

## **GENDER DIMENSIONS OF SUSTAINABLE DEVELOPMENT**

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**Keywords:** gender, inequality, health, education, wages, labor market, growth

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### **Summary**

Economic development based on gender inequality is inefficient, and therefore unsustainable in the long run. Women's economic and social progress has strong implications for the types of human capital, including the level and quality of education, in which women may choose to invest. Women's investment choices will in turn affect the future productivity of entire economies. Given the strong evidence that workers' education and skills matter a great deal for economic growth, sub-optimal investments in women's human capital could significantly impede macroeconomic growth. Besides increasing the productivity of labor, investing in women yields further benefits that have a positive impact on social welfare.

The differential ability between men and women to participate in the community and in the economy depends fundamentally on such human capital dimensions as their health status, access to education, and treatment in the labor market. This article examines each of these issues by discussing influential research, presenting trends in descriptive statistics across countries, and reflecting on policy implications.

### **1. Introduction**

Economic development based on gender inequality is inefficient, and therefore unsustainable in the long run. This idea was expressed in a 1998 World Bank workshop

on enhancing development through attention to gender, a landmark event in the growing political discourse on women and development. The full and productive use of human resources is essential to economic growth and sustainable development. However, gender inequality can permeate many aspects of daily life, through the legal and regulatory environment and through social and cultural life within the community. Gender inequality can impact the economic life of women and men as well, by altering the access to productive resources, and by affecting the allocation of labor supply, income, and health care within the household. These and other issues related to gender and development have gained increasing attention over the past few decades among development scholars and practitioners alike.

A rich body of evidence, both qualitative and quantitative, has emerged that documents women's relative progress in a host of economic, social, and political indicators. This progress has profound implications for the types of human capital, including the level and quality of education, in which women may choose to invest. Women's investment choices will in turn affect the future productivity of entire economies. Closely related, a growing consensus has emerged that empowering women through improvements in female literacy and female employment opportunities is a major step in the direction of reducing fertility rates, another precursor to long-term, sustained economic development.

This article focuses specifically on gender differences in human capital resources. The reader is advised to see Stromquist (1998) for a more comprehensive study of gender and development. The differential ability between men and women to participate in the community and in the economy depends fundamentally on such human capital dimensions as their health status, access to education, and treatment in the labor market. This article examines each of these issues by discussing influential research, presenting trends in descriptive statistics across countries, and reflecting on policy implications. Amartya Sen, Nobel Prize winner in economics, writes regarding women's unequal access to the advantages of medical and economic progress: "We confront here what is clearly one of the more momentous—and relatively neglected—problems facing the contemporary world" (Sen, 1989: 29). This statement highlights the importance of adding a gender perspective to the United Nations; extensive knowledge source on sustainable development.

## **2. Gender Differences in Health Status**

Health status is a critical determinant of an individual's economic well-being. Poor health status can reduce the number of hours worked, limit the productive capacity of the worker, and result in lower wages. The poor health of one family member can lead to detrimental effects for the health of other members, especially children, and can mean poverty and debt for the entire household. Despite the importance of health for the economic well-being of the individual and the household, sharp differences exist in measures of health across countries and societies, and within societies as well. Research on health status within countries and communities has found significant health differences by race, socioeconomic status, and social class. Gender inequities in health are another well-documented type of variation. This section compiles some revealing

statistics on the differences in the health of men and women of both industrialized and developing countries.

## 2.1 Measuring Health

A variety of indicators can be used to measure the health status of individuals, ranging from subjective measures such as self-reported health status and activities of daily living, to objective measures such as life expectancy, mortality rates, and the prevalence of specific diseases (for example, cancer or diabetes). Other measures of health include lifestyle risk factors (tobacco, alcohol and drug use, obesity and prevalence of overweight), measures of overall well-being (depression, or incidence of domestic violence), and measures of access to health care through insurance coverage and the use of preventive services (prenatal care and breast examinations, for example).

To document health differences between men and women and across countries, the researcher is presented with few measures that are collected separately for men and women and available in both industrialized and developing countries. For developing countries especially, data collection methods are unable to provide regular documentation of male–female differences in health. The principal measures that can be contrasted by gender and across countries are adult and infant life expectancy and mortality rates by cause. On morbidity differences by gender, available case studies are able to provide information for a small number of countries; some will be summarized here.

## 2.2 Patterns and Causes of Mortality Differentials

In Table 1, life expectancies at birth for males and females in 1970 and 1996 are reported for a subset of all countries. Males and females in all countries shown here, as is the case around the globe, experienced gains in life expectancy between 1970 and 1996. In addition, women’s life expectancy relative to men’s has increased worldwide, and currently exceeds male life expectancy in most countries. The rise in the life expectancy of females over and above that of males is a pattern that has been observed only within the last century. Some suggested explanations for the increase in women’s life expectancy are the development of medical treatments for infectious diseases, improvements in the diet and medical care of females relative to males, and shifts in occupational roles that have increased the occupational health risks for men, and decreased those for women. An additional cause of increased female life expectancy relative to that of males is the shift away from agricultural sector work and toward urban life. These explanations have not been tested empirically at great length, and their relative contributions are not known.

	Life Expectancy at birth (in years)			
	Male		1.1 Females	
	1970	1996	1970	1996
<b>By Region and Selected Countries (Low and Middle Income)</b>				
<i>East Asia &amp; Pacific</i>	58	67	60	70

China	61	68	63	71
Indonesia	47	63	49	67
Malaysia	60	70	63	74
Philippines	56	64	59	68
Europe & Central Asia	64	64	71	73
Hungary	67	65	72	75
Poland	67	68	74	77
Turkey	55	66	59	71
<i>Latin America &amp; Caribbean</i>	58	66	63	73
Bolivia	44	59	48	63
Brazil	57	63	61	71
Mexico	60	69	64	75
<i>Middle East &amp; N. Africa</i>	52	66	54	68
Algeria	52	68	54	72
Egypt	50	64	52	67
Morocco	50	64	53	68
<i>South Asia</i>	50	61	48	63
Bangladesh	45	57	43	59
India	50	62	49	63
Pakistan	50	62	49	65
<i>Sub-Saharan Africa</i>	42	51	46	54
Kenya	48	57	52	60
Mozambique	40	44	44	46
Nigeria	41	51	45	55
<b>By Income Group</b>				
Low Income	53	58	54	60
Lower Middle Income	58	66	63	71
Upper Middle Income	59	66	64	73
High Income	68	74	75	81
<i>Source: World Bank (1995, 1998a)</i>				

Table 1. Comparative statistics on life expectancy by gender, 1970 and 1996.

While women have an advantage in life expectancy over men in most countries of the world, the advantage is not present everywhere and is not uniform across countries. In 1970, females in India, Pakistan, and Bangladesh (and also in Nepal, Iran, and Papua New Guinea, not shown here) had lower life expectancies than males. By 1996, female life expectancy in India, Pakistan, Bangladesh, Iran, and Papua New Guinea exceeded that of males. In Nepal in 1996, female life expectancy continued to equal male life expectancy. Thus the advantage women have in life expectancy is not uniform across countries. Advantages in women's life expectancy in high-income countries in 1996 were on average seven years (74 years for men, 81 years for women). In low-income

countries, the gap between male and female life expectancy is considerably smaller, at only two years (58 years for men, 60 years for women). This variation in the gender gap in life expectancy is especially worth noting given the evidence that females have a biological advantage in survival over males.

Coale suggests that higher rates of female mortality are driven by traditions in South Asian countries such as India that create “discriminatory treatment sufficiently adverse to females to outweigh their normal advantage of experiencing mortality lower than that of males” (Coale, 1991: 520). He estimates that such traditions, beginning shortly after birth, are responsible for approximately 60 million “missing” women in the countries of China, India, Pakistan, Bangladesh, Nepal, and Egypt.

Data on child mortality reveal that such discriminatory behavior does indeed begin at early ages. Mortality rate ratios for females and males under age five, reported in Table 2, show that in countries where female life expectancy is only moderately greater than male life expectancy, child mortality for girls exceeds that of boys (as in the cases of Bangladesh and India). Research by Waldron in 1987 on developing countries reveals that sex differentials in mortality vary during childhood. During infancy, male mortality exceeds female mortality, most likely due to genetic differences in health present at the time of birth. However, for children aged one to four in countries with life expectancies less than 60 years, female mortality exceeds males. In countries with life expectancies greater than 60 years, male mortality exceeds females. The causes of these sex differentials are very different in the two cases. Excess female mortality in low life expectancy countries is caused by a wide range of factors, while excess male mortality in high life expectancy countries is driven by high numbers of male deaths caused by accidents and violence. Further research by Waldron indicates that excess female mortality is associated with differences in caloric intake, nutritional content, medical treatment that adversely affects female children, and with reported patterns of son preference by adults.

	Under-5 mortality rate (both sexes)	Under-5 mortality rate, ratio female/male	Life expectancy at birth, ratio female/male
By region and selected countries (low and middle income)			
<i>East Asia and Pacific</i>			
China	40	1.24	1.05
Indonesia	59	0.81	1.06
Malaysia	21	0.85	1.06
Philippines	42	0.80	1.05
Thailand	36	0.92	1.09
<i>Europe and Central Asia</i>			
Hungary	16	0.75	1.14

Poland	18	0.70	1.14
Turkey	58	0.79	1.08
<i>Latin America and Caribbean</i>			
Bolivia	84	0.90	1.06
Brazil	45	0.76	1.12
Mexico	36	0.85	1.09
<i>Middle East and North Africa</i>			
Algeria	52	0.83	1.04
Egypt	66	0.90	1.04
Morocco	64	0.86	1.06
<i>South Asia</i>			
Bangladesh	104	1.07	1.00
India	90	1.17	1.01
Pakistan	99	0.97	1.03
Sri Lanka	18	0.93	1.06
<i>Sub-Saharan Africa</i>			
Kenya	101	0.95	1.07
Mozambique	163	0.89	1.06
Nigeria	141	0.91	1.06
<i>Source: World Health Organization (1998b).</i>			

Table 2. Comparative statistics on child mortality by gender, 1997.

Related work by Koenig and D'Souza published in 1986 found that female children in rural Bangladesh were fed less frequently and with lower-quality food, were less likely to receive treatment in health centers, and were treated at health centers later in their illnesses than male children. Recent statistics on child nutrition for Bangladesh are consistent with these findings. In 1990, 67.8% of female children were reported to be underweight compared to 64.8% of male children (United Nations, 1994).

Using data on 35 developing countries from the Demographic and Health Surveys, Hill and Upchurch in 1995 examined differences in child mortality by gender and found evidence of a female disadvantage in under-5 mortality rates in 90% of the sample observations. Factors significantly associated with the male–female difference in mortality rates were differences in immunization and differences in the social status of

women compared to men (measured by the ratio of female to male primary school enrollment). A number of health-related measures had no relationship to male–female mortality differences at the country level. Their research suggests the importance of using individual-level analysis to identify the source of persistent gender differences in child mortality.

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### Bibliography

Beall J. (1995). In sickness and in health: Engendering health policy for development. *Third World Planning Review* 17, 213–222. [This paper describes reasons for a gendered approach in Third World health policy.]

Birdsall N., Graham C., and Sabot R., eds. (1998). *Beyond Tradeoffs: Market Reform and Equitable Growth in Latin America*, 367 pp. Washington, DC: Inter-American Development Bank and Brookings Institution Press. [This book argues that no necessary tradeoff exists between efficiency and equity objectives in market economies.]

Birdsall, N., Ross D., and Sabot, R. (1995). Inequality and growth reconsidered: Lessons from East Asia. *World Bank Economic Review* 9, 477–508. [This work finds that low inequality has a positive effect on economic growth.]

Blau F., Ferber M., and Winkler A. (1998). *The Economics of Women, Men, and Work*, 396 pp. Upper Saddle River, NJ: Prentice-Hall. [This study provides a thorough empirical record, with theoretical underpinnings, of labor market outcomes for men and women around the world.]

Cagatay N. and Ozler S. (1995). Feminization of the labor force: The effects of long-term development and structural adjustment. *World Development* 23, 1883–1894. [This article uses cross-sectional data to examine changing trends in female labor force participation as countries develop.]

Coale A. J. (1991). Excess female mortality and the balance of the sexes in the population: An estimate of the number of “missing females”. *Population Development and Review* 17, 517–523. [This paper provides an approximate measure of higher female mortality that results from tradition-based sex discrimination.]

Goldin C. (1995). The U-shaped female labor force function in economic development and economic history. *Investment in Women’s Human Capital* (ed. T. P. Schultz), pp. 61–90. Chicago: University of Chicago Press. [This chapter uses historical data for the United States to illustrate a U-shaped relationship between development and female labor force participation.]

Greenwood B. M., Bradley A. K., Greenwood A. M., Byass P., Jammeh K., Marsh K., Tulloch S., Oldfield F. S. J., and Hayes R. (1987). Mortality and morbidity among children in a rural area of the Gambia, West Africa. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 81, 478–486. [This research uses a post-mortem questionnaire to measure the incidence of malaria and its role in morbidity and mortality.]

Hill K. and Upchurch D. M. (1995). Gender differences in child health: Evidence from the Demographic and Health Surveys. *Population Development and Review* **21**, 127–151. [This work uses data from 35 developing countries to measure the extent and causes of gender differences in infant and child mortality.]

International Labour Office. (Various years). *Yearbook of Labour Statistics*. Geneva: International Labour Office. [This data source provides detailed information on employment and earnings around the world.]

Kjellstrom T., Koplan J. P., and Rothenberg R. B. (1992). Current and future determinants of adult ill-health. *The Health of Adults in the Developing World* (ed. R. Feachem, T. Kjellstrom, C. Murray, M. Over, and M. Phillips), pp. 209–260. Oxford: Oxford University Press. [This chapter provides an overview of the determinants of adult ill-health and describes how the reduction of ill-health can reduce the loss of productivity.]

Koenig M. A. and D'Souza S. (1986). Sex differentials in child mortality in rural Bangladesh. *Social Science and Medicine* **22**, 15–22. [This paper presents evidence of excess female mortality using longitudinal data from children and explores the rationale for the differential value placed on female and male children.]

Lucy T. V. (1995). Empowerment of women for sustainable development. *Social Action* **24**, 224–231. [This article provides a gendered perspective of sustainable development.]

Murray C. J. L., Feachem R. G. A., Phillips M. A., and Willis C. (1992). Adult morbidity: Limited data and methodological uncertainty. *The Health of Adults in the Developing World* (ed. R. Feachem, T. Kjellstrom, C. Murray, M. Over, and M. Phillips), pp. 113–208. Oxford: Oxford University Press. [This chapter discusses the different types of morbidity data and their shortcomings, and summarizes results based on adult morbidity surveys.]

Murray C. J. L., Yang G., and Qiao X. (1992). Adult mortality: Levels, patterns and causes. *The Health of Adults in the Developing World* (ed. R. Feachem, T. Kjellstrom, C. Murray, M. Over, and M. Phillips), pp. 23–112. Oxford: Oxford University Press. [This chapter explores the trends and causes in adult mortality in the developing world using existing data and previous research.]

Nataraj S., Rodgers Y., and Zveglic J. (1998) Protecting female workers in industrializing countries. *International Review of Comparative Public Policy* **10**, 197–221. [This study discusses the adoption of protective measures for female workers in industrializing countries and examines their labor market effects.]

Oaxaca R. (1973). Male–Female wage differentials in urban labor markets. *International Economic Review* **14**, 693–709. [This research first developed a now-common decomposition procedure for earnings gaps.]

Schultz T. P. (1993). Investments in the schooling and health of women and men: Quantities and returns. *Investment in Women's Human Capital* (ed. T. P. Schultz), pp. 15–50. Chicago: The University of Chicago Press. [This paper surveys the recent trends in the growth of investments in schooling and health in women.]

Schultz T. P. and Tansel A. (1997). Wage and labor supply effects of illness in Cote D'Ivoire and Ghana: Instrumental variables estimates for days disabled. *Journal of Development Economics* **53**, 251–286. [This paper uses an instrumental variables approach to deal with measurement error and simultaneity in the estimation of the effect of disability of labor market outcomes.]

Sen A. (1989). Women's survival as a development problem. *Bulletin of the American Academy of Arts and Sciences* **63**, 14–29. [This article examines the implications of women's unequal access to the benefits of medical and economic progress.]

Strauss J., Gertler P. J., Rahman O., and Fox K. (1993). Gender and life-cycle differentials in the patterns and determinants of adult health. *Investment in Women's Human Capital* (ed. T. P. Schultz), pp. 171–213. Chicago: The University of Chicago Press. [This study investigates the patterns and socioeconomic determinants of adult ill-health using survey data from four countries.]

Stromquist N., ed. (1998). *Women in the Third World: An Encyclopedia of Contemporary Issues*, 683 pp. New York: Garland Publishing. [This comprehensive reference work presents recent scholarship on a wide range of issues relating to women and development.]

Sutton M. (1998). Girls' educational access and attainment. *Women in the Third World: An Encyclopedia of Contemporary Issues* (ed. N. Stromquist), pp. 381–396. New York: Garland Publishing. [This chapter studies the importance of educating girls and women, and the obstacles to universal education.]

United Nations (1986). Development statistics of disabled persons: Case studies. *Statistics on Special Population Groups Series Y*, No. 2. New York: United Nations. [This paper presents statistical evidence and measurement difficulties in the estimation of disability incidence.]

United Nations (1994). *Women's Indicators and Statistics Database*. Version 3, CD-ROM. New York: United Nations. [This data source provides a wide range of economic and social indicators by gender for countries around the world.]

United Nations (1995). *The World's Women 1995: Trends and Statistics*. New York: United Nations. [This data source provides a wide range of economic and social indicators by gender for countries around the world.]

Vlassoff C. (1998). Women and contraception. *Women in the Third World: An Encyclopedia of Contemporary Issues* (ed. N. Stromquist), pp. 185–193. New York: Garland Publishing. [This article provides an historical overview of birth control practices and a discussion of current population policy.]

Waldron I. (1986). What do we know about causes of sex differences in mortality? A review of the literature. *Population Bulletin of the United Nations* 18-1985, 59–76. [This paper reviews evidence of sex differentials in mortality and summarizes the evidence concerning the causes.]

Waldron I. (1987). Patterns and causes of excess female mortality among children in developing countries. *World Health Statistics Quarterly* 40, 194–210. [This article reviews major hypotheses concerning the causes of higher female mortality and tests these hypotheses using data on deaths by cause.]

Wilkinson R. G. (1996). *Unhealthy Societies: The Afflictions of Inequality*, 255 pp. London: Routledge. [This book posits that a major determinant of health status is income inequality, and provides statistical evidence in support of this view.]

World Bank (1991). *World Development Report 1991: The Challenge of Development*. New York: Oxford University Press. [This data source provides a wide range of economic and social indicators for countries around the world.]

World Bank (1995). *World Development Report 1995: Workers in an Integrating World*. New York: Oxford University Press. [This data source provides a wide range of economic and social indicators for countries around the world.]

World Bank (1997). *World Development Report: The State in a Changing World*. New York: Oxford University Press. [This data source provides a wide range of economic and social indicators for countries around the world.]

World Bank (1998a). *World Development Report 1998/99: Knowledge for Development*. New York: Oxford University Press. [This data source provides a wide range of economic and social indicators for countries around the world.]

World Bank. (1998b). *World Development Indicators*, CD-ROM. [This data source provides a wide range of economic and social indicators for countries around the world.]

World Health Organization (1995). *World Health Statistics Annual 1994*. Geneva: The World Health Organization. [This data source provides a wide range of health indicators for countries around the world.]

World Health Organization (1996). *World Health Statistics Annual 1995*. Geneva: The World Health Organization. [This data source provides a wide range of health indicators for countries around the world.]

World Health Organization (1998a). *Gender and Health a Technical Paper*. Geneva: The World Health Organization. [This study illustrates the role of gender in health, health policy, and program development.]

World Health Organization (1998b). *The World Health Report 1998: Life in the 21st Century, A Vision for All*. Geneva: World Health Organization. [This data source provides an assessment of the global health situation and projects health trends to the year 2025.]

World Health Organization (1998c). *Health for All in the Twenty-first Century*, 54 pp. [www.who.int/hfa/index.html](http://www.who.int/hfa/index.html). [This document reviews the Health for All process initiative and outlines goals and targets for Health for All in the next century.]

Zveglich J., Rodgers Y., and Rodgers W. (1997). The persistence of gender earnings inequality in Taiwan, 1978–1992. *Industrial and Labor Relations Review* **50**, 594–609. [This article examines why rapid structural change is not necessarily accompanied by a narrowing of the gender earnings gap.]

### **Biographical Sketches**

**Jennifer Mellor** received a BA in economics from La Salle University in 1991, and a Ph.D. in economics from the University of Maryland at College Park in 1996. She spent two years at Yale University as a postdoctoral fellow in the Robert Wood Johnson Health Policy Scholars Program, and joined the faculty of William and Mary in the fall of 1998. She teaches principles of microeconomics, health economics, and labor economics, as well as a course in health care policy in the Thomas Jefferson Program in Public Policy. Professor Mellor's research interests are in the fields of health economics and the economics of aging. Recent research publications have focused on policies regarding long-term care insurance, and the link between income inequality and health. She is currently working on research that examines retirement savings decisions.

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