus, the specific social structures are
settings such as neighborhood, mass media, government agencies and informal
social networks. Macrosystem refers to the overarching institutional patterns of
the culture or subculture of which micro-, meso-, and exo- systems are the
concrete manifestations. In addition, macrosystem refers not to the specific
contexts affecting the life of particular person but to general prototypes such as
culture or subculture that set the pattern for structures and activities occurring at
the concrete level. Therefore, public policies and education policies may fit in the
context of Macrosystem under the ecological framework. In terms of the
patterns, values, and rules set by society and culture in that society, the general
purpose of society and culture is to transform individual characteristics in ways
that contribute and productive to society and consequently those behavior
patterns of behaviors and values are translated into public policies or programs.

Later, Johnson (1994) adopted the concept of ecological theory and
conceptualized child-environment interactions in terms of educational risks,
which consequently differentiate between student’s success and failure.
Applying the ecological perspective to the concept of educational risk, children would be at risk when they interact with environments that are ill-equipped. On the other hand, when interaction is positive and well-equipped, they tend to be successful and productive to society. Therefore, educational risk is the consequence of discordant children environment interactions. These discordant interactions potentially occur between and among the children, the classroom, the home, the community and the larger society (Johnson, 1994). Subsequently, Johnson (1994) proposed four interactive systems of risk include microrisk (classroom interaction), mesorisk (domestic interaction), exorisk (community interaction), and macrorisk (sociocultural interaction).

Siu (1996) and Yeh (2002) used the adapted educational risk model to identify educational factors particular related to Asian American college students into four categories; individual factors (language, education, immigration status), family factors (socioeconomic status, parents' education, family support and guidance), institutional factors (inadequate academic preparation, institutional climate, inadequate institutional support programs), and community and societal factors (model minority stereotype and intragroup socioeconomic status).

An ecological theoretical approach provides the basis for the study of academic attainment of minorities and factors that influence educational outcomes. Anguiano (2004) asserted that the value and belief systems that different ethnic families have in regard to education outcomes becomes a significant issue when examining individual and surrounding environments such as family and culture. Therefore, the utilization of an ecological theory is
significant for this study because it is essential to understand the social interaction that occurs between family and youth’s education outcomes. The ecological theoretical approach provides a framework to understand the academic development and success of students, while accounting for how families, cultures and educational environments contribute to academic success or failure.

In addition to the ecological approach, these educational factors are comparable to factors that are being used in the admission approaches in higher education. Many factors being used in admission approaches, such as parents’ education, family income, and parents’ occupations, disability, being first generation to attend college, disadvantaged social or educational environment, difficult personal and family situation, and refugee status (U.S. Department of Education, 2004), are comparable to the educational factors under the ecological perspective. Therefore, to identify the factors that differentiate within Asian American in postsecondary academic attainment, these educational factors may use to address educational dissimilarities.

For the propose of this study, which intends to identify factors that differentiate within Asian American groups with regards to postsecondary academic attainment, those differentiating factors tend to relate to educational factors particularly for Asian subgroups such as Southeast Asians. Thus, under the ecological perspective, it is important to examine differentiating factors that contribute to postsecondary educational outcomes in order to inform policy
makers and educators to improve education policy and encourage students from different background to success academically and socially.

Culturally Relevant and Responsive Education

Due to the fact that the number of minorities is drastically growing, there has been a significant increase of diversity, both culturally and economically, in education institutes including colleges and universities. A group of scholars and researchers such as Kathryn Au, Roland Tharp, A. Wade Boykins, Sonia Nieto, Lisa Delpit, Jacqueline Irvine, and Gloria Ladson-Billings have been concerned about the educational problems among low-income and minority students (Gay, 2000). Therefore, they have constructed a Culturally Responsive Pedagogy that gives guidance to educators in order to improve the academic achievement of these diverse groups of students.

What is “Culturally Responsive Pedagogy”?

Rationales behind culturally responsive pedagogy are that students are becoming more diverse and that culture plays a critical role in learning and academic achievement. Accordingly, it is vital that educators have sociocultural awareness and understand the role of culture in a classroom (Maddahian & Bird, 2004). Educational scholars suggest that the value of culture should be a part of the learning process and classroom instruction should be consistent with cultural orientation of ethnically diverse students (Maddahian & Bird, 2004; Gay 2000).
Culturally responsive teaching is also multidimensional. It encompasses curriculum, content, learning context, classroom climate, student-teacher relationship, instructional techniques, and performance assessment (Gay, 2000). Therefore, culturally responsive pedagogy can be defined as “using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them” (Gay, 2000).

What constitutes “Culturally Responsive Pedagogy”?

The philosophy of culturally relevant and responsive education (CRRE) is to “educat[e] all children by incorporating their emotional, social, and cognitive cultural experiences into the teaching and learning process” (Maddahian & Bird, 2004, p.3). In order to increase academic achievement, Ladson-Billings (1995) suggests that culturally relevant pedagogy must meet three criteria: students must experience academic success, develop and maintain cultural competence, and develop critical consciences. The following are five characteristics of Culturally Responsive Teaching (Gay, 2000, 29):

1. It acknowledges the legitimacy of the culture heritages of different ethnic groups, both as legacies that affect students’ dispositions, attitudes, and approaches to learning and as worthy content to be taught in the formal curriculum.

2. It builds bridges of meaningfulness between home and school experiences as well as between academic abstractions and lived socioculture realities.
3. It uses a wide variety of instructional strategies that are connected to different learning styles.

4. It teaches students to know and praise their own and each other’s cultural heritages.

5. It incorporates multicultural information, resources, and materials in all the subjects and skills routinely taught in school.

Policy Issues on Minority Education

As discussed in the previous section, issues such as model minority and different educational outcomes of Asian Americans tend to blind policymakers and educators in creating or improving educational programs and policies to serve those in-need students. As a result, some Asian groups who are in-need may not benefit from recent education policies. In particular, federal program such as TRIO programs and admission policies under race-neutral alternative approaches are discussed regarding the postsecondary education of minority student.

*Federal TRIO programs*

TRIO programs are federal programs that are designed to motivate and support students from disadvantaged backgrounds. It consists of six outreach and support programs targeted specifically to serve and assist low-income, first generation college students, and students with disabilities to progress from middle school through postsecondary education (U.S. Department of Education, 2008). Initially, TRIO programs are developed by the Office of
Postsecondary Education (OPE) as a part of the policy initiative under Higher Education Acts.

There are six outreach and support programs including Talent Search, Upward Bound, Student Support Services, Postbaccalaureate Achievement Program Authority, Educational Opportunity Centers, and Staff Development Activities. All the outreach and supports programs under TRIO programs are designed to identify qualified individuals from disadvantaged backgrounds, to prepare them for a program of postsecondary education, to provide support services for such students who are pursuing programs of postsecondary education, to motivate and prepare students for doctoral programs, and to train individual serving or preparing for service in programs and projects so designed. In general, TRIO programs serve particular individuals who are eligible for such programs including low-income individual, first generation college student and veteran eligibility.

The main criteria to determine the eligibility for participants are based on family income, first-generation college students which are determined by the level of parent’s education, and veteran eligibility. However, to only use these factors may not be adequate for serving Asian subgroup populations effectively, because there are other factors, such as educational risk factors, that may need to be added. Thus, those students are not being left behind in terms of improving and encouraging their education at the postsecondary level.
Admission Policy under Race-Neutral Alternative Approaches

With regards to higher education, admission policy approaches are being used in many postsecondary education institutes to ensure equity and equality for all students. Recently, the U.S. Department of Education proposed a race-neutral alternative approach to promote the success of minorities and to achieve diversity in higher education after the use of affirmative actions became controversial and even prohibited in some states, i.e. California, Florida, Texas, and Washington (Niemann & Maruyama, 2005). Race-neutral alternatives aim to generate “innovative thinking” about the way to improve higher education for disadvantaged students in the United States. Generally, these approaches are divided into two categories: developmental approaches and admissions approaches. The former are designed to diversify student enrollments by enriching the pipeline of applicants equipped to meet entry requirements and achieve academic success, while the latter are designed to diversify student enrollments through admissions policies and procedures (U.S. Department of Education, 2004).

Developmental approaches focus on improving academic performance in K-12 education. These approaches are particularly designed to develop the skills, resources and ability of student who might not apply or success in college

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3 In Texas, the elimination followed a court decision. In California and Washington, the prohibition was resulted from a ballot proposition. In the Michigan, institutional policy changed via executive order. Judgments in Michigan added to the complexity of the issues and made policies and practices more difficult to interpret, helping to push the issue to the U.S. Supreme Court (Niemann & Maruyama, 2005).
Admissions approaches focus on the process for admitting students into postsecondary educational institutions. These approaches include socioeconomic approaches, comprehensive review, percentage rank plans, target class-rank approaches, and lottery systems. The following are brief descriptions for each admission approach:

- **Socioeconomic Approach** (also called socioeconomic preferences or economic affirmative action). Existing literature shows that poverty is one of the most influential predictors of a student’s school performance. For example, Carnevale and Rose (2003) reported that economically disadvantaged students were 25 times less likely to be admitted into college than the economically advantaged students. Accordingly, the socioeconomic preferences were proposed to be considered in admission process. The socioeconomic factors that are most used for application and financial aids are parents’ education, family income, and parents’ occupations, family structure, school quality, and neighborhood quality (U.S. Department of Education, 2004). These factors are often used for application reviews and financial aids.

- **Comprehensive Review System.** This approach is an individualized process for reviewing student applications. Admissions officers look at wide-range of factors such as disability, low family income, a first generation to attend college, an employment status, disadvantaged social or educational environment, difficult personal and family situation, refugee status, or veteran status …etc.

- **Percentage Rank Plan/Class Rank.** The core feature of this approach is that “all qualified students graduating within a fixed percentage of the top of the graduating class at any state public high school are guaranteed admission into the state university system” (U.S. Department of Education, 2004, 74). For example, this plan guarantees that all students who finish in the top 10 or 20 percent of their class would admit to the state universities of their choice. This approach has been used in many states such as Texas, Florida, and California

- **Lottery systems.** This approach is used to achieve diversity by randomly selecting students based on a lottery open to all students who are eligible to continue for college. For example, all student with an SAT score greater than 900 are considered eligible for the admission pool.
Impact of Race-Neutral Alternative on Asian American

Although there is a lack of studies on the effect of race-neutral alternative approaches on Asian Americans, there was an attempt to investigate such impact in the states where affirmative action was banned (i.e. Texas, Florida and California). A recent study conducted by Colburn, Young & Yellen (2008) examined the admission pattern between 1990 and 2005 for the first time in college at five universities: University of Texas at Austin, University of Florida, and University of California’s Campuses at Berkeley, Los Angeles, and San Diego.

In order to see the effect of the educational policies, the researchers compared those enrollment trends with the four states that had never been affected by Affirmative Action bans i.e. New York, Illinois, Maryland and Arizona, where demographic changes paralleled those for Texas, Florida and California. Particularly, five universities, University of Buffalo, Cornell University, University of Illinois, University of Maryland at College Park, and University of Arizona, were selected for the trend analyses.

The results indicated that Asian American students were the most beneficial group after affirmative action eliminations as admission rates of African American and Hispanic students dropped after the affirmative action ban. Moreover, this study showed that White enrollment had declined substantially between 1995 and 2005. However, the fact that the White population in all three states had declined partly explains the decline in the number of white enrollments. In comparison to states that did not eliminate affirmative action (comparison group), the results revealed that race/ethnic diversity of each
university still remained constant throughout the period of 1990 to 2005. From this analysis, the author concluded that not only African Americans and Hispanic were hurt by affirmative action eliminations, but also White students.

With regard to the impact of race-neutral alternative approaches on Asian Americans, it is important to note that the results from the study above only reflect the effect of these approaches for five selective universities. It does not represent such effects throughout U.S. universities and colleges. Moreover, this study only includes five selective universities in the study, thus it would have reached different conclusions if it had included institutions that were not so selective in those three states. Colburn et al. (2008) also failed to take into account that the Asian American population is very diverse and that many struggle with poverty or lack of English proficiency. For instance, those who check “Asian American” on a college application may come from a wide variety of ethnic, cultural, or socioeconomic background. For example, the experience of a recent Hmong refugee from Southeast Asia may significantly differ from those of Korean, Japanese, or Chinese American whose family has been in the country since 1800s.

For those minority students, the criteria to determine the eligibility for admission policies may vary among postsecondary institution. Under the race-neutral alternative approaches, factors such as parents’ education, family income, and parents’ occupations, family structure, school quality, and neighborhood quality are often used for application and financial aid by socioeconomic approach. And wide-range of factors such as disability, low
family income, a first generation to attend college, an employment status, disadvantaged social or educational environment, difficult personal and family situation, refugee status, or veteran status are used by admissions officers under the comprehensive review system. Evidently, factors to determine eligibility for college admission are being used differently based on the situation of different students. Therefore, some factors that distinguish educational outcome among Asian groups may need to be considered into the admission policies in order to better serve particular Asian groups who tend to be “at risk” and in-need for assistance.

Statement of Problem

Recently, dramatically shifting demographics have created diversity in the U.S. society—particularly in the education system. The Asian American population has grown significantly in the past few decades. Many children from Asian families are being labeled as smart kids or “model minorities” because of their excellence in education. The “model minority” myth and belief in homogeneity of the Asian American student population have limited the development of educational programs or policies that fully address their varied needs. In addition, the use of collective data on minorities is misleading. Barnes & Bennett (2002) reported that, according to Census 2002, the term “Asian” refers to people having origins in any of the original people of the Far East, Southeast Asia, or the Indian subcontinent including Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippines islands, Thailand, and
Vietnam. Evidently, the term “Asian” in the Census data consists of various groups of Asians. Therefore, in fact, there are Asian groups that should be differentiated because most government educational policies refer to Asian in a collective fashion.

Recently, educational policies or programs that have been developed to address the special needs of these subgroups tend to disregard key factors such as educational risks or may be uninformed about these differentiating factors between various cultural and ethnic groups. In addition, factors such as family income, parental education and being in the first generation to go to college have been used to determine the policy, but may not be sufficient. Therefore, it is important to expand the perspective and look at other variables of academic attainment. In order to create effective education policy to better serve the Asian American population, policymakers must be informed about differentiating factors among Asian groups.

A number of barriers to equal opportunity prevent disadvantaged students from educational success. Critical factors that affect student success range from family income, family structure, family size, non-English speakers, parental educations, parental expectation and involvement to unequal school resources (e.g. quality teachers, class sizes, access to high quality after-school programs, advanced curricula, and modern learning facilities) (McLanahan, 1985; Coleman, 1988; Schneider & Lee, 1990; Kao, 1995; Kao & Tienda, 1995; Blair & Qian, 1998, Yang, 2003; Pearce & Lin, 2005). Racial inequities are also claimed to produce unequal opportunities for educational success (Blair & Qian, 1999).
These factors mentioned above work against disadvantaged students in affecting their opportunity, and therefore, it is important to eliminate such inequities to ensure that all children and youth have the same opportunity for educational success. The consequences of failing to do so are far-reaching. The adverse impact is long term and reflected in future employment prospects, poverty and incarceration rates. Thus, it is important that policy makers develop policies that will provide realistic educational opportunities for disadvantaged students. Consequently, with issues derived from recent education policies and problems related to the model minority stereotype, it is vital to identify variables that influence postsecondary academic attainment for Asian minorities along with variables that distinguish Asian Americans.

Purpose of Study

Although there have been many recent attempts by policy makers and educators in creating educational programs or policies to enhance minority students from diverse background to success in higher education, it may not be simple because they are unable to distinguish among minority groups such as Asian Americans. Therefore, this study intends to explore the differentiating factors among the Asian subgroup. By using National Educational Longitudinal Study database (NELS), the main purpose is to identify differentiating factors among Asian groups and to elicit factors that should be considered in higher education policy and other educational programs, for Asian group in particular. This study explicates the diversity within Asian Americans by focusing on East
Asian, Southeast Asian and other Asian and Pacific Islander. Additionally, the current study examines the academic attainment under ecological perspectives. The rationale behind this study is to help identify minority groups and factors that need attention from educators and policy-makers in order to create national policies for minority populations.

Significance of Study

In general, public policy is created based on social problems. Particularly, problems are identified which catch the attention of policymakers. However, some social issues are hidden or overlooked by policymakers. For example, in this case, the model minority stereotype tends to misdirect policymakers in developing education policies for minority groups, especially Asian Americans due to the perception of their homogeneity (Yang, 2003; Ngo, 2006; Yu, 2006). Perhaps, the information such as academic achievement statistics provided at “problem identification” in the beginning of policy process is misleading. Therefore, policymakers have not recognized problems (i.e. discrepancies among Asian American) that exist in Asian American education. Due to the fact that educational statistics of Asian Americans (e.g. level of education, attainment rates) were gathered in aggregate fashion, the information for Asian subgroups is rarely reported. Those statistics often show that Asian American students perform better than other ethnic groups. Therefore, policymakers often disregard this population. Evidently, policymakers fail to account for the diversity and complexity within Asian American subgroups.
in order to identify specific differences in characteristics and needs. These differences (e.g. discrepancies in demographic shift among Asian subgroup, financial capacity, college preparation and access, cultural and beliefs and so forth) are vital information for policy makers in developing education policies or programs or for disadvantaged Asian American students.

As mentioned by many scholars in the field of education research, the model minority stereotype seems to obscure the majority of society and policymakers in understanding the complexity within minority ethnic groups, Asian American in particular, since they are always labeled as the most successful minority group when compared to Blacks or Hispanics. Therefore, some problems faced by Asian subgroups, such as Southeast Asian American, seem to be disregarded or compromised.

First, this dissertation attempts to provide evidence showing that all Asian American students are not the same based on the ecological perspective. This study primarily argues that Asian American students are different in educational attainment due to many educational factors. The examination of this study will contribute to public policy and educational research in terms of identifying the factors that differentiate within Asian groups; thus, it is important that policymakers pay special attention to these factors in developing education policies and programs for minority students. Second, the analyses of this study may be useful for school counseling and educational staff in postsecondary institutions. When the most influential factors are identified, the needs of disadvantaged Asian students can be addressed in order to increase access and
opportunity to postsecondary education. Third, it would also benefit schools, government agencies, and non-profit organizations that require data on educational attainment for funding allocations or educational program planning and implementation. The findings from this study would be valuable for educators, school administrators, and policy makers in order to create and implement effective educational policies or programs for Asian American minorities.

In summary, this study of academic attainment of Asian Americans will help explain the differences among Asian Americans and overcome the educational barriers for Asian subgroups who are struggling in mainstream society. Identifying differentiating factors within Asian subgroup may help educators and policy makers to improve educational policy, the findings would provide significant evidence to factors that need to be considered in order to identify the needs/programs for specific Asian subgroups.

In order for educational policies for minorities to be effective for specific minority group such as Asian Americans, the perspective of what factors distinguish the Asian American population and the special needs among Asian groups needs to be expanded. Thus the main question for this study, based on ecological perspective, is what are the factors or characteristics that differentiate academic attainment among Asian American? And are those factors significantly to be considered and included into education policies for minorities such as Asian Americans?
CHAPTER II

LITERATURE REVIEW

This chapter consists of three sections. The first section reviews past literature regarding academic differences among Asian Americans. The second section discusses the factors related to academic attainment. Within this section, educational values and unique characteristics of Asians are discussed. The final section discusses educational risk under the ecological framework and educational factors of Asian Americans, including individual, family, institutional, and community and societal factors.

Differences in Academic Achievement among Asian Groups

Despite the high academic achievement of Asian American students, there is an increasing number of Asian American who are failing and dropping out of school. This growing numbers of high school dropouts reflect a widening achievement gap within the Asian American student population (Lew, 2006). Gay (2000) added that no ethnic group is ethnically and intellectually monolithic. Research on the education of recent Asian immigrants to the U.S. provides evidence as to why immigration should be understood as one of the reasons of
the achievement patterns of some ethnic groups. For example, it has been reported that the highest-performing Asian immigrant students are Japanese, Chinese, Filipinos, Koreans, and Asian Indians. Conversely, Southeast Asians, such as Vietnamese, Cambodians, and Thais do no perform well academically (Gay, 2000; McDonnell & Hill, 1993; Fass, 1989).

Gay (2000) also noted that socioeconomic background, lack of motivation for learning, and poor parental participation in the educational process may explain the disproportion in academic achievement among minority groups such as African American, Latinos, and some Asian American groups and consequently, differential skills and abilities are provoked by the racial prejudices and stereotypes and discontinuities between the cultures of the school and the homes of ethnically diverse students.

Many studies showed that there are differences in academic achievement among Asian American students. First, in the study of family and Asian student’s educational performance, Blair & Qian (1998) found that there were significant differences in educational performance across five Asian American groups: Chinese, Filipino, Korean, Southeast Asian and Japanese. The authors examined the specific variations in educational performance among these Asian ethnic groups. The authors also found that there are significant differences among these five Asian ethnic groups on educational performance. Variables such as religion, language use at home, level of parental education, number of siblings, family income, and availability of educational materials have different affects on student’s educational performance.
Additionally, there is evidence indicating a disproportion of academic attainment in Asian groups, particularly between Southeast Asian American youths and others. In the report, *A Dream Denied: Educational Experiences of Southeast Asian American Youth*, Um (2003) asserted that students whose families were from Southeast Asia (i.e. Cambodia, Laos, and Vietnam) face difficulties with higher education that are unusual in many other Asian American groups. Therefore, using group analyses of Asian students may provide a misperception on educational performance and achievement of Asian American students. For example, some scholars disagreed in referring to Asian Americans in the collective since there is existence of great diversity in their origins, religions and traditions that distinguish them from one other (Blair & Qian, 1998; Lee, 2006).

In addition to differences within Asian subgroups, Southeast Asian Americans are uniquely positioned both within and outside the discourse of academic attainment. On one hand, Southeast Asians are lumped with other Asian American groups and viewed as part of the “model minority”. On the other hand, they are portrayed as gangsters, high school dropouts and welfare dependents. The complexity of Southeast Asian Americans’ lives and struggles are reduce to binary extreme because they are depicted as “valedictorians and delinquents” (Kibria, 1993). However, Lee & Manning (2001) pointed out that the complexities of Southeast Asian student’s educational experiences make them more than “model minority” or “delinquent”. Problematically, the prevailing dual perception of Southeast Asian Americans have resulted in the denial of support
to Southeast Asian American based on the assumption that they have no problems and on the belief that they are “lazy” and do not deserve assistance (Um, 2003).

Factors Related to Academic Attainment Differences within Asians

Government statistics and many scholars suggest that educational achievements vary among Asian students and are affected by many factors. Under the ecological perspective on human development, ecological educational factors tend to have an impact on particular minority group such as Asian subgroup. The effect of ecological factors is considered to relate to the academic outcome of Asian students particularly in terms of the relationship between children and their parents through the value or culture in which an individual acquired from primary social institutions, such as family factors (Yeh, 2002). Besides educational risk factors, Asian educational values, their unique characteristics and cultural assimilation also help to explain the differences in academic attainment within Asian subgroups.

Asian Educational Values and Unique Characteristics

A number of scholars search for the explanations of why Asian Americans have academic success in the U.S. educational system. One of the most famous justifications that are widely acknowledged explaining Asian achievement is the distinctiveness of their culture and value. In general, culture
is often defined as a social heritage or something handed down from generation
to generation (Vermeulen & Perlmann, 2000). Cultures or values include how
they raise or cultivate their beliefs to their children from one generation to
another.

Many explanations of academic excellence and economic mobility of
Asian Americans have focused on a cultural argument emphasizing “Asian”
values of education, work ethic, and nuclear family (De Vos, 1973, 1980;
also suggested that cultural upbringing may be a strong factor contributing to the
educational success of both Asian students in Asian countries as well as in the
United States. In order to explain the academic success of Asian Americans,
many scholars look at “culture”, particularly family culture, as one of many
important factors for academic attainment (Rumbuat, 1990 as cited in Kao &
Thompson, 2003; Sue & Okasaki, 1990).

Historically, Asian culture, which believes that deficiency can be
overcome with diligence, stems from the Confucian beliefs about the role of effort
in achievement (Mau, 1997). Past literature suggested that Asian immigrants
believe that investment in education was not only a primary compensatory
method for surviving and overcoming many of effects of discrimination, but also
led to the better life (Shinagawa, 2005). Sue & Okazaki (1990) also pointed out
that most Asian Americans believe that success in life results from education,
such as school performances or school activities. Although many Asian
Americans place high value on education, some are not being able to reach
educational goals. Many barriers such as lack of English proficiency and understanding of the education system are loaded up to some Asian ethnic group, which typically struggle to assimilate the U.S. culture and educational system.

In addition, Asian characteristics are also accounted for in the success of Asian American students. Many scholars insisted that cultural values and norms reflect unique characteristics of Asian Americans. For example, in the study of Japanese Americans in Chicago, Caudill & De Vos (1956) described the characteristics of the Japanese American as respect for authority and parental wishes, diligence, punctuality, cleanliness, neatness, self-discipline and high achievement motivation. Additionally, characteristics such as family unity, respect for elders, respect for authority, industry, high value on education, and personal discipline are also considered to be the cultural traits of Chinese Americans that help them succeed in American Society (Sung, 1967; Hsu, 1971 as cited in Suzuki, 1977). Suzuki (1977) also asserted that the achievement of Asian Americans is a logical outcome of their unique cultural characteristics.

One of the indicators that may represent the cultural attachment of Asian American in particular is language spoken at home. Language used in the family reflects the individual attachment with traditional values, beliefs, norms, or culture. The members of a family who still speak their native language at home have stronger roots to their culture values, in which they perceive of educational advancement as the best means of social mobility or achieving the better life (Lee, 2006).
Past studies demonstrated the effects of using non-English at home on academic achievement. Blair & Qian (1998) found that the use of a non-English language was significantly correlated with student’s educational performance in the positive manner and it was, particularly, beneficial to Chinese and Southeast Asian students. The authors pointed out that the effect of language represents the distinction across Asian Americans in regard to determining educational performance and achievement. On the other hand, parents and children who do not speak their native language at home tend to absorb typical American cultures and ideas. Particularly, young people acquire ideas or values of American culture that emphasize the rights of children in making their own decision (Yang, 2003). As a result, many Asian people who do not speak their native language tend to be more independent and liberal than those who speak the language that represents an attachment to their heritage.

In terms of Asian educational values, past studies found inconsistent findings in educational achievement in terms of gender differences. Traditional Asian parents place a higher value on male over female children. However, an attainment gender gap among Asian Americans is inconsistent with typical Asian norms. Many studies on ethnic and gender differences on academic performance showed that in the high school setting, female students tend to have positive relationships with teachers and therefore performed better than male students (Demie, 2001; Perrault & Hill, 2000 as cited in Pearce & Lin, 2005). Pearce & Lin (2005) found that gender has a substantial impact on how children gain status and position within the academic culture, comparing between Whites.
and Chinese Americans. The results indicated that female students were more likely to have postsecondary attainment than males in both two groups. Specifically, a Chinese and White female were 1.84 and 1.3 times, respectively, more likely than a Chinese and White male to attain a postsecondary education. Conversely, Chow & Wood (2001) found that male high school students showed greater cognitive dissonance than females. Therefore, there are still inconsistent evidences of gender differences, particularly among ethnic groups on academic achievement.

Unique characteristics of Asians also play a great role in parenting practices and educational values. First, Asian parents tend to emphasize the importance of respect for authority as well as elders. For example, Kao (1995) found that Asians are more likely than whites to insist on unquestioned obedience to parents. Also, Asian parents were less likely than White parents to have expectations for mature behavior and to encourage two-way communication between their children and themselves. Likewise, Pearce & Lin (2005) showed that Chinese children were more likely to follow their parents’ instructions than were White peer group.

*Educational Expectation*

With regards to decision-making, individual aspiration and parental expectation are generally the most influential components in individual judgment. Both factors have a great impact on decision in pursuing the future goal either in academic success or career choice. However, parental expectation alone may
not drive individual to success either on academic or career. The important motivation is also derived from individual aspiration.

It is common that Asian parents place high expectations on their children. Generally, most Asians are very quiet and obedient. Asian children seem to suppress their feelings toward any pressure from their parent, even though they disagree or are not willing to comply. As a result, their children will obtain that expectation and try to fulfill the expectation of their parents, even though it may create some pressures for them to do that. But to attain their parental expectation, they usually have no complaint about doing what their parent want them to do. Schneider & Lee (1990) noted that Asian youth felt a great obligation to their parents and believed that it was their responsibility to do well in school.

In brief, an individual who academically succeeds tends to have high aspirations and expectations from their parents. However, parental expectation can also have a negative impact on their child because high expectation also means high pressure and stress. For example, Kao (1995) pointed out that:

“…on average, Asian parents may not only have higher expectations of their children, but also unwilling to negotiate these terms. Children understand this message and obligated to their parents to do well in school. For the children who are be able to attain academic success, their parents high expectation may further their own educational aspiration, but for those who cannot, that effects of such a pressure are potentially harmful (p.125).”
Henderson (1998) suggested that parental expectations play an important role in academic success of children regardless of socioeconomic and ethnic background. In addition, educational expectations and aspirations are universally high for all racial and ethnic groups (Hauser & Anderson, 1991; Kao & Tienda, 1998; Goyette & Xie, 1999 as cited in Kao & Thompson, 2003). For Asians in particular, Blair & Qian (1998) found that Asian parent’s desire for graduate degrees for their children is significantly and positively related to a child’s educational outcome. They also found that parental expectation is the best predictor for the educational performance for Chinese, Korean, and Filipinos students.

As a result, values and unique characteristics of Asian American families can contribute to their behavior and the academic outcome of their children. However, focusing on only their culture or values may not represent the whole situation of their educational outcomes. Since Asian Americans have different backgrounds and experiences regarding assimilation to U.S. society, educational factors under ecological perspective may distinguish the differences among Asians and consequently can provide insight for policy makers of how to improve academic attainment while decreasing educational failure for Asian American students.
Cultural Assimilation

Even though Asian Americans have distinctive characteristics and values, they are also able to adapt themselves and blend into the American social mainstream. This process is called acculturation or cultural assimilation. Particularly, it refers to a process of integration with, and differentiation from, the dominant culture. This concept is considered to be one of the most important explanations disclosing differences among ethnic groups (Mau, 1997). How well minorities assimilate to mainstream society could be reflected by their type of immigration.

Type of Immigration

Many researchers suggested that many immigrant families struggle in U.S. society because they come to the U.S. for many reasons such as escape poverty and persecution, and to improve the general quality of their lives. After arriving, they have to adjust to a new culture, language, style of livings, and educational systems (First & Carrera, 1988; Igoa, 1995, Oleneck, 1995; Gay, 2000). As a result, those conditions can cause stress, anxiety, a general feeling of vulnerability, and insecurity, which lead to negative effects on academic achievement.

Ogbu (1981) offered an ecological approach to further explain the differences among ethnic minorities and classified types of immigration into two types: voluntary and involuntary immigrants. The first group is the immigrants
who are willing to enter the U.S. and the other group is those who are forced or unwilling to immigrate to the U.S. What makes these two groups different is the motivation and ability to acculturate and adapt to dominant culture or value of the mainstream society. Voluntary immigrants tend to be open and able to adapt their culture to the dominant culture since many of them believe that America is the land of opportunity and they will have a better life. Thus, these immigrants are willing to adjust their own traditional values to those of the new culture. Ogbu (1981) also identified Asian Americans as voluntary immigrants. On the other hand, involuntary immigrants tend to struggle and are not willing to adapt their traditional value to the dominant culture. Most of these immigrants are forced to come to U.S. because of the problems within their country. The ability and willingness to absorb values of the mainstream society also affect the educational achievement of the offspring of immigrant parents. Moreover, the immigration status and birthplace also reveal conventional values.

Additionally, in their study on academic attainment between white and Chinese American students, Pearce & Lin (2005) suggested, based on Ogbu’s ecological perspective, that there is a difference between a voluntary and involuntary immigrant with regard to cultural assimilation of dominant culture. They further explained that Asian Americans who are voluntary immigrants may aspire to take on dominant values and cultures. Those voluntary immigrants may choose to adopt attitudes, preferences, lifestyles, and values of dominant culture; so they will be admitted into the dominant cultural group.
On the other hand, Asian Americans who are involuntary immigrants (e.g. refugees) may oppose the value of dominant cultures and rather maintain their own cultures or values. This idea would also account for the disparity of academic attainment among Asian Americans. Although academic achievement of minorities can be explained by acculturation to dominant culture, some groups of immigrants can accommodate without assimilation, which means that they choose to adopt only some values from dominant culture. Kao & Tienda (1995) mentioned that the accommodation-without-assimilation perspective implies that academic achievement declines with time in the United States as immigrant youth assimilate with their native peers.

Nevertheless, cultural assimilation also can have negative impacts on Asian American, viewed as “cultural conflict”. Stanley and Derald Sue (1971) noted that traditional Asian cultural values, such as emphasizing restraint of strong feelings, obedience, dependence upon family, and formality in interpersonal relations, are in sharp contrast to Western, dominant white culture, which emphasis on spontaneity, assertiveness, and informality. These cultural conflicts have led to serious psychological problems for some Asian Americans (Sue, S. & Sue, D, 1971; as cited in Suzuki, 1977). For example, Blair & Qian (1998) found that many American Koreans seem to face the culture conflict because most of them live in the urban areas with great exposure to American values and behaviors, so they tend to assimilate to American culture, which is incongruent with their traditional values and expectations—particularly the patriarchal and independent themes of Korean family.
Similar to Southeast Asian Americans, who were newly immigrants in particular, they tend to experience some barricades in promoting their children’s educational success. Since they are new to U.S. cultures and environments, they may seek to maintain their respective cultural practices, which can impede their children from participating in certain educational activities such as extracurricular activities at school. Additionally, many Southeast Asian immigrants tend to have low education and lack a basic proficiency of English, thus they tend to have trouble understanding and adjusting themselves to dominant cultures and norms. As a consequence, many Southeast Asian parents may not be able to provide much support to their children in terms of educational experiences (Blair & Qian, 1998). Unlike elite Asian groups like Chinese, Japanese, or Korean Americans, whom tend to migrate and live in the U.S. longer than those newly Southeast Asian immigrants, they have better abilities to assimilate into the society.

Some researchers attempted to compare Asian American students (in general) with White students since both groups have excelled in regards to academic performance. For example, Pearce & Lin (2005) found that if Asian Americans and White American cultures share the same value, then Asian Americans may appear successful in adopting the dominant culture. Many scholars noted that the dominant White culture, middle class in particular, emphasize education as a vehicle of upward mobility and academic achievement is a key factor (Ogbu, 1981; Pearce & Lin, 2005). Similar to the dominant culture, Asian Americans, particularly Chinese, Japanese, and Koreans, also
place a high value on educational achievement as the vehicle of social mobility. Even though Whites and Asian Americans tend to share the same value on education, the means they utilize to reach the educational goal are quite different. Thus, cultural assimilation of Asian American has both positive and negative impacts on Asians. The level of assimilation can determine how well particular Asian groups adjust to the mainstream society. Those who are struggling to adjust tend to result in poor education and having economic hardship.

**Educational Risks**

To identify the differences among Asian groups in terms of academic attainment, the concept of educational risk as explained by an overarching ecological framework is applicable. Based on this ecological perspective, development of student learning and behavior is manifested by the child-environment interaction (Johnson, Johnson, & DeMattia, 1991 as cited in Johnson (1994). Therefore, from the ecological viewpoint, children’s characteristics and behaviors are balanced or appropriately functioned when those characteristics are compatible with environment requirements or their ecosystem. On the other hand, failure or dysfunctional characteristics and behaviors will occur, when interaction between children and their ecosystem are imbalanced or incompatible.
Either academic achievement or failure is an outcome of human development. Thus, in order to understand the process of human development, Bronfenbrenner (1979) has developed the model of interrelated social structures and processes that influence human behavior. He also pointed out that children develop in a multitude of social contexts. Hence, social contexts have been found to be important in explaining individual differences in achieving ends such as academic gain, educational attainment, and occupation status (Duncan & Raudenbush, 1999 as cited in Stewart, 2007). Originally, Bronfenbrenner (1979) defined that:

“The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations between these settings and by the larger contexts in which the settings are embedded (p.21).”

Ecological theory identifies the interconnected systems that influence human development and examines the relationship between varied structures and processes in social environment and individual characteristics and behaviors. Moreover, an individuals’ environment consists of several occurring or nested levels that interact to influence human development (Becker & Luthar, 2002; Bronfenbrenner, 1979; Eamon, 2001 as cited in Steward, 2007). These nested levels include the micro-, meso-, exo-, and macro- system, defined as follows.
A microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting particular physical and material characteristics. It refers to the immediate environment such as the home in which the individual interacts. A mesosystem comprises the interrelations amongst two or more settings in which the developing person actively participates. It refers to social structures, or interactions among developmental settings, that affect the individual. An exosystem refers to one or more settings that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by what happens in the setting containing the developing person. It consists of neighborhood, schools, and government. A macrosytem refers to consistencies, in the form and content of the other three systems that exits, or could exist, at the level of the subculture or the culture as a whole, along with any belief systems or ideology underlying. It includes societal or institutional norms, cultures and values, beliefs and ideology (Bronfenbrenner, 1979). As a result, the theoretical model of human development that incorporate multiple contexts has provide a conceptual foundation for better understanding the complex influences on differences in academic achievement of students.

Theoretical Framework for Educational Risk

According to Johnson (1994), educational risk is the result of discordant child environment interactions. These discordant interactions that potentially occur between children and their environments include classroom,
home, community and society. An applied ecological perspective to the concept of educational risk, Johnson (1994) conceptualized and organized the educational risk factors for children in terms of four nested system: micro-, meso-, exo, and macrorisk.

**Microrisk.** Johnson (1994) asserted that microrisk is the first level of educational risk which reflects a combination of a student’s family background, personal attributes, and previous school experiences in which he or she brings with them to the present school environment. Microrisk is also the interaction between student and classroom environment regarding norms which are shaped by the teacher’s beliefs, expectancies, and interpretations of his or her students. Therefore, students are considered at risk due to discordant classroom interaction when such characteristics or behaviors of students conflicting with the school environment or norms in the classroom.

**Mesorisk.** The second level of educational risk consists of discordant child-home interactions as well as counterproductive of home-school interactions (Johnson, 1994). Generally, mesorisk is a domestic interaction which mainly related to the family and its characteristics. Typically, families is the first institution that places norms and expectancies to its members, therefore the child’s behaviors and characteristics influence and are influenced by its family (Johnson, 1994). In addition, mesorisk also includes the discordant home-school interaction, particularly teacher-parent. It primarily involves the interactions of
parent and teacher and reflects in the parental involvement of educational activities at school. Since parents enter the teacher-parent relationship with their own personal characteristics, beliefs and expectations which may conflict or be discordant to a teacher’s beliefs and place children at educational risk.

*Exorisk*. The third level is exorisk, or community interaction. Ecological theory acknowledges the critical role of the community in child development and behavior (Evens, Evens, & Gable, 1989; Hobb, 1978). Johnson (1994) noted that the community context influences and is influenced by the individuals and the institutions it contains. Communities and institutions interact with individuals in terms of providing services, particularly educational-related programs. Thus, communities without adequate social programs or services increase the propensity of children to fail in school and later in life (Nettles, 1991). Consequently, lacking appropriate extracurricular activities or services is considered educational risk.

*Macrorisk*. The fourth level is macrorisk or sociocultural interaction. It reflects the sociocultural factors that influence student achievement and educational risk. Typically, individual’s behaviors and characteristics are formed through social and culture forces or the society where individual resides. As Johnson (1994) noted that:
“Social and culture forces define risk factors and risk outcomes in the same way they define normal or abnormal behaviors and development. The purpose of the society and culture is to transform individual’s characteristics in the ways that contribute to a collective or groups existence. The child is transformed into a group member by the accumulation of human experiences preserved in the culture repository (p. 45).”

In addition, social and cultural values are expressed in the context of political and public policy that sometimes discriminates against culturally and socially different individuals (Sigmon, 1987). Consequently, children from ethnic minorities, who belong to specific subcultures and/or whose life experiences differ from those of larger society, are to be at risk of failure in school and in life. Therefore, macrorisk is the interaction of individual and social values and children tend to be educationally at risk when their values or behaviors are different from the values of mainstream society. Figure 2.1 shows the ecological framework for educational risks that has an impact on academic outcome.
Figure 2.1: Ecological Framework for Educational Risk
Educational Risks for Asian Americans

Generally, the concept of educational risk is not associated with Asian American students due to the tremendous numbers of Asian American students attending many postsecondary schools in the U.S. (Yeh, 2002). However, it seems to obscure the fact that some Asian American ethnic groups have struggled to enter and remain in the educational system (Bennett & Deborros, 1998). As a result, the needs of Asian American students who are having academic difficulties have been systematically neglected at the institutional level (Yeh, 2002). Consequently, based upon the ecology of human development and concept of educational risk, Siu (1995) examined factors for Asian Americans in public school and indentified that educational factors are language background, ability, history of schooling, timing and reasons for coming to the U.S., emotional trauma and vulnerability, ethnic group affiliation, identity, motivation, and sense of self-efficacy.

By expanding the ecological theory to educational risks, we ultimately end up with factors grouped into four categories relevant to Asian Americans in the postsecondary level: individual, family, classroom and school, and community and society. Yeh (2002) also identified the educational risk factors from ecological framework into four categories: individual, family, institutional, and community and societal risk factors. Thus, the persuasion and completion in higher education of Asian American students are likely to relate with these factors. Consequently, it distinguishes educational outcomes among Asian Americans.
Individual Factors

Many studies indicated that individual risk factors are characteristics or situations that are unique and inherent to an individual that cannot be controlled by external factors such as parents or faculty (Garcia, Wilkinson, and Ortiz, 1995 as cited in Yah, 2002). Although the individual factors may relate to family member or external factors, they are still considered as personal attributes that distinguish each individual. According to Yeh (2002), individual factors for Asian American college students consist of language, education, and immigration status.

Language. Numerous scholars indicate that English proficiency is one of the most reliable predictors of educational success (Cheng, 1995; Gordon, 1989; Ima & Rambaut, 1989; Olsen & Chen, 1988; Trueba, Cheng, & Ima, 1993; Waggoner, 1991 as cited in Yeh, 2002). In particular, Asian American students who are considered to be Limited English Proficient (LEP) or speak English as a second language tend to have a disadvantage in academic success and become educationally at risk to attain higher education (Yeh, 2002). Limited English Proficiency is also a hindrance in requesting support services and socializes with classmates, which can lead to sense of helplessness and isolation that can contribute to academic failure or college attrition (Tinto, 1993).
*Education.* Sui (1996) suggested that children who have consistent schooling tend to have a better chance to succeed in school than those whose education has been interrupted. Particularly, Asian immigrants or refugee students whose education has been interrupted by war in their origin country, resettlement, or other similar circumstances are likely to be educationally at risk because they did not receive adequate, stable education and lack of consistency in education in their origin country. Inconsistency in education of Asian Americans, particularly refugees, also can lead to unfamiliarity with the U.S. education system and consequently those students tend to have difficulties adjusting to the education system. Thus, pervious educational experience can be considered one of the educational factors related to academic attainment, especially for immigrant or refugee students.

*Immigration Status.* Since Asian Americans consist of various Asian ethnic groups, they may have different experiences from where they came from. Two of the important factors are place of birth and immigrant status (Pang, 1990). In addition, Asian American students, particularly those who were born in the U.S., are likely to be more highly assimilated in mainstream society. On the other hand, other Asian Americans such as recent immigrants may have found themselves struggling from feelings of marginality or the pressures of adaptation or cultural assimilation.
Past studies on minority education consider immigration status and birthplace as two of the factors that contribute to academic success (Pearce & Lin, 2005; Kao & Tienda, 1995). Kao & Tienda (1995) found that foreign-born youth are at a slight advantage due to their limited English skills. Thus, second and later generations of youth are best positioned to achieve academically. In addition, past studies indicate that students who were born in foreign countries are twice as likely to be at risk as those who were born in the United States (Waggoner, 1991). Parental immigration status is also important to the educational outcome of their children. Kao & Tienda (1995) asserted that immigrant parents are more successful in implementing their optimistic goals for their children after acquiring a minimum familiarity with the educational institutions and English proficiency. The authors also found that foreign-born parents had significantly higher educational aspirations for their children than did native-born parents. Hence, parental immigration status or birthplace tends to be one of the predictor of educational attainment of immigrant youth.

Generational Status. Past studies used type of immigration or birthplace of parents to determine the generational status of students. Kao & Tienda (1995) noted that generational status, specifically parental nativity (i.e. immigration status of parent), is crucial for Asian students in explaining the differences in academic achievement of immigrant and native youth (i.e. U.S. born). Authors also found that parental immigrant status is pivotal in determining the scholastic performance of youth. In addition, immigration status of parents
rather than children is a key in determining education outcomes. However, immigrant parents are more successful at implementing their optimistic goals for their children after acquiring a minimum familiarity with educational institutions and a minimum proficiency in English.

Asian students, particularly from immigrant families, were considered “first generation” if both they and their mothers were foreign-born. U.S. born students whose mothers were born abroad were designated “second generation” (Kao & Teinda, 1995). In addition, previous research has suggested that the mother plays a more critical role in managing their children’s educational careers than the father (Baker & Stevenson, 1986). Hence, generational status can be determined by a mother’s birthplace and student’s birthplace. However, authors also asserted that Asian first and second generation youth achieved higher grades on math and reading test scores and were more likely to aspire to graduate from college than third generation (and beyond) Asian youth.

**Family Factors**

Family is the first institution of child development that places norms, expectancies, and values, which tend to form individual characteristics and perceptions. Family factor is also one of the most important factors in children’s success in school and life (Thomas & Marshall, 1977). Family characteristics such as socioeconomic status often surface as the best predictors of student risk designation (Payne, Payne & Dagley, 1989 as cited in Johnson, 1994). Thus,
family factors involve a person’s immediate and extended family as well as cultural expectations that family subscribes to (Yeh, 2002).

Many studies indicate the multitude of family characteristics that implicate a child’s failure in school and in life, such as family size (McNeely, 1989), language spoken at home, and marital status of the Mother (McCann & Austin, 1988), level of parental supervision, and home routines and method of disciplines (Evens et al, 1989). The impact of the family characteristics is always relative to specific child characteristics. Yeh (2002) also identified family risk factors for Asian American students, such as socioeconomic status, parent’s education, family support and guidance.

Socioeconomic Status. Generally, family income and parent’s education were used with other variables to measure level of socioeconomic status. For example, Kao & Tienda (1995) used parent’s education together with family income and family composition as one of socioeconomic status variables in the analyses of educational performance and immigrant youth. Family income is the indicator of the financial resources that parents can provide to support to children to succeed in the academic field.

In general, family income affected student’s educational outcomes differently across Asian ethnic groups. For example, Blair & Qian (1998) found that Chinese and Filipino students’ educational performance were significantly correlated with family income; therefore, it appeared that the financial factor of family does have an effect on Asian students’ educational performances and
academic achievements. Low family income also results in the inability to pay for educational expenses such as application fees, tuition textbooks, and transportation (Yeh, 2002). Thus, the financial obstacles can distract or prohibit low income-students from attending and attaining higher education, although they are highly motivated.

*Family Composition.* Generally, family composition refers to characteristics of family. Family structure or composition is considered to be significant for a child’s intellectual development (Coleman, 1988). Coleman (1988) illustrated that:

“Social capital within family (or family composition) that gives child access to the adult’s capital depends on both physical presence of adults in the family and on the attention given by the adults to the child. The physical absence of adults may be described as a structural deficiency in family social capital. The most prominent element of structural deficiency in modern family is the single-parent family. (p.111)”

Past studies found that a lack of social capital within family or family composition leads to adverse education outcomes. For instance, Coleman (1988) found family composition is one of the major influential factors of school dropout. McLanahan (1985) also found that students from single-parent families report a lower level of educational performance because they often suffer with economic hardship and intellectual development. Moreover, Blair & Qian (1998) reported that the percentage of students who comes from single-parent families was less than ten percent, lower than other groups. They also found that among Asian American groups, single-parent status was negatively related to academic
achievement among Filipino, Korean, and Southeast Asian students. As a result, Blair & Qian suggested that this difference could partially explain the high academic achievement of Asian Americans.

*Parent’s Education.* Education of a parent tends to influence the education outcome of their children. For students whose parents have little formal or limited education, the value of postsecondary education is relatively low, reflecting their perceived ability to attain postsecondary degree (Nunez & Cuccaro-Alamin, 1998; Trueba, Cheng & Ima, 1993). Kiang (1992) also suggested that Asian American students who are the first in families to attend college are at a disadvantage because of their parent’s lack of educational experience with higher education. As a result, those parents are unable to provide educational support and guidance to their children when needed. Therefore, many first-generation students may not be familiar with postsecondary education and have difficulties attaining a postsecondary education.

Moreover, parent’s education tends to affect educational achievement of Asian students differently. In the study of family and Asian student’s performance, Blair & Qian (1998) found that, among Asian groups parental education has a positive relationship with the educational performance of Chinese and Korean students, whereas other Asian groups, such as Filipino and Southeast Asian, were not influenced. In addition, Pearce & Lin (2005) studied cultural capital and postsecondary educational attainment among White and Chinese Americans and found that parent’s education attainment is significant
and has a positive impact on a child’s educational attainment, particularly in the Chinese mother’s education level. They also found that the child was nearly three times more likely to gain a secondary education if the mother has a secondary education. Additionally, in their perspectives, parents who have high education are role models for their children by passing on the values of education to their children. Therefore, if their parents pursued higher education; the children were inspired to do so.

*Family Support and Guidance.* Yeh (2002) indicated that family support and guidance are related to the generational status (such as first generation student) and low-income status and may vary among Asian groups. Asian parents who immigrate to the United States to seek better educational opportunities for their children tend to give their children unwavering emotional support. However, among refugee students, parental support may not be strong due to many problems such as working long hours in order to make financial support for the family and consequently become mentally and physically absence for their children.

Family support and guidance can be determined in terms of how a parent is involved with children’s educational activities. Thus, educational support and guidance can be defined from parental involvement in academic activities of their children. Kao (1995) indicated the Asian parents tend to have a minimal involvement in school activities. Likewise, Pearce & Lin (2005) reported
that Chinese students were less likely to discuss school activities with parents compared to White students (approximately 20% lower than White). Moreover, Chinese parents were less likely to check on their children’s homework. Approximately, one-third of Chinese children claimed their parents often check on their homework, compared to 44.2% for a White matched group. In fact, almost half of Chinese students reported that their parents offer no help at all with homework, compared to only 18.4 percent of White respondents. Overall, Chinese children show slightly more independence in school works or activities.

*Parental Involvement.* Previous studies have defined the term parental involvement differently. In some studies, the term covers personal matters to significant decision-making, while some studies were only concerned the parental participation in academic activities. This current study focuses on the latter. One may think that children whose parents regularly provide educational support by engaging in school activities (i.e. discuss with teacher, help their children to do their homework or school project) would perform better in school and succeed academically than children with a lack of educational support. However, the literature indicates that is not always the case. Past studies revealed that Asian parents usually lack participation in school activities for various reasons. For example, Mau (1997) found that most Asian parents whose children did well academically tended not to get involved with their children’s school work because they did not know how to get involved effectively and might not be familiar with from their own cultural background.
Moreover, Lee & Manning (2001) reported that Asian parents were reluctant to get involved in school function or discuss issues with a teacher because they defer to authority of educators, in which, probably due to the traditional values they have on authority. Some parents tend to have limited knowledge of English or confidence in speaking English and some work for long hours, thus it is difficult for them to communicate with a teacher when needed.

Additionally, when focusing on specific Asian groups such as Southeast Asian American, there are evidences from qualitative studies on many different areas on their educational experiences. With regards to parental involvement of Southeast Asian American, Um (1997) stated that Cambodian parents are often reluctant to question authority in their relationships with school teacher and staff. Phommasouvanh (1997) also noted that Lao American parents do not question teacher because “The Lao are often characterized as quiet, peace-loving, accommodating, patient and happy people” They dislike confrontation, value harmony, and do not like to make waves. In addition, Gibson (1988) found that most Southeast American parents had little understanding of the U.S. educational system. Few were able to help with homework or course selection and only rarely did parents directly involve themselves school affairs. They were reluctant to visit schools or to attend school meetings nor did they see reason why they should do so.

For parents who want to engage and involve in their children’s education, their lack of knowledge of the educational system in the U.S. society limit their ability to participate. As, Ngo (2006) studied on Hmong American
college students revealed that when parents do not know about differences among prestige higher education institutions and do not know the process of admission, the pursuit to college becomes more difficult. Also many Southeast Asian parents are not aware of the important of extracurricular activities and participation in their academic activities.

Therefore, educational support from their family, particularly their parents, tends to affect academic outcome differently. Students who are well-supported by their parents tend to perform well and have success in school. On the other hand, receiving inadequate educational support may lead student to become at risk.

**Institutional Factors**

Institutional factors influence students in terms of experiences from an institutional environment that Asian American students have encountered, which lead them to fail or not attain postsecondary education. Yeh (2002) mentioned that educational risk is also a function of student’s educational environment. Therefore, at the postsecondary level, institutional factors are imposed by or directly related to the postsecondary educational institute such as the university or college that students are attending. The author noted that institutional factors consist of inadequate academic preparation, institutional climate, and inadequate institutional support programs. In general, many academic programs such as the Advanced Placement program or other college preparation programs that were provided by a school intended to help students with college transition. Lack of
inadequate academic preparation can lead to either mandatory remediation or difficulty with college level courses (Yeh, 2002). For instance, freshmen remediation rates for the California State University system in Fall 1999 indicated that at one university, 47 percent of Asian American and 61 percent of Filipino American incoming freshmen were required to take remedial courses in mathematics, and 58 percent and 46 percent respectively were required to take remedial English (California State University System, 2000). Thus, communities or institutions which provide inadequate social programs or academic programs that help in preparing students for postsecondary education may increase in school (Tinto, 1993).

Community and Societal Factors

These factors are directly related to the environment or surrounding that a student is in or interacts with. The environment around a student also represents the value or perception of the particular society, which has an impact on child development or educational outcome. Yeh (2002) suggested that community and societal factors for Asian American college students consist of the model minority stereotype and intragroup socioeconomic gap. Typically, community and societal factors are perception in which society perceived and later could be translated into policies or programs to serve particular group of people. For the Asian American students, the impact of community and societal factors are considered to be in the form of the model minority stereotype.
Model Minority Stereotype. As noted to be one of educational risks under community and societal factors for Asian American student, the model minority stereotype effects Asian groups differently. When Asian students are considered to be better than students from other minority groups and have lesser problems, society, educators and policymakers tend to ignore the problems that some Asians may encounter, specifically those who are considered to be educationally “at-risk”. Hence, the academic achievements of Asian Americans can mask the difficulties the at-risk students faced.

The model minority stereotype that always refers to the success story of Asian Americans is not new in the U.S. society. Evidently, there were many articles of the success story of Asian Americans in the past decades. One of those was documented in New York Times under the heading “Success Story, Japanese American style” (as cited in Chun, 1980; Suzuki, 1977). It was printed in 1966 and the main idea of the article was to praise two American minorities, Japanese and Chinese, for overcoming their adversities through the particular strengths of their cultural backgrounds and becoming accepted into dominant white middle-class society. Those stories of successful Asian Americans were not only visible in the mass print media, but also in many scholar papers. Chun (1980) asserted that Asian Americans are portrayed to be better educated, to be better assimilated and to manifest lower rates of social deviance. Consequently, the model minority stereotype becomes embedded in the society and Asian Americans, as a group, tend to achieve more educationally and economically (Lee, 2006). However, there are some debates over the notion of Asian
Americans as the model minority. In favor of the model minority image, Sowell (1981) noted that:

“Groups that arrived in America financially destitute have rapidly risen to affluence, when their culture stressed the values and behavior required in an industrial and commercial economy. Even when color and racial prejudice confronted then – as in the case of Chinese and Japanese – this proved to be an impediment but was ultimately unable to stop them. (p.284)”

Conversely, some scholars argued against this notion and criticized the homogeneous characterization of Asians and that the model minority image is just another phase in the evolution of stereotypes of Asian Americans (Hurch & Kim, 1989; Stienberg, 1989; Takaki, 1989; as cited in Kao, 1995). A number of educators have discussed the negative impact of being a model minority, which often invites resentment and hostility from members of the majority and other minority groups (Nakanishi, 1995; Suzuki, 1989).

Conclusion

A review of the literatures indicates differences regarding educational success among Asian ethnic groups in many perspectives, including the assumed presence educational factors. Many individual and family characteristic variables, such as gender, English proficiency, educational experience, birthplace, generational status, family income, family composition, parent’s education, language spoken at home, and parental involvement, are taken into consideration when investigating the differences in academic attainment. As well
as institutional variables, such as Advanced Placement program and school academic program which are also included to examine such differences. Thus, when focusing on educational factors, particularly individual, family, and institutional factors, it is logical to use an ecological perspective in respect to the educational risk factors we use to explore the differences in academic attainment within Asian subgroups.
CHAPTER III

METHODOLOGY

This chapter presents the methods employed in the examination of educational factors that differentiate between academic attainments of Asian Americans. This chapter is divided into eight sections. First, it presents the conceptual framework of the study. Then, it provides the statement of research questions and hypotheses. The next three sections are a description of data, the data collection process, and instruments. The sixth section discusses sampling selection. This is followed by the presentation of operationalization and the measurement of variables. Finally, the statistical techniques used for the data analyses are discussed.

Conceptual Framework

Past literature suggests that educational risks and other cultural and characteristics are the key to explaining differences in academic attainment within Asian groups. Based on the ecology of human development perspectives, the current study argues that educational factors, particularly individual and family factors, which reflect cultural values and characteristics, may vary among
Asian ethnic groups. As a consequence, these important factors contribute to the differences in educational attainment among Asian ethnic groups. In other words, not all Asian ethnic groups tend to be successful in postsecondary education attainment due to these educational factors. Like other minority groups, some Asian subgroups such as Southeast Asian (i.e. Hmong, Laotian, and Cambodian) have been struggling to continue and succeed in postsecondary education. This study attempts to examine the differences in academic attainment within Asian Americans on the basis of ecology of human development and educational risks. The conceptual model is adapted from Yeh’s study (2002) on educational factors and postsecondary educational attainment of Asian American college students. Figure 3.1 displays the conceptual model for this study with educational variables used in the investigation. As mentioned, the model minority stereotype has an impact on the academic attainment of Asian Americans. Therefore, societal factors (i.e. model minority stereotype) are excluded from the conceptual model of this study. Individual and family factors are the main focus in determining differences within Asian subgroups because educational values and characteristics of the individual which later translate to academic outcomes are likely to be formed through family culture. Both individuals and families are bonded and have strong interactions within Asian American families. Particularly, family is ultimately the most important factors in determining a child’s success in school and in life (Thomas & Marshall, 1977 as cited in Johnson, 1994). Thus, the combination of individual,
family and institutional factors may contribute to differences in academic outcome of Asian American students.

Figure 3.1: Conceptual Model of Academic attainment of Asian Americans
Research Questions

In order to examine the factors that differentiate academic attainment within Asian Americans, the following research questions are to be addressed:

1. Does academic attainment differ among Asian subgroups?
2. Do educational factors for academic attainment differ among Asian subgroups?
3. Controlling for educational factors, does academic attainment differ within Asian subgroups?

The secondary data analysis approach is utilized to address research questions. The following section discusses the detailed information of dataset used for the analyses.

Description of Data

The data for this study was obtained from the National Educational Longitudinal Study (NELS), which consisted of base year 1988 and four follow-ups (1990, 1992, 1994, and 2000) (NCES, 2004). The longitudinal surveys were sponsored by National Center of Education Statistics (NCES), U.S. Department of Education. NELS is a nationally representative database providing information on the cohorts 12 years after the 8th grade baseline, beginning in 1988. The surveys were conducted at the key stage of life transitions, particularly, they were designed to provide trend data on cultural, educational, career development, and family formation as the samples progressed from eighth-grade, high school, post-
secondary education, to adulthood (NCES, 2004). In May 2004, the Inter-university Consortium for Political and Social Research (ICPSR) also provided public access to this dataset.

Data Collection

During the 1987-1988 school year, NCES initiated a national longitudinal study of eighth grade students in high schools across the United States. The four follow-up surveys were undertaken in 1990, 1992, 1994, and 2000. The surveys were conducted on behalf of NCES by two contractors. The base year through the third follow-up (1988-1994) were conducted by the National Opinion Research Center (NORC) at the University of Chicago and the fourth follow-up (2000) were conducted by Research Triangle Institute (RTI), North Carolina (NCES, 2004). Databases were comprised of information collected from students, parents, teachers, and school administrators (See Figure 3.2). Specifically, the four sources of the information are based on 1) personal and telephone interviews, 2) questionnaires, and 3) test-scores. Details of each data collection wave are summarized below.

- **Base-year (1988)**. The surveys were conducted during the spring semester of the 1987-1988 school year. The samples were 8th grade students drawn from 1,052 public and private high schools across United States. At the base year, questionnaires and cognitive tests were administered to each student. One parent was surveyed about student activities and family characteristics. School principals were also asked to complete a questionnaire about the school. Two teachers of each student were surveyed regarding student, themselves, and their school.
First Follow-up (1990). Most of samples were in 10th grade. The survey had the same component as the base year, except for no parental surveys. There were a “freshened” samples added to achieve the representative of the sample. The first follow-up also tracked the base-year samples that had dropped out of school.

Second Follow-up (1992). Most of samples were high school seniors. In addition to basic component in the previous round, the second follow-up provides the measurement of performances in high school classes (transcript). In this round, the survey tracked the sample whether he or she decided to continue for post-secondary education or enter the labor force. As the previous follow-up, it also re-surveyed the dropouts in 1990.

Third Follow-up (1994). Most of samples were already graduated from high school, had begun post-secondary education, or had entered the workforce. For the third follow-up, the computer-assisted telephone interview (CATI) and computer-assisted personal interview (CAPI) technology were utilized for the first time in the survey.

Fourth Follow-up (2000). Most of samples were 26 years of age and had been completed high school for eight years. The majority of sample enrolled in post-secondary education, large proportion have completed the college, and some obtained the advance degree. The survey focuses on post-secondary education, labor market outcomes, job-related training, and family formation.
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<tr>
<td>2nd Follow-up (1992)</td>
<td>X</td>
</tr>
<tr>
<td>3rd Follow-up (1994)</td>
<td>X</td>
</tr>
<tr>
<td>4th Follow-up (2000)</td>
<td>X</td>
</tr>
</tbody>
</table>

Figure 3.2: Data sources for the National Education Longitudinal Study of 1988, by year and data collection wave: 1988-2000

---

Instrument

The instruments were developed to adhere to the research objectives of NELS, particularly to explain or predict future outcomes as measured in the surveys, to address area of policy concerns, and to reflect recent advance in theory. The process of each instrument is as the following procedure demonstrates (NCES, 2004, 164-165):

1. NCES development of list of topics;
2. Contractor development of a content outline;
3. Content outline shared with other government agencies, policy groups, and interested parties;
4. Draft copy of survey instrument developed;
5. Review by the NELS: 88 Technical Review Panel (a specially appointed, independent group of substantive, methodological, and technical experts);
6. Survey instrument revised based on reviewer comments;
7. Justification written for components of instruments;
8. NCES review of instruments;
9. Review of instruments by the federal Office of Management and Budget (OMB); and
10. Field testing of instruments, and revision based on field test results.

From the base year throughout the four follow-ups, fifteen questionnaires had been used for the survey. The question includes: 1) BY Student Questionnaire, 2) F1 Student Questionnaire, 3) F2 Student Questionnaire, 4) F1 Dropout Questionnaire, 5) F2 Dropout Questionnaire, 6) BY School Administrator Questionnaire, 7) F1 School Administrator Questionnaire,
8) F2 School Administrator Questionnaire, 9) BY Parent Questionnaire, 10) F2 Parent Questionnaire, 11) BY Teacher Questionnaire, 12) F1 Teacher Questionnaire, 13) F2 Teacher Questionnaire, 14) F3 Student/Dropout Questionnaire, 15) F4 Student/Dropout Questionnaire. The entire collection of 1988-2000 NELS questionnaires could be found in NCES' website.  

Sample Selection

The sample for this study is drawn from a national frame of approximately 39,000 public and private schools with 8th grade across the United States. At the base year survey, a stratified sampling of 1,734 schools was selected, of which 1,052 schools participated. Specifically, school samples were stratified by size, urban/rural, regional, and percentage of minority population. The original sample of 8th grade students in the first wave (base year) was 24,599. Throughout the four follow-ups, the sample remained 12,144 in the latest follow-up (2000). Figure 3.3 displays the number of samples by data collection wave.

This study utilized data from NELS 2000, which contains 12,144 cases. Most of variables used in the study were derived from the base year (1988) and the fourth follow-up (2000). This study only selected samples from the Asian subdivision; therefore the other ethnic groups (i.e. White, Black, Hispanic, and American Indian) were excluded from such analyses. The total sample of Asian Subgroups includes 764 cases.

5 http://nces.ed.gov/surveys/nels88/questionnaires.asp
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<td></td>
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<td>12144</td>
</tr>
</tbody>
</table>

Figure 3.3: The Number of 1988-2000 NELS Samples by Data Collection Year

<sup>6</sup> The first follow-up included the new student supplement developed for sample members added to the original sample in the base year in order to achieve a representative sample of national population.

<sup>7</sup> The second follow-up also included the new student supplement and the early graduation supplement in addition to the first follow-up.
Measurements of Variables

This section presents the measurement and operationalization of thirteen variables utilized in the analyses. Our dependent variable is postsecondary academic attainment. Thirteen independent variables are measures of risk factors for educational attainment. A complete list of variables and measurements employed in the study are presented in Table 3.1. The detailed information of how each is operationalized and measured are described as follows.

**Dependent Variable**

The dependent variable is the academic attainment of the respondent. It is measured by postsecondary degree attained as of the year of 2000 (the fourth follow-up of NELS). The academic attainment variable is classified into six categories: 1) some postsecondary experience, no degree attained, 2) certificate/license, 3) associate’s degree, 4) bachelor’s degree, 5) master’s degree/ equivalent, and 6) Ph.D. or a professional degree. In this study, responses were grouped and recoded into three groups for academic attainment; high school (some postsecondary experience, no degree attained as “0”, certificate and associate’s degree as “1” and bachelor’s degree or higher as “2”.)
Independent Variables

Thirteen independent variables were used in the analyses. All independent variables are derived from past literatures, which suggest influence in differentiating educational attainment among Asian Americans. These variables are educational factors of Asian American, including individual and family, and institutional variables. There are six individual factors include, Asian subgroups, gender, Limited English Proficiency (LEP), educational experience, birthplace, and generational status. Four family risk factor variables include family income, family composition, parent’s education, parental involvement, and language spoken at home. And there are two institutional factors variables which are Advanced Placement program and school academic club. The following describes the operationalization and measure of each independent variable.

Asian subgroups. For Asian or Pacific Islander Subdivision variable, the responses were coded: Chinese = 1; Filipino = 2; Japanese = 3; Korean = 4; Southeast Asian = 5; Pacific Islander = 6; South Asian = 7; West Asian = 8; Middle Eastern = 9; and Other Asian = 10. In this study, the Asian subgroup variable was collapsed into three categories and recoded as follows: East Asian = 0, Southeast Asian and Filipino = 1 and Other Asian = 2. Based on the geography and location of the country, East Asian American is comprised of Japanese, Korean, and Chinese American. Southeast Asian American is
comprised of Southeast Asian and Filipino. Other Asian American is comprised of Pacific Islander, South Asian, West Asian, Middle Eastern and Other Asian.

**Gender.** This variable is constructed by sex of a respondent. The response is coded “1” as male and otherwise “0” as female.

**Limited English Proficiency (LEP).** This variable is measured by proficiency in using English by the student. The LEP variable was coded as the student is not reported to be LEP = 1 and the student is reported to be LEP = 0.

**Educational experience.** This variable measure the previous educational experience that student attended or received before coming to the U.S. It was constructed by asking the parent “Did your 8th grader attend school outside the U.S.?” The responses were coded “1” as yes, otherwise “0” as No.

**Birthplace.** This variable was constructed by asking the parent “Was your eighth grader born in the United States?” This variable was originally coded “1” as Born in U.S., “2” as Born in Puerto Rico, and “3” as Born in Another Country. In the current study, the first two values (Born in U.S. and Born in Puerto Rico) were combined. Then birthplace variable was recoded into a dichotomous variable (born in U.S. and Puerto Rico = 1 and born in Another Country = 0).
Generational status. This variable is measured by the birthplace of mother and student. This variable was constructed by the composite score of mother's and student's birthplace to determine generational status. Initially, the mother's and student's birthplace were coded as born in the U.S. = 1, born in Puerto Rico = 2, and born in another country = 3. For the purpose of analysis, the first two values (born in U.S. and Born in Puerto Rico) were combined and recoded born in the U.S. = 1 and born in another country = 0. The composite score was created by combining values from mother's and student's birthplace variables. The composite score is ranged from 0 to 2. The value “2” was recoded to 1 as a native born and the other values (0-1) were recoded into “0” as the first generation.

Family income. This variable is measured by family annual income. It was coded as 1 to 15: none or no income = 1; less than $1,000 = 2, $1,000-$2,999 =3; $3,000-$4,999 = 4; $5,000-$7,499; = 5; $7,500-$9,999 = 6; $10,000-$14,999 = 7; $15,000-$19,999 = 8; $20,000-$24,999 = 9; $25,000-$34,999 = 10; $35,000-$49,999 =11; $50,000-$74,999 =12; $75,000-$99,999 =13; $100,000-$199,999 = 14; $200,000 or more = 15. For the analyses, this study recoded the family income variable by using a 1988 national median income (the survey base year) as a cutting point. According to the U.S. Census report, the national median income in the year 1998 was 33,792 (U.S. Bureau of the Census, 1991). However, the original data provided only a range of income.
The closest value to the median income is 34,999. Therefore, this variable was recoded “0” as $0 - $34,999 and “1” as $35,000 and over.

*Family composition.* This variable is measured by characteristic of the family/household composition. Initially, this variable was coded as mother and father = 1, mother and male guardian = 2, father and female guardian = 3, mother only = 4, father only = 5, and other relative and non-relative = 6. For the analysis purpose, this variable was recoded into a dichotomous variable. The value 1 (living with biological mother and father) was recoded to “1” as an intact family and the other values (2-6) were collapsed into “0” as a non-intact family.

*Parent’s education.* This variable is measured by the highest education level attained by the parents of the student. The responses were coded as: did not finish high school = 1; high school graduate or GED = 2; finish high school and attended PSE but did not have degree = 3; graduated college = 4; master/equivalent Degree = 5; and Ph.D. or M.D. = 6. For the purpose of analysis, values 1-3 were recoded “0” as no postsecondary education (i.e. high school or less) and values 4-6 were “1” as attained a postsecondary education.

*Parental Involvement.* Seven survey questions, which reflect the activities that parents are involved with their child’s education and school activities, were used to construct a parental involvement variable. For the first survey question in this category, the students were asked, “How often have you
discussed school activities with your parent?” The response was recoded: not at all = 1, once or twice = 2, and three or more times = 3. The second question was “How often have your parents checked on homework?” The response was recoded “0” as never, “1” as rarely, “2” as sometimes, and “3” as often. Furthermore, the students were asked to answer whether or not the following statement were was: “Since the beginning of the school year, have either of your parents or guardians done any of the following activities: 1) attended school meeting; 2) phoned or spoken with your teacher or counselor; 3) visited your school classes; and 4) attended a school event as a play, concert, gym exhibit, sport competition, honor ceremony, or science fair where you participated?” The four individual responses were recoded “1” as yes and “0” as no. Additionally, the students were asked if it is mostly true or false that they “often counted on parents to solve problems”. The response was recoded: true = 2 and false = 1. For the analysis purpose, the composite score was created for dummy variables by combining values from all seven variables in this category range. The composite score is ranged from five to 17. Median cut-off (Med = 12) is used to determine the level of parental involvement. The total score will be coded “0” as low involvement (12 or lower) and “1” as high involvement (higher than 12).

Language spoken at home. This variable is derived from the primary language spoken at home. The original variable coded from 1 to 4 as follows: non-English only = 1, non-English dominant = 2, English dominant = 3, and
English only = 4. In this study, the responses are collapsed and transformed into a dummy variable (Non-English dominant = 0 and English dominant = 1).

Advanced Placement Program. This variable is measured by whether student had ever been in Advanced Placement (AP) program. Responses also indicate the availability of academic support program provided by their school. Students were asked “Have you ever been in an Advanced Placement program?” Responses were coded “1” as yes and “2” as no. For this study, the responses were recoded “1” as been in AP program and “0” as never been in AP program.

School Academic club. This variable is measured by the activities in school academic club (such as Art, computer, engineering, debate/forensics, foreign language, sciences, math, psychology, philosophy, etc.) that students have participated in the school year. This variable also indicates the availability of academic support program as such. Students were asked to indicate their participated in school academic club. Responses were coded from 1 to 4 as follows: school does not offer = 1, did not participate = 2, participated = 3, and participated officer = 4. For this study, responses were recoded “0” as school does not offer program and “1” as school offers program.
Table 3.1 Variables and Measurement Employed in the Study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEPENDENT VARIABLE</strong></td>
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</tr>
<tr>
<td>Postsecondary Attainment</td>
<td>Bachelor’s degree or higher = 1</td>
</tr>
<tr>
<td></td>
<td>Lower than Bachelor’s degree = 0</td>
</tr>
<tr>
<td><strong>INDEPENDENT VARIABLES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Individual Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Asian Subgroups</td>
<td>East Asian = 0, Southeast Asian = 1, Other Asian = 2</td>
</tr>
<tr>
<td>Gender</td>
<td>Male = 1, Female = 0</td>
</tr>
<tr>
<td>LEP</td>
<td>Student is LEP = 0, Not LEP = 1</td>
</tr>
<tr>
<td>Educational experience</td>
<td>Attended school outside U.S. = 0</td>
</tr>
<tr>
<td></td>
<td>Not Attend School outside U.S. = 1</td>
</tr>
<tr>
<td>Birthplace</td>
<td>Born in U.S. or Puerto Rico = 1, Born in Another Country = 0</td>
</tr>
<tr>
<td>Generational status</td>
<td>First generation = 0, Native born = 1</td>
</tr>
<tr>
<td><strong>Family Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Family Income</td>
<td>Below Median income = 0</td>
</tr>
<tr>
<td></td>
<td>Higher than Median income = 1</td>
</tr>
<tr>
<td>Family Composition</td>
<td>Non intact family = 0, Intact family = 1</td>
</tr>
<tr>
<td>Parent’s Education</td>
<td>No Postsecondary education = 0</td>
</tr>
<tr>
<td></td>
<td>Attained postsecondary education = 1</td>
</tr>
<tr>
<td>Parental Involvement</td>
<td>Low involvement = 0, High involvement = 1</td>
</tr>
<tr>
<td>Language spoken at home</td>
<td>Non English dominant = 0, English Dominant = 1</td>
</tr>
<tr>
<td><strong>Institutional Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Advanced Placement program</td>
<td>Been in AP program = 1</td>
</tr>
<tr>
<td></td>
<td>Never been in AP program = 0</td>
</tr>
<tr>
<td>School Academic club</td>
<td>School offers program = 1</td>
</tr>
<tr>
<td></td>
<td>School does not offer program = 0</td>
</tr>
</tbody>
</table>
Statistical Techniques and Analyses

Within this section, it describes statistical techniques employed in the analyses. Data analysis was performed using Statistical Package for Social Sciences for Windows (SPSS) Version 16.0 for the analyses. Two statistical techniques, Pearson’s Chi-square test and Multinomial Logistic regression, are utilized in order to answer all research questions and test hypotheses.

*Pearson’s Chi-Square Test*

This technique was used to determine if there were any significant differences in academic attainment within Asian subgroups (i.e. East Asian, Southeast Asian and Other Asian). Assumptions of chi-square test are: (1) random sample data; (2) a sufficiently large sample size (n>50); (3) adequate cell sizes (5 or more in all cells); (4) independence (the same observation can only appear in one cell); (5) non-directional hypotheses; and (6) finite values (observations must be grouped in categories) (Garson, 2006). To answer first research question, *Does academic attainment significantly differ within Asian subgroups?*, Chi-square is performed to determine if academic attainment patterns significantly differ among Asian ethnic groups (East, Southeast, and other Asian) as measured by comparing estimates group variances (P-value).

For the second research question, *Does educational risk factors significantly differ within Asian subgroups?* a Chi-square test is also applied. In addition, three Pearson’s Chi-square tests are performed to determine
differences between Asian subgroups (East Asian vs. Southeast Asian, Southeast Asian vs. Other Asian and East Asian vs. Other Asian). The Chi-square test will identify particular risk factors that are significantly differ between Asian subgroups.

**Multinomial Logistic Regression Analyses**

Generally, the multinomial logistic regression technique is designed to handle multiple dependent variables. Multinomial Logistic Regression (MLR) is the extension beyond the logistic regression or the analysis of dichotomous variables to the analysis of categorical, either nominal or ordinal, dependent variables with more than two categories (Menard, 2002). This statistical method is useful when one has a polytomous, nominal dependent variable such as postsecondary education attainment and combination of continuous and dichotomous explanatory variables (Agresi, 1990). Therefore, MLR is used to answer examine postsecondary education attainment as a function of a set of explanatory variables.

The dependent variable in this study is postsecondary academic attainment, which is a categorical variable with three levels: High school, Certificate/Associate’s, and Bachelor’s degree or higher. In order to model the relationship between categorical dependent variable with more than two possible values, multinomial logistic regression is used. Logistic regression models produce odds ratio for independent variables. These odds reflect the increase or
decrease in the likelihood of an outcome (i.e. postsecondary attainment) for every one-unit increase in the dependent variables. Since the dependent variable in this study has three possible values, two redundant logits are formed. For each group of the dependent variable, the log of ratio of the probability of being in that group is compared to being in the baseline or reference group. For this analysis, the first category (high school degree) was the reference group to which the other two were compared based on the dependent variables.

To answer the third research question, *Controlling for risk factors, does academic attainment differ within Asian subgroups?* The unstandardized regression coefficient (b) is used to examine the relative importance of each independent variable. If the coefficient is statistically significant in one group but not in the other, then it means that the particular independent variable (X) is more important for one group than for the other. Figure 3.4 displays the multinomial logistic regression model examining differences in academic attainment within Asian subgroups.
Figure 3.4: Multinomial Logistic Regression Model Examining Academic Attainment Difference Within Asian Subgroups
The current endeavor seeks to identify differentiating factors among Asian American with regard to educational success. This chapter discusses the results of the analyses performed to address the research questions posed in Chapter Three. In particular, bivariate and multivariate analyses were designed to assess: (1) whether academic attainment differ among Asian subgroups; (2) whether educational risk factors for academic attainment differ among Asian subgroups; and (3) whether educational factors vary in predictive ability of academic attainment by Asian subgroups.

This chapter consists of three sections. The first section presents descriptive analyses of the samples and academic outcomes. Next, it discusses the results of bivariate analyses in order to determine significant differences in academic achievement and educational factors among Asian American students. The final section presents the results of multivariate analyses of the effect of these educational factors on academic success.
Characteristics of the Samples

This section discusses descriptive statistics of a sample of 764 Asian and Pacific Islander (API), drawing from 1052 public and private schools with 8th grade across the United States. The variables used in the analysis were derived from the National Educational Longitudinal Study (NELS): the base year (1988) and the fourth follow-up (2000). This section is divided into four sections: academic outcome, individual factors, family factors, and institutional factors. Detailed information about the sample can be found in Table 4.1 at the end of the section.

Academic Outcomes

This section presents academic outcomes for Asian American students. Of the total sample, more than 60% of Asian American students attained bachelor’s degree or higher (See Figure 4.1). However, when Asian ethnicity was broken down into subgroups, East Asian tended to have higher attainment rates, compared to South East Asian and Other Asian subgroups. For instance, more than three-fourth (76.8%) of East Asian group attained postsecondary education, while South East Asian (64.7%) and other Asian (69.4%) were more likely to have lower attainment. For detailed comparison, Figure 4.2 shows the breakdown of Academic Attainment by Asian subgroup.
Figure 4.1: Academic Attainment Rates for Asian American

Figure 4.2: Academic Attainment Rates (%) by Asian Subgroup
Individual Factors

Six variables in this category include Asian ethnicity, gender, Limited English Proficiency (LEP), educational experience outside the U.S., birthplace, and generational status. The sample in this study consists of 369 (48.3%) males and 395 (51.7%) females. Overall, approximately forty percent of the sample were East Asian (See Figure 4.3). Only seven percent of Asian American student had limited English proficiency. South East Asian (10.7%) had slightly lower English proficiency compared to East Asian (6.7%) and Other Asian (2.6%) counterparts.

Figure 4.3: Distribution of Asian Ethnicity
Of all samples, twenty percent attained schooling outside the US. South East Asian students (24.8%) tended to have educational experience outside the US. more than East Asian (19.3%) and other Asian (17.3%) students. Approximately half of the overall sample was born outside the US. South East Asian students (67.1%) were born outside the US. more than East Asian (44.5%) and Other Asian (35.8%) comparison groups. Overall, more than eighty percent (81.4%) of Asian American student were first generation who came to the US. and 18.6% were native born. Particularly, South East Asian samples (93.9%) were the first generation, compared to 84.0% East Asian and 61.0% Other Asian samples. Figure 4.4 and 4.5 illustrates the distribution of birthplace and generational status by Asian subgroups.

Figure 4.4: Distribution of Birthplace
Five family variables are used in the analyses: annual family income, family composition, parent's highest education, parental involvement, and language spoken at home. Close to sixty percent (57.4%) of Asian American students came from families with a median income or above. However, the East Asian group (59.8%) tended to have higher annual family income, compared to South East Asian (49.4%) and other Asians (64.4%). For family composition, more than eighty percent of Asian American students came from an intact family (two-biological parents). This pattern were similar to all groups when data broken down by Asian subgroup. Of the total sample, more than half of Asian American students (51.1%) were from non-English dominant families. Only one-third of
South East Asian students (36.1%) speak English at home. For comparison, Figure 4.6 shows percentage of Language spoken at home by Asian subgroups.

Overall, approximately half of Asian American parents (51.5%) attained postsecondary education. South East Asian parents had lower PSE rates (44.4%) than East Asian (53.2%) and Other Asian (57.8%) parents. Of the total sample, sixty percent of Asian American tended to have low involvement in academic activities. Specifically, seventy percent of South East Asian parents had lower involvement, compared to East Asian (59.8%) and Other Asian (47.3%). Figure 4.7 and 4.8 display the comparison of parent PSE rates and parental involvement in school activities among Asian subgroups.

Figure 4.6: Percentage of Language Spoken at Home
Figure 4.7: Percentage of Language Spoken at Home

Figure 4.8: Parental Involvement in Academic Activities
Institutional Factors

Two institutional variables were used in the analyses, including school academic club involvement and Advanced Placement (AP) Program. Approximately ninety percent of schools that Asian American students attended offered school academic clubs. With regard to the Advanced Placement program, close to sixty percent of overall Asian American students had never been in the advanced placement program. South East Asian students (62.1%) were the lowest groups that participated in AP program, compared to East Asian (57.5%) and Other Asian (52.2%) counterparts. Figure 4.9 shows the percentage of AP participation by Asian subgroups.

![Figure 4.9: Advancement Placement Program Participation](image-url)
Table 4.1
Descriptive Statistics

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<th>Variable Categories</th>
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<td>20.7</td>
<td>56</td>
<td>19.3</td>
<td>59</td>
<td>24.8</td>
<td>31</td>
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<tr>
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<td>234</td>
<td>80.7</td>
<td>179</td>
<td>75.2</td>
<td>148</td>
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<td>Total</td>
<td>707</td>
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<td>290</td>
<td>100.0</td>
<td>238</td>
<td>100.0</td>
<td>179</td>
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<td>67.1</td>
<td>64</td>
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<td>50.1</td>
<td>161</td>
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<td>32.9</td>
<td>115</td>
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<td>100.0</td>
<td>290</td>
<td>100.0</td>
<td>237</td>
<td>100.0</td>
<td>179</td>
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<td>SE Asian</td>
<td>Other Asian</td>
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<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
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<td></td>
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<tr>
<td>&lt; Median Income</td>
<td>297</td>
<td>42.6</td>
<td>113</td>
<td>40.2</td>
<td>121</td>
<td>50.6</td>
<td>63</td>
<td>35.6</td>
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<tr>
<td>≥ Median Income</td>
<td>400</td>
<td>57.4</td>
<td>168</td>
<td>59.8</td>
<td>118</td>
<td>49.4</td>
<td>114</td>
<td>64.4</td>
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<tr>
<td><strong>Total</strong></td>
<td>697</td>
<td>100.0</td>
<td>281</td>
<td>100.0</td>
<td>239</td>
<td>100.0</td>
<td>177</td>
<td>100.0</td>
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<td>Non-intact family</td>
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<td>19.9</td>
<td>29</td>
<td>14.8</td>
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<tr>
<td>Intact family</td>
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<td>246</td>
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<td>139</td>
<td>55.6</td>
<td>81</td>
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<td>44.4</td>
<td>111</td>
<td>57.8</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>752</td>
<td>100.0</td>
<td>310</td>
<td>100.0</td>
<td>246</td>
<td>100.0</td>
<td>192</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Low involvement</td>
<td>436</td>
<td>59.8</td>
<td>180</td>
<td>59.8</td>
<td>167</td>
<td>69.6</td>
<td>89</td>
<td>47.3</td>
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<tr>
<td>High involvement</td>
<td>293</td>
<td>40.2</td>
<td>121</td>
<td>40.2</td>
<td>73</td>
<td>30.4</td>
<td>99</td>
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<td><strong>Total</strong></td>
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<td>301</td>
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<td>Language Spoken at Home</td>
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<td></td>
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<td>Non-Eng. Dominant</td>
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<td>159</td>
<td>50.8</td>
<td>161</td>
<td>63.9</td>
<td>68</td>
<td>34.9</td>
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<tr>
<td>Eng. Dominant</td>
<td>372</td>
<td>48.9</td>
<td>154</td>
<td>49.2</td>
<td>91</td>
<td>36.1</td>
<td>127</td>
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<td>252</td>
<td>100.0</td>
<td>195</td>
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</tr>
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<td><strong>Institutional Factors</strong></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>School Did not offer AC</td>
<td>70</td>
<td>10.1</td>
<td>27</td>
<td>9.6</td>
<td>24</td>
<td>10.5</td>
<td>19</td>
<td>10.6</td>
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</tr>
<tr>
<td>Academic Offer AC</td>
<td>621</td>
<td>89.9</td>
<td>255</td>
<td>90.4</td>
<td>205</td>
<td>89.5</td>
<td>161</td>
<td>89.4</td>
<td></td>
</tr>
<tr>
<td>Club (AC) Total</td>
<td>691</td>
<td>100.0</td>
<td>282</td>
<td>100.0</td>
<td>229</td>
<td>100.0</td>
<td>180</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Advanced Never been in AP</td>
<td>406</td>
<td>57.8</td>
<td>161</td>
<td>57.5</td>
<td>151</td>
<td>62.1</td>
<td>94</td>
<td>52.2</td>
<td></td>
</tr>
<tr>
<td>Placement Have been in AP</td>
<td>297</td>
<td>42.2</td>
<td>119</td>
<td>42.5</td>
<td>92</td>
<td>37.9</td>
<td>86</td>
<td>47.8</td>
<td></td>
</tr>
<tr>
<td>Program Total</td>
<td>703</td>
<td>100.0</td>
<td>280</td>
<td>100.0</td>
<td>243</td>
<td>100.0</td>
<td>180</td>
<td>100.0</td>
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</tr>
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</table>
Bivariate Analyses

This section explores whether academic attainment differs within Asian subgroups and whether educational factors for academic attainment differ within Asian subgroups. In order to address these questions, chi-square analyses were performed. Within this section, the chi-squares results from two separate analyses are presented in order to determine: 1) whether there are any significant differences in postsecondary academic attainment within Asian American subgroups and 2) whether there are any significant differences in educational risk factors within Asian subgroups.

The results of first test of bivariate analyses show that academic attainment was significantly different within Asian Subgroups ($\chi^2 = 24.483$, $p = .000$). Moreover, results from chi-square analysis showed that Southeast Asians were more likely to attain high school and certificate/associate’s degree than East Asian and other Asian. Also East Asians were more likely to obtain Bachelor’s degree or higher than other groups. Therefore, the null hypothesis that academic attainment does not differ within Asian Subgroups is rejected. Table 4.2 provides detailed information on the bivariate relationships between academic attainment variable and Asian subgroups.

To address the second research question, a series of chi-square analyses were performed. The first chi-square analysis examines the differences in educational factors, based on past literatures, within Asian subgroups. The second analysis examines the differences in educational factors between Asian
subgroups (East Asian vs. SE Asian, SE Asian vs. Other Asian and East Asian vs. Other Asian). The results from the first chi-square analysis show that there are differences in educational factors for Asian subgroups. Particularly, factors such as limited English proficiency, birthplace, generational status, family income, parental involvement and language spoken at home are statistically different at .01. Parent’s education is statistically significant at .05 and family composition is significant at .10. However, gender, educational experiences, advanced placement program and school academic club are not statistically significant. Therefore, the null hypothesis that there is no difference in educational factors for academic attainment within Asian subgroups was rejected. Table 4.3 provides chi-square result on the bivariate relationships between educational risk factor variables among Asian subgroups.

The second chi-square analysis intends to determine differences in educational factors between Asian subgroups, including East Asian, Southeast Asian and other Asian. Table 4.4 provides chi-square results on the bivariate relationships between educational risk factor variables and Asian subgroups. The results indicated as follow:

*Individual Factors*

Compared between Asian subgroups, gender was not statistically significant across Asian subgroups. Limited English Proficiency (LEP) was statistically different across groups. In particular, Southeast Asians were more
likely to be LEP than East Asians ($\chi^2 = 2.831, p = .092$) and Other Asian ($\chi^2 = 11.004, p = .001$). Also, East Asians were more likely to be LEP than other Asians ($\chi^2 = 4.299, p = .038$). Educational experience was only statistically significant between Southeast Asians and other Asians, in which Southeast Asians were more likely to attend school outside U.S. than other Asians ($\chi^2 = 3.370, p = .066$). The birthplace variable was statistically significant across Asian subgroups. Southeast Asians were more likely to born in another country than East Asians ($\chi^2 = 26.891, p = .000$) and other Asians ($\chi^2 = 40.260, p = .000$). Also East Asians were more likely than other Asians to be born in another country ($\chi^2 = 3.482, p = .062$). For the generational status, Southeast Asians were more likely to be first generation than East Asians ($\chi^2 = 12.206, p = .000$) and other Asians ($\chi^2 = 66.675, p = .000$). In addition, east Asians were more likely than other Asians to be first generation ($\chi^2 = 30.645, p = .000$). Therefore, under individual risk factors, only gender was not statistically significant. Other factors such as LEP, educational experience, birthplace and generational status were statistically significant.

**Family Factors**

Compared between Asian subgroups, annual family income was statistically significant between Southeast Asian and other groups. Southeast Asians were more likely to have family incomes below the national median income than East Asians ($\chi^2 = 5.659, p = .017$) and other Asians ($\chi^2 = 9.318, p = .002$). Family composition was only statistically significant between East Asians

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and Southeast Asians. Southeast Asians were more likely to be a non-intact family than East Asians ($\chi^2 = 4.458, p = .035$). Parent’s education was statistically significant between Southeast Asians and other groups. Southeast Asians were more likely to have parents with no postsecondary education than East Asians ($\chi^2 = 4.313, p = .038$) and other Asians ($\chi^2 = 7.815, p = .005$).

Parental involvement was statistically significant across Asian subgroups. In particular, Southeast Asians were more likely to have low involvement in academic activities than East Asians ($\chi^2 = 5.556, p = .018$) and Other Asians ($\chi^2 = 21.619, p = .000$). East Asians were also more likely to have low involvement in academic activities than other Asians ($\chi^2 = 7.260, p = .007$). Language spoken at home was also statistically significant across Asian subgroups. Southeast Asians were more likely to speak non-English at home than East Asians ($\chi^2 = 9.740, p = .002$) and other Asians ($\chi^2 = 37.047, p = .000$). East Asian was more likely to speak non-English at home than Other Asian ($\chi^2 = 12.303, p = .000$). As a result, family factors such as family income, family composition, parent’s education, parental involvement and language spoken at home were significantly difference across Asian subgroups. However, the level of significance varied within Asian groups for some educational factors such as family composition and parent’s education.
Institutional Factors

Advanced Placement program (AP) was only statistically significant between Southeast Asians and Other Asians. Southeast Asians were more likely than Other Asian to never been in AP program ($\chi^2 = 4.173, p = .041$).

Participation in an AP program was not statistically significant between other Asian groups. Also, participation in school academic clubs was not statistically significant across or between Asian subgroups. Consequently, Advanced Placement program was only institutional risk factor that was statistically significant when examining educational factors across Asian subgroups.

Table 4.2

Chi-Square results: Between Academic Attainment and Asian Subgroups

<table>
<thead>
<tr>
<th>Academic Attainment</th>
<th>H.S. Degree</th>
<th>Certificate/ Associate's degree</th>
<th>Bachelor's degree or higher</th>
<th>$\chi^2$ (Chi-square)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asian</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Asian</td>
<td>Count</td>
<td>69</td>
<td>22</td>
<td>206</td>
<td>24.483</td>
</tr>
<tr>
<td>% within Asian</td>
<td>23.2%</td>
<td>7.4%</td>
<td>69.4%</td>
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<td></td>
</tr>
<tr>
<td>SE Asian</td>
<td>Count</td>
<td>83</td>
<td>35</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>% within Asian</td>
<td>35.3%</td>
<td>14.9%</td>
<td>49.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Asian</td>
<td>Count</td>
<td>53</td>
<td>12</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>% within Asian</td>
<td>30.6%</td>
<td>6.9%</td>
<td>62.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>205</td>
<td>69</td>
<td>431</td>
<td>29.1%</td>
<td>9.8%</td>
</tr>
</tbody>
</table>

*p ≤ .10. **p ≤ .05. ***p ≤ .01
Table 4.3
Chi-Square results: Educational Factors within Asian Subgroups

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\chi^2$ (Chi-square)</th>
<th>p-Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (male vs. female)</td>
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<td>.521</td>
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</tr>
<tr>
<td>Limited English Proficiency (LEP vs. Not LEP)</td>
<td>11.304</td>
<td>.004 ***</td>
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</tr>
<tr>
<td>Educational Experience (Attended vs. Not attended school outside U.S.)</td>
<td>4.019</td>
<td>.134</td>
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<tr>
<td>Birthplace (U.S. vs. Another country)</td>
<td>45.74</td>
<td>.000 ***</td>
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</tr>
<tr>
<td>Generational Status (First generation vs. Native born)</td>
<td>73.583</td>
<td>.000 ***</td>
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</tr>
<tr>
<td>Family Income (Below vs. Higher than national median income)</td>
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<td>.005 ***</td>
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</tr>
<tr>
<td>Family Composition (Intact vs. Non intact)</td>
<td>4.761</td>
<td>.092 *</td>
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</tr>
<tr>
<td>Parent's Education (Attained vs. Not attained PSE)</td>
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<td>.014 **</td>
<td></td>
</tr>
<tr>
<td>Parental Involvement (Low vs. High)</td>
<td>21.697</td>
<td>.000 ***</td>
<td></td>
</tr>
<tr>
<td>Language Spoken at home (English vs. Non English dominant)</td>
<td>37.055</td>
<td>.000 ***</td>
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</tr>
<tr>
<td>Advanced Placement Program (Been vs. Never been in program)</td>
<td>4.181</td>
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<tr>
<td>School Academic club (School offered vs. Not offer program)</td>
<td>.162</td>
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</tbody>
</table>

*p ≤ .10. **p ≤ .05. ***p ≤ .01
Table 4.4
Chi-Square results: Educational Factors between Asian groups

<table>
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<th>Variable</th>
<th>Comparison variable</th>
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<th>( p )-Value</th>
<th>Sig.</th>
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<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>11.004</td>
<td>.001</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>4.299</td>
<td>.038</td>
<td>**</td>
</tr>
<tr>
<td>Educational Experience</td>
<td>East Asian vs. SE Asian</td>
<td>2.304</td>
<td>.129</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>3.370</td>
<td>.066</td>
<td></td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>.291</td>
<td>.590</td>
<td></td>
</tr>
<tr>
<td>Birthplace</td>
<td>East Asian vs. SE Asian</td>
<td>26.891</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>40.260</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>3.482</td>
<td>.062</td>
<td>*</td>
</tr>
<tr>
<td>Generational Status</td>
<td>East Asian vs. SE Asian</td>
<td>12.205</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>66.675</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>30.645</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td>Family Income</td>
<td>East Asian vs. SE Asian</td>
<td>5.659</td>
<td>.017</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>9.318</td>
<td>.002</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>.980</td>
<td>.322</td>
<td></td>
</tr>
<tr>
<td>Family Composition</td>
<td>East Asian vs. SE Asian</td>
<td>4.458</td>
<td>.035</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>1.971</td>
<td>.160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>.234</td>
<td>.628</td>
<td></td>
</tr>
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Table 4.4 Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>Comparison variable</th>
<th>$\chi^2$ (Chi-square)</th>
<th>p-Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent’s education</td>
<td>East Asian vs. SE Asian</td>
<td>4.313</td>
<td>.038</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>7.815</td>
<td>.005</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>1.008</td>
<td>.315</td>
<td></td>
</tr>
<tr>
<td>Parental Involvement</td>
<td>East Asian vs. SE Asian</td>
<td>5.556</td>
<td>.018</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>21.698</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>7.260</td>
<td>.007</td>
<td>***</td>
</tr>
<tr>
<td>Language spoken at home</td>
<td>East Asian vs. SE Asian</td>
<td>9.740</td>
<td>.002</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>37.047</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>12.330</td>
<td>.000</td>
<td>***</td>
</tr>
<tr>
<td>Advanced Placement Program</td>
<td>East vs. SE Asian</td>
<td>1.164</td>
<td>.281</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>4.173</td>
<td>.041</td>
<td>**</td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>1.236</td>
<td>.266</td>
<td></td>
</tr>
<tr>
<td>School Academic club</td>
<td>East Asian vs. SE Asian</td>
<td>.115</td>
<td>.734</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE Asian vs. Other Asian</td>
<td>.011</td>
<td>.980</td>
<td></td>
</tr>
<tr>
<td></td>
<td>East Asian vs. Other Asian</td>
<td>.118</td>
<td>.731</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p ≤ .10. **p ≤ .05. ***p ≤ .01
Multinomial Logistic Regression Analysis

Multinomial logistic regression analysis was performed to examine the predictive ability of educational factors for postsecondary academic attainment within Asian subgroups. The multinomial logistic regression model in this study had twelve predictor variables including gender, limited English proficiency, educational experience, birthplace, generational status, family income, family composition, parent’s education, parental involvement, language spoken at home, advanced placement program, and school academic club. The following is a presentation of logistic regression results. The likelihood ratio tests indicated that educational experience, family income, family composition and advanced placement program were statistically significant. In addition, Limited English Proficiency and language spoken at home were marginally significant. Birthplace, parent’s education, parental involvement, and participation in school academic clubs were not statistically significant.

For the multinomial logistic regression examining the predictive ability of the twelve educational factors, the likelihood ratio test for the overall model revealed that the overall model was significantly better than the intercept-only model ($\chi^2 = 104.946, p = .000$). In other words, the null hypothesis (that the regression coefficients of the independent variables are zero) was rejected. In addition, the likelihood of ratio tests for individual effects indicated that many variables are significantly related to the dependent variable (educational experience: ($\chi^2 = 7.792, p = .020$); generational status: ($\chi^2 = 9.934, p = .007$);
family income: ($\chi^2 = 10.930, p = .004$); family composition: ($\chi^2 = 6.885, p = .032$); and advanced placement program: ($\chi^2 = 7.311, p = .026$) were statistically significant. In addition, Limited English Proficiency: ($\chi^2 = 5.123, p = .077$); and Language spoken at home: ($\chi^2 = 4.967, p = .083$) were marginally significant. However, educational factors such as birthplace, parent’s education, parental involvement, and participation in school academic clubs were not statistically significant.

Table 4.5 provides the parameter estimates from the multinomial logistic regression model examining predictive ability of independent variables on postsecondary attainment. Estimates of the independent variables were provided for the two different levels compared to high school degree; 1) certificate/associate’s degree, and 2) bachelor’s degree or higher. According to these results, the parameter estimates for family composition ($\beta = 1.103, p = .033$) and Southeast Asian ($\beta = .981, p = .071$) are significantly different from zero for the first logit (certificate/associate’s degree compared to high school degree). In other words, family composition was significantly and positively related to this difference, particularly for the Southeast Asian group. For family composition non-intact family was coded the value 0 and intact family was coded 1. Therefore, Southeast Asian American students with an intact family were more likely to attain certificate/associate’s degree than was student with non-intact family.
Comparing students who attained a bachelor’s degree or higher to those who attained high school degree, more independent variables had strong positive effects on postsecondary attainment. Regression results indicated that educational risk factors that were statistically significant and significantly related to the differences between Bachelor’s degree or higher and high school degree groups were educational experience ($\beta = -0.942, p = 0.007$), generational status ($\beta = -1.058, p = 0.004$) and family income ($\beta = 0.792, p = 0.004$), followed by, family composition ($\beta = 0.639, p = 0.041$) and participation in an Advanced Placement program ($\beta = 0.480, p = 0.043$). In addition, gender ($\beta = -0.396, p = 0.084$), Limited English Proficiency ($\beta = 0.804, p = 0.097$), and language spoken at home ($\beta = -0.442, p = 0.099$) were somewhat significant. Other variables and Asian subgroups were not statistically significant in predictive ability of attaining a Bachelor’s degree or higher.

An interpretation of the odds ratio in multinomial logistic regression model revealed that, for certificated/associate’s degree; the odd ratio for family composition was 3.0, therefore the odds of attaining certificate/associate’s degree for intact family was 3.0 times the odds of attaining a high school degree. However, other educational factors were not statistically significant. For bachelor’s degree or higher, the five factors that were statistically significant ($p < 0.05$) were educational experience, generational status, family income, family composition and advanced placement program. The odds ratio of educational experience is 0.39, therefore the odds of attaining bachelor’s degree or higher for not attending school outside U.S. is 0.39 times or 39% of the odds of attaining
high school degree. The odds ratio of generational status is .35, thus the odds ratio of attaining bachelor’s degree or higher for native born is .35 times the odds ratio of attaining high school degree. The odds ratio of family income is 2.2, therefore the odds ratio of attaining bachelor’s degree for family that had income above national median income was 2.2 times the odds of attaining high school degree. The odds ratio of family composition was 1.9, thus the odds ratio of attaining bachelor’s degree or higher for student with intact family was 1.9 times the odds of attaining high school degree. Finally, the odds ratio of advanced placement program was 1.6, hence the odds ratio of attaining bachelor’s degree or higher for student who had been in AP program was 1.6 times the odds ratio of attaining high school degree.

In addition, there were three factors (gender, LEP and language spoken at home) that were marginally significant (p < .10). The odds ratio of gender was .68, therefore the odds of attaining bachelor’s degree or higher for male was .68 times the odds of attaining high school degree. The odds ratio of LEP was 2.2, thus the odds ratio of attaining bachelor’s degree or higher for student who was not LEP was 2.2 times the odds ratio of attaining high school degree. The odds ratio of language spoken at home was .64, thus the odds ratio of attaining bachelor’s degree or higher for family that dominantly speaks English at home was .64 times the odds of attaining high school degree. Other variables were not statistically significant in predictive ability of academic attainment for Asian American students.
The regression coefficients of generational status and educational experience were negative, indicating that students who were native born and did not attend school outside U.S. were less likely to attain Bachelors degree. Gender and language spoken at home also have negative regression coefficients, indicating that male students and students whose family dominantly speaks English at home were less likely to attain bachelor's degree. When examined by Asian subgroups, Southeast Asians were statistically significant for attaining certificate/associate's degree. The odds ratio was 2.7, therefore it indicated that being Southeast Asian increases by 2.7 times the odds of attaining certificate/associate's degree versus high school degree. However, controlled for all educational risk factors, Asian subgroups were not statistically significant in attaining a bachelor's degree or higher. Therefore, controlled for risk factors, academic attainment does not differ within Asian Subgroups for bachelor’s degree or higher. For certificate/associate’s degree, controlled for educational risk factors, the Southeast Asian group was more likely to attain certificate/associate’s degree (p ≤ .10). Therefore, Asian subgroups were associated with academic attainment differ for certificate/associate’s degree.

Regarding effect sizes, the Nagelkerke $R^2$ in the overall model was .23. Therefore, the independent variables in the multinomial logistic regression model explained 23 % of the variability in postsecondary academic attainment.
Table 4.5
Parameter Estimates From Multinomial Logistic Regression Examining Predictive Ability of Independent Variables on Postsecondary Attainment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Certificate/Associate’s degree</th>
<th>Bachelor’s degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>β</td>
<td>Odds</td>
</tr>
<tr>
<td>Gender</td>
<td>-.357</td>
<td>.700</td>
</tr>
<tr>
<td>LEP</td>
<td>-.360</td>
<td>.697</td>
</tr>
<tr>
<td>Educational Experience</td>
<td>.639</td>
<td>.528</td>
</tr>
<tr>
<td>Birthplace</td>
<td>.264</td>
<td>1.303</td>
</tr>
<tr>
<td>Generational status</td>
<td>-.013</td>
<td>.987</td>
</tr>
<tr>
<td>Family income</td>
<td>-.086</td>
<td>.918</td>
</tr>
<tr>
<td>Family composition</td>
<td>1.103 **</td>
<td>3.012</td>
</tr>
<tr>
<td>Parent’s education</td>
<td>.047</td>
<td>1.048</td>
</tr>
<tr>
<td>Parental involvement</td>
<td>-.090</td>
<td>.914</td>
</tr>
<tr>
<td>Language spoken at home</td>
<td>.252</td>
<td>1.287</td>
</tr>
<tr>
<td>Advanced Placement program</td>
<td>-.277</td>
<td>.758</td>
</tr>
<tr>
<td>School academic club</td>
<td>-.527</td>
<td>.590</td>
</tr>
<tr>
<td>(Asian = 0)</td>
<td>.685</td>
<td>1.984</td>
</tr>
<tr>
<td>(Asian = 1)</td>
<td>.981*</td>
<td>2.667</td>
</tr>
<tr>
<td>(Asian = 2)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p ≤ .10. **p ≤ .05. ***p ≤ .01
CHAPTER V

DISCUSSION AND CONCLUSION

This dissertation has examined the differences in academic attainment within Asian subgroups with regard to educational risk factors. In order to conduct this study, a secondary analysis approach was used to examine differences in academic attainment within Asian subgroups. The NELS database provides trend data on cultural, educational, career development, and family formation as the samples progressed from eighth-grade, high school, post-secondary education, to adulthood. The intent of this analysis is to examine whether Asian American students differ in academic attainment. Moreover, the effects of educational factors, under ecological perspective, on academic attainment were investigated among the Asian subpopulation.

This chapter presents a summary of major findings, suggests implications, and compares this study's results with past studies. In addition, the limitations of this study will be presented. The remainder of this chapter focuses on the implications and recommendations for future research in the area of education policy for Asian subpopulations.
Major Findings and Discussion

This study found that there was significant difference in academic attainment within Asian American. However, the patterns of attainment varied in accordance with ecological educational factors. Southeast Asians were more likely to attain certificate/associate’s degree than East Asians and other Asians. East Asians were also more likely to attain bachelor’s degree or higher than the other two groups. Results from bivariate analysis found that educational factors such as Limited English Proficiency, birthplace, generational status, family income, parental involvement, language spoken at home, and parent’s education were statistically different \( (p \leq .05) \) within Asian subgroups. However, the remaining factors, including gender, educational experiences, Advanced Placement (AP) program, and school academic club, were not statistically different within Asian groups. When examining educational factors between groups (East, Southeast, and other Asian), the findings were varied. Multivariate analysis showed that, when controlling all educational factors, academic attainment does not differ within Asian subgroups for bachelor’s degree or higher. However, for certificate/associate’s degree, the Southeast Asian group was more likely to attain certificate/associate’s degree compared to high school degree, after educational factors were controlled. Therefore, Asian subgroups were associated with attaining certificate/associate’s degree. The remainder of this section presents a summary of findings for each research question along with a comparison with past studies.
1. Does Academic attainment differ within Asian Subgroups?

This study found that there were significantly differences in academic attainment within Asian subgroups ($\chi^2 = 24.483, p \leq .01$). Results from bivariate analysis showed that Southeast Asians were more likely to attained high school and certificate/associate’s degree than East Asians and other Asians. Also, East Asians were more likely than Southeast Asian to attain a bachelor’s degree or higher.

The findings presented above were consistent to results from past studies. For instance, Vartanian, Karen, Buck & Cadge (2007) found that there was significant heterogeneity in college attainment among Asian Americans. Particularly, the authors reported variation in college attainment among Asian groups that over 60 percent of Koreans and Chinese and 54 percent of Southeast Asians completed at least college degree, while Filipino and other Asian groups have completed college at rates of 37 percent or less.

2. Do educational risk factors differ within Asian Subgroups?

The results from bivariate analysis showed that there are differences in educational factors for Asian subgroups. Limited English Proficiency, birthplace, generational status, family income, parental involvement, language spoken at home and parent’s education were statistically significant ($p \leq .05$). However, other risk factors such as family composition, gender, educational experiences, advanced placement program and school academic club were not statistically significant.
In order to examine whether educational risk factors differ between Asian subgroups, bivariate analysis was also conducted. This study found that Limited English Proficiency (LEP), birthplace, generational status, family income, parent’s education, parental involvement, language spoken at home, and Advanced Placement program were significantly different between Southeast Asians and Other Asians ($p \leq .05$). Compared between East Asians and Southeast Asians, birthplace, generational status, family income, family composition, parent’s education, parental involvement and language spoken at home were statistically different ($p \leq .05$). LEP, generational status, parental involvement, and language spoken at home were statistically different between East Asians and Other Asians.

When examining each educational factor, Southeast and East Asians were more likely than other Asians to have Limited English Proficiency (LEP). Also, Southeast Asian students were more likely than East Asians and other Asians to be born in other countries. For the generational status, Southeast Asians and East Asians were more likely than other Asians to be the first generation and other Asian groups were more likely than East Asians to be native born. Southeast Asian samples tended to come from families with below national median income than East Asian and other Asian. For family composition, Southeast Asian families were more likely than East Asians to be a non-intact family. Furthermore, Southeast Asians were more likely than East Asians and other Asians to have parents with no postsecondary education than East Asians. Southeast Asian parents were more likely to have low involvement
in academic activities than East Asians and other Asians. East Asians were also more likely than other Asians to have low involvement in academic activities.

Similar to language spoken at home, Southeast Asians were more likely to speak non-English at home than East Asians and Other Asians. And East Asians were more likely to speak non-English at home than other Asians. Lastly, Southeast Asians were more likely than other Asians to participate in AP programs.

3. **Controlling for educational risk factors, does academic attainment differ within Asian subgroups?**

Statistical results showed that many educational risk factors were significantly related to academic attainment. Results from multivariate analysis indicated that variables such as educational experience, generational status, family income, family composition, and participating in the AP program were significantly related to obtaining bachelor’s degree or higher. For certificate/associate’s degree, only family composition was significantly related to academic attainment. The finding of this study was in the same pattern as previous studies. For example, Jasinski (2000) found that family socioeconomic status were significant factors in predicting participation in postsecondary education. With regard to generational status, Glick and White (2004)'s study indicated that generational status was associated with the decision to continue for postsecondary education. The previous study found that immigrant and second generation youths were more likely than the third or higher generation to complete high school and go on to college. Likewise, the results of current study
suggest that generational status was a predictive factor of postsecondary academic attainment.

Furthermore, when controlled for educational risk factors, Southeast Asians were more likely to attain certificate/associate’s degree ($p \leq .10$). Therefore, Asian subgroups were associated with academic attainment differ for certificate/associate’s degree. However, controlled for all educational factors, Asian subgroups were not statistically significant in attaining bachelor’s degree or higher. Therefore, academic attainment did not differ within Asian Subgroups in obtaining bachelor’s degree or higher.

Conclusion

This study found that there were significant differences in academic attainment within Asian subgroups. In particular, Southeast Asians tend to have lower education attainment than East Asians and other Asians, while East Asians were more likely than others to have bachelor’s degree or higher. Significant differences in academic attainment within Asian populations can challenge the model minority stereotype and advocate researchers and policymakers to consider using disaggregated data for study on Asian population for a better understanding and more accurate findings.

Educational factors were also significantly different within Asian subgroups. When comparing between Asian subgroups, Southeast Asians were more likely to be educationally at-risk than other groups. Specifically, Southeast
Asians were more likely to have at-risk characteristics which were LEP, born in another country, first generation in the U.S., low income family, parent’s did not have postsecondary degree, parents have low involvement in academic activities, and not speaking English at home. Those characteristics tend to result in low academic attainment compared to East Asians and other Asians.

There are many explanations that contribute to low academic attainment of Southeast Asian. Dao (1991) noted that majority of Southeast Asian American students come from refugee background which critically different from immigrants. According to Dao, immigrants are who voluntarily come to U.S., while refugees were forced to leave their country mostly because of instability situation in their origin country or war. As a result, most Southeast Asian refugees have difficulties in assimilation and adapting to a new country and culturally and linguistically unprepared to provide academic assistance to their children. For those who were not capable of adapting quickly may become confused and depressed, in turn negatively affecting their children. For instance, maternal depression levels have been correlated with the low achievement of some Southeast Asian refugee students (Rambaut & Ima, 1987). Therefore, their transition to mainstream America can be a traumatic experience and involve a long adjustment process. Dao (1991) also suggested a condition of educational risk among Southeast Asian American students, including a lack of educational experience, family support and problems of secondary language (English) acquisition. Consequently, within Asian subgroups, Southeast Asian students were more likely to be considered by educators and policymakers to
provide educational assistance or programs to enhance academic success for this specific group.

Based on the results of educational risk factors analysis, many variables appear to be differentiating factors in academic achievement among Asian subgroups. Those variables also need to be considered in order to improve educational achievement for Asian subgroups. From bivariate analysis, the results support the previous research suggesting the necessity of considering the diversity of Asian American in comparisons with each other. Multivariate analysis found that the effects of Asian subgroup on education attainment disappeared once educational risk factors were controlled. However, there was significant heterogeneity in postsecondary attainment among Asian Americans. Interestingly, family composition was only variable that was marginally ($p \leq .10$) significant in differentiating students who had a certificate or associate’s degree and those who had only high school degree. This relationship disappeared in the multivariate analysis, however, possibly due to the small sample size of the Asian subgroups. Hence, future research should attempt to obtain larger samples of Asian subgroups.

Finally, when considering educational variables that significantly related to academic attainment of Asian Americans, theoretical model for Academic attainment of Asian American can be drawn based on findings from this study and ecological perspective. There were four educational factors in the theoretical model including Individual (Limited English Proficiency, Birthplace, Generational status), Family (family income, family composition, parent's
education, language spoken at home), Institutional (Advanced placement program), Community and society (Model minority, Public policy, Social values).

Figure 5.1 displays theoretical model drawn from this study.

![Ecological model of Academic Attainment for Asian Americans](image)

Figure 5.1: Ecological Model for Academic Attainment for Asian Americans
Limitations of the Study

Despite the contributions of this study to the area of academic success of Asian American students and educational factors, there are limitations that should be considered in the interpretation of the results. Six limitations are acknowledged in this study.

The initial limitation is based on the fact that the current study used a secondary analysis of data collected by other researchers; therefore the dataset did not include all data needed for analysis. The analyses conducted in this study were limited to the data contained in the 1988 NELS. Many of institutional and community factors were unavailable. No information dealt specifically with support for postsecondary education that was relevant to this current study. In particular, this dataset did not provide information on academic or recreational programs that enhance a transition from high school to postsecondary level. However, those programming are crucial to postsecondary academic attainment and could explain the effect of educational risk factors for Asian American students. With this limitation, omitting relevant variables from the logistic regression model may result in biased coefficients for the independent variables, in turn, complicating the interpretation. “The magnitude of the bias depends on the strength of the relationship between the included and excluded variables” (Menard, 2002, p.69).
The second limitation regards to the identification of international student and Asian American due to unavailability of data on some variables, NELS dataset also cannot differentiate or identify international and Asian American students. Even though, there are student and parent questionnaires that intend to identify student’s backgrounds, place of birth which can be used to identify whether students are international students or Asian American (who are U.S. citizen), there was no question that indicate the immigration status of student in terms being international students. Experience, motivation and situation between International student and Asian American are reasonably different. For example, the first priority of international students is to graduate or attain postsecondary degree, but Asian Americans who actually live in the U.S. may have different priority such as to seek economic support for their family instead of attaining postsecondary degree. Therefore, using NELS dataset, particular for study within Asian groups, may need to address the issue of being international student and Asian American in order to find better academic outcome within Asian groups. As a result, academic attainment may not represent the actual facts about educational outcomes of Asian American.

The third limitation is related to the number of the sample of Asian students in NELS dataset. When Asian ethnicities were broken down, the number of samples in some Asian subgroups was small. The original Asian categories/ subgroups could not be used as an original plan since there were not enough observations for analyses in some variables. In order to avoid statistical assumption violations and to perform proper analyses, the Asian ethnic variable
was re-categorized and collapsed into three groups. For instance, Japanese, Korean, and Chinese were combined into East Asian group; Southeast Asian and Filipino were combined into Southeast Asian group; and the remaining were collapsed into Other Asian group. Consequently, the finding of this study could not be generalized to original Asian subgroups as originally intended. Instead, the results of this study have to interpret with regard to these three Asian subgroups: East Asian, Southeast Asian and Other Asian.

The forth limitation regarding methodology of this study is Unit of Analysis, particularly institutional factors. Initially, this variable intend to measure whether school provides academic programs that intend to help and prepare student for higher education such as college preparation program, Advanced Placement program or other academic activities that encourage student to continue for higher education. This variable represents the relation between institutional factors and individual on academic attainment. However, due to the small number of sample and unavailability of data on school specifically on this subject, the individual questions were used instead of school. Therefore, it may create the problem of intraclass correlation or design effect. Other limitation on methodology is that the findings many encounter problem of type I error, which is rejected null hypotheses when it is true. Because of the standard error underestimated, therefore the p-value may be larger than expected which can lead to the problem of Type I error for the findings.
The fifth limitation involves utilizing self-reporting data of eighth-graders and their parents. The nature of self-report data was subject to recall, interpretational, and presentational biases. For instance, students may not recall how often they discussed school activities with their parents, how often their parents checked on their homework or whether their parent attend school meetings, school events or spoken with their teacher since the beginning of the school year. Moreover, each student has different interpretations of how often: never, rarely, sometime, and often. Alternatively, the students might exaggerate when they have poor relationship with their parents. Therefore, the self-report approach could have led to underreporting or over reporting.

A sixth limitation exists in academic outcomes. Based on the fact that the postsecondary academic attainment data were collected in the year 2000, the record of students who attained postsecondary education after 2000 would not be included in the database. More than 40% of overall Asian students were from families with below national median incomes, so it was possible that students from these families choose to find full-time jobs instead of immediately continuing for postsecondary education after graduating from high school. After a while, these students may decide to continue for college when they have some savings or sponsorship. Therefore, attainment rates for Asian American students were probably higher than figures reported in this study.
Despite these limitations, this study yields an important finding relating educational risk factors and academic success among Asian American student and the role of educational risk factors in a highly vulnerable population. The next section discusses implication and recommendation for future research.

Implications

The diversity in ethnicities, languages, cultures, and experiences represented among Asian Americans creates many misunderstandings about reality about Asian Americans. The stereotype of the model Asian minority denies the reality that there are Asian groups that are struggling and undeserved. Based on the findings from this dissertation, there are several areas in which educators and policymakers may need to focus on.

Addressing Educational Factors For Academic Attainment

Many factors were associated with academic attainment of Asian American. Therefore, significant factors should be addressed to improve education condition for students who are in-need. For example, developing of scholarship program may help family with low family income which indicated to be educational factors. Developing program or services that educate Asian American parents, particularly Southeast Asian may increase knowledge of the American educational system, of their rights as parents and of rights of their children in the school and postsecondary institutions. Effective parent education
will promote parental involvement, allowing them to become more active and proactive in their children’s education. Also program that promote language acquisition for parent and children may help them understand and be able to adjust to the mainstream society and promote contended transition from the educational and life backgrounds.

Creating Culturally Responsive Education Policy For Asian Subgroups

The findings from this study addressed the diversity in higher education, specifically for Asian American students. Within an ecological framework, educational factors explore the differences between and within the Asian population. Family and individual factors tend to represent the culture or values of individual. Variables such as parental involvement and language used in the family reflect the individual’s attachment with traditional values, beliefs, norms, or culture. Past studies found that the use of non-English language was significantly correlated with a student’s educational performance in the positive manner and it was, particularly, beneficial to Chinese and Southeast Asian students. In addition, the effect of language represents the distinction across Asian Americans in determining educational performance and achievement. Therefore, educators or policymakers may need to consider programs or policies that are culturally responsive for Asian population, particularly Southeast Asian students.
In particular, Language spoken and home and parental involvement have significantly related to academic success of Asian American. Past studies indicated that these two factors represent family culture and associate with educational outcome of students, therefore programs and policies regard to these factors may need to be considered. For example, school and postsecondary education may ensure that language needs of students and parents are properly assessed. It is necessary that special attention is paid to dialects and written languages. To assist in efficient access to reach families that need language assistance, translation and interpretation services should be developed.

With regards to the association between Language spoken at home and academic attainment, interpretation or translation services As well as additional dual language programs in other Asian languages. Not only do dual language programs foster fluency in English, but in another language should be provided by educational institution to reach out to in-need Asian subgroups specifically Southeast Asian students. Other significant cultural related variable is parental involvement. Generally, family involvement represents how parent or family displays their value on education which passed down to their children. Therefore to increase the level of parent’s participation and involvement, parents should be informed of the new curriculum, introduced to different strategies of teaching, and directed to where they can find resources to help support their children in their learning. To be specific, school and postsecondary institution may assess how welcoming and accessible schools are to parents, especially
immigrant and limited English proficient parents and create orientation program for parent to visit, get familiar and facilitate them about ways to get involved with educational system or school curriculum. Also language assistance or interpretation services should be available along with this program because some parents such as Southeast Asian tend to have limited English or only speak their own language at home and not familiar with the educational system which is different from their country of origin. Thus, providing such a program or service may help improving the involvement and positive relationship between education institution and parent which later can translate into academic achievement of the student.

In addition, schools and postsecondary institutions need to take a proactive approach to promoting positive ethnic identity. Schools need to offer opportunities for students to interact and learn from each other. This might include mentoring programs, planning of heritage months and other efforts to foster inclusiveness. Postsecondary institution and school especially those with large Asian American populations, may need to be inclusive of Asian Americans in their curriculum or other academic activities.

**Criteria for Program Eligibility and a Recruiting Process in Postsecondary Institution Should Be Expanded**

Since criteria that are being used in federal programs, such as the TRIO program, to determine the eligibility for participants are based on limited criteria such as family income, first-generation college student, level of parent's
education, and veteran eligibility for program eligibility. However, using only these factors may not be adequate to serve Asian subgroup populations effectively since there are other factors, such as family composition factors, LEP, birthplace or educational experience outside the U.S. that may need to be considered. Thus, those students are not being left behind in terms of improving and encouraging their education at the postsecondary level. Therefore, effective policies and programs targeted toward educational attainment of Asian Americans need to address educational factors variables of Asian American students in the admission or recruitment process in postsecondary institution rather than focus on primarily criteria such as family income and first generation to attend college. For example, factor such as family composition may need to be considered since it is significantly associated with academic attainment of Southeast American. Findings from this study also identified factors that should be included in educational programs or policies that determine program eligibility that enhance academic achievement.

Research on Educationally At-Risk Asian Americans

In particular, future research on educationally at-risk Asian Americans needs to be conducted. More research on Asian subgroups may dispel the misconception that all Asian Americans are high academic achievers. Thus, research on educational risks may demonstrate the existence of factors such as generational status and language spoken at home for the Asian population and identify their needs and barriers to academic success. In addition, research
should focus on academic and developmental issues that at-risk students encounter and explore methods that alleviate for the problem. Moreover, research on specific populations, instead of collective groups, may help recognize Asian subgroups as being viable groups that need for educational programs and services.

Recommendations for Future Studies

This study seeks to inform policymakers and professionals in higher education regarding diversity in postsecondary academic attainment of Asian Americans. An understanding of the complexity of the Asian American subgroup is important in developing polices, programs and services that are more responsive to the needs of Asian American students.

To more accurately measure the representation and progress, or lack of progress, of Asian American students in the academic pipeline, institutions (policy makers and education professionals) need to treat international students from Asia, the majority of who return to their homelands, and Asian Americans, who are member of the U.S. racial minority group, as two distinct populations. The use of Asian Americans as a collective category in public policy is helpful, but it can obscure demographic differences that need to be addressed to benefit specific Asian subgroups and individuals. Thus disaggregating Asian populations can uncover differences in many aspects, such as ethnicity, income, education and language proficiency. To do so, policymakers and education professionals need to recognize these diversity and need-specific concern to
serve this population better. More data on Asian subgroups may better explain the diversity within Asian Americans not only for academic attainment study, but also for educational factors that related to academic achievement within Asian population. Also large number of sample will increase in statistical power for any statistical techniques. Small number of sample on Asian American studies will limit statistical technique and statistical power.

To develop appropriate policies, programs and services for Asian American students, education researchers and policymakers need to collect both aggregated and ethnic-specific data on Asian American population. In addition, focusing on specific area or region that have high concentration of Asian population may gave a better view and understanding the divert within Asian subgroups and specific area that need to be concerned and improved for Asian American population.

In addition, Promoting Partnerships with Community Based Organizations may help educators to enhance educational goal for Asian American students. Improve collaborative partnerships between schools and community based organizations will result from sharing goals and information on student performance and maintaining regular communication between schools and organizations. Moreover, private foundations and government agencies may need to increase grant opportunities for school and community based organization partnerships. Schools and postsecondary institution need to access support and resources from those community based organizations that are knowledgeable of the ethnic communities in their education institution.
Besides statistics and quantitative researches, qualitative studies are also needed to explain the specific needs for ethnic-specific population. Ethnic-specific and need-specific policies and programs may be required to enhance the academic process of group, educational at risk Asians, especially Southeast Asians. First generation Asian American college students and those from low-income family are less familiar with educational systems, U.S institutions, values and culture to seek support or service to negotiate college. In addition, those who have limited English report a strong language bias and the presence of discrimination in being penalized academically.

Evidently, Asian Americans are heterogeneous and so are their educational needs and barriers. Therefore, knowledge of Asian American demographics, diversity, and concerns may help toward developing relevant higher education policies, programs, and services for Asian American students.
BIBLIOGRAPHY


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