The Gender Disparity of Refugee Earnings in the U.S. [1]

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Abstract

The refugee crisis impacts both low and high-income countries alike, and the question of refugee assimilation receives much attention worldwide. While all refugees face various challenges in assimilating to their host countries, female refugees face additional challenges. This paper focuses on the earnings of refugees upon arrival to their host countries. I use the 2018 Annual Survey of Refugees to study the earnings trajectory of male and female refugees who arrive in the United States. I find a significant earnings gap of approximately $1.70 an hour, which is equivalent to male refugees receiving almost eight more years of schooling. This result is robust to a variety of model specifications. To examine the underlying mechanism behind this result, I study how the earnings trajectory varies when including the UNDP Human Development Index and the World Economics Forum Global Gender Gap variable, using refugees' country of birth. I find robust results that female refugees do not benefit from increases in human development, while both male and female refugees benefit from increases in gender equality. These results have important implications for refugee policy in the form of cash assistance or vocational training.

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1 Introduction

There are over 84 million displaced people worldwide, of which 24.6 million are refugees.[2] The image of a refugee often conjures images of grim situations: bombings happening in Iraq, a packed raft making its way to Italy, a starving child in Syria. The aim of this section is to introduce the reader to the ongoing refugee crisis in the U.S. as well as explain the main findings of this paper.

This paper studies refugee experiences in the U.S. The U.S. refugee resettlement program is one of the largest programs in the world: around 3 million refugees have been admitted to in total.[3] The program's aim is to provide refugees with assistance to make them economically and socially self-sufficient. Given that refugees flee their home country out of political, social, racial, or religious persecution, they are not expected to be economically self-sufficient upon arrival in the U.S. Federal and national level programs are implemented to help refugees eventually reach economic self-sufficiency. The Office of Refugee Resettlement (ORR) provides limited-time cash and medical assistance to new arrivals, as well as support for case management services, English as a Foreign Language classes, and job readiness and employment services. These are all designed to facilitate refugees' successful transition to life in the U.S. and help them to attain self-sufficiency.[4] This paper specifically looks at two of the ORR's programs and suggests improvements.

I investigate the earnings gap between male and female refugees now residing in the U.S. This paper uses data from the Annual Survey of Refugees (ASR) 2018 survey. The ASR survey is a full-cross-sectional nation-wide study on refugees progress toward self sufficiency. I use linear regression models to analyze the difference in pay between female and male refugees. I find that even while controlling for years of school and other demographic variables like English skill or wage, female refugees make around $1.70 less per hour. Finally, I study the underlying causes of the gender gap through the Global Gender Gap (GGP) variable, which indicates that refugees born in countries with higher gender inequality tend to have a larger earnings gap than those coming from countries with less gender inequality. I also study outcomes for refugees coming from countries with different levels of human development using the Human Development Index (HDI). I find advancements in human development primarily benefit male refugees, while developments in gender equality benefit all refugees (but benefit female refugees to a higher degree). These results have important policy implications in giving refugee women the autonomy to decide when they can receive job/vocational training as well as handing extra cash

[2] UNHCR 2021
[3] U.S. Department of State 2021
[4] Office of Refugee Resettlement 2021

payments to refugee women monthly to mitigate the effects of the gender gap.

1.1 Literature Review

This paper builds upon previous work about the refugee experience. In general, my results agree with the premise that there is a gender gap between male and female refugee earnings. However, there is a discrepancy between the numeric values of the earnings gap. Specifically, one large source of previous investigation was Kabir and Klugman's 2019 paper about unlocking refugee women's full potential, which analyzes refugee women and girls worldwide and recommends policy solutions. This paper aims to fill the gap in literature about refugee women living in the U.S. Many papers either focus on refugee women as a worldwide group (as Kabir and Klugman do), or focus on migrant women, not necessarily refugees (Amo-Agyei 2020).

Row 1 of Table 6 reflects similar results in prior research, see (Betts et al. 2018; Kabir and Klugman 2019). However, while the trend of refugee women being less paid compared to males with the same experience is consistent across multiple studies, the exact *amount* of the gender gap is inconsistent. For example, (Kabir and Klugman 2019) find that the pay gap between refugee men and women in the United States is \$0.29 for every dollar earned. Notably, however, refugee data is difficult to come across and many times authors must rely on small samples which are specific location.[5]

Row 3-6 of Table 6 are consistent with some results in prior research. (Cheng et al. 2020) finds for refugees relocated in Australia, understanding spoken English is associated with an increase of \$1.25 (std. 0.97) of hourly wage. Nonetheless, these effects of English skill are not significant, supporting the initial finding that gender is the main factor that affects refugee wage.

The rest of this paper is laid out as follows: Section 2 presents a contextual background of the refugee crisis, section 3 gives an overview of the study and descriptive statistics, section 4 presents results, section 5 is a discussion of the results as well as presents policy recommendations, and section 6 concludes.

[5]Kabir and Klugman 2019

2 Contextual Background

The purpose of this section is to provide more contextual background about the situation of refugees living in the U.S. in 2018. Definitions of key terms are provided, then statistics about the year 2018 in regards to refugee resettlement are provided. This section also includes a description of refugee policy in the U.S. This section concludes by providing specific background on the refugees surveyed in the ASR 2018.

First, definitions of key terms used throughout the paper are provided. It is important to distinguish between the terms often used interchangeably to refer to refugees: refugee, asylum-seeker, and internally displaced person. A refugee is someone who has been forced to flee their country because of persecution, war, or violence. A refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion, or membership in a particular social group. Most likely, they cannot return home or are afraid to do so.[6] An asylum seeker is someone whose request for sanctuary (refugee status) has yet to be processed.[7] In particular, some asylum seekers become refugees, and all refugees were once asylum seekers. Internally displaced people are different- they are individuals who have not crossed out of their home country to reach safety. Internally displaced people have left their home but are still on the run in some part of their own country. Contrary to misconceptions, internally displaced people are not legally referred to as refugees.

The U.S. has had varying policies through the years on the number of asylum seekers allowed to enter the country. The number for the ceiling for refugees is decided between the President and Congress through a Presidential Determination.[8] The Trump Administration significantly reduced refugee admission to the US, by more than 85%. This set record low admission numbers for every year- 30,000 for 2019, 18,000 for 2020 and just 15,000 for 2021. Before the Trump administration, the average admission cap was around 95,000 for both Democratic and Republic presidents. The number of refugees that the United States has taken in each year is represented in the below graph.[9]

[6]UNHCR 2020
[7]UNHCR 2019
[8]International Refugee Committee 2021
[9]Image and caption are from Batalova 2021

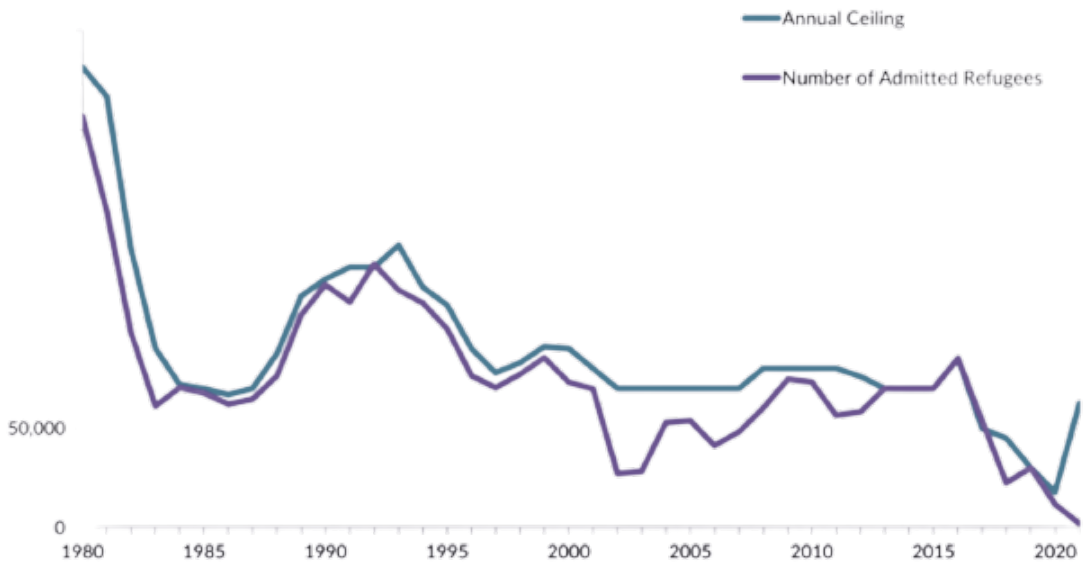


Figure 1: Annual Refugee Resettlement Ceiling and Number of Refugees Admitted to the United States, FY 1980-2021

Specifically, the two policies I suggest improvements to are the Cash and Medical Assistance (CMA) Program program, and the Ethnic Community Self-Help (ECSH) program. The CMA program aids newly arrived refugees with short-term medical support and healthcare for those who cannot get medicaid. This protection is available for up to eight months from the date of arrival in the U.S. There are several cash assistance programs in the U.S. for newly arrived refugees. Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), and Refugee Cash Assistance (RCA) are three of the programs that are available to eligible refugees. The TANF helps needy families, while RCA helps individuals who do not have minor children. This paper does not distinguish between the differences between the programs, but rather suggests general changes to U.S. refugee cash assistance programs.

The second program I suggest improvements to is the ECSH program, which the ORR runs to support ethnic community-based organizations in providing refugees resources to become self-sufficient. ECSH programs connect newly arrived refugees to community resources. These programs target all ORR populations, and all U.S.-based governmental and certified non-profit organizations are eligible to apply. Essentially, this program connects refugees with local ethnically-based nonprofits, which may or may not have the ability to serve those refugees.

The year 2018 was a significant year for refugees worldwide. By the end of the year, almost 70.8 million individuals were forcibly displaced, which was another record high.

Out of the 13.6 million newly displaced individuals in 2018, only 92,400 individuals were able to resettle in a country. In 2018, the top 5 countries from which refugees fled were Syrian Arab Republic (6.7 million), Afghanistan (2.7 million), South Sudan (2.3 million), Myanmar (1.1 million), Somalia (0.9 million).[10] Table 8 shows the country of birth for the refugees in the ASR 2018 study.

3 Data and Estimation Methods

3.1 Overview of Study

Since the 1980s, the Office of Refugee Resettlement (ORR) has conducted the ASR (Annual Study of Refugees), which is the only scientifically-conducted nation-wide study on refugees' progress towards integration and self-sufficiency. There were 5,621 total participants in the ASR 2018 study. The ASR 2018 used a full cross-sectional national sample of refugees entering within the past 5 years. The ASR was administered in 17 different languages, which covered about 73% of the total refugee population. Through the study, the participants were asked various questions ranging from income level per year, gender, age, number of years of schooling, etc. The complete list of the survey questions and source data are in the original ASR 2018 booklet which you can find on their website linked here. Below will contain descriptive statistics about the population in 2018.

3.2 Descriptive Statistics

This section presents the descriptive statistics of all of the demographic variables used.

This table contains the averages of select variables shown in the main regression table.

Characteristic	All Participants	Female	Male
Number of Hours Worked per Week	47.74 (20.09)	31.74 (12.53)	38.51 (12.14)
Number of Years of School Before U.S.	9.32 (4.82)	8.61 (4.88)	9.63 (4.47)
Worked a Job Last Week	1738	579	1159
Age	28.3 (17.07)	28.03 (17.35)	28.53 (16.82)
Speak no English Currently	508	291	217
Number of People in Household	4.13 (1.17)		
Amount Paid in Rent (monthly)	1161.5 (615.47)		

Note: Numbers in parentheses indicate standard deviations

Table 1: Selected Characteristics of Participants Separated By Gender

[10] UNHCR 2018

Female refugees spend seven hours less a week working on average working than male refugees. Male refugees on average also attend one year more of schooling than female refugees. Out of the total number of refugees that worked a job last week, 1/3 were female and 2/3 were males. Of the 591 refugees who spoke no English, 57% were female and 42% were male.

This table contains the highest degree earned before entering the U.S. separated by male and female participants. This data is used in Table 3.

Highest Degree Before U.S.	Female	Male
Don't know	35 (1.4)	27 (0.9)
Medical degree	9 (0.4)	8 (0.3)
None	407 (16)	362 (13)
Other	32 (1.3)	25 (1)
Primary	435 (17.3)	467 (17)
Refused	3 (0.1)	3 (0.1)
Secondary (or high school diploma)	375 (15)	468 (17)
Technical school certification	89 (3.5)	116 (4.2)
Training in refugee camp	4 (0.2)	11 (0.4)
University degree (other than medical)	164 (6.5)	233 (8.5)

Note: Numbers in parentheses indicate percent values out of total number of female and male refugees, respectively

Table 2: Highest Degree Before U.S. for Male and Female Refugees

Only 10.4% of females had an education more than secondary school education. In comparison with males, only 13.7% of them had an education level greater than secondary school.

3.3 Estimation Methods

This paper primarily uses the Ordinary Least Squares (OLS) method to perform linear regressions. OLS chooses the coefficients of a linear function by the principle of least squares. This means it minimizes the sum of the squares of the differences between the observed dependent variable in the given dataset and those predicted by the linear function of the independent variable. The equation for an OLS model with multiple dependent variables looks like this:

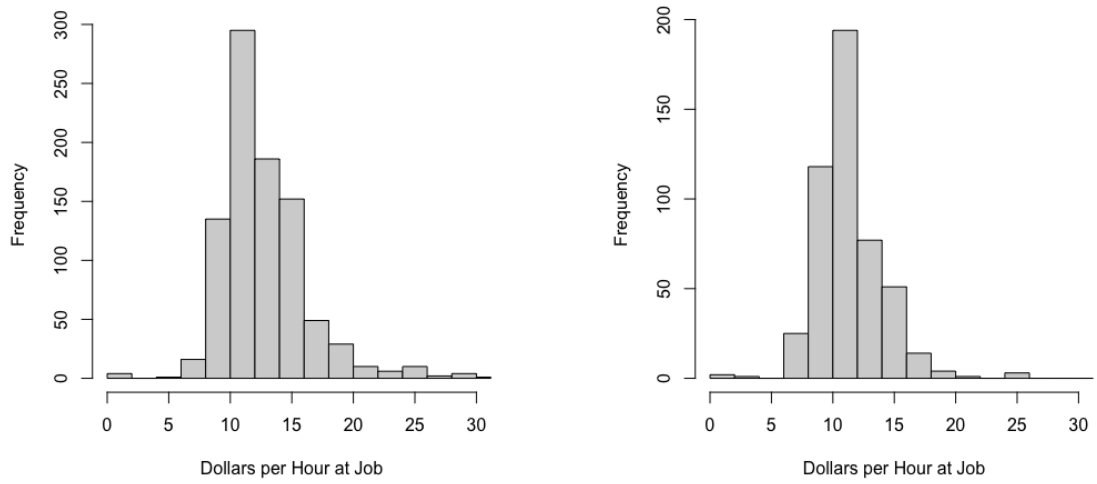
$$y_i = \beta_1 * x_{i1} + \beta_2 * x_{i2} + \beta_3 * x_{i3} + ... + \beta_p * x_{ip} + \epsilon$$

Where y_i is the dependent variable, β_n, is the intercept of the model, x_{in} corresponds to the nth explanatory variable of the model, and ϵ is the random error. The OLS model finds coefficients β such that the square of the error term ϵ is minimized.

4 Results

4.1 How does gender determine the distribution of earnings?

The gender gap between female and males in any given country has been a widely studied topic. This section looks at a histogram of earnings between female and male refugees from the ASR 2018 dataset to see if there is a difference in distributions.



(a) Male Graph **(b)** Female Graph

Figure 2: Male vs Female Earnings per Hour

Note: The graph has been modified to exclude five outliers who earned more than 40 dollars per hour

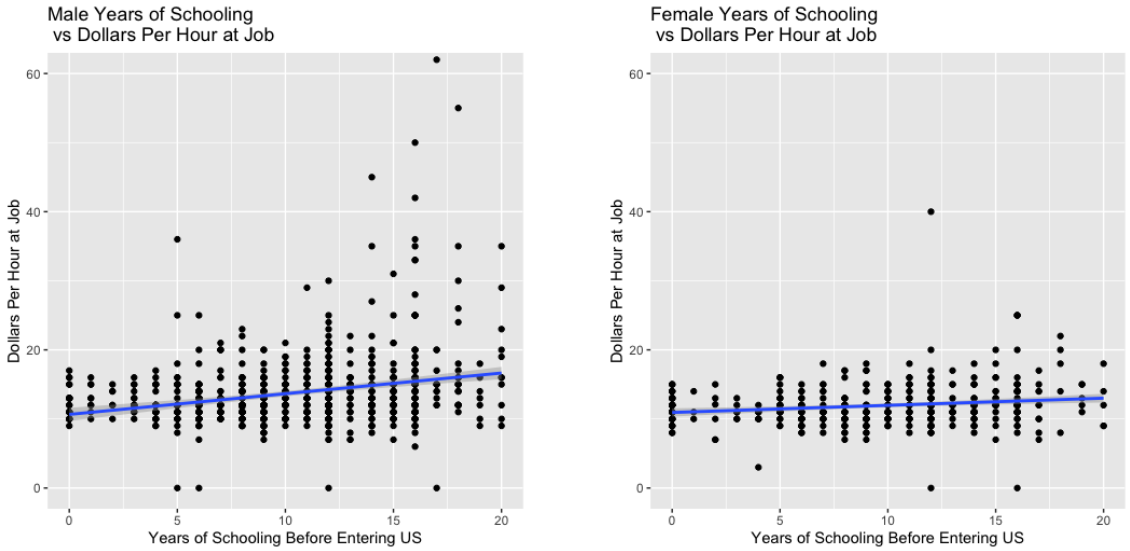
The 25th percentile of female earnings is $10, the 50th percentile is $12, the 75th percentile is $13. The median of female earnings is $12. The mean for female earnings is $11.91 In contrast, the 25th percentile of male earnings is $11, the 50th percentile is $13, the 75th percentile is $15. The median of male earnings is $13. The mean for male participants is $13.75.

Male participants are earning roughly $1-2 more than females on average. This number may seem insignificant on a small scale, but over a year this earnings gap adds up to approximately $3,061, assuming a 40 hour work week. The next section asks whether this gap is due to refugees education.

4.2 What is the effect of demographic variables and gender on earnings?

The aim of this section is to find out what the effect of demographic variables is on refugee earnings. This section establishes the relation between gender and earnings even when other demographic variables are taken into account.

The below graph shows the earnings vs the years of schooling for both male and female refugees.



(a) Male Graph **(b)** Female Graph

Figure 3: Male vs Female Years of School vs Dollars Per Hour

Note: The graph has been modified to exclude one outlier (a male refugee who earned $100 per hour) for clarity.

A reason that could explain this gender gap is the possibility that male refugees arrive to the US with more education than female refugees. Figure 3 graphs earnings by years of education. The graphs shows the gender gap between the male and female dollars earned per hour. Normally, one would expect that the difference in earnings would be explained by a change in the experience of a person- but this is clearly not the case. Many females with a masters degree are making the same as females with a primary school education.

Table 3 studies this question using an OLS model. So far, there is a significant effect of being male on the earnings for participants in the study.The next section considers other demographic variables to confirm that this relation is still valid.

	Dependent variable:				
	Dollars per Hour at Job				
	(1)	(2)	(3)	(4)	(5)
Male	1.835***	1.672***	1.704***	1.733***	1.734***
	(0.272)	(0.283)	(0.282)	(0.281)	(0.284)
Number of Years of Schooling		0.220***	0.189***	0.095**	0.099**
		(0.029)	(0.032)	(0.047)	(0.048)
No English Skill			1.557	1.145	1.074
			(4.892)	(4.851)	(4.867)
Speak English Not Well			1.154	0.921	0.965
			(4.871)	(4.829)	(4.845)
Speak English Well			1.417	1.157	1.218
			(4.869)	(4.827)	(4.843)
Speak English Very Well			2.520	2.061	2.169
			(4.872)	(4.831)	(4.850)
Medical Degree				1.075	0.991
				(2.478)	(2.488)
No Degree				1.453	1.496
				(2.003)	(2.013)
Other Degree				1.599	1.678
				(2.211)	(2.222)
Primary School Education				0.421	0.466
				(1.987)	(1.996)
Secondary School or High School Diploma				1.405	1.441
				(1.986)	(1.993)
Technical School Certification				0.970	0.941
				(2.039)	(2.046)
Training In Refugee Camp				1.293	1.336
				(2.605)	(2.615)
University Degree (Other than Medical)				3.228	3.198
				(2.023)	(2.031)
Age					0.010
					(0.014)
Constant	11.913***	9.814***	8.547*	8.354	7.871
	(0.220)	(0.357)	(4.877)	(5.231)	(5.289)
Observations	1,405	1,322	1,322	1,322	1,311
R^2	0.031	0.072	0.081	0.104	0.105
Adjusted R^2	0.031	0.070	0.077	0.094	0.095
Residual Std. Error	4.866 (df = 1403)	4.876 (df = 1319)	4.860 (df = 1315)	4.814 (df = 1307)	4.829 (df = 1295)
F Statistic	45.438*** (df = 1; 1403)	51.004*** (df = 2; 1319)	19.273*** (df = 6; 1315)	10.779*** (df = 14; 1307)	10.119*** (df = 15; 1295)
Note:					*p<0.1; **p<0.05; ***p<0.01

Table 3: Main Regression Table

Table 3 presents the regression results for other demographic variables as covariates. The first row in the table is the effect of gender on the earnings. The effect of gender is highly significant (p value < 0.001). Males earn around $ 1.84 more on average when compared with females.

In column 2, a variable is added to see if this difference is due to the years of schooling, however, this is not the case because the interaction term for gender is still statistically significant. Instead, both years of schooling and gender are accurate predictors for the earnings of an individual. Being a male is "equivalent" to 7.66 *years* of schooling- that's almost the entirety of elementary and secondary school.

In column 3, (rows 3-6), a variable is added to see if the current English skill of a refugee is significant in determining the earnings. The results in this section are mixed- while there is an increase from those who didn't speak English at all to those who were very proficient, there are also discrepancies, like those who spoke English well making less on average than those who didn't speak English at all, which is a reason the results could be statistically insignificant.

In column 4, (rows 6-14), another value is added to test the effect of highest degree before asylum would have on refugee earnings. The results obtained are not statistically significant. This result can be explained by numerous factors, such as individuals forgetting credentials at home, bias against refugees, lack of English skill, etc. Check Table 3 to find the regression between dollars per hour and highest degree earned. Even when other factors (gender, English skill, years of schooling), are not considered, highest degree earned is generally unimportant. The only significant result is that a University Degree earned (other than medical school), leads to an increase in $3.79 per hour. Potential explanations include those in University having higher chances of work, internships, or increased communication in English. To test this, table 7 shows the English skill before U.S. for those who reported their highest degree as University. These support our hypothesis that University Students do generally have higher English levels- about 53% of them were proficient in English (well or very well), when compared to 12.3% of the total population.

Finally, the last variable taken into account is age, which is not statistically significant. It also does not change the initial hypothesis. However, there is a small increase in earnings for each additional year.

5 Discussion

The purpose of this section is to investigate deeper questions addressing the cause of the earnings gap. This section introduces two new datasets aimed to support policy action towards helping female refugees. The section concludes by providing a literature review of papers in this field.

5.1 Using GGP and HDI to Determine Causes of Earnings Gap

In this section, two new datasets, the Global Gender Gap (GGP), and the Human Development Index (HDI) are introduced to investigate the cause of the earnings gap between male and female refugees.

The selection of these two datasets is a motivated choice. There are many datasets that aim to represent the gender inequality and gender gap in countries around the world. Other datasets like the Gender Inequality Index, and the Economic Participation variable in the GGP were considered. Ultimately, the choice of the global gender gap for measuring the gender gap was chosen because of the inclusion of data for almost all of the countries that are covered in the ASR 2018 dataset. Additionally, other indices like the Gender Inequality Index could be flawed as they contained both women-specific indicators and women vs men indicators into a single formula. This means that the results for the index may not be accurate.[11] For those reasons, the GGP variable was selected for regressions in this paper. The appendix contains tables of regressions using alternate datasets, if the reader is interested.

The GGP index benchmarks national gender gaps on economic, education, health and political criteria, and provides country rankings that allow for effective comparisons across regions and income groups. This index was created by the World Economic Forum, and has been maintained since 2006. The index is measured on a sliding scale between 0 and 1, but there are subcategories within the index which are also measured. I take the GGP in 2018 of the countries of birth of the refugees and create a new dataset out of these values. A chart of values used is also provided below. The link to the 2018 Global Gender Gap Report can be found here.

The HDI is an index that is comprised of four main statistics: life expectancy, education (mean years of schooling and expected years of schooling), and average per capita income. It was developed to measure a country's development by the United Nations Development Program. Higher Development Values indicate greater development in the country, and lower values indicate less development. The index is measured on a sliding scale between

[11] Permanyer 2013

0 and 1. I take the HDI in 2018 of the countries of birth of the refugees and create a new dataset of these values. The dataset can be accessed here. A chart of the values used is also provided below. The link to the 2018 Human Development Report can be found here. [12]

This table shows the data used for the GGP and HDI for the countries of birth of refugees in ASR 2018.

Country	GGP	HDI
Iraq	0.551	0.685
Syria	0.568	0.536
Congo	0.582	0.457
Iran	0.589	0.798
Bhutan	0.638	0.612
Eritrea*	0.656	0.440
Nepal	0.671	0.574
El Salvador	0.690	0.674
Burma	0.690	0.578
Thailand	0.702	0.775
Cuba	0.749	0.777

Table 4: GGP and HDI Index for Select Countries

There are issues to consider while using such an index to generalize the conditions in these countries. For the ASR 2018 data, the main issue is the fact that there are some countries of birth that don't have a value calculated. The two countries in the ASR 2018 dataset in which this problem occurs are Eritrea and Somalia. For Eritrea, I use the corresponding value of Ethiopia as Eritrea gained independence from Ethiopia in 1991. The two countries are also similar in location, male:female ratio, birth rate, and religious background. [13] For Somalia, the case is not so similar in choosing a similar country. It is unclear which countries would be suitable for replacement in the HDP and GGP values– or whether the choice of country would change based on which index is used. Thus, Somalia is omitted from calculations.

Other demographic variables are also used in considering in the regression equations to predict the earnings. From the main regression table (Table 3), the significant variables are primarily gender and years of schooling. These two demographic variables are included in new regression models. Multiple regressions, with and without interaction terms, are preformed to test the HDP and GGP variables.

[12] United Nations Development Program
[13] Barrientos 2020

5.1.1 Effect of HDI on Earnings

This subsection looks at the effect of the HDI on earnings. The below table uses an OLS model to find the effect of the HDI, gender, and interaction term on earnings of refugees.

	Dependent variable:	
	Dollars per Hour at Job	
	(1)	(2)
Male	−1.778	−1.954
	(1.649)	(1.662)
HDI	0.282	−0.030
	(0.208)	(0.216)
HDI*Male	0.565**	0.569**
	(0.263)	(0.265)
Years of School Before US		0.194***
		(0.030)
Constant	10.021***	10.029***
	(1.307)	(1.316)
Observations	1,124	1,057
R^2	0.060	0.094
Adjusted R^2	0.058	0.090
Residual Std. Error	4.124 (df = 1120)	4.074 (df = 1052)
F Statistic	23.890*** (df = 3; 1120)	27.247*** (df = 4; 1052)
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 5: Gender, HDI, and Years of School Effect on Earnings

Column 1 Discussion This regression supposes that gains in human development are taken differently based on the gender of the refugee. As shown in the table, the interaction term is indeed statistically significant to the %1 level, showing that male and female refugees have different outcomes from their country of birth being more developed. Specifically, being a male leads to a bonus of at least 50 cents per hour even when the experience of the male (years of schooling) is not taken into account.

$$\text{Earnings Male} = 8.243 + 0.847 * (HDI)$$

$$\text{Earnings Female} = 10.021 + 0.282 * (HDI)$$

These are the two equations for male and female earnings from column 1. The average HDI from the countries of birth is 6.28. Plugging this value into the equation, the male earnings are $13.56 and the female earnings are $11.79, agreeing with the estimated value of the earnings gap of $1.7.

Column 2 Discussion The second regression preformed more accurately depicts the factors in refugee pay, by including the years of schooling before the US (which roughly simulates refugee experience level). The years of schooling is still a highly significant variable, but the significance (p value < 0.05) of the interaction between human development and gender still exists.

$$\text{Earnings Male} = 8.09 + 0.54 * (HDI) + 0.194 * (\text{Years of School})$$

$$\text{Earnings Female} = 10.03 - 0.03 * (HDI) + 0.194 * (\text{Years of School})$$

With an average HDI value of 6.28 and years of school of around 9, this model can approximate male and female earnings. Specifically, male earnings are predicted as $13.23 and female earnings are predicted as $11.58, again agreeing with the estimate of the gender gap.

5.1.2 Effect of GGP on Earnings

This subsection looks at the effect of the GGP on earnings. The below table uses an OLS model to find the effect of the GGP, gender, years of schooling, and interaction term on earnings of refugees.

	Dependent variable:
	Dollars per Hour at Job
Male	6.108^{*}
	(3.123)
GGP	1.319^{***}
	(0.439)
GGP*Male	-0.758
	(0.520)
Years of Schooling Before US	0.245^{***}
	(0.030)
Constant	1.426
	(2.719)
Observations	1,057
R^2	0.095
Adjusted R^2	0.092
Residual Std. Error	4.072 (df = 1052)
F Statistic	27.605^{***} (df = 4; 1052)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 6: Gender, GGP, and Years of School Effect on Earnings

Discussion There is an increase in earnings when the gender gap in home countries is decreased regardless of whether the refugee is male or female (to avoid confusion, this means the GGP index is increasing). This result is significant with p value < 0.01. There is a significant but statistically insignificant decrease in earnings for males when the GGP variable increases. Equations for male and female earnings are provided:

$$\text{Earnings Male} = 7.53 + 0.56 * (GGP) + 0.245 * (\text{Years of School})$$

$$\text{Earnings Female} = 1.43 + 1.32 * (GGP) + 0.245 * (\text{Years of School})$$

Using this model and the averages for the GGP variable of 6.44 and years of schooling variable of 9, the male earnings predicted are $13.34 and the female earnings predicted are $12.14. This agrees with estimates for the gender gap predicted above from between $1-2.

5.2 Discussion of Findings and Policy Recommendations

Table 8 and 9 show the regressions using GGP and HDI to model the earnings of refugees. In particular, increases in the HDI by 1 benefit males by $0.54 but barely affect female salary. However, increases in the GGP variable (which means the gender gap is decreasing) benefit males by $0.57 and also benefit female salary by $1.3, a result significant to the 1% level. Interestingly, increases in HDI solely benefit male workers but increases in the GGP benefit all workers. Indeed, the two variables are related. Increasing the HDI index by 1 correlates to a 0.5 increase in the GGP index. Below shows a table using GGP, HDI, gender, and the years of school to create a new model.

	Dependent variable:
	Dollars per Hour at Job
Male	1.606^{***}
	(0.267)
HDI	0.397^{**}
	(0.137)
GGP	0.900^{***}
	(0.257)
Years of Schooling	0.220^{***}
	(0.031)
Constant	1.732
	(1.923)
Observations	1,057
R^2	0.100
Adjusted R^2	0.097
Residual Std. Error	4.060 (df = 1052)
F Statistic	29.351^{***} (df = 4; 1052)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 7: Gender, GGP, HDI, Years of School effect on Earnings

Again, this regression agrees with our analysis that reducing the gender gap in refugees home countries is significantly more beneficial to all refugees. The next section describes possible policy solutions to combat the earnings gap.

My results show the need for policymakers to pay special attention to the earnings potential of female refugees. In particular, it seems like focusing on women from countries with more gender inequality is the best path forward to addressing the gender gap. Indeed, the results show that increases in gender equality significantly contribute to a woman's pay. I explore and showcase two particular existing policy options that might help female refugees earn more, but my results suggest that any jobs or skills program that benefits them could be helpful to close this gap. The two policies that I look at are both cash assistance programs or workplace/vocational training for refugee women.

The first scenario is the introduction of policies to support refugee women in the form of cash assistance. Such programs for refugees in general are already in place, but have limitations. For example, the Refugee Cash Assistance (RCA) program helps refugees or humanitarian migrants by providing cash assistance for up to eight months from their arrival in the U.S. There are limitations for who can qualify for the cash assistance, mentioned in the introduction. Refugee women find that cash assistance is an important asset of governmental assistance. Cash assistance allows refugees to pursue autonomy in what they wish to buy rather than having these essentials imposed on them. Additionally, this benefits the local economy as refugees buy essential goods in local stores or pay for local services. Cash assistance benefits the refugees and the host economy at the same time.[14] Given the importance in cash assistance to refugees, there needs to be improvements in the cash assistance allotted to refugee women.

To solve for the RCA's minimal cash assistance, I suggest a kind of additional cash assistance for refugee women provided on top of the already existing RCA and other programs. The effect of the gender gap over a month can be calculated by approximating the dollars lost each hour as $1.70. Using the values from Table 5, refugee women work 31.74 hours per week on average. This contributes to about an extra $54 dollars being provided to refugee women per month. While this may not solve the root cause of the gender gap, it helps refugee women in the meanwhile. Cash assistance not only helps refugee women, but helps their daughters as well. Many refugee parents marry off their girls to reduce the economic burden that is placed on them. Instead, refugee parents can use the cash assistance to pay for proper school supplies, books, or extra tutoring. This is what happened in Syrian refugee communities within the U.S. Syrian refugee parents used the cash assistance to pay for school fees so that adolescent girls could stay in school

[14]UNHCR Staff 2019

and advance their educational pursuits.[15] Cash assistance can also help refugee women by giving them extra money to sign up for courses, degrees, or other career pursuits to bring them closer to self-sufficiency.

The second form of policy that will be explored is those that aim to directly provide workplace or job education to women. While this paper did not find significant results on the earnings by English skill, other papers find that learning English is key to refugee success. Additionally, about 32% of female refugees covered in the ASR 2018 study have no English skill at all. This number is lower for men, with only 28% refugee men speaking no English. In particular, immigrants who speak English proficiently are estimated to earn 17 to 24 percent more than those who do not. This is because those who do not are typically stuck in minimum wage jobs.[16]

The need for education for refugee women and girls is clear. On a global level, for every 10 refugee boys in primary school, there are less than 8 refugee girls. This number drops even more in secondary school, with fewer than 7 refugee girls in school for every 10 refugee boys.[17] The desperate need for English learning classes for women refugees in the U.S. is also clear. 11.5% of refugee women still speak no English even upon arrival in the US. Refugee women are also less likely to learn English before the US, with 32% of women having no English skill upon prior entry in the US, compared to 28% of men. These results come from Table 5.

English learning classes are often not readily available to refugees in the U.S., however. The U.S. has an unusually neglectful attitude towards immigrant integration in comparison to other industrialized countries. For example, in Sweden, foreigners get unlimited Swedish lessons at no cost, and France requires a short indoctrination session on "French values," but afterward offers 400 hours of language instruction with free child care.[18] The ESL classes that are available are in extreme demand, with over 16,000 refugees and immigrants on the waiting list for a particular center in Boston, Massachusetts.[19] It is clear that ESL classes need to be available to refugees to better help them integrate into the workforce and gain higher paying jobs. One potential policy suggestion is for ESL classes to be provided through the government until refugees learn English to a proficient level. The policy would be an add-on to the Office of Refugee Resettlement (ORR)'s pre-existing policies to lead refugees to self sufficiency. The policy can mandate connecting refugees with an ESL class or group for one to two years. At this point, the individual would

[15]Puls 2020
[16]Vu 2015
[17]UNHCR 2015
[18]Khazan 2021
[19]BostonGlobe 2018

learn basic English phrases and be literate. Further English learning from there can be managed by the individual.

However, ESL classes are not enough for refugee women to be self sufficient. Even though refugee women may have English skills, they still need to be able to understand job-related situations, such as writing resumes or performing interviews. Educational classes may not even be culturally sensitive for women refugees. Women refugees may be hesitant to participate in co-ed classes with males, or prefer classes held in more informal settings. Even though job and work related classes may be available to female refugees, many of them do not have the opportunity to participate them. This is mainly because of practical reasons, like daycare or transportation.[20] Policies like Universal Childcare, or providing some sort of childcare requirement for the first year of a refugee families' arrival could be implemented. Another important factor to note is the length of the programs that are offered. In the process of becoming quickly self-sufficient, refugees are expected to learn English concurrently with vocational training, job search and actual employment in as little as 3 months.[21] This is unrealistic for anyone, especially refugees who may not be literate in their own language. Refugee women who are also single parents face additional burdens with such time limits, as they are often unable to participate in these programs because of family or transportation issues that must be taken care of first. Often, female refugees may find themselves pressed to learn the material as quickly as possible, leading to them not actually becoming fluent in English or gaining skills from their job and vocational training.[22] Thus, a new policy that extends the period of time that federal support be given to female refugees is necessary for self-sufficiency. Such a policy could be an extension of the vocational training provided by the ORR. The policy could extend the time limit of these vocational training services to a year after arrival, or allow refugee women to have autonomy in choosing when they would like to take part in such a program.

In conclusion, there is high importance in creating programs that aim to help women refugees. Today, 50 per cent of the world's refugees are women and girls. Yet, only 4 % in the UN inter-agency appeals were targeted at women and girls.[23]This same disparity of programs to help support women refugees is seen in the U.S., where there are no national level programs for supporting the unique challenges that women refugees go through. The policy solutions listed above would help put women refugees on a path to self-sufficiency.

[20]Tuliao 2015
[21]Tuliao 2015
[22]Tuliao 2015
[23]United Nations 2015

6 Conclusion and Outlook

This paper demonstrates that female refugees face a gender gap in the U.S. This result is further strengthened by the fact that gender continues to be a highly significant predictor of earnings even when including other demographic variables such as years of schooling or english skill. This paper finds that the gender gap is influenced by conditions in refugees' home countries, such as the human development or gender inequality experienced. Increasing gender equality in refugees home countries is significantly associated with an increase in earnings for both male and female refugees, while increasing the human development in refugees' home countries primarily benefits male refugees. These results have significant implications in refugee policy. Policies like giving extra cash to female refugees to mitigate the gender gap and policies like giving women the autonomy to choose when job or vocational training occurs are explored.

Further research can be more robust in using data for refugees' country of defection rather than country of birth. It can also use the cohorts provided in the ASR 2018 data to analyze how female refugees have fared through the different years, and analyze the policies at place during those times. Policymakers can then use these results to determine which policies were effective in aiding female refugees.

The importance of closing the gender gap is not a statistic to be overlooked. Specifically, refugee women could generate up to 1.4 trillion dollars to national GDP if the gender gap were closed in each of the top 30 refugee hosting countries. In the U.S, this figure is an additional 2.064 billion dollars to the national GDP. [24] It is vital that commitments are implemented to reach refugee women and make sure they are not left behind.

[24] statistic from Kabir and Klugman 2019

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8 Appendix

8.1 Additional Tables

Country	Freq
Iraq	1517
Other	705
Syria	635
Bhutan	413
Burma	390
Congo	338
Somalia	326
Iran	159
Nepal	132
Eritrea	122
El Salvador	103
Don't know	29
Refused	3
Thailand	130
United States	258

Table 8: Country of Birth

English Skill	Freq
Not at All	60
Not Well	125
Very Well	39
Well	173

Note: n=397

Table 9: English Skill Before U.S for University Students

English Skill	Freq
Don't Know	23
Not at All	1605
Not Well	992
Refused	4
Very well	83
Well	566

Table 10: English Skill Before U.S. for all Participants

	Dependent variable:
	Dollars per Hour at Job
Medical Degree	1.545
	(1.932)
None	0.446
	(1.312)
Other Degree	1.261
	(1.626)
Primary School	−0.104
	(1.308)
Secondary (or high school diploma)	1.244
	(1.303)
Technical School Certification	0.848
	(1.376)
Training in Refugee Camp	1.222
	(2.049)
University Degree (other than medical)	3.785***
	(1.323)
Constant	12.000***
	(1.282)
Observations	1,405
R^2	0.064
Adjusted R^2	0.058
Residual Std. Error	4.796 (df = 1396)
F Statistic	11.893*** (df = 8; 1396)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 11: Highest Degree Earned vs Wage

	Dependent variable:
	Dollars per Hour at Job
Male	-1.477
	(2.475)
GII	-0.710^{*}
	(0.381)
Male*GII	0.620
	(0.478)
Constant	15.464^{***}
	(1.969)
Observations	1,238
R^2	0.040
Adjusted R^2	0.038
Residual Std. Error	4.118 (df = 1234)
F Statistic	17.198^{***} (df = 3; 1234)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 12: Earnings vs Interaction of Gender and GII