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# Gender discrimination, gender disparities in obesity and human development

Fabrizio Ferretti\*, Michele Mariani

*Department of Communication and Economics, University of Modena and Reggio Emilia, Reggio Emilia, Italy*

\*Corresponding author at: School of Social Sciences, Department of Communication and Economics, University of Modena and Reggio Emilia, Dossetti Building, Viale Allegrì 9–42121, Reggio Emilia, Italy.

E-mail address: [fabrizio.ferretti@unimore.it](mailto:fabrizio.ferretti@unimore.it) (F. Ferretti).

## Abstract

Measuring gender inequality and women's empowerment is essential to understand the determinants of gender gaps, evaluate policies and monitor countries' progress. With this aim, over the past two decades, research has mainly been directed towards the development of composite indices. The purpose of this paper is to introduce a new and interdisciplinary perspective to the current debate on measuring gender inequality in human development. As a starting point, we develop a simple macroeconomic model of the interdependence between human development and gender inequality. We then introduce a biometric indicator, based on the ratio of female to male body mass index, to measure women's empowerment at the country level. Finally, by using the latest available data, we examine the ability of this biometric indicator to capture countries' performance in achieving gender equality. We obtain five main results: 1) we provide a theoretical framework to explain the joint determination of human development and gender inequality; 2) we show how to use this framework to simulate the impact of exogenous shocks or policy changes; 3) we demonstrate that exogenous changes have a direct and a multiplier effect on human development and gender inequality; 4) we find that the distribution of obesity between the female and male populations represents a useful proxy variable for measuring gender equality at the country level; 5) finally, we use these results to integrate and develop existing knowledge on the 'ecological' approach to the overweight and obesity pandemic.

Keywords: Social sciences, Economics, Health sciences, Public health

## 1. Introduction

Equality between men and women, in terms of both opportunities and outcomes, is a fundamental dimension of human development (UNDP, 1995). Since the *Beijing Declaration* in 1995 (United Nations, 1996), significant progress has been made worldwide towards more gender-equal societies (World Bank, 2011). However, forms of gender discrimination still remain unquestionable realities in most parts of the world, particularly in developing countries (United Nations, 2014). The development of ‘gender-equity-sensitive’ indicators, albeit difficult, is an essential task to gain a better understanding of the determinants of gender gaps, evaluate policies and monitor countries’ progress (Beneria and Permanyer, 2010). With this aim and to capture a complex multi-dimensional phenomenon, research has mainly focused on the use of composite indices (Anand and Sen, 1995). As a result of broad collective efforts, several composite measures of gender disparities are now available to researchers and policymakers (van Staveren, 2013).

The purpose of this paper is to introduce a new perspective to the current debate on the measurement of gender inequality in human development (Human Development Report Office, 2015). So far, there has been little discussion of the possible use of biometric indicators to measure gender disparities at the country level. However, research has shown that the patterning of obesity prevalence across countries is gendered (Kanter and Caballero, 2012) and also that international differences in obesity prevalence between men and women are significantly associated with several countries’ measures of gender inequality (Garawi et al., 2014).

This study takes an interdisciplinary approach to explore the relationship between gender inequality and gender disparities in overweight and obesity. As a starting point, we sketch a simple macroeconomic model to analyse the two-way interplay between human development and gender inequality. We then introduce a basic indicator – based on the ratio of female to male body mass index – to measure gender inequality at the country level. Finally, by using the latest available data, we examine the ability of this biometric indicator to predict countries’ performance in achieving gender equality, as compared to the six most common indices of gender discrimination currently available to the international research community.

We obtain five main results. First, we provide an economic framework to explain the joint determination of human development and gender inequality. Second, we show how this framework can be used to simulate the impact of exogenous shocks (due, for instance, to policy changes). Third, we demonstrate that exogenous shocks (such as an action to promote women’s empowerment) have both a direct as well as an indirect (i.e. ‘multiplier’) effect on human development and gender

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