The Determinants of Domestic Violence through Female Economic Independence

Senior Economics Seminar

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Introduction:

The significance of wealth equality between genders and its effects on a country's social welfare varies from country to country depending on a variety of socioeconomic factors, but particularly the economic stability of a country. Many underdeveloped nations feature a larger wealth distribution gap between men and women than in more developed countries such as the United States. On the other hand, in other developed countries such as Finland, Sweden, Norway, Germany, etc. there have been movements taking place to empower women in the workforce that have yet to take place in the United States. The United States is sitting in the middle of a wealth equality continuum between developed and underdeveloped nations, when really the economic strength of the US suggests that they should be at the forefront of the developed side of the continuum.

The significance of the awareness of this topic is due to the correlation between wealth equality and domestic violence. Studies have proven that uneven wealth distributions can lead to greater probabilities of domestic violence occurring; developed nations generally show lower rates of domestic violence than do emerging markets (Mrkić 2010). If a woman is dependent on her husband for economic stability, she is more likely to accept abuse and not report it (Mull 1998-2016). The purpose of this study is to determine how the inequality of wealth distribution in a nation affects the rate of domestic violence per country, and how the redistribution of wealth through the implementation of women's rights can decrease this probability.

The majority of household domestic violence in the United States happens to women (85%) (Mull 1998-2016). For this reason, domestic abuse towards women will be the focus of this study. Domestic violence statistics are appalling and alarming. According to the Center for

Disease Control, 4,774,000 women in the United States suffer from physical domestic violence each year (Breiding 2014). This number jumps to 17,091,000 when accounting for emotional abuse and psychological aggression (Breiding 2014). Every nine seconds a woman is assaulted or beaten (Oliver 2014). 926 women are killed annually due to unaddressed domestic violence (Violence Policy Center 2013). If these statistics exist in a developed nation such as the United States, imagine countries for which fewer women's rights exist. All over the world right now, women are being held in dangerous situations in their own home where they should feel safest. Peru, Colombia, Haiti, Turkey, these are a few of the countries that experience high rates of domestic violence and unsurprisingly, simultaneously experience a larger distribution gap for wealth (Mrkić 2010). Adversely, developed nations that have more human rights and women's rights experience a smaller gap in wealth distribution (Pasquali 2012).

Additional negative effects that domestic violence has on social welfare are the effects transmitted to the child. Child abuse is up to 15 times higher in households where the mother is abused (Mull 1998-2016). Children coming from families where they experience or witness such abuse are at much higher risk of attaining drug and alcohol addictions, and have a greater chance of being involved in abusive relationships later in life. Socioeconomic impacts are also seen in the workforce, victims lose eight million days of paid work each year, which exceeds a loss of $8.3 billion annually (Oliver 2014).

The implications of domestic violence on society are obvious; the purpose of this study is to find ways that can decrease these rates, in both emerging and developed economies. Two questions must be addressed: 1) does the economic independence of women really decrease the rate of domestic violence, and 2) what laws or movements have increased female economic independence? By addressing the second question, a solution is created for the first. Through

causal effect, this determines whether laws and movements create economic equality between the sexes and whether this subsequently reduces the rate of domestic violence. Due to this causal relationship it is important to analyze whether the implementation laws are creating a shift in domestic violence, or whether the increase in female economic independence is responsible for this shift regardless of legislation.

Literature Review:

The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) is a bill of rights for women protecting their basic human rights and fundamental freedoms. It was adopted by the United Nations in 1979, and has been signed by all but 6 countries in the UN. These countries include: Iran, Palau, Somalia, Sudan, Tonga, and the United States. As the United States hangs in the middle of the economic equality continuum between developed and underdeveloped nations, mentioned previously, they should not be one of six countries to not sign a bill of necessary rights to women alongside less economically stable countries. The Unites States' refusal to commit to such a bill is a solid foundation for the understanding that in both developed and underdeveloped nations there needs to be an increase in the awareness of gender inequality.

CEDAW provides protection against many rights that women deserve, including but not limited to the right to education, employment, economic and social benefits, and political and public representation. The bill also provides protection against discriminations which are impeding to the growth and independence of women.

The economic impacts of refusing to empower women are significant. Matthias Doepke (2011) created an in depth analysis to validate this relationship. He and his colleagues reason that the explanation for why women have lagged behind men for so many years was *initially due to physical differences, women being physically weaker*. Eventually this changed as men realized that firstly more equality between the sexes leads to a rise in education that was previously inefficiently low, and secondly empowering the woman speeds up human capital accumulation. Once men in the western world realized this, women gained rights in *four stages: economic rights, political rights, labor rights, and the right to their own body*. These four stages of rights make up the level of female empowerment that a nation holds. Figure 1 of Doepke's study shows the relationship between a country's level of female empowerment and its GDP per capita. The graph increases exponentially, showing a positive correlation between empowerment of females and GDP per capita. Unsurprisingly, the observations show that many of the world's poorest countries hold very few women's rights and little female empowerment, giving basis to the argument that equality among the sexes must hold in order for economic development to flourish. A large influence on a country's level of female empowerment is the political rights that women hold, and this includes three factors: the median year of suffrage, the percent of women in parliament, and the Gender Empowerment Measure.

All 28 countries in the European Union have signed the CEDAW agreement, and many have taken further action to empower women through the implementation of gender quotas. Gender quotas create a certainty that women will hold a certain percent of positions in powerful architectures (such as board members for top firms, or political presence). Belgium, Finland, France, Germany, Iceland, and seven other European countries (listed in data findings) have implemented such gender quotas of 30% or more. In addition to the national economic impact

that empowering women can have, by creating these opportunities for women a country also increases the economic self-sustainability of women as they are more capable of increasing their income and obtaining positions of power.

In an EU Statistics Survey, "Violence Against Women: an EU-Wide Survey", the collected data shows that 25% of women in the EU-28 are victims of domestic violence. In the United States, this number rises to 33% (Kjaerum). The other five countries that refused to sign the CEDAW agreement do not even have laws prohibiting domestic violence (UN Women), and such countries can have rates of domestic violence against women rising as high as 80%. These countries also tend to be emerging markets, and underdeveloped. In the same way that women's rights have a strong positive correlation with a country's economic stability and women's economic independence (Doepke), women's rights holds a *negative* correlation with domestic violence rates. As the economic stability of a country increases, domestic violence tends to decrease (United Nations, 1979). A report by the United Nations shows statistics ranging over a variety of countries, which can be used in tandem with Doepke's study of gender power distribution to develop an argument for female economic strength being tied to rates of domestic violence. The UN report shows that domestic violence is higher where the unequal distribution of power is higher. For example, 60% of women in Jordan accept wife-beating as acceptable when they "burn the food" for their husbands. This power-distribution is different than say in Germany where gender quotas are being heavily addressed (Germany and Jordan's GDPs are $42,388 and $5,214 respectively, and their domestic violence rates are 32% and 50% respectively). Where the difference in these distribution powers are greater, there is more domestic violence. Where the difference in distribution powers are greater, there is less female

economic independence. Ergo, less female economic independence means more domestic violence.

Two opposing theories are argued to determine whether levels of education, labor force participation, and access to political roles increase or decrease the domestic violence in the nation. These rights available to women in different countries are considered to be "bargaining rights". The Levinson-Based Resource Theory suggests that domestic violence increases as these bargaining powers for the women become stronger, because men feel the need to exert dominance in the relationship through abuse when they no longer hold an economic advantage over their wives. The Whaley-Based Resource Theory suggests that as these levels of economic advantage increase for women, the level of domestic violence that occurs in said nation will decrease. Whaley agrees with Levinson in the short term; men will react with higher levels of domestic violence to show their dominance. But Whaley also argues that in the long term this increased gender equality will create positive results and decrease the overall level of domestic violence as the overall socioeconomic outlook of the country shifts to create stronger support for women.

Using support from Doepke under the long-term Whaley-based resource theory, "bargaining rights" (level of education, labor force participation, and access to political roles) for women can be attained through the process of four stages: economic rights, political rights, labor rights, and the right to their own body. This brings the literature review back to CEDAW. CEDAW protects a woman's rights to education, employment, economic and social benefits, and political and public representation. By abiding by bills such as CEDAW, and implementing laws such as gender quotas, countries will be providing opportunities for women to pass through the four stages and obtain their fully deserved "bargaining rights". An important note is the last stage

mentioned by Doepke, the right to their own body. The first stage in the process of obtaining these bargaining rights starts with economic rights for women, but does not insure immediate rights to their own body. This follows Whaley's theory that at first domestic violence may increase but over time and through these four stages, eventually domestic violence will decrease and women will have the right to their own body.

Thus far, developed countries and severely underdeveloped countries have been observed in this literature review with regards to female empowerment or lack thereof, however there are many underdeveloped countries that have been making strides to strengthen the first stage in obtaining female bargaining rights: economic rights. Women make up 70% of the world's poor. Women have the least amount of access to resources such as education, which sets them back from men when competing in the labor market. Microcredit has become a growing opportunity to allow people with lower incomes to take out loans, and the rapidly growing industry has been targeting women in particular. The International Labor Office in Geneva (2007) have created reports on the impacts and benefits of this new industry. Over 79 million women around the world struggling with poverty have taken part in this initiative, and 85% of the industry participants are female. High female participation rates have reaped positive externalities such as increased social welfare for the woman's children, betterment in health and nutrition, and positive environmental impacts. Women also tend to pay back their loans faster than men, and create higher rates of return on their investments. The top 20 countries in Microfinance have also been enjoying high rates of year over year GDP growth. Such initiatives for emerging markets are strong opportunities for creating stronger female economic independence, which in turn can potentially reduce the rates of domestic violence in participating countries.

Theory

The purpose of this research paper is to determine whether a greater wealth equality between genders in a given nation affects the amount of domestic violence that occurs in said nation. If the redistribution of wealth from men to women does lower the probability of domestic violence occurring, then it is important to know what laws can be implemented to promote this equality. Thus, the study must be broken into two parts: A. the observation of the level of equality in wealth distribution in a given nation as a function of the proportion of women's rights in said nation, and B. the observation of change in the probability of domestic violence against women in a given nation as a function of the level of equality in wealth distribution in said nation.

Equation 1:

$$WEALTHEQUALITY_n \sim F(WOMENSRIGHTS_n)$$

Equation 2:

$$P(DOMVIOLENCE)_n \sim F(WEALTHEQUALITY_n)$$

To understand the first relationship, it is important to understand the factors that effect women's rights. From the literature review it is apparent that these rights can change from country to country depending on the economic strength of the country. In developed nations, current laws that are being implemented are gender quotas on corporate boards and in political positions. In emerging markets, women's rights are still developing and instead an indication of a country's standing is the lack of rights such as domestic violence rights, and the use of industries such as Microcredit agencies. Because developed nations at first needed to pass the same hurdles as underdeveloped nations to get to the position they are in now, to observe a growth trend it is important to include both emerging and developed markets.

Previous research found through the literature review suggests two different takes on a theory called the 'Resource Theory'. This theory determines whether the bargaining power for women (quantified through the level of education, labor force participation, and access to political roles) can increase or decrease domestic violence in a nation. Levinson suggests that domestic violence exerted on women by men increases as these strength of these bargaining powers increase because men feel the need to exert power in a different way when women become more economically independent. Whaley agrees with this theory for the short-term but argues that the increase in these bargaining powers for women is effective in the long run and over time decreases the level of domestic violence. Levinson's theory will be addressed but Whaley's argument will pose as the basis for research due to the long-term outlook. Both emerging markets and developed markets will be used as observations as a way to detect effects over a long period of time.

Hypothesis

This study observes how A. the variation in the level of women's rights can affect the variation in the level of equal wealth distribution between genders, and subsequently B. how the variation in the level of equal wealth distribution between genders can explain the variation in probability of domestic violence. The literature review suggests that over the long run an increased equality between genders will have a negative relationship with the probability of domestic violence occurring (as countries become more developed, the relationship becomes more significantly negative). Emerging markets that have fewer women's rights and more gender

income inequality should observe higher levels of domestic violence, and developed countries

with more women's rights and less inequality will observe less domestic violence.

Description of Data

Because this paper observes a causal effect between two separate studies, it is important

to keep the observed countries consistent for all independent variables. A range of emerging and

developed markets should be used to observe changes over time, in the form of a cross sectional

model. The countries are chosen based on a few indicators. Twelve European countries that have

implemented gender quotas will be used as sources for developed economies, as well as the US

due to the findings in the literature review. The top twenty countries that are participating in

Microcredit will be used as a source for emerging markets that are proactively working towards

female economic independence. Additionally, countries that have no laws prohibiting domestic

violence will also be included to account for emerging markets that are not actively pursuing

female independence. The use of these countries will help to account for the vast amount of

macro socioeconomic factors that cannot be explained in the model. These country descriptions

will be used in a dummy variable form to avoid serial correlation. In this model it is critical to

choose factors that can affect both emerging and developed countries. The equation below will

be used as a model to observe the effect of women's rights on distribution of wealth between

genders, estimated in the form of ordinary least squares:

Equation 1.1: $(\text{WEALTHEQUALITY}_n) \sim F(\text{WOMENSRIGHTS}_n)$

$\text{PctSavedEmergency}_n = B_0 + B_1(\text{Suffrage}_n) + B_2(\text{Microcredit}_n) + B_3(\text{PoliticalTargetQuota}_n) + B_4(\text{GGI}_n) + B_5(\text{GenderQuota}_n) + B_6(\text{NoDVLaw}_n) + E_n$

The dependent variable in this model used to denote wealth equality is the average percent of women in each country who save in case of an emergency (in case of unexpected unemployment for example). In order to determine the variation in women's rights between economies of different strength, multiple independent variables reflecting different levels of bargaining power strength have been chosen for this model. The first is the year suffrage ended in a country, which shows how progressive the country is about women's rights. The second is the Microcredit dummy variable previously explained. The third is the size of the quota required for women in political positions (if the quota exists). The fourth is the gender gap index (GGI), this describes the level of inequality between men and women with regards to wage, education, and level of employment. The fifth and sixth are whether gender quotas have been implemented and whether there is a domestic violence law implemented (previously explained). These variables allow for consistent observation across countries of different economic strength.

When the increased level of women's rights among these countries show a positive effect on the equal distribution of wealth between genders in each respective country, then one can use the same model with added variables that account for wealth to determine if this wealth equality can in turn affect domestic violence:

Equation 2.1: P(DOMVIOLENCE$_n$) ~ F(WEALTHEQUALITY$_n$)

DomesticViolence$_n$ = B$_0$ + B$_1$(Suffrage$_n$) + B$_2$(PctParliament$_n$) + B$_3$(PoliticalTargetQuota$_n$) + B$_4$(GGI$_n$) + B$_5$(GenderQuota$_n$) + B$_6$(NoDVLaw$_n$) + B$_7$(Microcredit$_n$) + B$_8$(PctSavedEmergency$_n$) + B$_9$(FemaleEmpRate$_n$) + B$_{10}$(PctTertiaryEdu$_n$) + B$_{11}$(PctRealGDP$_n$) + E$_n$

After observing whether the implementation of women's rights increases the gender equality of wealth, additional independent variables are added to determine the overall effect that wealth

equality has (through economic and legal factors) on the probability of domestic violence. These are; percent of women in parliament, percent of women who save for emergencies (now an independent), female employment rate, tertiary education attainment, and year over year change in GDP. The independent variables and their relationship to the dependent variable *Domestic Violence* are explained in Table 1.

Table 1: Explained Independent Variables included in Equation 2.1 and the Expected Relationship with the Dependent Variable: *Domestic Violence*

Independent Variable	Definition	Type of Data	Unit of Analysis	Expected Sign
Suffrage	What year were women given the right to vote?	Quantitative: year country implemented women's right to vote	Country X	Positive
PctParliament	What percent of parliament is represented by women in each country?	Quantitative: percent of women in parliament	Country X in 2011	Negative
PoliticalTargetQuota	How large is the target quota for female political presence?	If the country has a female political quota, it is based off of target percent in parliament. If there is no law standing for political quotas, it is quantified as zero.	Country X in 2014	Negative
GGI	The Gender Gap Index Score	Ratio determining the level of inequality between men and women in each country	Ratios listed per country for 2014	Negative

GenderQuota	Has the country established a target quota for women on the boards of directors?	Dummy Variable: Does the country have a gender quota law	Country X in 2014	Negative
NoDVLaw	Does the country not have any laws in place to prevent domestic violence?	Dummy Variable: Does the country have laws prohibiting domestic violence	Country X in 2011	Positive
Microcredit	Is the country in the top 20 performing microcredit countries?	Dummy Variable: Is the country listed on the top 20 markets for microcredit	Country X in 2014	Positive
PctSavedEmergency	How much has the average woman saved in each country, for case of emergency?	Percent that the average woman has saved for emergencies (compared in USD)	Country X in 2010	Negative
FemaleEmpRate	What is the rate of employment for women in each country?	Percent of women that are employed	Country X in 2010	Negative
PctTertiaryEdu	What percent of women have a tertiary education degree?	Percent of women that hold tertiary education degree	Country X in 2010	Negative
PctRealGDP	What is the Real GDP Growth over the last year for each country?	YOY Percentage change in GDP	Country X in 2010	Positive
E	Error Term – accounts for any variables that are not included in the model	N/A	N/A	N/A

The independent variables selected have been discussed in the literature as important factors that increase female independence and subsequently reduce the probability of domestic violence.

The dependent variable (probability of domestic violence occurring in a given country) will be quantified as a percent of the female population that are victims of domestic violence. Sources for the data are included the bibliography.

I hypothesize that with a greater portion of women's rights and with stronger female economic independence there will be a decrease in the overall level of domestic violence observed in each country.

Testing the Hypothesis

Independent Variable	Mean	Std. Dev.	Minimum		Maximum	
DomesticViolenceRate	37.17%	18.22%	13.00%	Spain	80.00%	Belarus
Suffrage	1934	18	1906	Finland	1973	Bahrain
PctParliament	21.72%	11.67%	4.00%	Mongolia	45.00%	Sweden
PoliticalTargetQuota	24.95%	19.23%	0.00%	Armenia, Azerbaijan, Bahrain, Belarus, Cambodia, Georgia, Ghana, Russia, Tajikistan, United States	50.00%	Belgium
GGI	72.27%	5.91%	61.83%	Turkey	85.94%	Iceland
GenderQuota	Dummy Variable					
NoDVLaw	Dummy Variable					
Microcredit	Dummy Variable					
PctSavedEmergency	25.89%	14.89%	5.79%	Armenia	55.16%	Sweden
FemaleEmpRate	61.25%	12.69%	30.20%	India	82.00%	Cambodia
PctTertiaryEdu	44.43%	38.03%	0.00%	Bahrain	110.74%	United States
PctRealGDP	3.92%	3.70%	-5.50%	Haiti	13.09%	Paraguay

The average rate of domestic violence for the 39 countries included in this data set is

37.1%. Spain has the lowest domestic violence rate at 13%, and Belarus has a very high rate of

domestic violence at 80%

The average year that women won the right to vote was in 1934. Finland was first in this

series, in 1906, and Bahrain was last in 1973.

The average percent of female political presence is approximately 22%, which I was expecting to be much lower. Mongolia has the lowest rate at 4%, and Sweden has the highest rate at 45%. This is in alignment with the literature review.

The average targeted quota for female presence in politics is approximately 25%. Armenia, Azerbaijan, Bahrain, Belarus, Cambodia, Georgia, Ghana, Russia, Tajikistan, United States have no required quotas and are listed as the lowest, these are all either countries with no domestic violence laws or they are microcredit countries, so this matches the literature review. The highest is Belgium at 50%, which also matches the literature review.

The average Gender Gap Index is 72% suggesting that on average, women across the world have about 72% of the same rights that men have. Turkey is the lowest at 62% and Iceland is the highest at 86%.

The three dummy variables for each country are not quantifiable.

The average percent of women in each country that save money for emergencies and unexpected events is 26%. Armenia is the lowest at 6%, and Sweden is the highest at 55%.

The average female employment rate is 61%, India has the lowest at 30% and Cambodia has the highest at 82%.

The average percent of women that have a tertiary (bachelors) degree is 44%. In Bahrain, women do not have any. In the United States women are over performing at 110%.

The average year on year GDP growth rate for these countries is 4%. Haiti is declining at -5.5% and Paraguay is excelling at a growth rate of 13%.

Table 2.1: (*WEALTHEQUALITY$_n$*) ~ *F(WOMENSRIGHTS$_n$*)

Regression	Coefficient	Std. Error	t-statistic	P value	VIF
Suffrage	.001	.0010	1.40	0.174	1.41
Microcredit	-.1481	.0602	-2.46	0.21	3.86
PoliticalTargetQuota	.0585	.1064	0.55	0.587	1.85
GGI	1.881	.4447	4.23	0.000***	2.22
GenderQuota	-.0666	.0793	-0.84	0.409	5.64
NoDVLaw	-.0595	.0554	-1.07	0.293	1.93

Prob > F: 0.0000
Adj R^2: 0.6504
R^2: 0.7140

***significant at 1% level*

This regression is analyzing the effect of women's rights on wealth equality. The adjusted R^2 for this regression suggests that the model can explain a considerable amount of the variation in the data (65% of the variation). The F-Statistic indicates that the entire model is significant at the 1% level. Only one independent variable is significant at the 1% level: the Gender Gap Index. The rest of the independent variables are not significant even at the 10% level which suggests there may be a problem with multicollinearity. The VIF test was run to check for multicollinearity. Only one independent variable had a value greater than five, indicating multicollinearity. Gender Quota had a VIF of 5.64. This is considered when running the next model. The next model is the second model; domestic violence as a function of wealth equality. Because wealth equality includes all of the variables in the above equation, and additional independent variables, Gender Quotas will be left in the model even with a high VIF score. The reason for this is that multicollinearity for this variable may go down when omitted variables are introduced to the equation. Thus the following model was produced:

Table 2.2: *P(DOMVIOLENCE_n) ~ F(WEALTHEQUALITY_n)*

Regression	Coefficient	Std. Error	t-statistic	P value	VIF
Suffrage	.0006	.0024	0.25	0.802	2.09
PctParliament	.6169	.3793	1.63	0.118	2.16
PoliticalTargetQuota	-.1361	.2322	-0.59	0.564	2.48
GGI	.4490	1.336	0.34	0.740	5.64
GenderQuota	-.0868	.1665	-0.52	0.607	6.98
NoDVLaw	.0957	.1177	0.81	0.425	2.44
Microcredit	.1366	.1689	0.81	0.427	8.53
PctSavedEmergency	-.3485	.3999	-0.87	0.393	4.24
FemaleEmpRate	.2134	.3544	0.60	0.553	1.92
PctTertiaryEdu	.0235	.1282	0.18	0.856	2.63
PctRealGDP	.2760	1.288	0.21	0.832	1.99

Prob > F: 0.1671   **No Data at 10%**
Adj R^2:   0.1670   **Significance Level**
R^2:   0.4446

Here the adjusted R^2 goes down significantly, and shows that the model can only explain 16% of the variation in domestic violence across the selected country set. The t-statistics also go up, showing no significance for any of the variables at even the 10% level. Testing for VIF again, it is apparent that Gender Quotas still have a very high level of multicollinearity. Additionally, Microcredit countries, Percent Saved in an Emergency (the original dependent variable from equation 2.1), and GGI are now showing severe multicollinearity. Because so many independent variables are included for such a small number of countries (39), it is impossible for the model to account for a high amount of variation in the data. There are irrelevant variables in this data set that should be evaluated and removed.

The dummy variables for all of the countries will be correlated, and thus only one dummy variable should be included. They are correlated because only one country will have one of the

three characteristics, thus any country with (1) for one variable will have (0) for the other two. It

is necessary to make an empirical evaluation of which dummy variable is most significant.

Because Microcredit agencies have shown the largest amount of contribution towards female

economic empowerment, across all types of countries, this is the most important variable to

include. NoDVLaw and GenderQuota will be eliminated.

Another way to determine which variables are not statistically significant is by running a

correlation matrix to see what the correlation is between every variable. GGI had a high

correlation with all of the other variables, so although it had a 1% statistical significance in

Model 2.1, it should be eliminated for this equation.

The year on year change in GDP has a very low statistical significance compared to what

it normally represents. Because difference in GDP is so vast in the difference between countries,

and the observation set is so small, it is wise to consider leaving this out of the equation.

From the data analysis at the beginning of the hypothesis testing, tertiary education is

such a large range of data that it may not have statistical significance for this set of observations.

If the United States has 110% of females in tertiary education, and Bahrain has 0%, this suggests

that there will be insignificance in the t-statistics from the wide range of data.

Finally, Suffrage is not showing a high statistical significance at all. Because the date that

a country created the women's right to vote does not represent modern times, and because this

data set is not time series, this may be throwing off the variables.

After eliminating many of the independent variables deemed to be irrelevant, the

following model was created:

Equation 2.3: P(DOMVIOLENCE$_n$) ~ F(WEALTHEQUALITY$_n$)

DomesticViolence$_n$ = B$_0$ + B$_1$(Microcredit$_n$) + B$_2$(FemaleEmploymentRate$_n$) +
B$_3$(PctSavedEmergency$_n$) + E$_n$

Regression	Coefficient	Std. Error	t-statistic	P value	VIF
Microcredit	.4354	.3255	1.34	.190	1.60
FemaleEmpRate	-.2377	.1624	-1.46	.153	1.25
PctSavedEmergency	-.5390	.2403	-2.24	.032**	1.61

Prob > F: **0.0376**

Adj R²: **0.1523**

R²: **0.2230**

***indicates data is significant at the 5% level*

The R^2 in this equation still does not explain a large amount of the variance in the

equation, at only 15.23%. The overall statistical significance of the model is significant at the 5%

level. The VIFs are no longer suggesting any multicollinearity, however the P-values are still not

as statistically significant as they were in the first model.

Because of these characteristics, I believe the best way to run the equation is with the

same variables included in this model, but with the dependent variable the same as in the first

equation (2.1). The model will run the percent that women save as a function of domestic

violence and other gender equality matrices (female employment rate, and whether the country

has microcredit agencies to promote female economic independence). This still represents the

literature review because it will show that as domestic violence rates change, so will the amount

of economic independence that a woman has (total savings).

Equation 2.3: P(DOMVIOLENCE$_n$) ~ F(WEALTHEQUALITY$_n$)

PctSavedEmergency$_n$ = B$_0$ + B$_1$(Microcredit$_n$) + B$_2$(FemaleEmploymentRate$_n$) + B$_3$(DomesticViolence$_n$) + E$_n$

Regression	Coefficient	Std. Error	t-statistic	P value	VIF
Microcredit	-.1284	.0367	-3.50	0.001	1.21
FemaleEmpRate	.5434	.1394	3.90	0.000	1.04
DomesticViolence	-.1959	.0999	-1.96	0.058	1.18

Prob > F: 0.0000   ***indicates data is significant at 1% level**

Adj R^2: 0.5370   ****indicates data is significant at the 5% level**

R^2: 0.5756

This regression shows great statistical significance. The model is significant at the 1%

level, two of the independent variables are significant at the 1% level, and one of the independent

variables is significant at the 5% level. None of the variables show any signs of multicollinearity

because the VIF scores are all under 5.

What this model is saying is that if the country is a Microcredit country then it will have a

lower level of savings than other countries. If the female employment rate goes up by 1%, then

savings will go up by 0.5434%. The important topic here is that if domestic violence goes up by

1%, then savings will go down by -0.1959%. This proves the research in the literature review

because domestic violence and female economic independence have a negative relationship.

Conclusion:

Ultimately, this regression analysis would have been more statistically significant if there were more countries and if it was analyzed in panel form over a significant number of years. This data takes years to research and many of the data sources that were used for these statistics held sporadic information year over year. Additionally, because many of the underdeveloped nations have high levels of domestic violence, not all of these governments release information about their domestic violence rates and if they do it is not certain that they are truly reflecting what is going on in the country. In order for such a relationship to be truly analyzed, it takes years of analytical research.

The chosen data would normally show lower levels of multicollinearity, and subsequently statistical significance if the data set was larger with more observations. It is an interesting topic to look into. However, because little data was attainable due to government regulations, the final regression analysis was statistically significant and did prove the theory that as domestic violence decreases, women have higher incentives to save money. The literature review suggested that on average, $8.3 billion are lost annually in the United States due to domestic violence. If the rate of DV decreases, then more women will be working and will have the opportunity to save more. Microcredit having a negative relationship with savings seems to go against the literature findings, however, women who need microcredit lending generally are not in a position to start saving yet.

The conclusion of this paper is that there is definitely a relationship between female economic independence and domestic violence. There is also a relationship between female economic independence and women's rights implemented through legislation. CEDAW and

other legislation such as gender quotas should be recognized and considered to increase the

social welfare of women and children all around the world.

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Statistics Findings:

The World Bank, The International Monetary Fund

Political quotas per country:

http://www.quotaproject.org/uid/countryview.cfm?country=77

Political quotas (list including the US)

http://www.ipu.org/wmn-e/classif.htm

Gender Gap Index

http://reports.weforum.org/global-gender-gap-report-2014/rankings/

Timeline of Women's Suffragette

http://womensuffrage.org/?page_id=69

Employment Rates by Country NBLS

http://www.bls.gov/fls/country.htm