

“Is your commute really making you fat?”: The causal effect of commuting distance on height-adjusted weight

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The worldwide growth in overweight and obesity is a serious cause for concern because an excessive BMI is a risk factor for a number of major illnesses including, e.g. cardiovascular diseases or cancer (WHO 2014). In the past few years societal and environmental factors (e.g. food and activity environment, work environment) have gained attention in the study of overweight and obesity. Especially longer working hours and living further from work have led to a situation in which individuals can devote less time to planned nutrition and physical activity. To date, only little research has been performed to investigate the relationship between commuting distance and height-adjusted weight. One recent study (Hoehner et al. 2012) uses cross-sectional data of 4,297 adults living in Texas and finds that commuting distance is positively associated with BMI.

Given this limited knowledge, the aim of this paper is to examine the causal impact of commuting distance on height-adjusted bodyweight. An understanding of this effect is important not only because commuting distances have increased in recent decades but also because commuting to the workplace is an important dimension of labour market experience as well. The analysis is conducted using data from the German Socio-Economic Panel (SOEP) for the period 2004 – 2012. First, an ordinary least square model is estimated. Second a fixed effects model is used to remove time invariant unobserved heterogeneity. To take care of reverse causality, we further replace commuting distance variables with lagged values in order to avoid the influence of BMI on contemporaneous commuting distance. Finally, we exploit variation in commuting distance within an individual, when there are no changes in residence and employer. By keeping employer and residence location constant in the estimations, any change in commuting distance is than the result of employer-induced workplace relocation (so the employer moves to another location).

Our results cast doubt on the idea that commuting distance is positively associated with excess weight. More precisely, the results reveal that an increase in commuting distance does not affect an individual's BMI. Even after controlling for time-invariant characteristics no significant associations are observed. In addition, the non-existence of a relationship between BMI and commuting distance is consistently found across various sub-samples and prevails regardless of included control variables (e.g. physical activity and eating habits). Concentrating on the models in which we account for the potential reverse causality bias, we also obtain non-significant relationships. The intuition of our results is that either the effect of commuting distance on BMI found for the U.S. does not hold for Germany, since overweight and obesity are much more common in the United States than in Germany or that individuals who commute are aware of the potential adverse effect of commuting and, therefore, adjust their behaviour to their situational needs. We find some (albeit little) evidence for compensating health behaviour, such as more physical activity, among those who commute, which could explain why we do not find any effects of commuting distance on BMI.

Keywords: BMI, commute, obesity, overweight, weight

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