International Scholars Journals

African Journal of Gender and Women Studies ISSN 2516-9831 Vol. 5 (3), pp. 001-015, March, 2020. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

The relationship between work conditions and women's socio-economic status: a global exploratory study

[1]Jingqiu Guan*, [2]UjvalaRajadhyaksha and [3]Jerome McElroy

[1]*84 Brattle Street, #369, Cambridge, MA 02138

[1/2/3]Department of Business Administration and Economics, Saint Mary's College

Accepted 05 October, 2019

Women's work conditions have an impact on their socio-economic status; however, because of the lack of a database of policies regarding women's work conditions across countries, few studies have been done to establish the statistical relationships between them. In this study, multivariate regression was used to explore the relationships between these policy areas and macroeconomic indicators with a focus on women's socio-economic status. An original Women's Work Conditions Index (WWCI) was developed in the study to measure women's work conditions in 192 countries. Results reveal a strong positive relationship between women's work conditions and women's socio-economic status and support the hypothesis that better women's work conditions may improve their socio-economic status and may positively impact a country's macroeconomy, such as raising the per capita GDP and the adult literacy rate, lowering the fertility rate, and both the general and female unemployment rates. Contrary to the traditional view that providing better labor protections lowers productivity, this study proves statistically that a country would be better-off if it provides better work conditions for women.

Keywords: Women's work conditions, socio-economic status, macroeconomy, index.

INTRODUCTION

With the advent of globalization, the world's social and economic structures have undergone drastic changes in the past decades. An increasing number of women entered the labor market as a transition from being unpaid homemakers. This transforming family and work structure propels the changes in institutions and laws relating to women's work roles and conditions of employment (Barrett, 1984). Policy makers, social scientists and managers have been caught in a debate over the impact of investing resources into improving work conditions for labor. While there is little debate over the moral grounds for providing humane work conditions, the challenging part has been actually making it happen, especially given the prevailing economic wisdom that increasing minimum wages and improving workplace conditions lead to increasing costs, higher unemployment rates and job loss (Neumark and Wascher, 2006).

Nevertheless, when both paid and unpaid work is included, women are substantially less likely to have protection at work (Heymann and Earle, 2010). Lack of labor protection exacerbates gender and income inequalities, while the availability of labor protection favorably influences lifetime opportunities, health, and welfare of employed individuals, especially women. Numerous past studies examining the relationship between working conditions and women's socioeconomic status at a country-specific level have found a positive relationship between the two. However, few studies have been conducted to examine this important issue at a global level. This study seeks to fill this gap by using an empirical approach with data collected for 192 countries to establish a relationship that favorable work conditions do not reduce a country's economic productivity but instead help reduce the gender gap and raise women's socio-economic status. This study is made possible because of the development of the work, family, and equity index (World Legal Rights Data Center, 2005) which measures governmental performance around the world in meeting the needs of working women, men, and their families.

This paper comprises four parts: (1) literature review

*Corresponding author email: jig030@mail.harvard.edu
Phone: 574-520-9650

on studies exploring the relationship between women's work conditions and their socioeconomic status; (2) detailed description of the research methodology of this study; (3) results of the statistical analysis; and (4) discussion and conclusions drawn from this study.

Literature Review

In today's society, women have become more and more active in the job market. However, their traditional roles of taking care of housework and family members have stayed the same, heavily adding to their burden and stress in their working life (Domínguez et al., 2010; Dedeoğğlu, 2010; Mellner, Krantz and Lundberg, 2006). Studies on the United Kingdom and Republic of Ireland show that though women are encouraged to participate in the labor market, the inadequate provisions of childcare result in women's dual pressure of being economically active and bearing heavy family responsibilities (Smith et al., 2011). The budget cuts to social care services have shifted even more caring responsibilities to women, making them "less attractive to employers looking for a new flexible and accommodating workforce" (Smith et al., 2011, p. 608), prolonging the gender inequality in the U.K. and Ireland. As a result of the double burden, the U.S. has witnessed some reverse trends in that many women decided to leave the work force to take on the primary responsibility of housework and childcare (Hochschild, 2003, as cited in O'Hara, 2011). A lack of provisions for temporary maternal or parental leave is the primary cause that drags women into the deep dilemma between family and work and also causes poor health as a result of high stress (Swiss and Walker, 1993).

Domínguez et al. (2010) believe that it is "insufficient to look only at women's increased participation in the labor force" (p. 188) to examine the progress of women's socio-economic status. The difficulties to achieve life-work balance and gender discrimination create a ceiling for women entering higher levels of jobs, sustaining the gender inequality in the professional world (Henehan and Sarkees, 2009).

Numerous past studies on specific countries call for an improvement in women's work conditions as a means to raise women's socio-economic status and improve both their and their children's health. Mellner et al. (2006) emphasized in their studies on women's health and the role of work characteristics that it is important to improve women's work conditions in order to improve the health of middle-aged women who are most likely affected by job strain which means "lack of control in a psychologically demanding job" (p. 1). Galtry (2003) concluded in his study of Ireland, Sweden, and the U.S. that it is crucial to have both socio-cultural support and labor market policy as a means to promote high rates of both breastfeeding and women's employment in industrialized countries. In her study on lone and partnered mothers in Sweden, Amilon (2010) also discussed that allowing mothers to take temporary parental leave increases the health of the child, which "contributes to the mother's well-being" (p. 36). Swiss and Walker (1993) believed that in order for mothers to get out of the family/work dilemma, the passage of legislation to ensure certain basic rights for all parents is critical, and the companies are "self-imposing penalties" (p. 224) by not offering these benefits. Agreeing with these provisions, McDowell, Perrons, Fagan, Ray, and Ward (2004) stated that "through the transformation of the tax and benefit systems, addressing practices that previously discriminated against women, and new policies to provide paid leave for caring responsibilities, more women also have the prospect of largely uninterrupted labour-market careers" (p. 444).

While these above studies show strong evidence for the necessity of raising women's work conditions, few studies have managed to explore this phenomenon at a global level, mainly on account of the absence of a uniform database on global work conditions. With the availability of the work, family, and equity index, Heymann and Earle (2010) indicated that there is no relationship between unemployment rates and providing basic protections to workers. Contrary to popular belief, providing good work conditions can make countries more, rather than less, competitive. They therefore built the argument that the obligation to improve work conditions globally is an economic as well as a moral one. Researchers believe that Heymann and Earle (2010) made an important contribution to thinking on global policy, and the aim of this study is to support their thesis by subjecting the data to cross-country analysis with a special focus on work conditions for women and establishing their relationships with socio-economic indicators. Therefore, the hypotheses of this study are:

Hypothesis 1. Women's work conditions have a positive relationship with per capita GDP.
Hypothesis 2. Women's work conditions have a negative relationship with the unemployment rate.
Hypothesis 3. Women's work conditions have a negative relationship with the female unemployment rate.
Hypothesis 4. Women's work conditions have a negative relationship with the fertility rate.
Hypothesis 5. Women's work conditions have a positive relationship with life expectancy.
Hypothesis 6. Women's work conditions have a positive relationship with the adult literacy rate.

METHODOLOGY

Data Sources

The goal of the study is to examine the impact of

Table 1. Scoring Maternal Leave

Range	New Range (Multiplying both ends of the two ranges)	Medium (Medium number of the new range)	Score
0	0	0	0
<14 & 1-49%	0-7	3.5	1
<14 & 50-74%	0-10	5	2
<14 & 75-100%	0-14	7	3
14-25 & 50-74%	7-18.5	13	4
14-25 & 75-100%	10.5-25	18	5
26-51 & 50-74%	13-38	25.5	6
26-51 & 75-100%	19.5-51	35	7
>=52 & 50-74%	>=26	>39	8
>=52 & 75-100%	>=39	>52	9

women's work conditions on a country's macroeconomic performance. Researchers chose to examine five areas of policies concerning women's working conditions: maternal leave, parental leave, breastfeeding, leave for adult family member's need and paid sick leave. Maternal leave refers to the paid leave for new mothers. Parental leave refers to the paid leave a parent takes in order to take care of his or her child. Breastfeeding is a policy that allows new mothers to take time off from work in order to breastfeed a child. Leave for adult family member's need is the leave a worker can take in order to take care of any adult member of the worker's family. Therefore, these measures of working conditions have a great impact on women. Paid sick leave refers to the leave that a worker needs to take because of illness, which affects both men and women equally. All above data were collected from the World Legal Rights Data Center (http://raisingtheglobalfloor.org). To examine the impact of these policies on the macroeconomy, researchers selected six macroeconomic indicators as dependent variables including two with gender focus: per capita GDP, the unemployment rate, the female unemployment rate, the total fertility rate, life expectancy, and the adult literacy rate. All of these data were retrieved from the UN website (http://data.un.org), and the latest data available were selected for this study.

Scoring Method

In the work, family, and equity index, most of the five policies examined in this study consist of several sub-policy areas and are expressed as ordinal data. In order to examine how these five policies collectively influence women's health and the macroeconomy, data for all five areas are standardized and then combined to develop the Women's Work Conditions Index (WWCI).

Scoring maternal leave

Maternal leave is shown in a combination of duration of paid leave for mothers in weeks and wage replacement of paid leave for mothers in percentage. However, both data given are expressed by ranges of weeks or ranges of percentages instead of discrete numbers. Take Belgium as an example: the duration of paid leave for mothers is 26-51 weeks and the wage replacement of paid leave for mothers is 75-100%. In order to arrive at a single number, a method to transform the ranges and combine both the duration and the wage replacement together into one score was developed to quantify the policy.

The score is given by considering the cumulative effect of both the number of weeks of maternal leave and the percentages of wage replacement for the leave. Multiplying the number of weeks of break and the percentage of wage replacement yields the number of weeks with 100% of wage replacement. In this way, this independent variable is standardized and given scores according to the number of weeks with 100% of wage replacement. A score from 0-9 is given from the lowest to the highest medium number of the new range resulting from the multiplication. In this way the scores are developed as shown in Table 1 above.

Scoring parental leave

Parental leave is also a combination of both duration of paid parental leave and the wage replacement of paid parental leave. Similar to the measurement of the policy for maternal leave, both data are expressed in ranges instead of discrete numbers. For example, Canada offers 26-51 weeks of paid parental leave and 50-74% of the wage replacement while Afghanistan does not offer any

Table 2. Scoring Paternal Leave

Range	New Range (Multiplying both ends of the two ranges)	Medium (Medium number of the new range)	Score
0	0	0	0
<14 & 1-49%	0-7	3.5	1
<14 & 50-74%	0-10	5	2
<14 & 75-100%	0-14	7	3
26-51 & 1-49%	0.26-25	13	4
14-25 & 50-74%	7-18.5	13	4
14-25 & 75-100%	10.5-25	18	5
26-51 & 50-74%	13-38	25	6
>=52 & 1-49%	> (0.52, 25)	25	6
26-51 & 75-100%	19.5-51	35	7
>=52 & 50-74%	>=26	>39	8
>=52 & 75-100%	>=39	>52	9

Table 3. Scoring Policies on Breastfeeding

Daily length of breastfeeding break (hour)	Length of breastfeeding break coverage (month)	Score
>=1	>=24	4
>=1	>=12	3
>=1	7-11	2
>=1	1-6	1
0	0	0
<1	>=24	
<1	>=12	

form of parental leave. Therefore, the same method to score maternal leave is used to score parental leave. The possible combination and scores are shown below in Table 2.

Scoring policies on breastfeeding

Breastfeeding is also expressed by two sets of data: daily length of breastfeeding break (in hours) and length of breastfeeding coverage (in months). Therefore, combining the two sets of data together is necessary in order to correctly reflect each country's policy on breastfeeding. According to the possible combinations of both sets of data shown in Table 3 above, the data can be scored according to the length of breastfeeding break coverage if the daily length of breastfeeding break is one or more hours. Otherwise, including data with less than one hour of breastfeeding break compounds the difficulty of scoring objectively. Since only Albania, Monaco, Nicaragua, and Slovakia fall into the last two possible combinations where length of breastfeeding break is less than one hour per day and lasts for more than 12 to 24 months over the year, it was expected that dropping four data points would not significantly affect regression results since the sample size is 192. Therefore, these four countries were not included in the scoring process (see Table 3).

Scoring leave for adult family members' need

In the work, family and equity index, leave for adult family members' need is categorized as "paid", "unpaid", or "none." Therefore, a score of 0 is given to countries that do not offer any policy to allow leave for adult family member's need; 1 is given to countries that do offer this policy, but it is unpaid, and 2 is given to countries that offer this policy, and it is paid (see Table 4).

Table 4. Scoring Leave for Adult Family Members' Need

Leave for adult family member's need	Score
None	0
Unpaid	1
Paid	2

Table 5. Scoring Paid Sick Leave

Duration	Score
0	0
1-10 days	1
11-30 days	2
31 days – 25 weeks	3
>=26 weeks	4

Table 6. Women's Work Conditions Index for Argentina

	Maternal leave	Parental leave	Leave for breastfeeding	Leave for adult family member's need	Paid sick leave	Women's work condition index
Original score	5	0	3	0	3	
Standardized score	5/9	0/9	3/4	0/2	3/4	5/9+0/9+3/4 +0/2+3/4= 2.05

Scoring paid sick leave

The policy for paid sick leave consists of only one set of data – paid sick leave duration (in days and weeks). The duration of sick leave is also scored according the range, but it is more apparent because the ranges do not overlap (see Table 5).

Developing Women's Work Conditions Index (WWCI)

After scoring all five areas of policy, all the scores were conflated together to develop women's work conditions index that is a combined index that accounts for the overall work conditions for women. Because the scores for maternal leave and parental leave range from 0-9, the scores for paid sick leave and breastfeeding leave range from 0-4, and the scores for leave for adult family members' need range from 0-2, each score was standardized by dividing the score previously developed by the largest possible score in the same category. Then all the five values were added together to develop the score for women's work conditions. Take Argentina as an example in Table 6.

Through this method, the Women's Work Conditions Index (WWCI) was developed for 192 countries in the world. This index is shown in the Appendix.

To examine the relationship between labor policies and macroeconomic indicators, a correlation matrix, multivariate regressions, and step-wise regressions are used to test the hypotheses. Six multivariate regressions were run with all the independent variables against each of the six macroeconomic indicators. In addition, five step-wise regressions were run with all independent variables against the five macroeconomic indicators holding GDP constant. Finally, five step-wise regressions were run using the WWCI as independent variable and the five macroeconomic policy indicators as dependent variables.

RESULTS

The results of the regression analysis favorably support our hypotheses and confirm that better work conditions for women can benefit the economic performance of a country and improve women's socio-economic status, by

Table 7. Correlation Matrix

Variable		M. leave	Parental leave	Breast-feeding	Leave for adult family member	Sick leave	Per capita GDP	Unem	F unem.	%Fertility	Life expect.
Maternal leave	b										
	p										
Parental leave	b	0.659									
	p	***									
Breastfeeding	b	0.161	0.076								
	p	*	0.362								
Leave for adult	b	0.442	0.404	-0.034							
family member	p	***	***	0.672							
Sick leave	b	0.380	0.161	0.043	0.112						
	p	***	*	0.590	0.139						
Per capita GDP	b	0.310	0.342	-0.104	0.256	0.124					
	p	***	***	0.204	***	0.111					
%Unemploy	b	-0.206	-0.095	0.087	-0.191	-0.124	-0.286				
	p	***	0.367	0.410	0.056	0.214	**				
%Female unemploy	b	-0.250	-0.281	0.025	-0.187	-0.105	-0.359	0.863			
	p	*	**	0.823	0.070	0.310	***	***			
%Fertility	b	-0.429	-0.337	0.062	-0.308	-0.253	-0.430	0.072	0.125		
	p	***	***	0.441	***	***	***	0.467	0.225		
Life expectancy	b	0.174	0.108	0.106	0.095	0.016	0.183	-0.021	0.004	-0.402	
	p	*	0.180	0.197	0.218	0.839	*	0.837	-0.970	***	
Adult literacy	b	0.341	0.291	0.041	0.211	0.215	0.390	-0.110	-0.138	-0.778	0.399
	p	***	**	0.672	*	*	***	0.389	0.299	***	***

Notes. M. leave = Maternal leave; %Unem = %unemployment rate; %F. unemp = % Female unemployment rate
* p< 0.05. ** p< 0.01. *** p < 0.001

lowering female unemployment and fertility while increasing the adult literacy rate.

Correlation Matrix

It is perceived that correlations exist among both the independent variables and dependent variables, which might lead to inflated R^2 values that do not reflect the reality or lead to the inclusion of unnecessary independent variables. Therefore, the correlation matrix is shown in Table 7 above to give general information on the relationships between each pair of variables.

According to the results of the matrix, maternal leave has strong positive relationships with per capita GDP, life expectancy, and adult literacy and negative relationships with the unemployment rate, the female unemployment rate, and the fertility rate. The coefficient for the relationship between maternal leave and the fertility rate (r=-0.429) stands out among all the other coefficient values. It shows a strong negative relationship between the policy on maternal leave and the fertility rate, which will be investigated in the multivariate regression to follow. The matrix also shows that parental leave also has positive relationships with per capita GDP and adult literacy, and it has negative relationships with fertility and female unemployment. The p-values of the regressions between parental leave and per capita GDP, the female unemployment rate, the fertility rate, and adult literacy demonstrate high statistical significance ($p \leq 0.01$).

Surprisingly, the high p-values of the matrix results with breastfeeding leave and all the macro-economic indicators show that breastfeeding leave does not have a significant relationship with any of the macroeconomic indicators under examination. The matrix shows that leave for adult family member's need is positively related to per capita GDP and adult literacy and negatively related to the fertility rate. However, it does not show statistically significant relationships with life expectancy and the unemployment variables, although the latter show the expected negative relationships and approach statistical significance (p=0.056, p=0.070, respectively).

Table 8. Results of the Multivariate Regression

		Dependent Variables					
		Per capita GDP	**Unemp**	**Female unemp**	**Fertility**	**Life expect.**	**Adult literacy**
Independent variables	P	0.000	0.191	0.221	0.000	0.269	0.024
	R_2 adj.	24.1%	3.2%	3.0%	18.3%	1.2%	8.4%
Maternal leave	b	-133	-0.499	+0.291	-0.0003	+0.878	-1.32
	p	0.825	0.191	0.584	0.997	0.227	0.024
Parental leave	b	+1460	+0.173	-0.795	-0.174	+0.365	+3.46
	p	0.003	0.546	0.059	0.020	0.539	0.012
Breastfeeding	b	-1098	+0.130	+0.202	+0.125	+0.466	-0.95
	p	0.023	0.691	0.658	0.085	0.425	0.403
Leave for adult family members	b	+3422	-0.519	-0.332	-0.319	-0.54	-0.13
	p	0.004	0.456	0.729	0.072	0.700	0.965
Sick leave	b	+299	+1.15	+0.051	-0.258	-0.563	+3.13
	p	0.067	0.025	0.944	0.015	0.499	0.050

According to the results of the matrix, sick leave only shows a negative relationship with the fertility rate and a positive relationship with adult literacy. The very low p-values (0.001, 0.020) confirm the hypotheses, although the influence is small.

According to Table 7, all the independent variables, except breastfeeding leave, show a significant negative relationship with fertility and a positive relationship with adult literacy. Most of them are positively related to per capita GDP as well. It is also noticeable that the p-value of the correlation between maternal leave and parental leave is 0.000, indicating a strong relationship between the two. There is also significant correlation between maternal leave and parental leave, maternal leave and leave for adult family member's need, between parental leave and leave for adult family member's need, sick leave and maternal leave, sick leave and parental leave, breastfeeding leave and maternal leave. However, the small correlation coefficients indicate that they do not strongly influence each other.

Therefore, based on the correlation matrix, despite some correlation between some of the independent variables, especially between maternal leave and parental leave, the relationships are not strong. More importantly, the high correlation between some independent and dependent variables sheds light on the statistical significance of multivariate regressions.

Multivariate Regressions

The results of the multivariate regressions with maternal leave, parental leave, breastfeeding, leave for adult family member's need, and sick leave altogether as independent variables, and each macroeconomic indicator as a dependent variable in each regression are summarized in Table 8.

According to Table 8, the combination of the five policies has significant relationships with per capita GDP, fertility, and adult literacy, with p-values of 0.000, 0.000, and 0.024 respectively and signs consistent with the hypotheses.

However, there exist no significant with the unemployment rates and life Therefore, hypotheses 1, 4, and 6 are relationships expectancy confirmed.

The R^2 for the regression with per capita GDP is extremely high (24%), showing that these policies contribute close to 1/4 of the variation in per capita living standards. In addition, roughly four of the five independent variables have statistically significant influence on per capita GDP. The R^2 for fertility is also high (18.3%), and confirms the hypothesis that female work conditions have a statistically significant negative impact on fertility. When better work conditions are available, more women choose to enter the work force and have fewer children. The R^2 of the regressions with the adult literacy rate is lower, 8.4 percent. The positive signs for parental leave and sick leave also show statistical significance and confirm the hypotheses that the better the female work conditions, the higher the adult literacy rate.

Step-wise Regressions with the Five Policy Areas

To hold per capita GDP constant, six step-wise regres-

Table 9. Results of Step-wise Regressions with Five Policies

		Dependent Variables				
		Unemp	**Female unemp**	**Fertility**	**Life expect.**	**Adult literacy**
Per capita	b	-	-	-	+	+
	p	0.003	0.000	0.000	0.017	0.000
GDP	R_2 adj.	7.3%	11.9%	18%	2.8%	14.5%
Per capita GDP +five	P	0.042	0.047	0.000	0.169	0.001
policies	R_2 adj.	9.3%	9.9%	24.6%	2.7%	18.4%
Maternal leave	b	-0.387	+0.398	-0.0032	+0.897	-0.91
	p	0.290	0.427	0.971	0.228	0.559
Parental leave	b	+0.341	-0.564	-0.094	-0.017	+2.49
	p	0.224	0.158	0.210	0.978	0.068
Breastfeeding	b	-0.104	-0.011	+0.0474	+0.516	-0.31
	p	0.746	0.980	0.515	0.397	0.785
Leave for adult family	b	-0.197	+0.136	-0.166	-1.55	-0.34
members	p	0.776	0.884	0.355	0.289	0.905
Sick leave	b	+1.09	+0.003	-0.214	-0.513	+2.29
	p	0.026	0.996	0.045	0.553	0.145
	ΔR^2 adj.	+2%	-2%	+6.6%	-0.1%	+3.9%

sions were run with the five policy areas and per capita GDP as independent variables, and five macro-economic indicators as dependent variables. These dependent variables are: the unemployment rate, the female unemployment rate, the fertility rate, life expectancy and the adult literacy rate. The first step is to understand how much an influence per capita GDP has on these five dependent variables, and the second step is to understand the cumulative effect of both per capita GDP and female work conditions on these variables. Lastly, the differences between both results were calculated in order to understand how much female work conditions themselves influence the macro economy. The results of the regressions are shown in Table 9 above.

The results of the regressions indicate that per capita GDP indeed has significant relationships with every single macroeconomic indicator examined in this study because the p-values of all the results of the regressions between per capita GDP and the indicators are below the 0.05 level. The signs of the regression functions also demonstrate that per capita GDP is positively related to life expectancy and the adult literacy rate, and it is negatively related to unemployment, female unemployment, and fertility. The R^2 values in the results show that per capita GDP counts for 7.3 percent of the variation of unemployment rate and 11.9 percent of the variation of female unemployment rate. It also influences 18 percent of the fluctuation of the fertility rate, 14.5 percent of the variation of the adult literacy rate, and 2.8 percent of the changes in life expectancy.

The results of the second step, running regressions for both policies and per capita GDP, show that all the independent variables are associated with the unemployment rate, the female unemployment rate, the fertility rate, and the adult literacy rate. However, there is no significant relationship between the independent variables and life expectancy (p=0.169). The overall R^2 values for all the five regressions are 9.3 percent for unemployment rate, 9.9 percent for female unemployment rate, 24.6 percent for fertility, and 18.4 percent for adult literacy. Compared to the R^2 values in the first step of the regression analysis, adding the labor policies increased the impact on unemployment by another 2 percent,on fertility by 6.6 percent, and on adult literacy by approximately 4 percent. These increases show that holding per capita GDP constant, female work conditions still influence general unemployment, female unemployment, fertility, and adult literacy, thus confirming the hypotheses 2, 3, 4, and 6.

Step-wise Regressions with the WWCI

In order to take into account the effect of per capita GDP on the other five dependent variables, step-wise regres-

Table 10. Results of Step-wise Regressions with Women's Work Conditions Index

		Dependent variables				
		Unemp.	**Female Unemp.**	**Fertility**	**Life expect.**	**Adult literacy**
Per capita GDP	b	-	-	-	+	+
	p	0.003	0.000	0.000	0.017	0.000
	R_2 adj.	7.3%	11.9%	18%	2.8%	14.5%
Per capita GDP + WWCI	p	0.006	0.000	0.000	0.038	0.000
	R_2 adj.	7.8%	15.3%	23.7%	2.7%	19.5%
Per capita GDP	b	-0.000120	-0.00016	-0.00004	+0.00013	+0.00096
	p	0.012	0.003	0.000	0.043	0.000
WWCI	b	-0.660	-1.3569	-0.37181	+0.7226	+4.316
	p	0.210	0.033	0.000	0.347	0.005
	ΔR^2 adj.	+0.5%	+3.4%	+5.7%	+0.4%	+5.5%

sions were run with the index. The first step was also to find out the impact of per capita GDP on the unemployment rate, the female unemployment rate, the fertility rate, life expectancy, and the adult literacy rate. The second step was to find out the combined effect of both per capita GDP and the index on these five indicators. The difference between both results should identify the impact of women's work conditions, holding per capita GDP constant. A summary of the results is shown above in Table 10. The change in R2 indicates the influence of WWCI alone in the association with the macroeconomic indicators.

The regression results of the first step, finding the relationships between per capita GDP and all the indicators, are exactly the same as the results of the earlier step-wise regression run with per capita GDP and five policies. After adding the WWCI as another independent variable, the results were better compared to using the five separate policy areas as independent variables. They show that women's work conditions and per capita GDP together still have a significant relationship with general unemployment, female unemployment, fertility, life expectancy, and adult literacy. The signs of the regression functions also favorably show that women's work conditions and per capita GDP both are positively related to life expectancy and adult literacy, negatively related to the two unemployment rates and fertility. More importantly, all the changes in R2 are positive, showing that women's work conditions alone play a role in influencing these macroeconomic indicators. Therefore, the hypothesis that women's work condition is favorably related to per capita GDP and women's socio-economic status is strongly confirmed.

Among all the changes in R^2 values, the change in the fertility rate is the largest, 5.7 percent, further indicating the importance of having favorable female work conditions in order to reduce fertility. The cumulative effect of both per capita GDP and female work conditions counts for nearly one quarter of the variation in the fertility rate. The change in the R^2 of adult literacy is the second largest, 5.5 percent, showing better female work conditions can strongly and favorably influence literacy. It is also noticeable that using the WWCI as independent variables in the step-wise regressions gives the strongest results showing the positive effect of good work conditions on women's socio-economic status.

DISCUSSION

Overall, the regression results from this study strongly confirm the hypotheses that better women's work conditions favorably relate to the macroeconomy of a nation, reflected by a higher per capita GDP, lower general unemployment and female unemployment, lower fertility rate, and higher adult literacy rate. Women's work conditions are somewhat associated with life expectancy as indicated from the results of the multivariate regression run with WWCI as independent variable.

Other existing studies presented the rationale behind the empirical findings of this study though they only address the correspondence between women's work conditions and their socio-economic status within a context of a career or specific countries. Parental leave gives both mothers and fathers time off to take care of their children. It gives more equality to men and women in the work force by indicating that it is both fathers' and mothers' responsibility to take care of the next generation. Encouraging not just mothers but also fathers to take parental leave is tested as a crucial policy in achieving the goal of ensuring equal employment opportunity for women (Haas and Hwang, 2008). Longer maternal leave leads to improved women's health, "in-

creased social support, increased job satisfaction, less physical exertion on the job, fewer infant symptoms, and less difficulty arranging child care" (McGovern et al., 1997, p. 507). Along with breastfeeding leave, and leave for taking care of adult family members, maternal leave allows some degree of flexibility in a job, making it easier for mothers to balance both work and family responsibilities. The limitation of women's career advancement is a result of women's "self-exclusion based on [their] decisions about their caring responsibilities" (O'Hara, 2011, p. 180). Consequently, women tend to only take on less-paid part-time jobs or jobs that allow more flexibility. If labor laws provide women with necessary leaves for the needs of their family and children, more women will be able to work full-time and earn more income, thus reducing the gap between men and women socio-economically.

The findings in this study not only confirm what Heymann and Earle (2010) expressed in their book, *Raising the Global Floor*, and many other existing country-specific studies mentioned above, but also strengthen their findings based on case studies and interviews by providing vigorous cross-national statistical confirmation. In addition, the study has developed a WWCI index which ranks all 192 countries. The ranking shows clearly the degree of labor protection a country offers to female employees compared to other countries. Since the index summarizes much of the Heymann and Earle data on labor protection for female workers, it may be useful in other follow-up cross-national studies on women's work conditions.

Policy Implications

To raise women's socio-economic status and reduce the gender gap, society should take into consideration the special needs of women in every aspect of living. Policy makers in countries that have not yet established laws, in which it is up to firms whether or not to provide these leaves, argue that these laws and regulations will increase costs and reduce productivity and growth. Therefore, it becomes the individual companies' choices to protect female labor by providing favorable work conditions for women, which results in women being weakly protected and discriminated against in the work force. However, the findings of this study strongly contest the belief that better labor protection leads to inefficiency. Providing better work conditions actually contributes to a country's economic well-being and may indeed favorably influence economic growth. For instance, in Africa, the fastest growing country of Ethiopia, with a real GDP growth rate of 8.7% in 2009, provides better women's work conditions with a WWCI score of 2.08 compared to most other African countries (CIA World Factbook). In central Asia, Azerbaijan achieved a GDP growth of 9.8% in 2009 while its WWCI score is 3.25, which ranks 16th inthe world. China is the fastest developing country in the world, with an average GDP growth of close to 10%, while its WWCI score is 2.06, four times higher than the WWCI for the United States (0.50).Therefore, the belief that providing better labor conditions would negatively impact a country's economic well-being cannot be justified.

Providing decent work conditions encourages women to enter the work force instead of shying way from it because of their dual responsibilities for their jobs and families. It also generates cumulative effects that improve living conditions of women, children, and families. Therefore, the findings of this study have a strong policy implication that a country advances socio-economically by providing good work conditions especially for women.

Limitations

Despite the availability of a few case studies on a similar topic, this study was limited by concept, data and methodological concerns. Because of the provisional, cross-national, and interdisciplinary nature of this study, the lack of literature on existing studies by other scholars on the same topic is the biggest limitation. Almost all the conclusions are drawn directly from the data analysis developed in this study. Very few available works that use the same approach to examine the same topic exist to prove the accuracy of this study or provide more confirmation from the literature. However, this exploratory study provides a contribution to the field because of the vigorous empirical approach. In addition, the development of the WWCI may lead to more cross-national studies related to women's work conditions. Moreover, though 192 countries are tested in the study, not all the countries have data for all the 11 variables. If and when such data become available, future research may yield more complete results. Lastly, since this study only establishes the correlation between women's work conditions and their socio-economic status, future research would need to be structured in order to determine causality between the two to further strengthen the findings of this research.

CONCLUSION

In conclusion, this empirical study on 192 countries strongly demonstrates that offering better work conditions is highly associated with a healthier macroeconomy of a country and may potentially narrow gender inequality by raising women's socio-economic status. Countries should take into serious consideration offering better women's work conditions to adapt to and encourage the formation of new gender structures in the work force.

REFERENCES

Amilon A (2010). The temporary leave dilemma: Lone and partnered mothers in Sweden. Feminist Economics, 16(4), 33-52.

Barrett NS (1984, June). Women as workers. Paper presented at the National Conference on Women, the Economy, and Public Policy, Washington, D.C.

Dedeoğğlu S (2010). Visible hands – invisible women: Garment production in Turkey, Feminist Economics, 16(4), 1-32.

Domínguez E, Icaza R, Quintero C, López S, Stenman Å (2010).Women workers in the Maquiladoras and the debate on global labor standards. Feminist Economics, 16(4), 185-209.

GDP (Official Exchange Rate), Retrieved November 20, 2010, from CIA The World Factbook Website: https://www.cia.gov/library/publications/the-world-factbook/

Galtry J (2003).The impact on breastfeeding of labour market policy and practice in Ireland, Sweden, and the USA. Social Science and Medicine, *57*(1): 167-177.

Gender Statistics, Data and Statistics, Retrieved February 25, 2010, from World Bank Website: http://econ.worldbank.org/

Haas L, Hwang P (2008). The impact of taking parental leave on fathers' participation in childcare and relationships with children: Lessons from Sweden. Community, Work and Family, 11(1), 85-104.

Henehan MT, Sarkees MR (2009). Open doors and closed ceilings: Gender-based patterns and attitudes in the international studies association. International Studies Perspectives, 10, 428-446.

Heymann J, Earle A (2010). Raising the Global Floor: Dismantling the myth that we can't afford good working conditions for everyone. Stanford, CA: Stanford University Press.

Mellner C, Krantz G, Lundberg U (2006). Symptom reporting and self-rated health among women in mid-life: The role of work characteristics and family responsibilities. Int. J. Behavioral Med. 13(1), 1-7.

McDowell L, Perrons D, Fagan C, Ray K, Ward K (2005). The contradictions and intersections of class and gender in a global city: Placing working women's lives on the research agenda. Environment and Planning A, 37, 441-461. doi: 10.1068/a3781

McGovern, P., Dowd, B., Gjerdingen, D., Moscovice, I., Kochevar, L., and Lohman, W. (1997). Time off work and the postpartum health of employed women. Medical Care, 35(1), 507-521.

Millennium Development Goal, Data and Statistics, Retrieved February 25, 2010, from World Bank Website: http://econ.worldbank.org/

Millennium Development Goal Database Update (2009). Retrieved February 18, 2010, from the United Nations Website: http://mdgs.un.org/unsd/mdg

Neumark D, Wascher W (2006). Minimum wages and employment: A Review of Evidence from the New Minimum Wage Research. National Bureau of Economic Research Working Paper no.W12663, November.

O'Hara M (2011). Gender and development: Voice of female police officers in Ireland on work challenges and commitments, domestic care responsibilities, and implications for career advancement. J. Res. in Peace, Gend. and Dev. 1(5), 173-180.

Smith F, Wainwright E, Buckingham S, Marandet E (2011). Women, work-life balance and quality of life: Case studies from the United Kingdom and Republic of Ireland. Gender, Place and Culture, 18(5), 603-610.

Swiss DJ, Walker JP (1993). Women and the work/family dilemma: how today's professional women are finding solutions. New York: J. Wiley.

World Legal Rights Data Center (2005). *The work, family, and equity index*. Retrieved from http://raisingtheglobalfloor.org

Appendix

Female Work Conditions Index

Ranking	Country	Female Work Conditions Index
1	Norway	5.00
2	Croatia	4.53
3	Estonia	4.50
4	Germany	4.39
5	Japan	4.08
6	Lithuania	4.03
7	Sweden	4.00
8	Italy	3.97
9	Russian Federation	3.92
10	Romania	3.75
11	Denmark	3.56
11	Poland	3.56
11	Slovenia	3.56
12	Bulgaria	3.50
12	Finland	3.50
13	Cuba	3.42
14	Spain	3.39
15	El Salvador	3.33
16	Austria	3.25
16	Azerbaijan	3.25
17	Kyrgyzstan	3.19
18	Montenegro	3.08
18	Canada	3.08
19	Burkina Faso	3.06
20	Belgium	3.03
20	France	3.03
20	Ireland	3.03
21	Albania	3.00
21	Serbia	3.00
21	Ukraine	3.00
21	Uzbekistan	3.00
22	Czech Republic	2.92
22	Moldova, Republic of	2.92
23	Slovakia	2.89
24	Gabon	2.81
24	Morocco	2.81
25	Luxembourg	2.78
26	Latvia	2.75
27	Iraq	2.58
28	Belize	2.56
28	Egypt	2.56
28	Netherlands, the	2.56
28	Panama	2.56
28	Portugal	2.56
29	Belarus	2.50
30	Congo, Democratic Republic of the	2.44
30	Iran, Islamic Republic of	2.44
31	Mongolia	2.39
32	Equatorial Guinea	2.33

Continue

		2.33
32	Hungary	
32	Malta	2.33
32	Mexico	2.33
32	Sudan, the	2.33
32	Uruguay	2.33
33	Benin	2.31
33	Cameroon	2.31
33	Comoros	2.31
33	Congo, Republic of the Congo	2.31
33	Costa Rica	2.31
33	Greece	2.31
33	Madagascar	2.31
33	Mali	2.31
33	Mauritania	2.31
33	Niger	2.31
33	Peru	2.31
33	Senegal	2.31
34	United Kingdom	2.28
35	Armenia	2.25
35	Australia	2.25
36	Nicaragua	2.22
36	Paraguay	2.22
37	Cambodia	2.19
37	Central African Republic	2.19
38	New Zealand	2.14
39	Iceland	2.11
40	Dominican Republic	2.08
40	Ethiopia	2.08
40	Guatemala	2.08
40	Laos	2.08
40	Libyan Arab Jamahiriya	2.08
40	Qatar	2.08
40	Sao Tome/Principe	2.08
40	Saudi Arabia	2.08
40	Turkey	2.08
41	Argentina	2.06
41	Bolivia	2.06
41	Chile	2.06
41	China	2.06
41	Guinea	2.06
41	Turkmenistan	2.06
41	Vietnam	2.06
42	San Marino	2.00
43	Tunisia	1.97
44	Djibouti	1.94
45	Bahamas	1.83
45	Bahrain	1.83
45	Haiti	1.83
45	Mauritius	1.83
45	Namibia	1.83
45	United Arab Emirates	1.83
46	Brazil	1.81
46	Cyprus	1.81
46	Venezuela	1.81

Continue

46	Zimbabwe	1.81
47	Korea, Republic of	1.75
47	Tajikistan	1.75
48	Nigeria	1.72
48	Vanuatu	1.72
49	Solomon Islands	1.61
50	Burundi	1.58
50	Colombia	1.58
50	Israel	1.58
50	Jordan	1.58
51	Algeria	1.56
51	Andorra	1.56
51	Kazakhstan	1.56
51	Liechtentein	1.56
51	Monaco	1.56
51	Thailand	1.56
51	Zambia	1.56
52	Afghanistan	1.50
52	Tanzania, United Republic of	1.50
53	Honduras	1.47
53	Rwanda	1.47
54	Singapore	1.39
55	Angola	1.33
55	Barbados	1.33
55	Cape Verde	1.33
55	Ecuador	1.33
55	Grenada	1.33
55	Indonesia	1.33
55	Maldives	1.33
55	Seychelles	1.33
55	South Africa	1.33
55	Trinidad and Tobago	1.33
55	Yemen	1.33
56	Papua New Guinea	1.25
57	Dominica	1.22
57	Guyana	1.22
57	Myanmar	1.22
57	St. Kitts and Nevis	1.22
57	St. Lucia	1.22
57	St. Vincent/Grenadines	1.22
58	Chad	1.19
59	Botswana	1.11
59	Kiribati	1.11
59	Tuvalu	1.11
60	Ghana	1.08
60	Malawi	1.08
60	Mozambique	1.08
60	Oman	1.08
60	Pakistan	1.08
60	Phillippines, the	1.08
60	Somalia	1.08
60	Sri Lanka	1.08
61	Bangladesh	1.06

Continue

61	Switzerland	1.06
62	Lesotho	1.00
63	Syria	0.97
63	Timor-Leste	0.97
63	Togo	0.97
64	Jamaica	0.83
64	Kenya	0.83
64	Kuwait	0.83
64	Lebanon	0.83
64	Malaysia	0.83
64	Nepal	0.83
64	Uganda	0.83
65	Fiji	0.81
66	Eritrea	0.75
66	Georgia	0.75
66	Macedonia	0.75
67	Antigua and Barbuda	0.72
68	United States of America	0.50
69	Gambia, the	0.33
69	Guinea-Bissau	0.33
69	India	0.33
70	Bhutan	0.25
70	Samoa	0.25
71	Brunei	0.11
72	Bosnia-Herzegovina	0.00
72	Cote d'Ivoire	0.00
72	Korea, Democratic People	0.00
72	Liberia	0.00
72	Marshall Islands	0.00
72	Micronesia, Federated States of	0.00
72	Nauru	0.00
72	Palau	0.00
72	Sierra Leone	0.00
72	Suriname	0.00
72	Swaziland	0.00
72	Tonga	0.00

Note: developed in the study based on *The work, family, and equity index.* World Legal Rights Data Center. (2005). Retrieved from http://raisingtheglobalfloor.org