Does English Help or Hurt?

An empirical analysis of the earnings of foreign-born individuals and their fluency in English.

By

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**Abstract:**

This research paper investigates the impact English fluency has on foreign-born individuals that reside in the United States. Replicating a major study conducted in 1995, this study analyzes 2019 Census data and finds that English fluency has a positive effect on earnings which follows many works of literature on the given subject. It also examines determinants that are impactful to earnings. The study’s main objective to account for gender differences in the analysis is also accomplished. Observing that foreign-born men have larger earnings compared to females.

Keywords: English Fluency, Foreign-born, Earnings, Immigration

**Introduction:**

The ever-growing demand for human capital is often needed in fully developed societies such as the United States. This, paired with a new wave of massive immigration that has occurred in the United States, shows the need to utilize economic immigrants arriving in the country (Abramitzky, & Boustan, 2017).

Economic immigrants are individuals who migrated to host countries in search of better opportunities for themselves and their families. Some arrive in nations that more often than not speak a different language than they are accustomed to (Chiswick, & Miller, 1995). It produces a need for a “Lingua Franca”, a Latin term which translates to bridge language. The need to communicate in one’s new country’s language is not only necessary to assimilate into a host country but also a human capital skill that offers new opportunities for the individual that invests in it (Chiswick & Miller, 1995).

Empirical analyses have been conducted that have shown a positive relationship between English fluency and earnings (Chiswick & Miller, 1995). Referred to as linguistic adjustment, it is the process where an individual who is not fluent in the host country’s language improves their ability to use it (Chiswick & Miller, 1995). Another study completed by Hwang & Xi (2008) showed the positive effect education had on language proficiency, while gender showed a negative effect. This study’s main focus was more on English proficiency and its relationship to gender and other covariates, rather than earnings associated with the individuals. Mason (2001) focused on individuals of Mexican descent and their earnings accounting for factors such as English proficiency and education.

This research is testing whether the measures of English proficiency affects earnings for immigrants, accounting for gender differences. The hypothesis is that a higher level of English fluency produces higher earnings for individuals. The analysis mentioned before used a dataset that only accounted for foreign-born males. This study will account for females in the research, as over 25 years have passed since that study was conducted and women are more prevalent in the workforce today than ever before.

Language skills are viewed as a form of human capital that requires time and resources to establish. Factors that impact one’s ability to improve these skills were tested in other studies. Hwang & Xi, (2008) provides four structural hypotheses derived from Blau’s (1977) Social Exchange theory. These include group size, heterogeneity, segregation, and inequality. The literature review provides a larger overview of these hypotheses (Hwang & Xi, 2008). These hypotheses provide context as to why certain individuals may not be motivated to pursue a difficult human capital skill such as language adjustment. Other factors that normally impact one’s earnings will also be considered during the study. These factors include education, age, gender, race, and marital status (Chiswick & Miller, 1995).

The econometrics that will be used in this study will be a multiple regression of respondents’ answers to the question “ability to speak English”, ranging from five different responses and their reported earnings. This regression will also include other factors associated with earnings. The data is cross-sectional and is extracted from the U.S. Census Bureau. The data used is derived from the 2019 public use microdata sample. This data covers all 50 states in the United States. Using this data, the study will investigate the relationship between English fluency and earnings.

Previous studies have observed that the longer an individual is in a host’s country, the higher the likelihood is that they will have a higher level of language fluency (Chiswick & Miller, 1995). Examining the structural hypotheses from Blau’s 1977 theory of Social Exchange during this research will also be difficult to measure. Due to this difficulty, the hypothesis will only be mentioned in the paper, rather than analyzed. Additionally, the study will be divided into sections. The next part will dive into the literature related to this topic and its research. Next, this paper will provide a deeper framework of the data present and its assessment of the analysis. It will also examine the robustness of the findings. Lastly, in its conclusion, this paper considers the contribution of the topic and its implication in its findings.

**Literature Review:**

Several empirical studies focus on the development of language fluency and its applications in earning for individuals. The research that this study is replicating is derived from the study posed by Chiswick & Miller (1995). The paper provides a deep analysis of English fluency and income earnings. The study conducted used data from Australia’s 1981 and 1986 censuses. The data used in 1981 contains information on any second language spoken in the home by the respondents and allows for a minority language concentration (Chiswick & Miller, 1995). The statistical analysis was limited to foreign-born men aged 25-64 who reported an income. Findings show that 74% of immigrants reported a minority language spoken at home.

For immigrants from non-English speaking countries resettling in an English-speaking host society, being able to speak the language pertains to successful acculturation and smooth social transition. Learning a host country’s language can be seen as human capital and earn higher economic returns for investing in a skill such as this (Hwang & Xi, 2008).

The study was able to determine the level of English fluency by dividing respondents into those who spoke only English or who spoke English very well with the rest of the groups. The census had over five different choices between the level of fluency in English, from only English, very well, well, not well, and not at all. The analysis of language fluency in Australia shows that fluency is related to education, duration of residence, age, current married status, number and age of children, and country of birth. Estimates reveal that each additional year of education is associated with an increase of 2.5% in fluency rate or 3.6% from those in non-English speaking countries.

Hwang & Xi (2008) was another study that examined English proficiency and immigrant groups. However, rather than focusing on the relationship between earnings and language proficiency, the study examined English proficiency and how it was affected by structural hypotheses, using Chiswick & Miller (1995) as a key component of their study.

  Blau’s 1977 Social Exchange theory examined four structural hypotheses. Those four structural hypotheses are group size, heterogeneity, segregation, and inequality. Group size refers to the impact the number of people with similar traits has on an immigrant's ability to assimilate (Hwang & Xi, 2008). Large group size suppresses intergroup relationships. Intergroup associations become more necessary and therefore more common for a smaller than for a larger group. Heterogeneity is defined as the probability that two random persons who do not belong to the same group are chosen in a community.

Segregation affects interactions between members of different groups. It has also been known to affect interracial marriages. The clustering of a large number of immigrants who speak a common non-English language is bound to suppress the use of English and weaken their ability to speak English. Inequality is the differentiation of the population along with a medium that is identified by the average status of all possible pairs of individuals. Intermarriage rate increases with inequality which limits the growth of opportunities for groups (Hwang & Xi, 2008).

The analysis conducted used data from two sources, the 5% Public-Use Microdata samples of the 2000 U.S Census and Summary File Three. The sample was restricted to foreign-born individuals who are members of one of the 20 largest non-English speaking groups. Respondents were over 22 years of age. The strategy is both individual and group-based. Three models were created. The data shows that respondents from certain countries have a higher average English proficiency. The average respondent had about 11.9 years of education and has lived in the United States for 18.6 years. The study also observed the level of cluttering for groups to observe its impact on English fluency (Hwang & Xi, 2008).

The findings showed that a foreign-born person's ability to speak English was impacted positively by education and negatively by gender. The age at which a person arrives in the country also impacts their ability to learn the language as well. Those who arrive at 24 years of age or younger have the advantage of developing a higher level of proficiency.

Mason (2001) observes some of the factors that are associated with income potential. Referring to the group of analysis as Persons of Mexican Descent, or PMD, it examines the types of differences between these groups of people. The study observed the racial and ethnic differences between Hispanics. Hispanics are a large group that is vastly diverse. Having white or brown complexes impacts change earnings between this group. The study observes that Hispanic status influences the acquisition of income. Variables that are used in the study are phenotype, color, nativity, and language fluency.

The study provides a natural experiment for appraising the relative importance of acculturation, assimilation, and discrimination in the relationship between the formation of racial/ethnic identities and income inequality within the United States. Data was taken from the 1979 Chicano National Survey, which provided a randomized sample of American households limited to PMD. Native-born males of light/European phenotype have the highest annual income, $12,393 and $12,125, respectively. Immigrant women and dark/indigenous-phenotype women had the lowest earnings, $6,807 and $7,097. The mean level of education for PMD is nine years; however, when comparing native-born and immigrants, the ranges from 6.4 years to 10.4 years respectively. When examining the level of those who are not fluent in English, that percentage is 43%. However, only 47% of the sample have an average or above-average proficiency in Spanish (Mason, 2001).

The result of the study provides great insight into several of the factors associated with earning for immigrants. As PMD have similar characteristics to the national average, their earnings report the same. In terms of education, each additional year increases earnings by $368. PMD earns 10% less than those who are proficient in English. The study also concluded positive earnings for those with light complexions. Annual earnings increase of about $894. Those with darker complexion or Indigenous features did not see an increase in earnings regardless of English proficiency (Mason, 2001).

The ability to speak the language of the host country is one of the most important indicators of how successful an individual has integrated. Structural explanations have been underrepresented in research in the area of language fluency and this study provides insight into that regard. English language fluency of foreign-born individuals is affected negatively by the size and residential clustering of immigrants who speak a common native language (Hwang & Xi, 2008). The race of individuals is also a factor under consideration, as it does have a larger impact on earning than fluency (Mason, 2001). Gender does play a role not only in earnings but in an individual's ability to learn English (Hwang & Xi, 2008).

**Empirical Analysis:**

Following the literature, the research conducted uses data obtained from the 2019 United States Census Bureau. The data provides a large array of individuals that had responses to a plethora of questions. These include whether the individuals were foreign-born, the age of the individual, how many years the individual has resided in the nation, and what their marital status is to name a few.

The sample pool that this research will use will be modified to focus solely on foreign-born individuals. The dataset contains respondents who are 18 years or older and have reported an income in 2019. The variables that will be focused on will be as follows: English fluency, the highest level of educational attainment, age, sex, years since migration into the United States, marital status, country of origin, and lastly race. Through examining the literature, these variables are the most prevalent when analyzing the factors associated with earnings. This paper uses the log of wages that were earned by the respondents in 2019. This follows the most prevalent study conducted in 1995 (Chiswick & Miller, 1995).

The research observes these variables and modifies the response to the question to be able to fit the model. Similar to the 1995 study, we also removed the English-only responses from the dataset to only observe those who have to learn the language before or during their migration to the United States (Chiswick & Miller, 1995).

ENG - Ability to speak English

Values:

0 - N/A (less than 5 years old/speaks only English)

1 - Very well

2 - Well

3 - Not well

4 - Not at all

By eliminating the zero values and focusing on the other four responses, we can see the impact fluency has on earnings. The study creates a 0/1 binary variable for English fluency. With “Very well” and “Well” being one and “Not well” and “Not at all” is zero. This follows the research published in 1995 (Chiswick & Miller,1995).

The highest-level education attainment contains variables for high school, bachelor’s, and graduate, which contain individuals who have earned a degree higher than a bachelor's. Previous literature has concurred that a higher level of earnings is associated with education. Education also impacts higher levels of English fluency as well. Variables were created to identify each respondent’s highest level of education. Age is factored in as previous research shows a positive effect between individuals who arrive to host countries at a younger age and their level of English.

Gender was adapted to observe a male variable that will be turned off if the individual identifies as female. This allows the analysis to see if being male has a positive effect on earnings as well as English fluency. Marital status was broken up into two groups: whether an individual was married, and if they had another status such as if they were divorced, separated, widowed, or never married. For the Hispanic factor, rather than observe if a person was Hispanic, we observe the opposite - which should provide the same result. Race will also have two variables in the regression that pertained to Black and Asians. This is separate from the Hispanic variable as it can be very diverse and have respondents that may identify as both Black and Hispanic as well as white or Asian and Hispanic. This will also help in avoiding multicollinearity.

Lastly in the data, there is a country of origin. Due to the small sample size of 1121 observations, this research has limited the country of origin to their respective continents to avoid codes that may only have one or two respondents and may not accurately show the effect being from that country would have.

**Summary Statistics:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *Wage* | *English* | *Age* | *Bachelors* | *Graduates* | *Male* | *Married* | *White* |
| **Max** | 665000 | 1 | 80 | 1 | 1 | 1 | 1 | 1 |
| **Min** | 1000 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
| **Mean** | 35044 | .71 | 34.3 | .33 | .23 | .55 | .48 | .41 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Asia** | **Africa** | **Not Hispanic** | **Black** | **Asian** | **Years Since Arrival** |
| **Max** | 1 | 1 | 1 | 1 | 1 | 74 |
| **Min** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Mean** | .45 | .06 | .72 | .06 | 0.04 | 3.45 |

The data summary gives us an interesting insight into the background of many of the respondents. The average wage of the dataset was 35,000 dollars annually. The average age is 34 years old. Roughly 33% of the respondents have received a bachelor’s degree, while another 23% had pursued higher forms of education. We can observe, based on the wages reports of the min and max, that there is a huge imbalance in earnings. This may be due to a variety of factors but show how immigrants can become very successful while other may not earn as much. Considering that the average year since arrival is about 3.4 years, and roughly half have a four-year degree or longer, it can be assumed that many obtained this education before arrival.

The respondents also have a high level of proficiency in English. Roughly 71% had answered very well or well regarding their ability to speak. Roughly half of the respondents in the dataset are from Asia; however, only 4% identify as Asian while the majority identify as white. This may be, in part due to countries like India and Pakistan, which are located in Asia, identifying themselves as a different category from Asians.

**Empirical Results:**

Using a multi-regression method, the model is as follows:

With the dependent variable being the log of wages and the explanatory variable being all other factors that were considered, the study comes up with this model:

This model will establish what kind of impact English fluency has on earnings. The results are interesting when examining the other variable in the regression.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Estimate** | **Std. Error** | **T Value** | **Pr(>|t|)** |
| **(Intercept)** | 7.484300 | 0.165305 | 45.276 | < 2e-16 \*\*\* |
| **English** | 0.294856 | 0.105787 | 2.787 | 0.005405 \*\* |
| **Graduate** | 0.797418 | 0.106086 | 7.517 | 1.14e-13 \*\*\* |
| **Male** | 0.454362 | 0.084472 | 5.379 | 9.11e-08 \*\*\* |
| **Age** | 0.027758 | 0.004288 | 6.474 | 1.42e-10 \*\*\* |
| **Married** | 0.366428 | 0.096983 | 3.778 | 0.000166 \*\*\* |
| **Not Hispanic** | 0.423923 | 0.128753 | 3.293 | 0.001024 \*\* |
| **Black** | -0.228965 | 0.241423 | -0.948 | 0.343129 |
| **Years Since Arrival** | 0.004694 | 0.005276 | 0.890 | 0.373788 |
| **Africa** | -0.254497 | 0.251754 | -1.011 | 0.312284 |
| **Asia** | -0.195479 | 0.107922 | -1.811 | 0.070362 |

At the significant values, this study observes that English proficiency, education, male, age, married, and not Hispanic have the greatest effect on earnings. The regression has shown a positive effect on English fluency and earnings. This effect is that individuals with a good level of English fluency can see a 29% increase in earnings over time.

The education variable is most interesting as it has the largest impact on earnings. Observing the graduate variable, we see a positive effect of 79% for those individuals with that educational attainment. Marriage has a positive effect as well. Those who are married have a 36% increase in earnings. Being a male has a positive effect on earnings, showing roughly a 46% increase in that regard. Though the black variable, as well as the Asia and Africa variable, harm earnings, it is not statically significant and may need a large sample pool to examine it more thoroughly. The years since arrival variable have a very small impact which can be from the limited number of years people came into the United States. Only having a mean of 3.4 years shows that most of the respondents did have much time in the country. Literature such as Abramitzky, & Boustan (2017), shows that it can take anywhere from 15-20 years to be fully assimilated into a host country based on previous trends. The estimate is not statistically significant and perhaps a large dataset would be able to address this variable more.

**Conclusion:**

This study’s research question was to measure English proficiency on the earnings of foreign-born individuals, accounting for gender differences. While replicating the study conducted over 20 years ago (Chiswick & Miller,1995), the paper used the same method when measuring English proficiency, excluding English only from the responses. We observed some of the effects English fluency had on earnings, education, and gender (Hwang & Xi, 2008).

Our dataset though small, had all-important factors when performing the regression and produced results that are in line with the hypothesis. English fluency positively affects earnings for foreign-born individuals, regardless of gender; however, it should be noted that foreign-born Males on average earn more than foreign-born women. Education plays a larger role in earnings for foreign-born individuals, but the purpose of this study is to see whether offering programs that teach skills, such as English, would provide better opportunities in terms of earnings for the foreign-born individual regardless of their educational attainment.

The contributions that this paper has provided may lead to further research into what educational programs those foreign-born individuals take may increase their earnings over time. Additionally, more research may be conducted as to what regions they may come from and how that may impact their earnings as well.

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