Economics and Human Biology 22 (2016) 24–34

Contents lists available at ScienceDirect

Economics and Human Biology

journal homepage: http://www.elsevier.com/locate/ehb

Beauty, body size and wages: Evidence from a unique data set☆

Sonia Oreffice [a], Climent Quintana-Domeque [b,*]

[a] University of Surrey and IZA, United Kingdom
[b] University of Oxford, IAE-CSIC and IZA, United Kingdom

ARTICLE INFO

Article history:
Received 4 November 2015
Received in revised form 13 January 2016
Accepted 19 January 2016
Available online 9 February 2016

Keywords:
Attractiveness
Body mass index
Height
Weight
Wages

ABSTRACT

We analyze how attractiveness rated at the start of the interview in the German General Social Survey is related to weight, height, and body mass index (BMI), separately by gender and accounting for interviewers' characteristics or fixed effects. We show that height, weight, and BMI all strongly contribute to male and female attractiveness when attractiveness is rated by opposite-sex interviewers, and that anthropometric characteristics are irrelevant to male interviewers when assessing male attractiveness. We also estimate whether, controlling for beauty, body size measures are related to hourly wages. We find that anthropometric attributes play a significant role in wage regressions *in addition to* attractiveness, showing that body size cannot be dismissed as a simple component of beauty. Our findings are robust to controlling for health status and accounting for selection into working.

1. Introduction

The salience of physical attributes to economic behavior is well-established in the social sciences, where research consistently reports that beauty or anthropometric measures (height, weight, and body mass index (BMI)[1]) are significantly related to socioeconomic outcomes, from schooling attainment and wages to crime.[2] In this paper, we examine how anthropometric characteristics are related to beauty, and investigate the relationship of attractiveness, weight, height and BMI with wages, with a unique data set.

We use nationally representative German data where the respondents provide information on their anthropometric attributes (height and weight) and the interviewers assess their attractiveness at the start of the interview on an 11-point Likert scale. The fact that our attractiveness measure is based on the interviewer rating respondents' overall attractiveness rather than a photograph of part of the body, that this happens at the start of the interview, and that we can control for interviewers' characteristics (including fixed effects), allow us to provide a novel answer to the question: Do anthropometric characteristics contribute to attractiveness?

We then investigate how beauty and anthropometric measures (height, weight or BMI) are associated with hourly wages. As such, we reassess one of the open questions in the social sciences regarding beauty and socioeconomic outcomes: Is it beauty, anthropometric measures or both that matter(s) for wages?

☆ We thank Damian Clarke, Tel Enyecu, Marco Gonzalez-Navarro, David Margolis, Daniele Paserman, Simon Quinn, Curtis Simon, one anonymous referee and seminar participants at Alacant, IFS, Oxford, PSE and TSE for useful comments. The usual disclaimers apply.

* Corresponding author at: University of Oxford, Department of Economics, Oxford OX1 3UQ, United Kingdom. Tel.: +44 01865281452.
E-mail address: climent.quintana-domeque@economics.ox.ac.uk (C. Quintana-Domeque).

[1] BMI is defined as the individual's body weight (in kg) divided by the square of his/her height (in m).

[2] For example, Averett and Korenman (1996), Biddle and Hamermesh (1998), Caliendo and Gehrsitz (2014), Cawley (2004), Mocan and Tekin (2010) and Scholz and Sicinski (2015).

http://dx.doi.org/10.1016/j.ehb.2016.01.003
1570-677X/

The existing research has unveiled several interesting patterns typically using either beauty *or* anthropometric measures. Hamermesh and Biddle's (1994) seminal work on beauty and the labor market considers *during*-interview ratings of beauty, and also of height and weight.[3] However, *during*-interview ratings of height, weight, and beauty may be contaminated with the personality or grooming of the rated individuals, or with the raters' role in the actual measure. Hence, it has not been established yet whether and how anthropometric measures should be conceptually distinguished from beauty measures, or whether the observed anthropometric "premium" (or "penalty") in the labor market simply reflects a "beauty premium", or vice versa.

Our analysis uses the German General Social Survey (ALLBUS) data for 2008 and 2012, two nationally representative cross-sections of the German population. We estimate regressions of attractiveness rated *at the start* of the interview on anthropometric measures and several groups of control variables, including age, region, year, interviewer fixed effects, and interactions with gender and age group of the interviewer. We find that height, weight and BMI all strongly contribute to male and female attractiveness when attractiveness is rated by opposite-sex interviewers, whereas only female anthropometric measures are relevant when attractiveness is assessed by same-sex interviewers. To the best of our knowledge, we are the first to estimate that anthropometric characteristics are irrelevant to male interviewers in assessing male attractiveness, while they are important for both male and female interviewers in assessing female attractiveness. Our findings are robust to controlling for health status. In addition, we unveil that this differential beauty assessment by interviewer's gender cannot be explained by the existence of a non-monotonic relationship between beauty and BMI.

In the second part of our analysis, we investigate the presence of both beauty and anthropometric "premia" in the labor market by means of wage regressions. We show that attractiveness and height matter in the labor market in terms of higher wages for both men and women. Moreover, male BMI is non-monotonically related to wages, consistent with Caliendo and Gehrsitz (2014). The height "premium" may reflect the fact that adult stature is positively correlated with cognitive ability (Case and Paxson, 2008), while the non-monotonic relationship of BMI with wages for men is consistent with BMI not being able to distinguish fat from muscle (Burkhauser and Cawley, 2008; Tekin and Wada, 2010). Body size – height for both men and women, BMI for men only – explains wages above and beyond beauty, even when controlling for health status and accounting for selection into working.

Our first finding should prompt future researchers to seriously consider and account for the gender of the interviewer in any beauty analysis. Hamermesh and Biddle (1994) write that "within a culture and at a point in time there is tremendous agreement on standards of beauty". Our analysis provides a clarification of such statement: we show that these standards and their anthropometric determinants may differ by *gender*. Moreover, our paper contributes to bridge the gap between the literature on the economics of anthropometric measures (including height and BMI), on one hand, and the economics of beauty, on the other, estimating the relevance of body size and beauty. It seems that body size cannot be dismissed as a component that employers are taking into consideration since it significantly explains hourly wages beyond attractiveness.

The paper is organized as follows. Section 2 describes the data and discusses the approaches and challenges to measuring beauty, and our contribution, also providing a survey of the existing attractiveness measures and related economic papers. Section 3 presents our analysis of the determinants of beauty. Section 4 investigates whether body size matters above and beyond beauty in explaining wages, accounting for differences in health status and selection into working. Section 5 concludes the paper.

2. Data description and measuring attractiveness

2.1. The data set

Estimation is carried out on the German General Social Survey (ALLBUS) data (GESIS, 2014), a biennial survey that started in 1980 on "the attitudes, behaviour, and social structure of persons resident in Germany": a nationally representative cross-section of the German population is interviewed every two years, and detailed demographic and socioeconomic information at the individual and household level is collected. In addition, the interviewer's identifier and main demographic characteristics (age and sex) are also recorded, which will prove useful in our present analysis.[4]

We use the cumulative series ALLBUS GESIS-Cumulation 1980–2012, focusing our study on the waves of 2008 and 2012, i.e., the *only* waves containing information on *both* attractiveness *and* anthropometric measures, where 2012 is the most recently released cumulation wave.[5] Our main variables of interest are height (in cm), weight (in kg), and BMI (body mass index) of the respondent as well as his/her attractiveness, which is rated by the interviewer at the *start* of the interview. The respondent's attractiveness rating is reported on an 11-point (Likert) scale from 1 to 11 (from unattractive to attractive).

[3] In anthropology or psychology studies typically work with small samples. For instance, Weeden and Sabini (2007) use measures of face photo ratings, body size, and the residual attractiveness component in a sample of undergraduate students to study their sexual behavior.

[4] Interviews are performed with CAPI (computer assisted personal interviewing). In 2008 a total of 3469 respondents participated in the survey, which was conducted between March and August of 2008 by 185 interviewers. The response rate was 51.3% (see (Menold and Zuell, 2010) for details), higher than the 40.2% response rate in the 2006 cross-section of the GSOEP (German Socio-Economic Panel).

[5] In the ALLBUS some questions are asked in some or alternate waves. The anthropometric measures are not available in 2010 or in the years before 2008. An additional feature of these anthropometric measures is that they are not asked in the basic questionnaire but in the rotating ISSP modules "Health" or "Leisure time and sports" to about 50% of the respondents in selected years (other respondents are asked other "split" questionnaires).