

Chapter 1 Happy sustainability as a lifestyle

Beyond the Easterlin paradox

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1 Introduction

There is a general agreement within the scientific community, that ecological services provided by planet Earth cannot support the population of 7 billion at the economic welfare level of the Western societies under current technological conditions. (Wackernagel et al. 2004) We still want to sustain the level of subjective welfare, measured by life satisfaction and happiness, without jeopardising the life supporting systems of the Earth. O'Brien (2005) defined sustainable happiness as the pursuit of happiness that does not exploit other people, the environment, or future generations. Thus, studying the fundamental nature of the linkage between ecological services and subjective wellbeing became crucial. A large number of authors tried to assess how much the two are tied both from economic and psychological disciplinary viewpoint. In psychology this research has led to the formulation of "aspiration theory" linking personal goals to subjective wellbeing. (Kasser and Lee 2003) Economics was inspired by the so called Easterlin paradox, exploring the contradiction between happiness of wealthier people in the US at an assigned moment and the decoupling of high GDP growth from the stagnating level of happiness in longer term. As an outcome of ongoing debates "happiness economics" came into being.

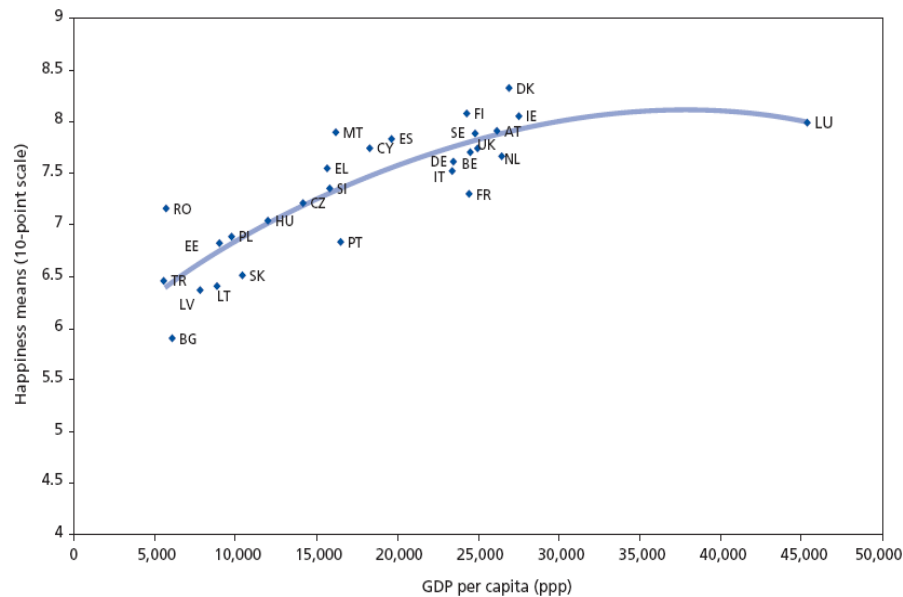
The economic crisis does impact our feeling of material security and may also impact our life satisfaction and happiness. Are we sentenced to unhappiness whenever we are forced to give up our current consumption level?

The link between ecological impacts and subjective wellbeing is difficult to be tested, thus the ultimate question is most often approximated by misplaced questions on linking income to subjective wellbeing or linking pro-environmental behaviour to subjective wellbeing. In the first part of the paper a very short discussion follows about the essence of these streams. Then this paper attempts to re-establish this link and directly measure the dependence of our subjective wellbeing on associated ecological footprint. Alternative theories will be developed to what is generally supposed and these theories will be tested on a representative sample.

The paper discusses the potential for achieving the same level of happiness at a modest level of ecological footprint.

2 Income and subjective wellbeing

The impact of financial situation on subjective wellbeing is fully studied both in psychological and economic literature. Their conclusions, however, are different in the attributed weight to financial situation in increasing subjective wellbeing. Economists tend to emphasise the significant relationship between the two. (Figure 1)



Source: EQLS 2003; Eurostat 2004. Mean values.

Figure 1: Happiness means and GDP per capita in Europe

Easterlin (1973), however points out that average national happiness has remained constant over time despite sharp rises in GDP per capita in the US. At the same time, positive correlations between individual income and individual happiness can be found at micro level. Many explanations were given by many economists to this phenomenon. Veenhoven and Hagerty (2006) found that a “happiness had increased slightly in rich nations and considerably in the few poor nations for which data are available” (p. 421). Bjørnskov et al. (2008) found how that “while current GDP growth does not affect trends in well-being, accelerations in GDP growth do. In addition, faster GDP growth and faster growth of government consumption than in neighbouring countries induces positive trends in life satisfaction. Their findings are consistent with the predictions of aspirations theory and the theory of reference group comparisons” p. 317. The dispute is still going on.

At the same time, psychologists warn about the faintness of that relationship, although acknowledge the presence of the interrelation. (Kasser & Ryan, 1996, 2001, Nickerson et al. 2003)

They also point out the possible destructive nature of financial goals. Income and financial goals belong to extrinsic goals. In a large sample representative empirical survey Martos and Kopp (2012, p.566.) found that while the orientation toward extrinsic goals may contribute to

the present mood and satisfaction, they may bring along personal costs in the long run.” In case of „meaning of life”, importance of negative aspirations proved to be a negative predictor., In contrast, the pursuit of intrinsic life goals may indiscriminately support well-being.”

Happiness economics, the psychological theory of subjective wellbeing and the economics of ecological services are popular scientific streams, not properly linked together yet. Our former research serves evidence that such a link is meaningful and may provide interesting insights and findings. The indicators of income and social wellbeing must be complemented, though, with ecological footprint. The essential question for sustainable consumption is the dependence of subjective welfare on ecological footprint rather than on mere income. Interrelationship among the three indicators must be revised and will be tested.

3 Linking subjective wellbeing to pro-environmental behaviour

Pro-environmental behaviour is sometimes used as a proxy for sustainable consumption.

Brown and Casser (2005) studied the link between ecologically responsible behaviour and subjective well-being. They found that people living according to voluntary simplicity principles have lower ecological footprint and higher level of life satisfaction. Their sample was, however, very limited and specific (200 middle- and high school Caucasian students in the US) They found the intrinsic value orientation being responsible for increased level of life satisfaction.

Veenhoven (2004, p.1.) suggested that “a shift to sustainable consumption involves a minor reduction in happiness, at least, temporarily, but that we can live quite happily without that luxury. “ He found that heavy energy users were happier in the Netherlands. He admitted, however, that the association between the two proved to be weak with high variance. (See Figure 2)

Csutora (2012) also found, that although “green” consumers not necessarily show up a reduced footprint compared to “brown ones”, but the former are definitely happier than the latter. Thus green consumption may indirectly increase the subjective wellbeing per footprint ratio as it contributes to the increase of subjective wellbeing at an assumed level of footprint. The discussion, however, halted with this single statement and did not go further in analysing the link between life satisfaction, happiness and consumption patterns. Life goals and values do matter, resulting in varying levels of happiness with the same level of ecological footprint.

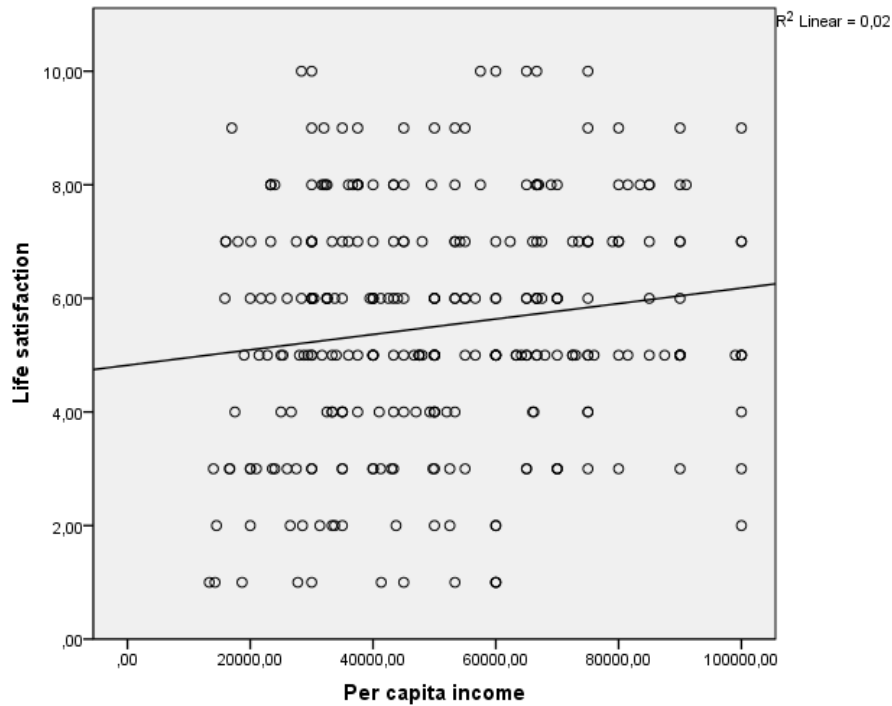


Figure 2: Life satisfaction and per capita income in Hungary

4 Alternative hypothesis proposed

Reconsidering previous research results the correlation between ecological footprint and subjective well-being will be reconsidered. The link is apparently straightforward for low levels of income, but becomes quite forced and faint after that. Lack of money is assumed in the study to make people unhappy, but material wealth does not make much happier after a certain level reached. Different paths for happiness open up, once that point achieved with no more struggle for satisfying basic needs.

With low level of income the correlation between income and happiness seems straightforward. After reaching a certain level of wealth, however, an inflection point can be found, after which the association faints. Tremendous increase in income is needed in order to generate a substantial increase in happiness. The regression line comes close to horizontal suggesting a weak relationship if any. Also, most graphs referring to citizens rather than countries plot mean values for income groups rather than all dots, omitting to share the determinant coefficient for the regression with us. With all dots plotted, the link between income and happiness can hardly be captured. The strength of the relationship is significant, but extremely weak.

Another interesting general feature of such graphs is the likely presence of heteroskedasticity hidden in data. At higher level of income the variance of points apparently increases. This leaves potential to alternative theories that go beyond a single logistic curve linking the two variables. Perhaps the link breaks at a certain level of income and two different clusters of points with different features are hidden causing the high variance observed.

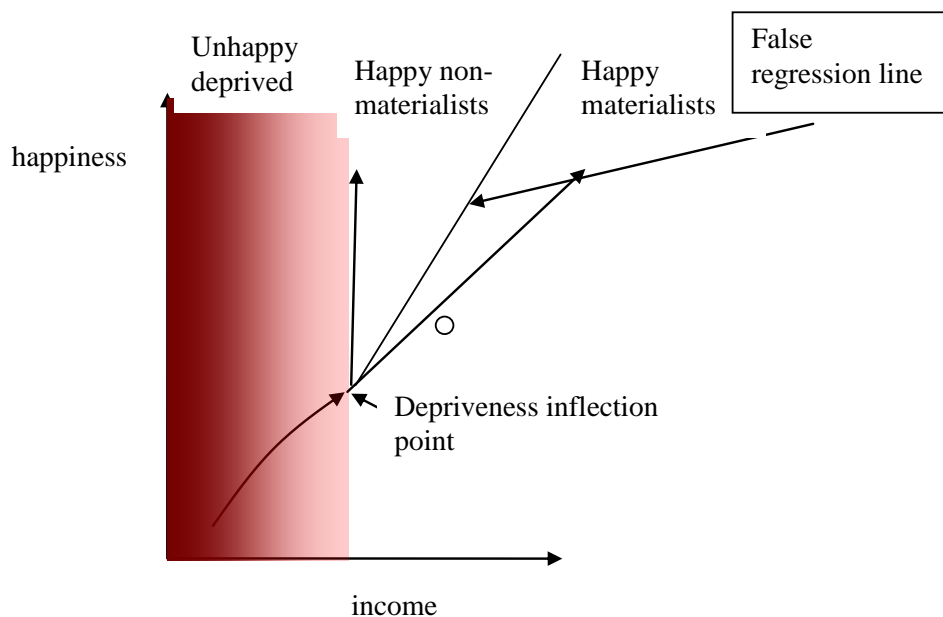


Figure 3: A false regression assumed between happiness and income

From a false regression line a false statement can be drawn:

Lack of money does make you unhappy = Money makes you happy

The hypothesis of this paper is that although the poorest may suffer of constant struggling for basic goods, after arriving at satisfying basic needs, increasing ecological footprint is not essential in order to feel happy and satisfied.

Two pathways exist beyond that point: one for those with materialistic goals. They may increase their income and footprint and feel happier or fail and feel unsatisfied. With non-materialistic goals both happiness and life-satisfaction can be increased without significant increase of ecological footprint.

The false nature of the regression line can be suspected from the figures of certain previous studies. The correlation of income and happiness visually seems to be quite strong on most figures before the inflexion point, but becomes quite forced and vague after that

inflexion point is reached. Sometimes has a feeling, that without the regression line printed, we would not see that kind of relationship after the inflection point.

Money does not make you happy, but lack of money does make you unhappy. The close correlation between unhappiness and lack of money cannot be automatically translated into correlation between high income and happiness.

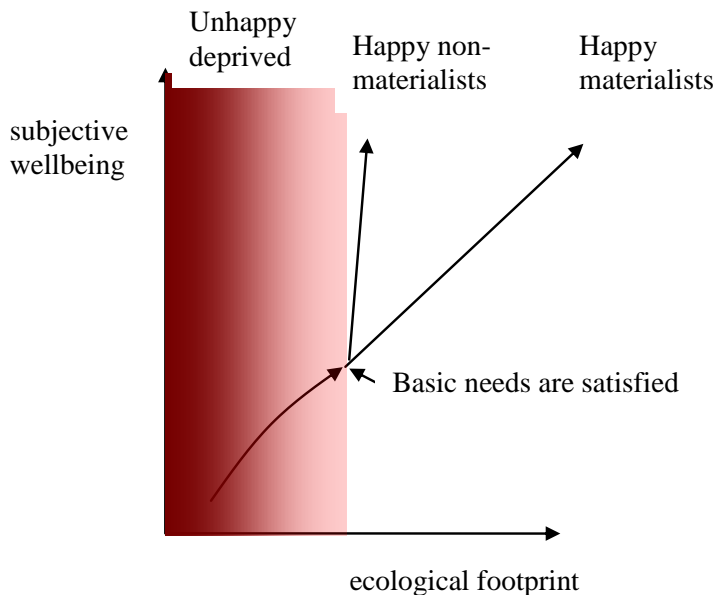


Figure 4: Two possible paths towards increasing subjective welfare

The regression line between income and happiness might appear false, once the deeper structure of society based on income and happiness unfolds.

5 Preliminary results of the empirical analysis

In 2010, a survey was carried out in Hungary in order to collect data on the spending structure of consumers, their consumption patterns, their environmental attitudes, demographic data, and life satisfaction issues. The survey was financed through the Norwegian Financial Mechanism. Interviewing was carried out by TARKI, one of the largest Hungarian professional opinion polling companies. The survey was collected from a representative probability sample (selected in multiple stages with proportional stratification), $N = 1012$. All adults with an address in Hungary had equal probability of becoming part of the sample. All Hungarian regions were included in the sample with a total of 70 localities. First a sample of settlements was drawn. Then the random walk technique was applied to select the dwelling. Finally, one person was chosen within a dwelling to be interviewed, using the Leslie Kish key to select the person within the household. The survey sample was representative of the population aged 18+ in terms of sex, education, type of settlement, and

educational background. The questionnaire was carefully piloted on a smaller sample before the survey.

A compound based method was used to calculate the ecological footprint of consumption activities, which comprise a critical part of total ecological footprint. Food, transport, and household energy were considered important contributors, so respondents were asked detailed survey questions regarding their daily diets, mobility habits, and energy use.

There is a correlation between net household income and total ecological footprint as suggested by previous literature.

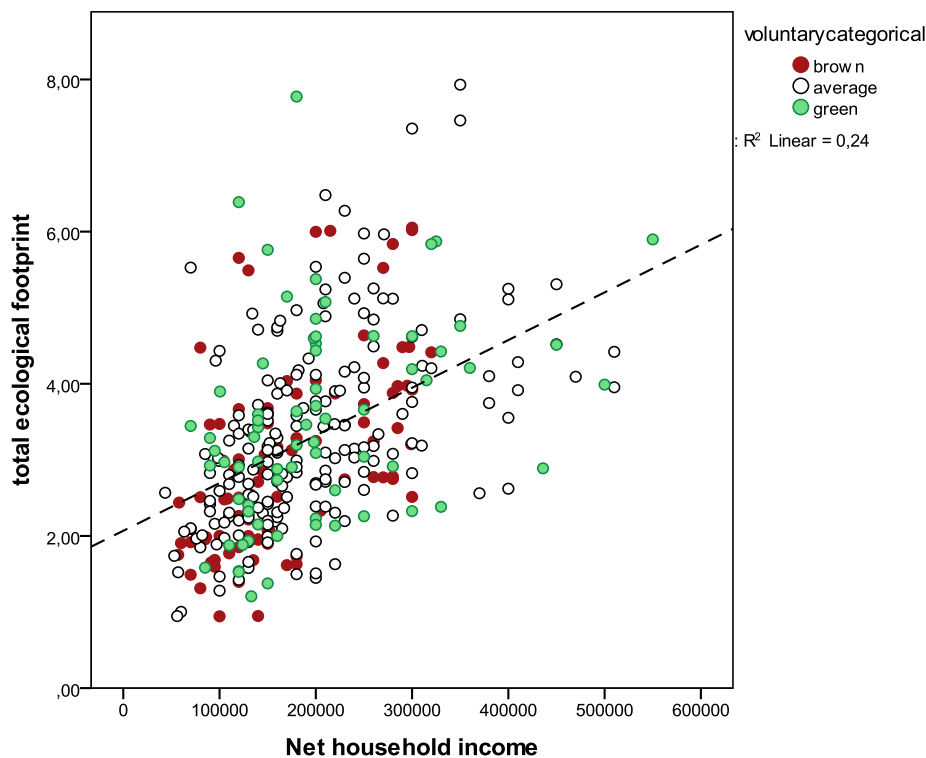


Figure 5: Net household income and total ecological footprint

Source: Csutora (2012, p. 156)

The association between the two is, however, weak and does not predict a strong association between ecological footprint and subjective wellbeing. Thus the correlation between the variables has been tested based on the database data. The correlation among variables is presented in Figure 5.

The results reassure the preliminary hypothesis about the weakness of correlation between ecological footprint and subjective wellbeing. Although net house hold income does correlate with both components of subjective wellbeing and ecological footprint and this correlation is weak for happiness. The most interesting finding is, however, that ecological footprint correlates with life satisfaction weakly and does not correlate with happiness at all. Thus, driving a happy life without imposing high burden on the environment do not seem to be contradicting principles according to these results.

Correlations		Ecological footprint	Happiness	Life satisfaction	Net household income	Per capita income
Ecological footprint	Pearson Correlation	1	,055	,161**	,359**	,533**
	Sig. (2-tailed)		,121	,000	,000	,000
	N	793	793	792	367	367
Happiness	Pearson Correlation	,055	1	,724**	,189**	,080
	Sig. (2-tailed)	,121		,000	,000	,093
	N	793	1013	1011	447	447
Life satisfaction	Pearson Correlation	,161**	,724**	1	,274**	,236**
	Sig. (2-tailed)	,000	,000		,000	,000
	N	792	1011	1011	446	446
Net household income	Pearson Correlation	,359**	,189**	,274**	1	,745**
	Sig. (2-tailed)	,000	,000	,000		,000
	N	367	447	446	447	447
Per capita income	Pearson Correlation	,533**	,080	,236**	,745**	1
	Sig. (2-tailed)	,000	,093	,000	,000	
	N	367	447	446	447	447

** . Correlation is significant at the 0.01 level (2-tailed).

Table 1: Correlation between subjective wellbeing, income and ecological footprint

A regression analysis between happiness and income was also carried out with cutting point of different household income level. The regression proved to be significant below the level of roughly 220000 HUF, but became insignificant above that level. Thus it seems, different paths for happiness open up, once a point achieved. The single regression line, suggested by previous literature can be decomposed into two lines, as the nature of the link changes beyond a point of income reached. Although one single logistic regression line instead of two lines is preferred by most researchers, this approach is proved to be more elegant than exact. Unfortunately only about 25% of people live beyond that level of income, so the original hypothesis still holds for most people.

A similar analysis has been carried out for testing the relationship between ecological footprint and subjective wellbeing. A regression analysis between happiness and income was also carried out with cutting point of different ecological footprint level. Here I used life satisfaction instead of happiness as an indicator of subjective wellbeing. Using regression analysis I found an overall significant relationship between life satisfaction and ecological footprint, but the regression line, again was decomposed into two lines. A cutting point was found around 2.7 gha, well below the average footprint of 3.4. Beyond that level, the association between ecological footprint and life satisfaction became insignificant. The good news is that 535 people, more than 67% of valid responses, belong to that group. Thus, for majority of people, ecological footprint is not a good predictor of subjective wellbeing. This increases the potential for a politically acceptable sustainable consumption policy.

Further analysis has still to be carried out about the reasons and intercultural validity of these findings. One possible explanation might be in the high share of heating related

ecological footprint in the total EF. Energy footprint is a major component of total footprint. Roughly 75% of the energy footprint, is determined by heating-purpose fuel consumption. It seems to be uncorrelated with environmental awareness nor with income, but is dependent on socio-economic conditions such as home size, or physical condition and age of the building, etc. People do not move into smaller house whenever their income is reduced. Thus very often old and low income people are characterised by high level of energy related footprint and low level of subjective wellbeing. By reducing their footprint by retrofitting of their houses, they could increase their level of wellbeing and reduce their footprint substantially.

A quick cluster analysis also explored three clusters within the society: Cluster 1 was characterised by low footprint (2.81) and low level of happiness (4.41), cluster 2 by above average happiness (7.00) and footprint (4.86), while cluster three by high level of happiness (8.07) and low level of ecological footprint (2.6). Further analysis will focus on testing the validity of these results and exploring the lifestyle patterns of the three groups.

6 Overall conclusion

The Easterlin paradox has a straightforward solution, provided that the theory described in this article is correct. In longer term you may cease the causes of unhappiness linked to deprivation, but you cannot make people happy by merely increasing material wealth beyond a certain point. Moreover, the link between ecological footprint and subjective wellbeing is much weaker than that between ecological footprint and subjective wellbeing. Thus, decreasing ecological footprint without compromising subjective wellbeing is less ambitious goal than sustaining welfare without compromising income.

The hypothesis was tested on a database gained from a representative survey in Hungary, 2011. Reanalysing data from the world value survey also took place. The empirical analysis confirmed the potential for feeling the same level of happiness at very different levels of ecological footprint. Value choice does matter in increasing the likelihood of feeling happy. Green consumers, although are less successful in decreasing their ecological footprint due to a BIG problem – are happier at all level of income than average or brown consumers.

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