Diet, Lifestyle and Happiness: Application to Russian Data

Sonya K Huffman and Marian Rizov

The goal of this study is to improve our understanding of happiness and well-being overall and particularly in Russia, by examining the relationship between subjective well-being, life circumstances and other important wellbeing outcomes; and in particular to investigate the impacts of diet, and exercise on happiness measured as level of lifetime satisfaction. Studies had shown that answers to general happiness and life satisfaction are highly correlated (Blanchflower and Oswald 2004). This study contributes to the existing literature on happiness with providing empirical evidence on impacts of diet and lifestyles (smoking, drinking, and exercise) on happiness and correcting for reverse causality by using 1995-2007 data from the Russian Longitudinal Monitoring Survey (RLMS).

Following Becker and Rayo (2008), we develop the following theoretical model of happiness production. We assume that happiness is a commodity in the utility function as other goods are. The individual chooses to maximize utility, but happiness and utility are not always identical. The individual has a utility function: \( U = U(H, C) \), where \( H \) is happiness and \( C \) is other commodity. The individual cannot buy happiness in the marketplace. Therefore, we assume that \( H \) is not directly purchased but have to be produced by each individual according to a household production function, using market goods, time, and other inputs. The individual has the following production functions: \( H = H(D, L, O, \varepsilon) \), where food \( D \) (including tobacco smoking and alcohol consumption); leisure, \( L \); and fixed characteristics \( O \), such as age, gender, education and socioeconomic background, and \( \varepsilon \) are the unobservable individual characteristics that affect individual’s happiness, \( H \). The individual also has a budget constraint: \( P_D D + P_C C = W(T - L) + N \), where \( P_D \) and \( P_C \) denote the market prices of food (\( D \)), and the other good (\( C \)), respectively; \( W \) is the wage rate per unit of time, \( T \) is the fixed time endowment (\( T - L \)=work), and \( N \) is the non-labor income. To obtain the full income budget constraint \( F \), we define \( \pi_H \) to be the average shadow price of producing \( H \): 

\[
\pi_H = \frac{W(T-L)+N}{-P_D D - P_C C} = \frac{F}{-P_D D - P_C C},
\]

Therefore, the production of happiness depends on personal and objective market characteristics. We assume that the individual maximizes the utility subject to budget constraint and happiness production function. The Hicks demand function for happiness is: 

\[
H = H(U, \pi_H) = H(U, P_D, P_C, W, O).
\]

Following the theoretical model, we estimate the following econometric equation: 

\[
H_{it} = a_0 + a_1 D + a_2 S + a_3 A + a_4 E + a_5 P_D + a_6 P_C + a_7 O + \eta_{it},
\]

where \( H \) is an indicator of happiness, \( D \) is diet (composition and diversity), \( S \) is smoking, \( A \)-alcohol consumption, \( E \)-exercise, \( O \) is a vector of exogenous explanatory variables, and \( \eta_{it} \) is the disturbance term. To deal with the endogeneity and reverse causality issues, we propose to replace the endogenous variables with lags or use Instrumental Variables (IV) methods. In our study, smoking and drinking, exercise, and diet are choice (endogenous) variables. Therefore, we will use one-period lags of these variables. Lags of endogenous variables can offer consistent estimators of the coefficients of interest (Cameron and Trivedi, 2009). Using panel data for the years 1995-2007 from the RLMS allows for the correction of unobserved personality traits and correlated measurement errors. Hausman test indicated the model of choice; random effects model for panel data to control for time invariant variables.