

Usefulness of the Mainstream Market Value in Studying the Educational Attainments of Immigrant Stocks: A Case Study of Seven Asian Immigrant Stocks in the United States

Kao-Lee Liaw* Ji-Ping Lin** Chien-Chia Liu***

* Professor Emeritus, School of Earth, Environment, and Society, McMaster University.
E-mail: rliaw@mcmaster.ca

** Associate Research Fellow, Research Center for Humanities and Social Sciences, Academia Sinica.
E-mail: jplin@gate.sinica.edu.tw

*** Professor, Department of Medical Sociology and Social Work, Kaohsiung Medical University; Adjunct Researcher, Department of Medical Research, Kaohsiung Medical University Chung-Ho Memorial Hospital. Corresponding author.
E-mail: chienchia@gap.kmu.edu.tw

Abstract

Using the microdata of the 2015-2019 American Community Survey, this paper creates the Mainstream market value (*MMV*) as an alternative to Lieberman's net difference (*ND*) for measuring educational attainment, and uses the examples of seven Asian (Taiwanese, Indian, Chinese, Korean, Japanese, Filipino, and Vietnamese) immigrant stocks to demonstrate the usefulness of *MMV* for studying the predictive power of educational attainment on real wage as well as the intergenerational transitions in educational attainment. In addition to showing that *MMV* is stronger than *ND* in predicting real wage, we obtained the following results. First, the intergenerational transitions of these immigrant stocks in educational attainment converged towards a level much high than that of the Mainstream. Second, the stock of Vietnamese immigrants, who came to the U.S. mostly as refugees with low educational attainment and their relatives, was not assimilated into the ghetto culture. Their U.S.-born descendants surpassed not only the Mainstream but also their Filipino and Japanese counterparts in both educational attainment and real wage. Their impressive achievement is worth the emulation by other minority groups that are trapped in a cycle of poverty. Third, for every one of the seven immigrant stocks, the intergenerational transition in educational attainment surpassed gender equality. We infer from these findings that these Asian immigrants were selective preservers of the value systems of their source countries. They mostly maintained strong work ethic and dedication to their children's education but seemed to have discarded male preference.

Keywords: *American Community Survey, Asian immigrant, intergenerational transition, immigration, Mainstream market value*

I. Introduction

In a democratic society with a well-functioning justice system, pursuing a higher level of formal education tends to be an effective way of enhancing income and achieving a higher social status. Formal education can provide not only scientific and engineering knowledge but also literary and artistic refinements. In this paper, we restrict our attention to the measurement of educational attainment and its link to real wage.

Although some simple measures (e.g., the average year of education or the proportion with at least college education) have been used by researchers to represent a population's level of educational attainment (Duncan and Trejo 2015; Feliciano 2005a, 2005b),¹ a rather sophisticated and widely used measure for comparing the education attainments of different populations is Lieberman's net difference (*ND*) between a superior probability and an inferior probability (Feliciano 2005a, 2005b, 2006; Figlio et al. 2019; Hirschman and Wong 1986; Liaw and Huang 2012; Liaw and Ishikawa 2011; Lieberman 1976; van de Werfhorst and Heath 2019). At the early stage of our empirical investigation, we naturally used *ND* to compare the educational attainments of several immigrant groups in the U.S., including those from China and Korea. However, we were puzzled

1 Using the microdata of the 1990 census and the 1997-2001 Current Population Survey to study the effects of the key explanatory variable (immigrant group's educational selectivity) and other explanatory variables on the educational attainments of the young adults (aged 20-40) in the 1.5 and second generations, Feliciano (2005a) measured educational attainment simply by the proportion having at least college education (or by a dummy variable assuming the value of 1 if the young adult in question had at least college education), although the more sophisticated Lieberman's *ND* was used to represent the key explanatory variable, which indicated the difference in educational attainment between the group of immigrants from a given country and the population of their source country.

by the finding that relative to the Chinese group, the Korean group was markedly higher in *ND* but clearly lower in real wage. We then found out that the cause for this contradiction is that with educational attainment being divided into five levels (less than high school, high school graduate, some college, bachelor's degree, and graduate degree), *ND* is incapable of reflecting the important empirical fact that on average in the American labor market, the marginal wage gains of the transitions from the third level to fourth level and from the fourth level to the fifth level are much greater than the marginal wage gains of the transitions from the bottom level up to the third level. In light of this shortcoming of *ND*, we will create in this paper an alternative measure of educational attainment that can take advantage of this important empirical fact. We call this alternative measure Mainstream market value (*MMV* for short). We will then show that *MMV* is useful for comparing the educational attainments of different immigrant populations and their U.S.-born co-ethnics in the United States.

Using the 2015-2019 microdata of the American Community Survey (ACS), we will compute both *ND* and *MMV* for the immigrant populations born in seven Asian countries (Taiwan, India, China, Korea, Japan, Philippines, and Vietnam). The selection of these populations was based on two considerations. First, these populations have rather different immigration histories,² so that parts of our findings may be generalizable to some extent. Second, based on the previous joint research of the first author of this paper (Hanaoka et al. 2017), we knew that there were substantial differences in both educational attainment and real wage among these

2 For a rather detailed account of the history of the immigration from Japan into Hawaii and continental America, see Liaw and Ishikawa (2011). Different main features of the histories of the immigrations from Vietnam, Philippines, and China into the United States were presented in Ishikawa et al. (2018).

populations, so that we have a good chance of finding statistically reliable connection between educational attainment and real wage.

We will also compute these measures for the U.S.-born co-ethnics of these immigrant populations. To get some insights into the ease or difficulty in intergenerational advancements of the immigrant stocks in the host society, we restrict (1) the immigrants to be in the 50-59 age group and to have the entry year being at least 25 years before the survey year, and (2) the U.S.-born co-ethnics to be in the 25-34 age group in the survey year. Since the ACS data do not allow the distinction between the second and higher generations of the immigrant stocks, we consider the U.S.-born co-ethnics as being in the “U.S.-born generation,” while the immigrants born in the source countries are said to be in the “immigrant generation.” Since gender equality is a widely shared ideal, we will disaggregate the populations of both generations by sex and examine the gender gaps in educational attainment and real wage.

Our investigations will reveal that *MMV* is better than *ND* in predicting real wages. Using *MMV* as our preferred measure of educational attainment, the main purpose of our paper is to show the patterns of the intergenerational transitions in educational attainment and real wage among the seven immigrant stocks. We hope that our findings have high societal relevance.

For broad and succinct reviews of the literature on various outcomes of different groups of immigrants and their U.S.-born descendants, the readers are referred to Feliciano (2005a) and Duncan and Trejo (2015).

II. The ACS Data and the Specifications of Populations and Educational Attainment

The ACS is a monthly survey conducted by the U.S. Census Bureau.

It takes a stratified representative sample of individuals and households in the whole country. The cumulative sample size over a year is approximately 1% of the whole population and households. The 2015-2019 individual micro dataset used in this research was made available for free download by the Census Bureau on its website.³ Being about 5% of the total American population, its sample size is 15,947,624. With such a large sample size and 288 variables, it is particularly useful for research on immigrants from specific countries.

Since different strata are sampled with different intensities, there is a “personal weight” variable that assigns different weights to the individuals in different strata, with the minimum being 1, the maximum being 727, the median being 16, the mean being 20.36, and the sum being 324,697,795. The sum of the weights reflects closely the actual size of the whole country’s population in the middle of the 2015-2019 period. In order to avoid biases and to reflect the actual sizes of the relevant subpopulations, all our computations from the individual records are weighted by this variable.

Specifications of the Immigrant Populations and Their U.S.-Born Co-Ethnics

We use ancestry as well as the place of birth to specify the immigrant populations so that the correspondence to their U.S.-born co-ethnics can

3 Source website: [https://www2.census.gov/programs-surveys/acs/data/pums/2019/5-Year/Among the many files on this site, download the compressed file “unix_pus.zip,” which includes 4 very large SAS data sets. Together, they contain the personal records of the sampled residents of all 50 states and Washington, DC. The primary document can be downloaded from the website: \[https://www2.census.gov/programs-surveys/acs/tech_docs/pums/ACS2015_2019_PUMS_README.pdf\]\(https://www2.census.gov/programs-surveys/acs/tech_docs/pums/ACS2015_2019_PUMS_README.pdf\). The definitions of variables and values are in the file “2015-2019 ACS 5-year PUMS Data Dictionary,” which can be downloaded from the website: <https://www.census.gov/programs-surveys/acs/microdata/documentation.2019.html#list-tab-1370939201>.](https://www2.census.gov/programs-surveys/acs/data/pums/2019/5-Year/Among%20the%20many%20files%20on%20this%20site,%20download%20the%20compressed%20file%20%22unix_pus.zip%22,%20which%20includes%204%20very%20large%20SAS%20data%20sets.%20Together,%20they%20contain%20the%20personal%20records%20of%20the%20sampled%20residents%20of%20all%2050%20states%20and%20Washington,%20DC.%20The%20primary%20document%20can%20be%20downloaded%20from%20the%20website:%20https://www2.census.gov/programs-surveys/acs/tech_docs/pums/ACS2015_2019_PUMS_README.pdf)

be well made. From the place-of-birth variable (*POBP*), we identify the seven source countries (Taiwan, India, China, Korea, Japan, Philippines, and Vietnam). Giving each respondent the possibility of identifying more than one ancestry, the ACS micro dataset uses two variables (*ANC1P* and *ANC2P*) to provide ancestry information. Since most values of *ANC2P* are missing, we use only the values of *ANC1P* to identify the ethnicities of the individuals. For the Taiwan-born immigrants, we let the population include only those whose ancestry is “Taiwanese.” For the India-born immigrants, we let the population include those whose ancestry is “East Indian,” “Asian Indian,” or “Bengali.” For the China-born immigrants, we let the population include only those whose ancestry is “Chinese.” For the Korea-born immigrants, we let the population include only those whose ancestry is “Korean.” For the Japan-born immigrants, we let the population include those whose ancestry is “Japanese” or “Okinawan.” For the Philippines-born immigrants, we let the population include only those whose ancestry is “Filipino.” For the Vietnam-born immigrants, we let the population include only those whose ancestry is “Vietnamese.” All seven immigrant populations are further restricted to include only those who were aged 50-59 at the time of the survey and had the year of entry being at least 25 years before the survey.

The specifications of the U.S.-born co-ethnic populations corresponding to the seven immigrant populations are based on the corresponding values of the variable *ANC1P*. In naming the co-ethnic populations, we subsume “East Indian,” “Asian Indian,” and ‘Bengali’ under the name Indian, and use the name Japanese to represent both “Japanese” and “Okinawan.” These U.S.-born co-ethnic populations are restricted to include only those aged 25-34 at the time of the survey, so that many of them could be assumed to be the descendants of the members of the corresponding immigrant populations.

To represent the Mainstream of the American economy, we use the population of the U.S.-born non-Hispanic White males, aged 25-34 at the time of the survey.

Specification of Educational Attainment

In the ACS data, educational attainment is coded into 24 levels. We recode them into the following five broad levels: (1) less than high school, covering the lowest 15 levels from “no schooling completed” and “nursery, preschool” up to “Grade 11” and “Grade 12, no diploma;” (2) high school graduate, covering “regular high school diploma” and “General Educational Development (GED) or alternative credential;”⁴ (3) some college, covering “some college, but less than 1 year,” “ ≥ 1 years of college credit, no degree,” and “associate’s degree;” (4) bachelor’s degree, covering only “bachelor’s degree;” (5) graduate degree, covering “master’s degree,” “professional degree beyond a bachelor’s degree,” and “doctorate degree.”

III. Definitions of Lieberman’s *ND* and *MMV*

To compare the educational attainment of a population in question (A) to that of a reference population (B), Lieberman first defines two probabilities: a superior probability $P(A > B)$, which is defined as the probability that a randomly selected person from population A will be better educated than a randomly selected person from population B; and an inferior probability $P(B > A)$, which is defined as the probability that the reverse is true. Next, he defines the index of *ND* as $P(A > B) - P(B > A)$.

4 GED credential is granted to a person who has passed the GED Test, which consists of four subject (language, math, social studies, and science) tests.

When every person in population A is better educated than every person in population B, ND assumes its maximum value of 1. When the reverse is true, ND assumes its minimum value of -1. Thus, as ND gets closer to 1, population A becomes better and better educated than population B. As ND gets closer to -1, the reverse is true.

Table 1 is created to demonstrate how ND is computed. We let population A be the population of U.S.-born Taiwanese defined in the previous section, and we also let population B be the Mainstream. The proportional distribution of the U.S.-born Taiwanese among the five educational levels [$X(i)$ for $i = 1, 2, \dots, 5$] is given in the right marginal column, whereas that of the Mainstream [$Y(j)$ for $j = 1, 2, \dots, 5$] is given in the bottom marginal row. The joint probability for a U.S.-born Taiwanese to have education i and a Mainstream member to have education j is $P(i, j) = X(i) \times Y(j)$. For example, the probability that the former has a graduate degree and the latter has a bachelor's degree is $P(5, 4) = X(5) \times Y(4) = .3329 \times .2732 = .0910$. Now, focus on the 5-by-5 matrix of the joint probabilities. By summing up all lower-left off-diagonal elements of the matrix, we get $P(A > B) = .6722$. By summing up all upper-right off-diagonal elements of the matrix, we get $P(B > A) = .1125$. Hence, $ND = .6722 - .1125 = .5597$, which indicates that the U.S.-born Taiwanese population is much better educated than the Mainstream. In a computer program, the computation can be carried out by either one of the following two formulas:

$$ND = \sum_{i=2}^5 \sum_{j=1}^{i-1} X(i) \times Y(j) - \sum_{i=1}^4 \sum_{j=i+1}^5 X(i) \times Y(j) \dots\dots\dots(1)$$

$$ND = \sum_{i=2}^5 \sum_{j=1}^{i-1} [X(i) \times Y(j) - X(j) \times Y(i)] \dots\dots\dots(2)$$

Table 1. The data for explaining the computation of Lieberman's *ND*

Education attainment	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree	U.S.-born Taiwanese $X(i)$
Less than high school	.0004	.0015	.0019	.0016	.0005	.0059
High school graduate	.0019	.0083	.0101	.0087	.0029	.0320
Some college	.0061	.0264	.0322	.0278	.0093	.1019
Bachelor's degree	.0318	.1368	.1667	.1441	.0481	.5273
Graduate degree	.0200	.0863	.1052	.0910	.0304	.3329
Mainstream $Y(j)$	.0602	.2593	.3161	.2732	.0912	

Note: The elements in the 5-by-5 matrix of joint probabilities are computed by: $P(i, j) = X(i) \times Y(j)$.

Equation (1) follows the flow of the above presentation, whereas Equation (2) is the basis for the presentation in Appendix 1 where the subtractions between the corresponding off-diagonal elements in the matrix of joint probabilities are done before the summation of all differences.

An important point made by Lieberman is that ND is a better measure of the difference between two ordered distributions than is the difference between the two medians, because the former is sensitive to the differences in all parts of the distributions, whereas the latter is blind to the differences within both upper and lower halves of the distributions.

Our wage data came from the variable “wages or salary income in past 12 months,” with the unit being \$/year.⁵ For the income values in each year, the ACS provides an adjustment factor ($ADJINC$) to adjust for inflation. We multiply this factor to the wage variable so that all values reflect the real values as of the end of 2019.

For each population of a given sex, we compute the MMV in the following way. First, we find the mean wage of the Mainstream at each of the five levels of educational attainment [$M(i)$ for $i = 1, 2, \dots, 5$]. The set of the resulting five mean wages is called the reference wage schedule. Second, using the proportional shares of the population in question among the five levels of educational attainment [$X(i)$ for $i = 1, 2, \dots, 5$] as the weights, we compute the weighted mean of the reference wage schedule and call the resulting value as the MMV of the population’s educational attainment. The computational formula is:

5 For protecting confidentiality, the original values of the wage variable have been top-coded in the micro data of ACS. Specifically, all values higher than the top 0.5 percentile in the distribution of the full microdata are replaced by the rounded value of the top 0.5 percentile (\$736,000 for the 2015-2019 ACS). A consequence of the practice of top-coding is that the mean wage will be understated, making it closer to the median wage.

$$MMV = \sum_{i=1}^5 M(i) \times X(i) \dots \dots \dots (3)$$

which is much easier to apply to empirical data than either Equations (1) or (2). Since the unit of *MMV* is \$/year, it is a concrete measure that can be easily communicated and internalized. We also use the reference wage schedule to compute the *MMV* of the Mainstream in the same way. For a relative perspective, we compute the *MMV* ratio by dividing the *MMV* of a given population by the *MMV* of the Mainstream.

To assess whether *MMV* is better than Lieberman’s *ND* in predicting the real wages of the populations in question, we also specify the real wage of a population as the mean of the wages of all members in the population. Note that in computing various mean wages from personal records, we always remove the records with the annual wages being less than \$5,000, because such unusually low values could be due to either coding errors or a prolonged unemployment in the previous 12 months. An implication of this removal is that for the Mainstream, the *MMV* is lower than the real wage, because the individuals at the bottom level of educational attainment were more likely to have the recorded annual wages being less than \$5,000.

IV. Analysis and Findings

The data on the Mainstream is shown in Table 2. Its educational composition displays a bell-shaped pattern with the maximum of 32% at the third level (some college). Its wage schedule increases monotonically from \$32,996 at the lowest level of educational attainment to \$82,693 at the highest level. An important feature of the wage schedule is that the marginal increments from getting a bachelor’s degree (\$21,535) and a graduate

Table 2. Educational composition and wage schedule of the Mainstream population: Based on the micro data of the 2015-2019 ACS

Educational attainment	Population size (person)	Educational composition (%)	Mean wage (reference wage schedule) (\$/year)	Marginal increment in mean wage (\$/year)
Less than high school	725,501	6	32,996	
High school graduate	3,124,634	26	39,737	6,741
Some college	3,808,128	32	45,066	5,329
Bachelor's degree	3,291,954	27	66,601	21,535
Graduate degree	1,098,486	9	82,693	16,092
Overall	12,048,703	100	52,271	

Note: 1. ACS: American Community Survey.

2. Wage has been adjusted annually for inflation from 2015 to 2019. It is in the constant dollar of December, 2019. The Mainstream population includes the U.S.-born non-Hispanic White males, aged 25-34 in the year of the survey.

degree (\$16,092) are much greater than the marginal increment from getting a high school diploma (\$6,741). An important difference between Lieberman's *ND* and *MMV* is that the former is incapable of reflecting this feature, whereas *MMV* can fully reflect it. In Appendix 1 and its footnote, we show in detail how this difference helps explain why the order that Lieberman's *ND* is higher for Korea-born males than for China-born males (0.25 versus 0.18) is reversed by *MMV* (\$60,067 versus \$60,996). In the last part of this section, we will show that *MMV* is better than *ND* in predicting the real wage.

Findings on the Immigrant Generation

For the male and female immigrant populations, Table 3 shows their composition of educational attainment, *MMV*, *MMV* ratio, and Lieberman's *ND*. The patterns of educational composition for both sexes can be classified

Table 3. The composition of educational attainment and the *MMV* of the immigrant populations born in seven Asian countries

Country of birth	Composition of educational attainment (%)						<i>MMV</i> (\$)	<i>MMV</i> ratio	Lieberson's <i>ND</i>
	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree				
	Male immigrant populations, aged 50-59 in the year of survey								
Taiwan	3	7	10	15	65	72,087	1.38	.60	
India	5	8	10	21	55	69,240	1.32	.51	
China	19	17	9	12	44	60,996	1.17	.18	
Korea	3	18	22	30	26	60,067	1.15	.25	
Japan	4	22	25	29	20	57,179	1.09	.15	
Philippines	5	16	36	34	10	54,475	1.04	.11	
Vietnam	24	19	27	21	9	49,209	0.94	-.15	
Mean						60,465	1.16	.24	
<i>SD</i>						8,020	0.15	.25	
	Female immigrant populations, aged 50-59 in the year of survey								
Taiwan	2	11	16	30	41	66,094	1.26	.44	
India	5	9	13	36	36	65,203	1.25	.41	
China	17	22	12	19	32	57,818	1.11	.09	
Korea	7	28	24	30	11	53,301	1.02	.01	
Japan	2	15	38	29	17	56,539	1.08	.18	

Table 3. The composition of educational attainment and the *MMV* of the immigrant populations born in seven Asian countries (continued)

Country of birth	Composition of educational attainment (%)					<i>MMV</i> (\$)	<i>MMV</i> ratio	Lieberson's <i>ND</i>
	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree			
Philippines	5	15	28	43	9	56,095	1.07	.16
Vietnam	28	22	24	19	7	47,261	0.90	-.24
Mean						57,473	1.10	.15
<i>SD</i>						6,566	0.13	.23

Note: The *MMV* of the Mainstream is \$52,271. The *MMV* ratio for each immigrant population is its *MMV* divided by the *MMV* of the Mainstream (U.S.-born non-Hispanic White males, aged 25-34). For the ease of reference, we reproduce the composition of the Mainstream population here in ascending order: 6%, 26%, 32%, 27%, and 9%. The composition of the educational attainment of the U.S.-born non-Hispanic White females, aged 25-34, in ascending order is: 4%, 15%, 35%, 31%, and 14%. Their *MMV* is \$55,741, implying a *MMV* ratio of 1.07.

into four types. First, the compositions of the immigrants born in Taiwan and India have a monotonically increasing pattern, with the share by the graduate level being particularly high for males (at 65% for the Taiwan-born and 55% for the India-born). Consequently, they have the highest *MMV*s (\$72,087 for the Taiwan-born males, \$69,240 for India-born males; \$66,094 for Taiwan-born females, and \$65,203 for India-born females), with the corresponding *MMV* ratios being at least 1.25 and reaching 1.38 for Taiwan-born males.⁶ It is worth noting that in terms of *MMV*, the females born in Taiwan and India have higher educational attainments than the males born in the other five Asian countries.

Second, the immigrants born in China have a bimodal composition with a strong concentration at the graduate level (44% for males and 32% for females) and also a strong concentration at the two lowest levels (36% for males and 39% for females). This bimodal pattern is related to (1) the fact that the entrenched employment niche in the food service sector established by the first wave of Chinese immigrants in the late 19th century has continued to attract and accommodate a large number of their co-ethnic immigrants with low educational attainment, and (2) the fact that a sustained wave of well-educated Chinese immigrants was created by the eagerness of the U.S. government to help the fast development of China since Jimmy

6 The very high educational attainment of the Taiwanese immigrants has a long historical root that went back to the 1950s when many bright graduates of National Taiwan University were accepted by American universities, including Massachusetts Institute of Technology. The competent academic performance of most of them in the host country resulted in more university graduates from Taiwan being accepted by more American universities in the 1960s and more recent decades, with most of them succeeded in getting a graduate degree. Having good training in mathematics and computer programming and being fluent in English, many Indians with at least a bachelor's degree in India have been entering directly into the American job market as productive information technology workers. Many of the university graduates from India have also been accepted by American universities where they succeeded in getting a graduate degree.

Carter's presidency that led to a massive expansion of the opportunities for Chinese students to pursue graduate studies in American universities. Since a graduate degree is greatly rewarded in the Mainstream market, the China-born immigrants have the third highest *MMV*s (\$60,996 for males and \$57,818 for females). Their *MMV* ratios are 1.17 for males and 1.11 for females.

Third, the immigrants born in Korea, Japan, and Philippines have a strong concentration at the levels of some college and bachelor's degree (at least 52%),⁷ with the minor exception of Korea-born females who have a higher share at the high school level (28%) than at the level of some college (24%).⁸ This exception is probably related to the large employment niche in small grocery stores, especially those in black neighborhoods, that

7 In light of the obsessive concern of many Japanese mothers with their children's educational advancement in Japan (Ochiai 1997) and the positive educational selectivity of the immigrants from Japan to the U.S. (Feliciano 2005a, 2005b), it may be puzzling that the proportion of the male Japanese immigrants with a graduate degree (20%) turned out to be markedly lower than those of their counterparts from Taiwan (65%), India (55%), China (44%), and Korea (26%). The main reason for this apparent paradox is that most bright university students in Japan have strong preference for entering a large corporation at graduation over entering a graduate school. This preference is determined by the entrenched practices of large Japanese corporations (restricting the recruitment of new employees mostly to fresh graduates from the undergraduate programs of top-ranking universities; providing extensive on-the-job skill trainings as well as cultivating loyalty to the company; and making the duration in the company as the main basis for monetary and status rewards) (Liaw and Ishikawa 2011). These practices are in turn rooted in the highly resilient value system of Japan (Nakane 1970).

8 According to United Nations Department of Homeland Security (2023), the number of lawful permanent residents from Korea increased rapidly from 4,845 in the 1950s, to 27,048 in the 1960s, 241,192 in the 1970s, and 322,708 in the 1980s, and then stabilized around 200,000 per decade in the remaining periods (specifically, 179,770 in the 1990s, 209,758 in the 2000s, and 201,059 in the 2010s). Most of the Korean immigrants in the 1950s were brides or fiancées of American military men returning from the 1950-1953 Korean War. Large parts of the Korean immigrants in the following decades were (1) students studying in American educational institutions and (2) middle-class families with limited capital and strong work ethic who succeeded in building a large ethnic employment niche in smaller grocery stores mostly in poor black ghettos of large urban areas like Los Angeles and New York. Many of the male store owners were believed to be college-educated (Lee 2018). Our data suggest that many of the wives of these owners were high school graduates.

have been established by hardworking middle-class families from Korea, presumably with most of the wives having a high school diploma. Among the immigrants born in these three countries, those born in Philippines have the greatest concentration in the college and bachelor's levels (70% for males and 71% for females). This great concentration is related to the fact that the Filipino government has focused on investing educational funds in the nursing programs at college and undergraduate levels, and the fact that Filipino immigrants have created a huge employment niche in the nursing and caregiving sector of the U.S. (Choy 2003; Espiritu and Wolf 2001; Karnow 1989; Liaw and Huang 2012). The immigrants from these three countries have *MMVs* that are modestly or moderately higher than that of the Mainstream. For males, the *MMVs* (and *MMV* ratios) range from \$54,475 (1.04) for the Philippine-born to \$60,067 (1.15) for the Korea-born. For females, the *MMVs* (and *MMV* ratios) range from \$53,301 (1.02) for the Korea-born to \$56,539 (1.08) for the Japan-born.

Fourth, the immigrants born in Vietnam are strongly concentrated at the lowest level of educational attainment (24% for males and 28% for females) and have very low presence at the graduate level (9% for males and 7% for females). With the *MMVs* (and *MMV* ratios) being \$49,209 (0.94) for males and \$47,261 (0.90) for females, the Vietnam-born population is the only one among the seven foreign-born populations that is less educated than the Mainstream. Most members of this population were the "boat people" and their relatives who had a similarly limited educational background and arrived later via chain migration (Liaw and Huang 2012).

Findings on the U.S.-Born Generation

Was there an intergeneration convergence in the educational attainments of the seven ethnic groups towards that of the Mainstream?

Not really. Tables 3 and 4 show that there was indeed an intergenerational convergence in *MMVs* among them: the standard deviation decreased from \$8,020 to \$5,314 for males and from \$6,566 to \$4,954 for females. However, the convergence was towards the means (\$61,339 for males and \$64,969 for females) that are much higher than the level of the Mainstream (\$52,271).⁹ Actually, the seven U.S.-born co-ethnic populations of both sexes all achieved higher educational attainments than that of the Mainstream. For males, their *MMVs* range from the minimum of \$54,640 for Filipinos to the maximum of \$68,708 for Taiwanese, with the corresponding *MMV* ratios being between 1.05 and 1.31 (first panel of Table 4). For females, their *MMVs* range from the minimum of \$57,673 for Filipinos to the maximum of \$71,448 for Indians, with the corresponding *MMV* ratios being between 1.10 and 1.37 (second panel of Table 4).

With respect to the gender gap in educational attainment, the intergenerational transition went beyond gender equality. In the immigrant generation, among all ethnic groups except for the Filipinos, males were better educated than females. In the U.S.-born generation, every co-ethnic population shows that females have achieved high educational attainments than males. The reversed gender gaps in *MMV* range from the minimum of \$1,413 for Taiwanese to the maximum of \$4,457 for Vietnamese. Even for the Filipinos, the *MMV* gender gap in favor of females was magnified from \$1,620 in the immigrant generation to \$3,033 in the U.S.-born generation.

9 This finding is at odds with the prediction of the classical assimilation theory that the descendants of the immigrants of most ethnic groups would converge towards the Mainstream (Alba and Nee 2003). This theory was developed from the studies of the pre-1965 immigrants (mostly from European countries) and their descendants. With the American society having greater educational opportunities and much less racism (White supremacy) in recent decades, it is not surprising that the Asian immigrants with strong work ethic and dedication to the education of their children are found to have an intergenerational convergence towards an educational level much higher than that of the mainstream.

Table 4. The composition of educational attainment and the *MMV* of the younger U.S.-born co-ethnic populations of the immigrants born in seven Asian countries

Ethnicity	Composition of educational attainment (%)							<i>MMV</i> (\$)	<i>MMV</i> ratio	Lieberson's <i>ND</i>
	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree					
Male U.S.-born co-ethnic populations, aged 25-34 in the year of survey										
Taiwanese	1	3	10	53	33		68,708	1.31	.56	
Indian	2	6	15	41	37		67,146	1.28	.50	
Chinese	2	6	18	53	21		63,765	1.22	.41	
Korean	1	11	27	45	16		59,966	1.15	.30	
Japanese	2	14	32	40	12		57,113	1.09	.20	
Filipino	3	17	38	34	9		54,640	1.05	.12	
Vietnamese	2	12	32	39	14		58,034	1.11	.23	
Mean							61,339	1.17	.33	
<i>SD</i>							5,314	0.10	.16	
Female U.S.-born co-ethnic populations, aged 25-34 in the year of survey										
Taiwanese	1	3	8	51	38		70,121	1.34	.60	
Indian	1	2	10	38	49		71,448	1.37	.63	
Chinese	1	3	12	56	28		67,433	1.29	.53	
Korean	1	6	19	51	23		64,217	1.23	.43	
Japanese	1	10	25	44	20		61,401	1.17	.34	

Table 4. The composition of educational attainment and the *MMV* of the younger U.S.-born co-ethnic populations of the immigrants born in seven Asian countries (continued)

Ethnicity	Composition of educational attainment (%)						<i>MMV</i> (\$)	<i>MMV</i> ratio	Lieberson's <i>ND</i>
	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree				
Filipino	2	12	33	42	12		57,673	1.10	.23
Vietnamese	3	8	21	47	22		62,491	1.20	.37
Mean							64,969	1.24	.45
<i>SD</i>							4,954	0.09	.15
Improvement over the immigrant generation: Males									
Taiwanese	-2	-4	0	38	-32		-3,379	-0.06	-.04
Indian	-3	-2	4	20	-18		-2,094	-0.04	-.01
Chinese	-17	-11	10	41	-23		2,769	0.05	.23
Korean	-2	-7	5	15	-10		-101	0.00	.05
Japanese	-2	-8	7	12	-9		-66	0.00	.05
Filipino	-2	1	1	1	-1		165	0.00	.01
Vietnamese	-22	-7	5	18	5		8,825	0.17	.38
Improvement over the immigrant generation: Females									
Taiwanese	-2	-8	-8	21	-3		4,027	0.08	.16
Indian	-5	-7	-3	3	13		6,245	0.12	.22
Chinese	-16	-19	0	37	-3		9,615	0.18	.44

Table 4. The composition of educational attainment and the *MMV* of the younger U.S.-born co-ethnic populations of the immigrants born in seven Asian countries (continued)

Ethnicity	Composition of educational attainment (%)					<i>MMV</i> (\$)	<i>MMV</i> ratio	Lieberson's <i>ND</i>
	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree			
Korean	-6	-22	-4	21	12	10,916	0.21	.42
Japanese	0	-5	-13	15	4	4,862	0.09	.16
Filipino	-3	-4	5	-2	4	1,578	0.03	.07
Vietnamese	-25	-14	-3	28	15	15,230	0.29	.61

For both sexes, the most impressive intergenerational advancement in educational attainment was achieved by the Vietnamese. From the immigrant generation to the U.S.-born generation, their *MMVs* increased by \$8,825 for males and by \$15,230 for females. In the U.S.-born generation, their *MMVs* (\$58,034 for males and \$62,491 for females) surpassed those of Filipinos and Japanese. This impressive advancement of the Vietnamese was achieved by massive shifting from the two lowest levels to the two highest levels of educational attainment. Note that we use the more general term “intergenerational transition” instead of the more restrictive term “intergenerational transmission,” because the great educational advancement of the U.S.-born Vietnamese could not have depended on the transmission of scientific and scholarly knowledge from their mostly poorly-educated parents.

For both sexes, a rather impressive intergenerational advancement in educational attainment was also achieved by the Chinese. From the immigrant generation to the U.S.-born generation, their *MMVs* increased by \$2,769 for males and by \$9,615 for females. In the U.S.-born generation, their *MMVs* (\$63,765 for males and \$67,443 for females) remained as the third highest. Their achievement was accomplished by a massive shift from the two lowest levels to the bachelor’s level.

Korean females also had a rather impressive intergenerational advancement in educational attainment. From the immigrant generation to the U.S.-born generation, their *MMV* increased by \$10,916 (from \$53,301 to \$64,217). This large increase resulted from a large shift from the three lower levels to the top two levels. The unusually high share by the high school level in the immigrant generation (28%) was reduced to only 6% in the U.S.-born generation.

Despite the intergeneration decrease in educational attainment among

the Taiwanese and Indian males, the U.S.-born Taiwanese and Indians of both sexes remained to be the best educated among their peers. In the U.S.-born generation, the *MMV*s (and *MMV* ratios) are \$68,708 (1.31) for Taiwanese males, \$67,146 (1.28) for Indian males, \$70,121 (1.34) for Taiwanese females, and \$71,448 (1.37) for Indian females. Their highest educational attainments among all seven ethnic groups of the U.S.-born generation suggest that they benefited greatly from the scientific and scholarly knowledge transmitted from their parents.

In the U.S.-born generation, the Filipinos of both sexes are distinguished by having the lowest share at the graduate level (9% for males and 12% for females) among the seven ethnic groups. This finding suggests that many Filipinos are satisfied with the moderate wage income received from the relatively secure jobs in the nursing and caregiving sector of the American economy. Such jobs mostly do not require a graduate degree. It is worth noting that the drive towards academic excellence has not been very strong for Filipinos. The data of the 1980 census revealed that among the young adults aged 20-21, the school enrolment rate was 38% for Filipinos, compared with 55% for Koreans, 62% for Japanese, and 74% for Chinese (Hirschman and Wong 1986).

High Predictive Power of *MMV* on Gender-Specific Real Wage

To compare *MMV* and *ND* in the power to predict real wage, we use the real wages of the seven Asian ethnic populations of the two sexes and in the two generations as the 28 observations of the dependent variable in two specifications of a linear regression model, with *MMV* used as an explanatory variable in the first specification, and *ND* in the second

specification (see Table 5). In both specifications, we use two covariates: (1) “female,” which is a dummy variable assuming the value of 1 for female observations; (2) “immigrant generation,” which is another dummy variable assuming the value of 1 for observations in the immigrant generation. The estimation results are shown in Table 6. We found clear evidence that *MMV*

Table 5. Contrast in real wage between the immigrants from seven Asian countries and their U.S.-born co-ethnics

Ethnicity	Real wage (\$/year)		Sex-specific real wage ratio		
	Immigrants	U.S.-born co-ethnics	Immigrants	U.S.-born co-ethnics	Change
Male					
Taiwanese	129,270	85,237	1.42	1.59	0.17
Indian	151,901	91,273	1.67	1.70	0.04
Chinese	114,002	70,690	1.25	1.32	0.07
Korean	106,174	59,812	1.17	1.12	-0.05
Japanese	91,693	52,429	1.01	0.98	-0.03
Filipino	73,585	49,715	0.81	0.93	0.12
Vietnamese	73,465	55,283	0.81	1.03	0.23
(Whites)	91,096	53,535	1.00	1.00	0.00
Female					
Taiwanese	78,387	71,199	1.38	1.67	0.29
Indian	87,767	73,723	1.54	1.73	0.18
Chinese	77,221	67,379	1.36	1.58	0.22
Korean	57,673	56,443	1.01	1.32	0.31
Japanese	60,901	49,460	1.07	1.16	0.09
Filipino	66,317	48,878	1.17	1.14	-0.02
Vietnamese	53,427	56,725	0.94	1.33	0.39
(Whites)	56,850	42,738	1.00	1.00	0.00

Note: For the immigrants, (Whites) represents the U.S.-born non-Hispanic Whites, aged 50-59. For the U.S.-born co-ethnics, (Whites) represents the U.S.-born non-Hispanic Whites, aged 25-34. For computing the wage ratios, the denominator is the real wage of the U.S.-born non-Hispanic Whites of the matching sex.

Table 6. The results of regressing real wage on *MMV* and Lieberman's *ND* respectively in the context of gender and generation, based on a linear model ($n = 28$)

Explanatory variable	Coefficient	<i>t</i> -statistic	<i>p</i> -value
First regression			
Intercept	-10.16	-5.9	< .0001
<i>MMV</i>	2.79	10.3	< .0001
Female	-2.23	-6.7	< .0001
Immigrant generation	3.55	10.1	< .0001
Adjusted R^2	.88		
Second regression			
Intercept	4.26	8.1	< .0001
Lieberman's <i>ND</i>	8.24	8.0	< .0001
Female	-2.25	-5.6	< .0001
Immigrant generation	4.00	8.9	< .0001
Adjusted R^2	.82		

Note: The unit of both real wage and *MMV* in the model is \$10,000 per year.

has a greater predictive power than *ND*. The adjusted *R*-square is .88 for the specification with *MMV* and .82 for the specification with *ND*. Furthermore, the associated *t*-statistic is greater for *MMV* than for *ND* (10.3 versus 8.0).

Since the U.S.-born generation is better assimilated to the Mainstream in language usage and behavior than the immigrant generation, it is not surprising that *MMV* tends to be stronger in predicting real wage for the U.S.-born generation than for the immigrant generation (Figure 1). From the immigrant generation to the U.S.-born generation, the correlation coefficient between *MMV* and real wage increases from .92 to .97 for males and from .90 to .97 for females.

Similar to the case of the non-Hispanic Whites in the same age group, the gender gaps in real wage in favor of males still persist clearly in the U.S.-born generation, with the minor exception of the Vietnamese, although

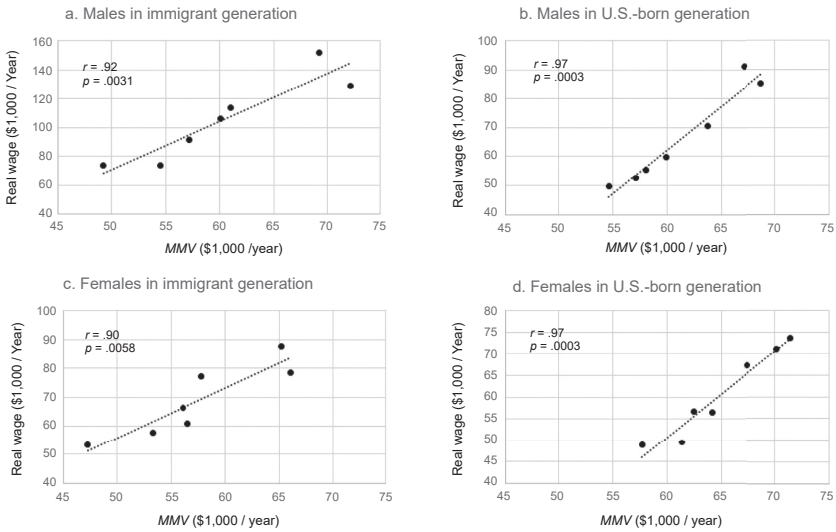


Figure 1. Strong correlation between *MMV* and real wage by gender and generations

Note: The straight lines are linear regression lines. Each dot represents an ethnic population. r is correlation coefficient, and p is the associated p -value.

the gaps in relative terms have decreased markedly from the immigration generation. Based on the data on the field of bachelor's degree available in ACS, we found that the remaining gender gaps in real wage are partly due to the fact that among those with at least a bachelor's degree, females have smaller proportions studying in the fields with high wages in the mainstream market (e.g., computer sciences and engineering) than males (Appendixes 2 and 3).

V. Societal Relevance of Our Findings

For a long history, the Jewish immigrants and their descendants in the U.S. have been distinguished as being capable of exceeding markedly the non-Jewish Whites and other minority groups in both educational

attainment and income (Burstein 2007). However, due to the obstacles of pervasive anti-Semitism and serious shortage of educational resources when they flooded into the U.S. in the last 2 decades of the 19th century and the first 2 decades of the 20th century, the impressive educational and wage advancements of the Jewish immigrants and their descendants took much longer than the time span of a generation to achieve (Berrol 1976).¹⁰ Our finding that the *MMVs* of the seven U.S.-born Asian groups converged toward a level much higher than the *MMV* of the Mainstream from the immigrant generation to the U.S.-born generation could be taken as reflecting that educational institutions (opportunities) have increased greatly in the U.S. Together with such facts as Black men becoming one of the nine Supreme Court justices (Clarence Thomas), a secretary of state (Colin Powell), an American president (Barack Obama), and a secretary of defense (Lloyd Austin) in recent decades, this finding also helped convince us that racism has declined sharply in this country. Certainly, racism could not account for our finding that the Filipinos lagged far behind the Vietnamese with respect to the intergenerational improvements in both educational attainment and wage. Our findings counter the claim of the critical race theory that racism (White supremacy) is a permanent and pervasive feature of the American society that continues oppressing and victimizing Black and other minority groups (Christian et al. 2019).

For the ethnic communities that are trapped in cycles of poverty and violence, our findings about the advancement of the Vietnamese are worth

10 A study of Jewish occupations in three Lower East Side districts of New York City in 1890 showed that 60% of the employed males and females were needle trade workers, 15% were artisans (bakers, carpenters, painters), 11% were peddlers, 8% were retail entrepreneurs, and only 1% were professionals (Berrol 1976, p. 264). In 1908 (well into the 3rd decade of heavy Jewish immigration), 38% of all clothing workers in New York City were Jews aged 14-19, showing that a substantial number of Jewish youngsters did not go beyond the eighth grade (Berrol 1976, p. 262).

further investigation. The Vietnamese immigrants studied in this paper entered the U.S. mostly in three waves (Figure 2). The first wave came as refugees in 1975 when American forces and diplomatic organizations suddenly withdrew from Saigon. They were mostly officials of the previous Vietnamese government and their families as well as those employed by or related to American forces and officials, with about 80% having at least some college education. The second wave was less intense but lasted over a longer span. It reached a peak in 1980, with about 40% being at the bottom two levels of educational attainment. This wave resulted from not only actual persecutions by the communist government but also the fear of even more severe persecutions. These refugees escaped mostly by unsafe boats and were called “boat people” in the media. Through the process of chain migration, the third wave consisted of mostly the relatives of the boat people

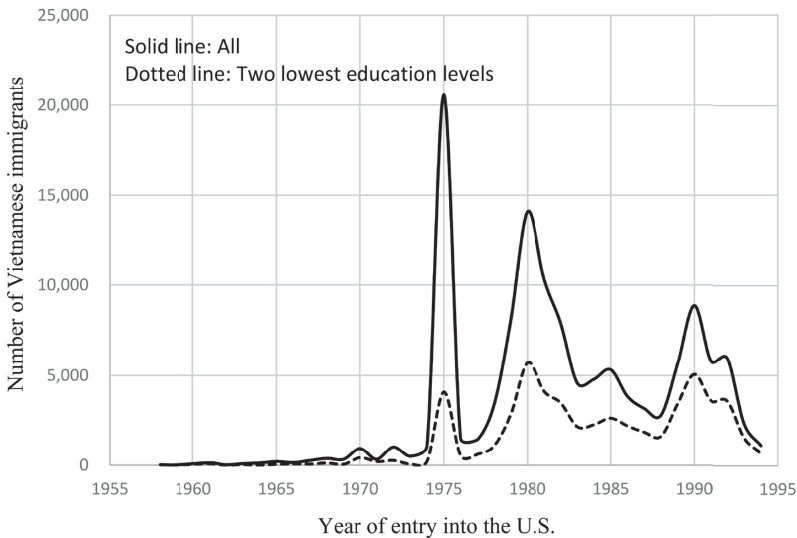


Figure 2. The varying intensities of the inflow the Vietnamese immigrants (aged 50-59 in the survey year) through time

Source: American Community Survey data, 2015-2019.

and was similarly not well educated. It lasted over a shorter time span and reached a peak in 1990, with about 60% being at the two lowest levels of educational attainment.¹¹

In order to avoid having too much negative effect on concentrated areas, the Vietnamese immigrants were widely scattered in the country by the federal government and sponsors. Being mostly refugees and having limited educational attainment, their livelihoods were initially sustained by the federal government via Refugee Cash Assistance, Aid to Families with Dependent Children, or Supplemental Security Income (for low-income elderly only) (Zhou 2001, p. 191). Through post-immigration migration, they became highly concentrated in a few large metropolitan areas in California and Texas. With little money in the early stage, they resided mostly in poor neighborhoods with schools of low quality.¹²

Despite all the hardships and unfavorable environments through a large part of their lives, the Vietnamese males and females in the immigrant generation worked hard and managed to earn real wages in 2015-2019 that were somewhat higher than what could be expected from their levels of educational attainment (see the lowest dot in Figures 1[a] and 1[b]). Furthermore, we found that the Vietnamese in the U.S.-born generation have surpassed not only the U.S.-born non-Hispanic Whites but also the

11 Since the immigrants who entered the U.S. at a school age could have pursued further education in the U.S., the educational attainment reported at the time of the survey overstated the educational attainment at the time of entry. Note that 21% of the Vietnamese immigrants in question entered the U.S. at the age of less than 15.

12 According to the segmented assimilation theory (Portes and Zhou 1993), the Vietnamese in the U.S.-born generation would be at high risk of being assimilated into the ghetto culture. This theory was developed mainly from the field studies of the immigrant stocks from several Latin American and Caribbean countries. The remarkable intergenerational advancement of the Vietnamese revealed in our study demonstrated the limited applicability of this theory.

U.S.-born Filipinos and Japanese in terms of both educational attainment and real wage. This was true for both sexes.

The impressive success of the Vietnamese immigrant stock was achieved in the context of the existence of the social safety net provided by the government and the meritocratic labor market with opportunities for being employees and self-employed. Within this context, most of them were able to move out of poverty through hard work and saw hope for the economic advancement of their children through dedication in education. Instead of developing a strong sense of victimhood from the influence of critical race theory (Butcher and Gonzalez 2020; Xu 2021, pp. 195-198) and engaging in destructive behaviors in schools and communities, other minorities that are trapped in the cycle of poverty should emulate the efforts of the Vietnamese or be aware of the insights of the Black economist Thomas Sowell who succeeded in rising from poverty to prominence (Sowell 2019).

Finally, we infer from our findings that the immigrants from the seven Asian countries are selective preservers of their native cultural systems. While maintaining strong work ethic, two-parent families, and the dedication to children's education, they seemed to have discarded male preference.¹³ In the U.S.-born generation, their *MMVs* are found to be higher for females than for males.

13 We avoid interpreting our findings as suggesting a shift from male preference to female preference, because irrespective of difference in parental influences, female juveniles, relative to their male counterparts, tend to be less rebellious to their parents and more willing to stay home and do the homework brought back from schools, resulting in better academic achievements. Based on the data from the two waves (in 1992 and 1995-1996) of the Children of Immigrants Longitudinal Study, Espiritu and Wolf (2001, p. 166) found that "Filipina girls spent more time studying and watched less TV than did Filipino boys in both time periods."

VI. Conclusion

We have shown that Lieberman's *ND* is incapable of reflecting the important empirical fact that the marginal wage gains of the transitions from some college to bachelor's degree and from bachelor's degree to graduate degree are much greater than the marginal wage gains of the transitions from the bottom educational level up to some college, and that *ND* is consequently weaker than *MMV* in predicting real wages. Since *MMV* has the unit of \$/year, it is also easier to internalize and be communicated to the public than *ND*. Furthermore, as demonstrated in Appendixes 2 and 3, *MMV* is also useful for comparing the income potentials of populations with different distributions among the fields of studies (computer sciences, life sciences, social sciences, etc.) where a natural order like that of educational attainment is lacking.

Using *MMV* as our preferred measure of educational attainment, we have found the following results about the seven Asian immigrant stocks. First, the intergenerational transitions of these immigrant stocks in educational attainment converged towards a level much high than that of the Mainstream. Second, the Vietnamese immigrants, who came to the U.S. mostly as refugees with low educational attainment, were not assimilated into the ghetto culture. Their U.S.-born descendants surpassed not only the Mainstream but also their Filipino and Japanese counterparts in both educational attainment and real wage. Third, for every one of the seven immigrant stocks, the intergenerational transition in educational attainment surpassed gender equality. We infer from these findings that these Asian immigrants were selective preservers of the value systems of their source

countries. They mostly maintained strong work ethic and dedication to their children's education but seemed to have discarded male preference.

Finally, we remind the readers that we introduced *MMV* as a reasonable alternative to Lieberman's *ND* only for the purpose of studying the link between educational attainment and real wage at the macro (population or group) level. We do not rule out the possibility that *ND* may perform better than *MMV* for other studies at the macro level. For studies in which the analysis is to be carried out at the micro (personal) level, neither *MMV* nor *ND* is useful, because they can be computed only at the macro level.¹⁴ In the micro analysis of Feliciano (2005a) for explaining the educational attainment of individuals in the 1.5 and second generation, she used a dummy variable instead of *ND* to represent their educational attainment. She only used *ND* to represent the key explanatory variable (immigrant group's educational selectivity) such that the same value of a given group is imputed to all individuals in the same group, with the implicit assumption that the children of highly-educated parents as well as poorly-educated parents in the same nationality group are all subject to the same effect of the group's *ND*.

14 A proper way to assess the effect of educational attainment on real wage at the micro level is demonstrated in Hanaoka and Liaw (2015), where educational attainment was represented by a set of four dummy variables in a multi-factor exponential regression model. It is important to note that the popular way of log-transforming the dependent variable in a linearized regression model is accompanied by an under-prediction problem that is pervasive and systematically biased when the predicted values are expressed in the original unit (say, dollar per year or dollar per week). For an in-depth explanation and a demonstration of this undesirable consequence of log-transforming the dependent variable in geophysical science, see Liaw et al. (2021).

References

- Alba, R. and V. Nee. 2003. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Cambridge, MA: Harvard University Press.
- Berrol, S. C. 1976. "Education and Economic Mobility: The Jewish Experience in New York City, 1880-1920." *American Jewish Historical Quarterly* 65(3): 257-271.
- Burstein, P. 2007. "Jewish Educational and Economic Success in the United States: A Search for Explanations." *Sociological Perspectives* 50(2): 209-228. doi:10.1525/sop.2007.50.2.209
- Butcher, J. and M. Gonzalez. 2020. "Critical Race Theory, the New Intolerance, and Its Grip of America." *Backgrounder* 3567: 1-42.
- Choy, C. C. 2003. *Empire of Care: Nursing and Migration in Filipino American History*. Durham, NC: Duke University Press. doi:10.1215/9780822384410
- Christian, M., L. Seamster, and V. Ray. 2019. "New Directions in Critical Race Theory and Sociology: Racism, White Supremacy, and Resistance." *American Behavioral Scientist* 63(13): 1731-1740. doi:10.1177/0002764219842623
- Duncan, B. and S. J. Trejo. 2015. "Assessing the Socioeconomic Mobility and Integration of U.S. Immigrants and Their Descendants." *The Annals of the American Academy of Political and Social Science* 657: 108-135. doi:10.1177/0002716214548396
- Espiritu, Y. L. and D. L. Wolf. 2001. "The Paradox of Assimilation: Children of Filipino Immigrants in San Diego." Pp. 156-186 in *Ethnicities: Children of Immigrants in America*, edited by R. G. Rumbaut and A.

- Portes. Berkeley, CA: University of California Press. doi:10.1525/california/9780520230118.003.0006
- Feliciano, C. 2005a. "Does Selective Migration Matter? Explaining Ethnic Disparities in Educational Attainment among Immigrants' Children." *International Migration Review* 39(4): 841-871. doi:10.1111/j.1747-7379.2005.tb00291.x
- Feliciano, C. 2005b. "Educational Selectivity in U.S. Immigration: How Do Immigrants Compare to Those Left Behind?" *Demography* 42(1): 131-152. doi:10.1353/dem.2005.0001
- Feliciano, C. 2006. "Beyond the Family: The Influence of Premigration Group Status on the Educational Expectations of Immigrants' Children." *Sociology of Education* 79(4): 281-303. doi:10.1177/003804070607900401
- Figlio, D., P. Giuliano, U. Özek, and P. Sapienza. 2019. "Long-Term Orientation and Educational Performance." *American Economic Journal: Economic Policy* 11(4): 272-309. doi:10.1257/pol.20180374
- Hanaoka, K. and K.-L. Liaw. 2015. "Understanding the Japanese-Born Residents in the United States from the Determinants of Their Wage Pattern: An Analysis Based on the Micro Data of the American Community Survey." *Japanese Journal of Human Geography* 67(1): 41-56 (in Japanese). doi:10.4200/jjhg.67.1_41
- Hanaoka, K., K.-L. Liaw, S. Takeshita, and Y. Ishikawa. 2017. "The Employment Pattern and the Underlying Value Orientation of Japan-Born Japanese Wives in the United States: For the Realization of More Sensible Work-Life Balance in Japan." *E-Journal GEO* 12(1): 101-115 (in Japanese). doi:10.4157/ejgeo.12.101
- Hirschman, C. and M. G. Wong. 1986. "The Extraordinary Educational Attainment of Asian-Americans: A Search for Historical Evidence and Explanations." *Social Forces* 65(1): 1-27. doi:10.2307/2578933

- Ishikawa, Y., S. Takeshita, K.-L. Liaw, and K. Hanaoka. 2018. "Strategic Cross-Border Marriages: An Investigation Based on the Spousal Age Gaps of Foreign-Born Wives in the US." *Memoirs of the Faculty of Letters, Kyoto University* 57: 135-154 (in Japanese).
- Karnow, S. 1989. *In Our Image: America's Empire in the Philippines*. New York, NY: Random House.
- Lee, C. 2018. "Migration to the 'First Large Suburban Ghetto' in America: Korean Immigrant Merchants in South Central Los Angeles in the 1980s." *Historical Reflections* 44(2): 87-106. doi:10.3167/hrrh.2018.440206
- Liaw, K.-L. and T. Huang. 2012. "Salient Features of Vietnamese and Filipina Brides of American Citizens: Findings Based on the Micro Data of Recent American Community Surveys." *Journal of Population Studies* 44: 1-56. doi:10.6191/jps.2012.1
- Liaw, K.-L. and Y. Ishikawa. 2011. "Characteristics of Japan-Born Japanese in the United States: Students, Non-Students, and Recent Brides of Non-Japan-Born American Citizens." *Japanese Journal of Human Geography* 63(6): 483-506. doi:10.4200/jjhg.63.6_483
- Liaw, K.-L., M. Khomik, and M. A. Arain. 2021. "Explaining the Shortcomings of Log-Transforming the Dependent Variable in Regression Models and Recommending a Better Alternative: Evidence from Soil CO₂ Emission Studies." *Journal of Geophysical Research: Biogeosciences* 126(5): e2021JG006238. doi:10.1029/2021JG006238
- Liebertson, S. 1976. "Rank-Sum Comparisons between Groups." *Sociological Methodology* 7: 276-291. doi:10.2307/270713
- Nakane, C. 1970. *Japanese Society*. Berkeley, CA: University of California Press.
- Ochiai, E. 1997. *The Japanese Family System in Transition: A Sociological*

- Analysis of Family Change in Postwar Japan*. Tokyo, Japan: LTCB International Library Foundation.
- Portes, A. and M. Zhou. 1993. "The New Second Generation: Segmented Assimilation and Its Variants." *The Annals of the American Academy of Political and Social Science* 530: 74-96. doi:10.1177/0002716293530001006
- Sowell, T. 2019. *Discrimination and Disparities*, revised and enlarged ed. New York, NY: Basic Books.
- United Nations Department of Homeland Security. 2023. *2022 Yearbook of Immigration Statistics*. Washington, DC: United Nations.
- van de Werfhorst, H. G. and A. Heath. 2019. "Selectivity of Migration and the Educational Disadvantages of Second-Generation Immigrants in Ten Host Societies." *European Journal of Population* 35(2): 347-378. doi:10.1007/s10680-018-9484-2
- Xu, K. 2021. *An Inconvenient Minority: The Attack on Asian American Excellence and the Fight for Meritocracy*. New York, NY: Diversion Books.
- Zhou, M. 2001. "Straddling Different Worlds: The Acculturation of Vietnamese Refugee Children." Pp.187-227 in *Ethnicities: Children of Immigrants in America*, edited by R. G. Rumbaut and A. Portes. Berkeley, CA: University of California Press. doi:10.1525/california/9780520230118.003.0007

Appendix 1. Why Korean Immigrants Have Higher *ND* but Lower *MMV* Than Chinese Immigrants

a. Cell-specific probability differences for Chinese male immigrants

Education attainment	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree	Chinese male immigrants $X(i)$
Less than high school						.189
High school graduate	-.039					.168
Some college	-.055	-.031				.085
Bachelor's degree	-.045	-.015	.014			.117
Graduate degree	.009	.099	.131	.110		.441
Mainstream $Y(j)$	.060	.259	.316	.273	.091	

b. Cell-specific probability differences for Korean male immigrants

Education attainment	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree	Korean male immigrants $X(i)$
Less than high school						.032
High school graduate	.003					.184
Some college	.003	-.001				.220
Bachelor's degree	.009	.028	.035			.301

Education attainment	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree	Korean male immigrants $X(i)$
Graduate degree	.013	.051	.063	.044		.263
Mainstream $Y(j)$	.060	.259	.316	.273	.091	

c. Wage advantages for different combinations of educational levels

Education attainment	Less than high school	High school graduate	Some college	Bachelor's degree	Graduate degree	Reference wage (\$/year)
Less than high school						32,996
High school graduate	6,741					39,737
Some college	12,069	5,329				45,066
Bachelor's degree	33,605	26,864	21,535			66,601
Graduate degree	49,696	42,956	37,627	16,092		82,693
Reference wage (\$/year)	32,996	39,737	45,066	66,601	82,693	

Note: In Panels (A) and (B), the value in each non-blank cell in the 5-by-5 matrix is the value of cell-specific probability difference $P(i, j) - P(j, i)$ for $i > j$, where the joint probability $P(i, j)$ was defined in Table 1. It is useful to know that the value of ND can be found by summing up all the cell-specific probability differences in each matrix (see Equation [2]). As consequence of the fact that the matrix for Korean immigrants has fewer negative elements than does the matrix for Chinese immigrants, the Korean ND (.25) becomes greater than the Chinese ND (.18). In Panel (C), the value in each non-blank cell is the wage advantage in the mainstream market associated with each cell-specific probability difference $P(i, j) - P(j, i)$ for $i > j$. Since the marginal wage gains in the mainstream market are much greater at the two highest levels of educational attainment than at lower levels, the wage advantages are much greater for $i \geq 4$ than for $i < 4$. In Panels (A) and (B), the largest probability difference is much greater for the Chinese (.131) than for the Koreans (.063), with both occurring at the cell (5, 3) which is associated with a very large wage advantage of \$37,627. Since MMI' fully reflects the educational pattern of the mainstream wage, this difference helps explain why the Korean immigrants have higher ND but lower MMI' (\$60,067 versus \$60,996) than the Chinese immigrants.

Appendix 2. The Field Composition of the Mainstream Population With at Least a Bachelor's Degree and the Corresponding Wage Schedule

Broad field of bachelor's degree	Composition (%)	Wage schedule (\$/Year)	Population size (person)
Computer sciences	5.3	84,150	212,662
Engineering + architecture	11.9	83,480	482,808
Business + economics	26.5	80,249	1,072,500
Math + statistics	1.5	78,292	60,427
Life sciences	5.0	73,681	200,763
Technologies	1.0	73,271	39,184
Medicine + healthcare	2.8	71,364	113,022
Physical sciences	3.1	69,394	127,427
Social sciences	6.2	67,836	251,144
Other fields	11.7	61,635	472,835
Communications	5.0	61,133	201,938
Psychology	2.9	57,134	119,022
Agri + food + environment	2.5	57,114	100,821
Humanities + liberal arts	6.0	55,948	243,453
Arts	4.5	51,272	181,604
Education	4.2	50,873	169,093
All	100.0	70,686	4,048,703

Note: In the 2015-2019 American Community Survey, there are 173 fields of bachelor's degree being identified. We grouped them into the 16 broad fields in this table. The Mainstream population includes the U.S.-born non-Hispanic White males, aged 25-34 in the year of survey, with at least a bachelor's degree.

Appendix 3. The Field Compositions and the *MMV*'s of the U.S.-born Generation of the Seven Asian Immigrant Stocks

Broad field of bachelor's degree	Taiwanese	Indian	Chinese	Korean	Japanese	Filipino	Vietnamese	(Whites)
Male (%)								
Computer sciences	8	8	9	5	5	6	7	5
Engineering + architecture	25	19	20	13	12	13	14	12
Business + economics	24	26	28	28	25	21	23	26
Math + statistics	1	3	2	2	1	1	1	1
Life sciences	13	16	10	9	7	9	19	5
Technologies	0	0	1	1	0	1	0	1
Medicine + healthcare	3	4	3	3	3	9	7	3
Physical sciences	2	4	3	3	4	3	3	3
Social sciences	5	5	5	7	6	5	4	6
Other fields	4	4	6	7	9	10	6	12
Communications	2	1	2	4	6	5	3	5
Psychology	4	3	2	4	4	4	4	3
Agri + food + environment	1	1	1	1	1	1	1	2
Humanities + liberal arts	4	3	3	5	7	6	3	6

Broad field of bachelor's degree	Taiwanese	Indian	Chinese	Korean	Japanese	Filipino	Vietnamese	(Whites)
Arts	3	1	4	6	5	6	4	4
Education	1	0	1	2	3	2	1	4
<i>MMV</i> (\$)	78,032	78,082	76,637	73,334	70,813	71,029	74,586	70,686
<i>MMV</i> ratio	1.10	1.10	1.08	1.04	1.00	1.00	1.06	1.00
Female (%)								
Computer sciences	4	3	2	1	1	1	1	1
Engineering + architecture	10	5	6	3	4	4	4	2
Business + economics	20	17	22	16	14	16	25	16
Math + statistics	2	1	2	2	1	1	0	1
Life sciences	16	18	13	11	10	8	20	6
Technologies	0	0	0	0	0	0	0	0
Medicine + healthcare	8	13	8	9	8	21	12	13
Physical sciences	2	3	3	2	2	2	5	2
Social sciences	5	9	6	8	8	7	6	7
Other fields	3	5	5	6	8	6	3	7
Communications	5	3	6	7	7	6	4	7
Psychology	7	10	7	8	10	8	6	8
Agri + food + environment	1	1	2	1	2	1	1	2
Humanities + liberal arts	7	5	7	10	10	8	6	9
Arts	8	2	7	10	7	6	4	6

Broad field of bachelor's degree	Taiwanese	Indian	Chinese	Korean	Japanese	Filipino	Vietnamese	(Whites)
Education	2	3	3	5	8	4	3	13
<i>MMV</i> (\$)	71,331	70,967	69,642	66,485	64,646	66,809	70,614	63,861
<i>MMV</i> ratio	1.01	1.00	0.99	0.94	0.91	0.95	1.00	0.90

Note: In this table, (Whites) represents U.S.-born non-Hispanic Whites, aged 25-34 in the year of survey. The *MMV*'s in this table are based on the wage schedule shown in Appendix 2. For every group, the *MMV* ratio is computed by dividing the *MMV* of the group by the *MMV* of the non-Hispanic White males.

主流市場價值分析方法在研究移民存量 之教育成就的效用： 美國七個亞裔移民存量的個案研究

廖高禮* 林季平** 劉千嘉***

摘要

本文利用2015-2019年美國社區調查的個體資料，建構「主流市場價值」（Mainstream market value, *MMV*）來替代Lieberson的net difference（*ND*）作為衡量教育成就的指標，運用七個亞裔（臺灣、印度、中國、韓國、日本、菲律賓、越南）移民存量的實例，來展示*MMV*在研究以下兩個課題的有效性：一、教育成就對實質工資的預測能力；二、教育成就的代間轉移。本研究除了證明*MMV*比Lieberson的*ND*指標更能準確預測實質工資，亦包括以下主要發現。首先，移民代間教育成就的改變，朝向比主流社群的教育成就更高的水準收斂。第二，雖然越南移民多數是教育水準很低的貧窮難民及其

* 加拿大麥克馬斯特大學地球環境與社會學院名譽教授
E-mail: rliaw@mcmaster.ca

** 中央研究院人文社會科學研究中心副研究員
E-mail: jplin@gate.sinica.edu.tw

*** 高雄醫學大學醫學社會學與社會工作學系教授、高雄醫學大學附設中和紀念醫院臨床醫學研究部兼任研究員，通訊作者
E-mail: chienchia@gap.kmu.edu.tw

親屬，他們在美國出生的後代並未淪入貧民區文化，反而在教育成就和實質工資上不僅超過主流社群，亦超越了菲律賓裔和日本裔移民後代。他們卓越的成就值得當其他少數族群脫離貧困的借鏡。第三，七個移民群體中的每一群之代間教育成就的改變，皆超過了性別平等。這些發現意味著，亞裔移民族群選擇性地保存了來源國的價值體系，大多保持著苦幹精神和對孩子教育的奉獻精神，但似乎放棄了母國的男性偏好文化。

關鍵詞：美國社區調查、亞裔移民、代間轉型、跨國移入、主流市場價值

