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Do body weight and gender shape the work force? The case of Iceland

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ABSTRACT

Most studies of the relationship between body weight – as well as its corollary, beauty – and labor-market outcomes have indicated that it is a function of a gender bias, the negative relationship between excess weight or obesity and labor-market outcomes being greater for women than for men. Iceland offers an exceptional opportunity to examine this hypothesis, given that it scores relatively well on an index of gender equality comprising economic, political, educational, labor-market, and health-based criteria. Equipped with an advanced level of educational attainment, on average, women are well represented in Iceland's labor force. When it comes to women's presence in the political sphere, Iceland is out of the ordinary as well; that Icelanders were the first in the world to elect a woman to be president may suggest a relatively gender-blind assessment in the labor market. In the current study, survey data collected by Gallup Iceland in 2002 are used to examine the relationship between weight and employment within this political and social setting. Point estimates indicate that, despite apparently lesser gender discrimination in Iceland than elsewhere, the bias against excess weight and obesity remains gender-based, showing a slightly negative relationship between weight and the employment rate of women, whereas a slightly positive relationship was found for men.

1. Introduction

As obesity rates in Western countries rise, researchers examine the possible consequences of this trend for the labor market. Governments provide a wide variety of tax-funded social-welfare programs intended to aid the unemployed and the unemployable; if obesity is not only on the rise but also negatively correlated with an individual's capacity to find employment, it threatens to become an increasing burden for the entire tax-paying public.

The literature on the effects of body weight on labor-market outcomes was originally based on one US dataset, the National Longitudinal Survey of Youth (NLSY) (Averett and Korenman, 1996; Págan and Dávila, 1997; Cawley, 2000, 2004). Whether or not these results are generally applicable depends upon robustness to changes in data and context. A broader literature is now emerging (Morris, 2007; Greve, 2008; Johansson et al., 2009; Villar and Quintana-Domeque, 2009).

The vast majority of the weight-employment literature reports that obesity has a consistently negative effect on women in the labor market, whereas for men any effect that it may have is less apparent (Sarlio-Lahteenkorva and Lahelma, 1999; Register and Williams, 1990; Averett and Korenman, 1996; Págan and Dávila, 1997; Cawley, 2000, 2004; Morris, 2007; Greve, 2008; Atella et al., 2008; Cawley et al., 2009; Johansson et al., 2009; Villar and Quintana-Domeque, 2009). In the minority on this issue are Brunello and D'Hombres (2007), who report that in nine European countries the negative effect of excess weight is greater for men than it is for women. Using the same dataset but applying a different methodology, Villar and Quintana-Domeque (2009) examine the relationship between individual income, as well as household income, and body weight and find the reverse to be the case.

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The gender differentials widely reported in the literature and confirmed by Villar and Quintana-Domeque could be a form of cosmetic discrimination in a culture where thinness is positively correlated with attractiveness, especially in the case of women. Before any definitive conclusion can be reached, the weight–gender literature, until now rather modest in scope, will have to expand sufficiently to reflect the fact that there may be exceptions to the rule. The case of Iceland is interesting because it boasts an exceptionally low rate of gender-based discrimination, as measured by the World Economic Forum's Gender Gap Index, in which countries are ranked according to multiple-outcome variables related to citizens' economic participation and opportunity, educational attainment, health, and political empowerment (Hausmann et al., 2010). Iceland gets high ratings for the educational attainment of women, their presence in the labor force, and in the political sphere; perhaps the latter is illustrated by the fact that in 1980, Iceland was the first nation in history to elect a woman, Vigdís Finnbogadóttir, president (Hausmann et al., 2010; Valsson, 2009). In the present study, survey data collected by Gallup Iceland in 2002 are used to examine the association between excess weight and employment in this exceptional political and social setting. Unfortunately, until we have access to data less limited in scope, we can do no more than clarify correlations among various factors. Caution should therefore be taken and estimates not interpreted as causal effects.

2. The data

This study is based on data collected by Gallup-Iceland in January 2002. A random sample of 2000 Icelanders (1.4% of the population) between the age of 20 and 80 received questionnaires on their nutritional habits, drinking and smoking, exercise, illnesses, accidents, stress, quality of life, use of drugs, dental care, and other lifestyle factors; demographic and work-related issues were addressed as well.

While the net-response rate, after a telephone follow-up, was only 54%, or 1062 questionnaires, the sample proved to be representative of the Icelandic population, differing only slightly from census data (Statistics Iceland, 2005). That these discrepancies do not warrant serious concern (and therefore are not reported in Table 1) is evident when one considers that the following were – with one omission – the most significant: gender representation in the census and the sample differed by 1%; the census figure for the labor-force participation in Iceland was 86.5%, whereas in the sample it was 86.9%; the average number of hours worked per week as reported in the census was 43.8, compared with the sample's 44.23.

The one inconsistency of any significance (and therefore reported in Table 1) concerns age representation; subjects in their 20s were less likely and those over the age of 65 more likely to turn in their questionnaires than were the others. In fact, however, this discrepancy, while somewhat less insignificant than the others, is not a cause for serious concern, since population statistics do not indicate that those subjects who failed to return their questionnaires differed fundamentally from the others.

Table 1
Representation by age.

Age group	% in census	% in sample
20–24	11.4	7.7
25–29	11.2	10.8
30–34	10.4	10.9
35–39	11.3	11.4
40–44	11.1	10.2
45–49	10.1	11.2
50–54	8.7	8.9
55–59	7.0	8.2
60–64	5.1	5.1
65–69	4.9	5.2
70–74	4.7	6.7
75–80	4.2	4.9

The chief strength of the data is the considerable quantity of information obtained for each individual in the sample; the chief weakness is the sample size. This weakness, along with the consequent likelihood of type-one and type-two errors, needs to be considered when interpreting the results. In addition, it is regrettable that longitudinal data, which would have permitted the determination of specific causes and effects, were unavailable.

Each variable used and preparation of the data for further statistical analysis will now be discussed. Summary statistics on key variables are reported in Table 2.

2.1. Employment

Employment status was defined in the questionnaire as one of the following: employee, employer, student, homemaker, pensioned, unemployed, or disabled. A dummy employment variable was created from this question comprising those respondents who selected either of the first two categories. Unfortunately, the number of individuals reporting unemployment was too small to permit any meaningful inference about that group specifically. Pensioners were excluded since it is on account of their age that they are not employed.

2.2. Body weight

The terms "overweight" and "obese" – that is, very overweight – are usually defined in terms of excess body fat. While it is technologically feasible to ascertain the fat composition of an individual directly, such procedures are extremely costly and therefore rarely used in the case of large samples. Indirect measures of fat composition, which are based on weight and height, are employed instead. The standard measure of this type, the Body Mass Index (BMI), which consists of the ratio of weight in kilograms to height in meters squared, is used here in two forms: first as a continuous variable and then in terms of the traditional clinical weight classifications. The consensus, based on the medical literature, is that for adults the optimal BMI is between 18.5 and 25; a BMI below 18.5 is in the underweight range, a BMI of 25–30 is in the overweight range, and a BMI above 30 is in the obese range. A BMI above 25 is associated with a rise in both the disease and the death rate. Unfortunately, the BMI is not an entirely