ECONOMIC DEVELOPMENT AND WOMEN'S WELL BEING: SOME EMPIRICAL EVIDENCE FROM DEVELOPING COUNTRIES

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SUMMARY

This study investigates the effect of economic development on women’s well being by relating a country’s per capita GDP with several dimensions that affect women’s affluence and well being within the economic, social and political context. Data from a sample of low and middle-income category of countries are used in regression analysis to determine the effect of economic development on several indicators of women’s well being. The empirical results provide strong evidence that economic development has been associated with improvements in a number of economic and social indicators of women’s well being. In terms of women’s political well being, while the proportion of seats held by women in national parliament is positively correlated with economic development, women are still under-represented at the governmental level in terms of holding ministerial portfolios. The major policy implication is that the government’s of low and middle-income countries can enhance women’s welfare through women-friendly policies and legislation targeting areas such as minimum quotas for each gender for parliamentary seats, improving budgetary allocations for women’s activities, maternity leave, anti-discrimination, raising remuneration levels for women in the informal sector and creating social safety nets for women living in vulnerable conditions.

KEY WORDS: Women, development, empirical, political, developing countries, low-income.
1. INTRODUCTION

The process of economic development has brought about significant changes to various aspects of human well being across several countries around the world. For example, Anand and Sen (2000) note that ‘people today in many countries in Europe, North America and elsewhere have lives that are much longer, less miserable and far less battered by forces beyond the person’s control.’ In a similar vein, Easterlin (2000) notes that many people today are better fed, clothed, and housed than their predecessors two centuries ago. Using a new human capital inequality measure, Costello and Domenech (2002) conclude that most countries in the world have reduced the inequality in human capital distribution. However, of equal importance is the effect of economic development on women’s well being. Some researchers argue that economic development has marginalized women (see for example, Marchand and Parpat, 1995; Kucera and Milberg, 2000 and Kerr, 2006) while others consider economic development improving women’s welfare (see for example, Wood, 1991; Glyn, 1992; and Horton, 1999). In their recent study, Morrison and Jutting (2005) found that institutional framework (social institutions) that disadvantages women hinders development and reduces human capital formation.

On the basis of commonly used measures such as per capita income and human development index, indications are that many countries around the globe are realizing positive changes on aspects of well being (see Figures 1 and 2). Despite the progress noted in Figures 1 and 2, there are also differences in the levels of per capita income and human development across various income categories of countries of the globe and these differences are incredible between high and low-income countries. For example, the per capita gross domestic product in high-income category of countries is almost seven times more than the low-income category of countries (Figure 1). In terms of achievements in human development, measured by the human development index, the gap between high-income and the low-income category of countries is tremendous (Figure 2). In addition, much of the world’s population remains mired in poverty and huge gaps in material well being exist (see Gallup, Sachs and Mellinger, 1998 and Anand and Sen, 2000).
Figure 1.

Source of data for Figure 1: World Bank (2004).

Figure 2.

Source of data for Figure 2: United Nations Development Program (2000 and 2006, Table 1).
Variations in economic and human development tend to affect world welfare at different rates. Sen (2002) notes that ‘while there is much evidence that the global economy has brought prosperity to many different areas of the globe’, the overall state of economic development is considered to be poor in the low and middle-income countries. For example, the continued high incidence of premature mortality, ill-health, undernourishment, illiteracy, poverty, insecurity and other forms of deprivation among women and children indicate the failure of the modern world to bring even the most basic capabilities within the reach of all. An understanding of growth and development of several poor countries across the globe has been of obvious importance. In these income categories of countries, studies providing a comprehensive and systematic investigation into the contribution of economic development in improving women’s well being are rare. Such inadequacies in the literature make it difficult for various stakeholders (governments, non-governmental organizations, donors, development financing institutes and policy makers) to gauge the extent of policy intervention and investment required in achieving a satisfactory level of progress towards improving women’s well being.

Sen (1998) notes that one of the significant transformations to occur in recent years in the analysis of economic growth and development is the greater recognition of the role of what is called “human capital” as opposed to physical capital. Economic growth literature reveals a large number of studies including measures of human capital as one of the right hand side variables. Despite this, there has been slow progress in research of women’s welfare as part of the mainstream concern within economic development. Studies specifically measuring women’s human capital and including it as a right hand side variable in growth equations are rare. Lack of numerical measures of women’s human capital perhaps explains this rarity.

In recent times there has been a surge in interest in women’s well being and economic development relationships. As economic development has progressed, researchers have also focused on its effect on various aspects of women’s welfare both in the low and high-income economies (for example, Lavy et al. 1995; Tzzannatos, 1999; Kucera and
Milberg, 2000; Singh and Zammit, 2000; Hawthorne, 2004; Pezzini, 2005; and Kerr, 2006). In a study on worldwide standard of living since 1800, Easterlin (2000) notes that women’s lives are less centered on reproduction and political democracy have gained a foothold. The scatter plots in Figures 3 and 4 tend to confirm this point of view with an inverse relationship between fertility rates and per capita income and a positive relationship between per capita income and women’s political participation. One of the reasons of low reproductions is perhaps the birth control rights that have increased women’s investment in education, probability of working and income (see Pezzini, 2005). However, women’s early return to work, particularly of mothers could have other negative consequences as the study by Berger, Hill and Waldfogel (2005) suggests causal relationship between early returns and reductions in breastfeeding and immunizations and increases in externalizing behavior problems among children whose mothers worked pre-birth.

Figure 3

![Fertility Versus Per Capita GDP](image)

Source of data for Figure 3: The World Bank (2006).
Source of data for Figure 4: United Nations Development Program (2006).

While recent statistics provide evidence of women’s increasing role in formal economic activities with progress in economic development (Figures 5 and 6), women’s education and literacy rates are equally important for better social outcomes (see for example, Schultz, 1993 and Subbarao and Raney, 1995). Although adult female literacy rates have improved as a result of economic progress (Figure 7), female economic activity is still below 50 percent in low-income countries as well as and also below the world averages (see Figures 8 and 9).
Figure 5

Female Employment in Industry Verses GDP Per Capita

Source of data for Figure 5: The World Bank (2006).

Figure 6

Female Professional and Technical Workers Verses Per Capita GDP

Source of data for Figure 6: United Nations Development Program (2006).
Figure 7

**Adult Female Literacy Rates Verses GDP Per Capita**

![Scatter plot showing the relationship between adult female literacy rates and GDP per capita.](image)

Source of data for Figure 7: The World Bank (2006).

Figure 8.

**Female Economic Activity (Ages 15 and Older) in 2004**

![Bar chart showing female economic activity by income category.](image)

Source of data for Figure 8: The World Bank (2006).
In this spirit, this study investigates the effect of economic development on women’s well being by relating a country’s per capita GDP with several dimensions that affect women’s economic, social and political affluence and well being. Within the theoretical framework of the modernization neoclassical approach, this study utilizes data from a sample of low and middle-income category of countries to quantitatively determine the effect of economic development on economic, social and political indicators of well being for women. The paper is organized into five sections; beginning with a discussion of the conceptual framework relating economic development to women’s well being. Section three discusses the analytical framework and the choice of variables. Section four presents the empirical results. A conclusion with policy implication follows.

2. CONCEPTUAL FRAMEWORK ON THE RELATIONSHIP BETWEEN WOMEN’S WELL BEING AND ECONOMIC DEVELOPMENT

The conceptual framework here is formulated around previous work relating to gender, growth and development. Drawing onto available literature on gender and development,
three core schools of thought relating to development and women’s welfare can be identified: the *modernization-neoclassical approach*, the *Boserup Approach* and the *feminist approach* (see Forsythe, Korzeniewicz and Durrant, 2000). While these schools of thought have been extensively discussed elsewhere (see for example, Morrison and Jutting, 2005; Korzeniewicz and Durrant, 2000; Boserup, 1970; Marchand and Parpart, 1995; and Parpart, 1993), it is useful to note the core argument of each of these three approaches.

The *modernization neoclassical approach* largely pertains to the role of economic growth in improving women’s well being. The core issue pertaining to this approach is that economic growth entails an increase in employment opportunities and competition and this can eventually eliminate overall female discrimination in areas such as education, finance and training (see also Morrison and Jutting, 2005). The *Boserup approach*, sharing some elements of the modernization-neoclassical approach, largely focuses on productivity differences (see Boserup, 1970). The core argument behind this approach is that discrimination against women increases as a result of the growth process, women get excluded from participating in the modern sector and so productivity differences are crucial. Boserup (1970) has argued that such a trend can be reversed through policy changes such as providing women access to education and training. Finally, the *feminist approach* (see for example, Marchand and Parpart, 1995, Parpart, 1993; and Kerr, 2006) emphasizes that economic growth increases the vulnerability to women. The March 2006 (Volume 29, Issue 1) of *Development* focused on several issues from a feminist perspective relating to women’s rights and development. A long standing issue within this school of thought has been the accounting for women’s work and in line with this, Beneria (1992) has noted that the conceptual battle for a better accounting for women’s work has been largely won. In this regard, Tzannatos (1999) has argued for more emphasis and resources to be diverted on collection of data that capture norms that restrict the admittance of the fact that a women is working.

This study tends to adopt the modernization-neoclassical approach in quantifying the effect of economic development on women’s welfare. In regard to this, the core issue of this study – the effect of economic development on women’s well being, can be analyzed
within the framework that relates human development to the more conventional analyses to be found in the economic literature. The inclusions of human development are not new to economic literature. Prominent authors, for example, Anand and Sen (2000) have noted that “the interest in human development has been part of standard economic literature for quite some time and is an old and an established heritage and that economics has never been a subject of one tradition only”. Sen (1988) has noted that this concern has been explicitly present in the early writings on quantitative as well as the political economy literature.

The extensive literature largely pertaining to economic growth (see for example, Barro, 1991 and 1997; Temple, 1999; Dollar and Kray, 2000; Easterly and Levine, 2000; and Seguino, 2000) has demonstrated that the extended role of education, health and other qualities in generating economic growth. For example, the human capital (including quality and skill of workers) is an aspect of human development as part of the new endogenous growth theory. This human capital usually characterized has healthy, educated and less debilitated population translates into the fact that this condition of human capital would positively contribute to nation’s material progress.

The human development (defined as enlarging people’s choices in a way which enables them to lead longer, healthier and fuller lives, see UNDP (1990, p. 9) approach also linked to the robust role of economic development on the impact on lives of a wide cross-section of a nations population. It means extending the impact of economic development that concern for all human beings – irrespective of race, class, gender or nationality. At the same time, achievements in human development make a critical contribution to economic growth with two distinct causal chains: economic growth to human development and human development to economic growth (Ranis, Stewart and Ramirez, 2000).

Of main concern here is the impact of economic development on women. As a matter of fact, economic development should not discriminate national prosperity on the basis of sex. Man and women should benefit equally as nations achieve economic progress.
Economic development can contribute to women’s welfare through household and government activity. For example, household’s after tax income is of crucial importance as their propensity to spend after tax income contributes most directly to the promotion of women’s welfare in terms of access to food, clean drinking water, education and health services. It should be noted that many developing countries suffer from significant dualism in which a relatively high wage, high income economy appears to exist within a much less developed economy (Krugman, 1998). This kind of dualism can have a strong effect on women’s well being.

Economic growth plays a fundamental role in reducing poverty (see Bruno, Ravallion and Squire, 1995). The way in which economic growth translated into poverty reduction for women depends on the nature of the growth process, for example, extent to which it generates economic opportunities: employment for women, increases in wages and salaries, improvements in women’s incomes purchasing power and their ability to access basic needs such as food, clean drinking water, education and health care. It has been noted that where women control cash income, their expenditure patterns are geared more towards human development inputs such as food and education (Ranis, Stewart and Ramirez, 2000).

The allocation of public expenditure to improve women’s welfare also becomes vital. For example, public expenditure on health services, clean drinking water contributes to the improvement in women’s health. At the same time, the provision of basic health care services including adequate drugs to women can improve their health and increase child health and survival (see Lavy et al. 1995). In her study, Kerr (2006) argues the “the HIV/AIDS pandemic and other emerging threats like that Avian Flu and SARS have the potential to create unimaginable levels of devastation and multiple oppressions, especially for women and children.” Therefore, raising expenditure allocation on women’s development inputs such as education and health can constitute several social benefits: educated women contribute more as workers, have fewer children and focus their talents on smaller number of children who are then healthier and build more human capital (see also Rowen, 1996, p. 103). In his paper on education, empowerment and
gender inequalities, Kanbur (2002) has argued that “gender inequalities (in education and other variables) are not large that they do not necessarily impede economic growth.”

There are a number of empirical studies that tend to provide support of economic development improving women’s welfare. For example, Wood (1991) found that trade between developed and developing countries corresponded with an increased female intensity of employment in developing countries and had no noticeable negative symmetric effect on female intensity of employment in the traded goods sector of industrialized countries. Glyn (1992) notes that economic development contributes to the reduction of employment segregation. In examining women’s labor market participation, employment and earnings, Horton (1999) found no evidence of women being marginalized. Horton’s (1999) study revealed that woman’s participation rates in labor force has been increasing, women have shifted into white collar occupations and certain previously male dominated occupations have become female dominated. Tzzannatos (1999) notes that in the developing countries, labor markets are transformed relatively quickly in the sense that gender differentials in employment and pay are narrowing much faster than they did in the industrialized countries.

There are studies that do not tend to provide support that economic development has enhanced women’s welfare. Not necessarily sharing the feminist approach, a significant body of literature exists where the core argument is that women has been left out of economic development, well summarized with critique in Scott (1986). Globalization has been an important element in reducing poverty and inequality (Sen, 2002). The effect of globalization has been noted to harm women (see for example, Hawthorne, 2004). In her recent study, Kerr (2006) has argued that “global forces seem so daunting and governments so intractable in relation to truly promoting women’s rights.” International trade has been an important component of the globalization process. In their study of gender segregation and gender bias in manufacturing trade expansion, Kucera and Milberg (2000) found that the North-South trade of manufactures has in many industrialized countries reduced female employment relatively more than male employment over turning the findings of Wood (1991). The process of globalization has
also included movement of financial capital. In examining the gender impact of international capital flows to developing countries, Singh and Zammit (2000) argued that at the macroeconomic level women lose more than men from slow and or unstable economic growth, financial crises and melt downs and even more so the longer the deeper the economic downturn because, without a social security system, the family and women have many additional burdens. Some feminist scholars (for example, Mies, 1986 and Bennhodt-Thomson and von Verlhof, 1988) have also argued that male bias as the main cause of gender inequality.

The discussion above sets the appropriate conceptual framework for a quantitative analysis into the links between economic development and women’s well being. The review here does provide the framework for testing the effects of economic development on various economic, social and political indicators of women’s well being. The following section will discuss the analytical procedure.

3.0 ANALYTICAL FRAMEWORK AND CHOICE OF VARIABLES

The strategy employed to assess the impact of economic development on women’s well being includes testing the effect of economic development on a set of indicators of women’s well being. Three categories of indicators of well being are identified. These are economic, social and political. The estimation equation therefore takes the following general generic form:

\[
WWB_{it}^{\text{economic}} = \alpha_0 + \alpha_1 ED_{it} + \nu_{it} \\
WWB_{it}^{\text{social}} = \beta_0 + \beta_1 ED_{it} + \nu_{it} \\
WWB_{it}^{\text{political}} = \delta_0 + \delta_1 ED_{it} + \nu_{it}
\]

where \( WWB \) is women’s well being in country \( i \) in a given period, \( t \) and \( \nu \) is the unobservable error term. The generic form includes three categories of well being measures – economic, social and political. \( ED \) is economic development, measured by
per capita GDP adjusted for purchasing power parity. The choice of dependent and the independent variables in equations (1), (2) and (3) are explained in more detail together with their respective data sources as follows.

(a) The dependent variables

(i) Economic indicators
Six measures of women’s economic well being were utilized to estimate the impact of economic development on women’s economic well being. These measures largely referring to women’s opportunities in the labor market include female employment in agriculture (%); female employment in industry (%); female employment in services (%); female unemployment (% of female labor force); female legislators, senior officials and managers (% of total); and female professional and technical workers (% of total). The data source for all these measures is World Bank (2006).

(ii) Social indicators
Six measures of women’s social well being were utilized to estimate the importance of economic development on women’s social well being. These measures included total fertility rate (births per women); female life expectancy at birth (years); adult female literacy rate (% of females ages 15 and above); adult female mortality rate (per 1,000 female adults); pregnant women receiving pre-natal care (%); and female adults with HIV (% of population aged 15+ with HIV). The data source for the social variables was the World Bank (2006).

(iii) Political indicators
It is to be noted that time series measures of political indicators are limited. As such, two measures of women’s political well being are included. These are women in government at ministerial level (% of total) and proportion of seats held by women in national parliament (%). The source of data for these measures is United Nations Development Program (2006).
(b) The independent variable

A growing economy also offers greater opportunities to raise women’s well being and is largely dependent on domestic economic conditions. Good economic growth also indicates the extent to which factors favoring investment in women’s well being are in place. An economy whose economic and institutional infrastructure favors production encourages individuals to engage in the creation and transaction of goods and services. An economy in which economic policies and rules are changing frequently may indicate an unstable economic environment and may deter potential investors and weaken production (Roger, 2003). While the numerical measure of economic development is largely restricted to per capita incomes of a country such as the per capita GNP or the per capita GDP, Krugman (1996) has argued that this measure does not seriously distort the level of development (Krugman, 1996). On the other hand, Sen (1998) notes that a country’s level of development depends on various social and physical conditions, for example, the availability of health care, orderliness of urban living and access to modern medical knowledge. This study adopts the per capita GDP adjusted for purchasing power parity as a measure of economic development. The source of the data for this measure is World Bank (2006).

In terms of sample countries, the focus here is low and middle-income group of countries. The analytical procedure is largely dictated by data availability on dependent and independent variables for the selected sample countries. While long-term time-series data on measure of economic development is available for several low and middle-income countries, this is not the case for the dependent variables listed under economic, social and political categories. The measures of several of the dependent variables relating to women’s well being are available for different points giving different sample sizes for each of the several dependent variables. As such the number of observations ranges from 44 to 856. Furthermore, not all of the sample countries have consistent series of data on the dependent as well as independent variables, and where data is available the time span is limited. The number of countries chosen for analysis varies from one equation to another as indicated by the number of observations in Tables 2 to 4. The countries chosen
for each of the well being indicators is not reported here. However, a list of the choice of countries for each of the well being indicators is available from the author.

4. RESULTS
The estimation methodology adopted here incorporates estimation by ordinary least squares (OLS) procedure as well as the procedure of a pooled analysis of time-series cross section data. As a result of pooling of some variables, a cross-sectionally heteroskedastic and time-wise autoregressive model is also estimated. This procedure of estimation is also equivalent to the generalised least squares (GLS) estimation (see Kmenta, 1986). Estimations based on this procedure are indicated in Tables 2 to 4.

Within the conceptual framework discussed in section 3, the effect of economic development in women’s welfare is put to empirical test based on equations 1, 2 and 3. Table 1 presents the summary statistics while Tables 2, 3 and 4 report the regression results of economic development on women’s economic, social and political well being respectively. The estimates obtained seem satisfactory given the data limitations on several of the economic, social and political indicators of women’s welfare. The explanatory power is generally low. For the models estimated by the GLS procedure, a low explanatory is expected as a result of the pooling of the data. In some cases, the GLS estimation produced higher values of the explanatory power and these are considered to be highly satisfactory given the use of cross-sectional data. Overall, a number of variables show the expected sign and are statistically significant and consistent with a priori expectations. These are discussed as follows.
Table 1. Variable names and summary statistics.

<table>
<thead>
<tr>
<th>Variable definition</th>
<th>N</th>
<th>Log of variable</th>
<th>Raw data</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Log) Female employment in agriculture (%)</td>
<td>224</td>
<td>2.2</td>
<td>19.3</td>
</tr>
<tr>
<td>(Log) Female employment in industry (%)</td>
<td>252</td>
<td>2.7</td>
<td>16.6</td>
</tr>
<tr>
<td>(Log) Female employment in services (%)</td>
<td>238</td>
<td>4.1</td>
<td>65.8</td>
</tr>
<tr>
<td>(Log) Female unemployment (% of female labor force)</td>
<td>341</td>
<td>2.3</td>
<td>12.7</td>
</tr>
<tr>
<td>(Log) Female legislators, senior officials and managers (% of total)</td>
<td>44</td>
<td>3.2</td>
<td>28.7</td>
</tr>
<tr>
<td>(Log) Female professional and technical workers (% of total)</td>
<td>44</td>
<td>3.8</td>
<td>47.6</td>
</tr>
<tr>
<td>(Log) Total fertility rate (births per women)</td>
<td>456</td>
<td>1.3</td>
<td>3.9</td>
</tr>
<tr>
<td>(Log) Adult female literacy rate (% of females ages 15 and above)</td>
<td>107</td>
<td>3.9</td>
<td>62.4</td>
</tr>
<tr>
<td>(Log) Female life expectancy at birth (years)</td>
<td>464</td>
<td>4.1</td>
<td>63.6</td>
</tr>
<tr>
<td>(Log) Adult female mortality rate (per 1,000 female adults)</td>
<td>436</td>
<td>5.2</td>
<td>235.7</td>
</tr>
<tr>
<td>(Log) Pregnant women receiving pre-natal care (%)</td>
<td>56</td>
<td>4.3</td>
<td>77.3</td>
</tr>
<tr>
<td>(Log) Female adults with HIV (% of population aged 15+ with HIV)</td>
<td>82</td>
<td>3.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Women in government at ministerial level (% of total)</td>
<td>118</td>
<td>…</td>
<td>13.4</td>
</tr>
<tr>
<td>Proportion of seats held by women in national parliament (%)</td>
<td>856</td>
<td>…</td>
<td>10.8</td>
</tr>
</tbody>
</table>

N = number of observations; STD = standard deviation; and … indicates non-logs.

(a) Results of women’s economic well being

Table 2 presents the regression results of the effect of economic development on women’s economic well being. The results in Table 2 provide strong confirmation that economic development is positively correlated with female employment in industry and services. In both cases the coefficients are positive and statistically significant at the 1 percent level. The results do lead to the suggestion that economic development has created better employment opportunities for females in the industry and services sectors.
in low and middle-income category of countries. On the contrary, the coefficient of female employment in agriculture has a negative sign and statistically significant at the 1 percent level. This result of the female employment in agriculture is not surprising given falling agricultural value added as a share of GDP across several countries in the sample.

Table 2 also presents the regression results of female unemployment and economic development. The coefficient of female unemployment is negative and statistically insignificant. The results of this variable also confirm a weak inverse relationship that economic development is associated with falling female unemployment levels.

With regard to female work opportunities in professional fields, two variables were tested: female legislators, senior officials and managers and female professional and technical workers. While the regression results show positive coefficients for both, only female professional and technical workers coefficient is statistically significant. The result of this variable provides strong evidence that economic development is associated with more females employed as professional and technical workers.
Table 2. Cross country regressions of economic development and women’s economic well being.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Constant</th>
<th>Coefficient of log of GDPPC</th>
<th>$R^2$</th>
<th>N</th>
<th>DW</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Log) Female employment in agriculture (%) $^+$</td>
<td>10.862</td>
<td>-1.002</td>
<td>0.44</td>
<td>224</td>
<td>1.67</td>
</tr>
<tr>
<td>(Log) Female employment in industry (%) $^+$</td>
<td>0.752</td>
<td>0.228</td>
<td>0.17</td>
<td>252</td>
<td>1.55</td>
</tr>
<tr>
<td>(Log) Female employment in services (%) $^+$</td>
<td>2.712</td>
<td>0.160</td>
<td>0.09</td>
<td>238</td>
<td>1.77</td>
</tr>
<tr>
<td>(Log) Female unemployment (% of female labor force) $^+$</td>
<td>2.999</td>
<td>-0.076</td>
<td>0.01</td>
<td>341</td>
<td>1.59</td>
</tr>
<tr>
<td>(Log) Female legislators, senior officials and managers (% of total) $^{++}$</td>
<td>0.871</td>
<td>0.273</td>
<td>0.10</td>
<td>44</td>
<td>2.23</td>
</tr>
<tr>
<td>(Log) Female professional and technical workers (% of total) $^{++}$</td>
<td>2.115</td>
<td>0.193</td>
<td>0.09</td>
<td>44</td>
<td>1.68</td>
</tr>
</tbody>
</table>

$t$ – statistics are in parentheses.

* and ** indicates statistically significant at the 1 and 5 percent levels respectively.

$+$ and $^{++}$ indicates estimation using GLS and OLS procedures respectively.
(b) Results of women’s social well being

Table 3 presents the regression results of women’s social well being by testing the effect of economic development on six social indicators. The effect of economic development on fertility has a negative coefficient that is statistically significant at the 1 percent level. This result of the variable provides ample support that economic development is associated with falling births per women. Table 3 also includes an indicator of female literacy rates. The regression results show a positive and statistically significant coefficient for this social indicator providing strong confirmation that economic development is associated with improved female literacy rates.

The effect of economic development on several aspects concerning women’s health outcomes is also tested. In fact four different indicators concerning women’s health outcomes (life expectancy, mortality, women receiving pre-natal care and females with HIV) are considered. These indicators of women’s health reveal interesting results. Female life expectancy at birth has a positive and statistically significant coefficient thus providing strong confirmation that economic development is associated with rising female life expectancy. While economic development is positively correlated with life expectancy, it has an inverse relationship with female mortality rates. The coefficient adult female mortality rate is negative and statistically significant at the 1 percent level providing strong support that economic development is associated with falling adult female mortality rates. Table 3 also presents the regression results of the effect of economic development and pregnant women receiving pre-natal care. Its coefficient is positive and statistically significant at the 1 percent level thus providing strong support that economic development is associated with improvements in resources available for pre-natal care. Finally, the effect of economic development is also tested on women with HIV. The coefficient of the indicator female adults with HIV is negative and statistically significant at the 1 percent level. This result confirms an inverse relationship between economic development and the incidence of females with HIV.
Table 3. Cross country regressions of economic development and women’s social well being.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Constant</th>
<th>Coefficient of log of GDPPC</th>
<th>$R^2$</th>
<th>N</th>
<th>DW</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Log) Total fertility rate (births per women)</td>
<td>4.651</td>
<td>-0.426</td>
<td>0.80</td>
<td>456</td>
<td>1.61</td>
</tr>
<tr>
<td>(Log) Adult female literacy rate (% of females ages 15 and above)</td>
<td>0.274</td>
<td>0.464</td>
<td>0.45</td>
<td>107</td>
<td>2.04</td>
</tr>
<tr>
<td>(Log) Female life expectancy at birth (years)</td>
<td>2.727</td>
<td>0.177</td>
<td>0.93</td>
<td>82</td>
<td>1.47</td>
</tr>
<tr>
<td>(Log) Adult female mortality rate (per 1,000 female adults)</td>
<td>9.659</td>
<td>-0.550</td>
<td>0.87</td>
<td>436</td>
<td>1.53</td>
</tr>
<tr>
<td>(Log) Pregnant women receiving pre-natal care (%)</td>
<td>5.676</td>
<td>-0.249</td>
<td>0.22</td>
<td>56</td>
<td>1.82</td>
</tr>
<tr>
<td>(Log) Female adults with HIV (% of population aged 15+ with HIV)</td>
<td>2.813</td>
<td>0.191</td>
<td>0.22</td>
<td>82</td>
<td>2.03</td>
</tr>
</tbody>
</table>

$t$-statistics is in parentheses.

* and ** indicates statistically significant at the 1 percent level.

+ and ++ indicates estimation using GLS and OLS procedures respectively.

(c) Results of women’s political well being

Table 4 presents the regression results of the effect of economic development in women’s political well being. Two indicators of women’s political well being are tested: the...
percentage of women in government at ministerial level and the proportion of seats held by women in national parliament. The regression results obtained confirmed only one aspect of women’s political well being – the proportion of seats held by women in national parliament. Its coefficient is positive and statistically significant at the 1 percent level thus providing strong evidence that economic development is associated with greater political participation by women. However, it should be noted that women are still under-represented at the governmental level in terms of holding ministerial portfolio’s as confirmed by the negative coefficient of the percentage of women in government at ministerial level.

Table 4. Cross country regressions of economic development and women’s political well being.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Constant</th>
<th>Coefficient of GDPPC</th>
<th>$R^2$</th>
<th>N</th>
<th>DW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women in government at ministerial level (% of total)$^{++}$</td>
<td>13.496</td>
<td>-0.0002</td>
<td>0.001</td>
<td>118</td>
<td>2.11</td>
</tr>
<tr>
<td></td>
<td>(10.780)*</td>
<td>(-0.080)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of seats held by women in national parliament (%)$^+$</td>
<td>7.544</td>
<td>0.0006</td>
<td>0.24</td>
<td>856</td>
<td>1.77</td>
</tr>
<tr>
<td></td>
<td>(31.780)*</td>
<td>(16.660)*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

t-statistics is in parentheses.

* and ** indicates statistically significant at the 1 percent level.

$^+$ and $^{++}$ indicates estimation using GLS and OLS procedures respectively.
The results obtained here certainly support the modernization neoclassical school of thought. Further, the empirical results complement some of the earlier studies examining women’s welfare and economic development as discussed in section two.
5. CONCLUSION

This study examines the effect of economic development on women’s well being by relating a country’s per capita GDP with several dimensions that affect women’s affluence and well being within the economic, social and political context.

The empirical results provide strong support that economic development has created better employment opportunities for females in the industry and services sectors; economic development has led to falling female unemployment levels and that more females get employed as professional and technical workers. In terms of women’s social well being, the regression results provide strong support that economic development is associated with falling births per women, improved female literacy rates, rising female life expectancy, falling adult female mortality rates, improvements in resources available for pre-natal care and lower incidence of females with HIV. In terms of political well being, the regression results obtained confirmed only one aspect of women’s political well being – the proportion of seats held by women in national parliament, providing strong evidence that economic development is associated with greater political participation by women. However, it should be noted that women are still under-represented at the governmental level in terms of holding ministerial portfolio’s as confirmed by the negative coefficient of the percentage of women in government at ministerial level.

It can be concluded that the aggregate evidence from the sample of low and middle-income countries from this study strongly support the modernization neoclassical school of thought – that economic development raises the opportunities that improve women’s welfare. A number of literature reviewed in this study also suggested that women have not gained much as part of the process of economic development and that the feminist school of thought has been clear that economic development have made women more vulnerable. This study does not provide any evidence to support the feminist school of thought that economic growth increases the vulnerability to women.
The opportunities for women can be further improved via identifying appropriate economic, social and political policies that relate to women’s well being in the developing world. With regard to women’s political participation, allowing a fair representation and increasing women’s political participation can be achieved if governments legislate minimum quotas for each gender in terms of parliamentary seats. Once quotas are allocated it gives an opportunity for women to participate in the political process and this is likely to influence their political well being.

As the process of economic development continues, low and middle-income countries continually need to accommodate the role that women can play. As such women’s contribution in the low and middle-income category of countries can be further enhanced through women-friendly policies and legislation targeting areas such as budgetary allocations, maternity leave, anti-discrimination, remuneration levels in the informal sector and social safety nets.
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