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Living among the Affluent: Boon or Bane?

Louis Tay

Purdue University

Mike Morrison

University of Western Ontario

Ed Diener

University of Illinois and The Gallup Organization

Accepted at Psychological Science

Address for correspondence:

Louis Tay

Department of Psychological Sciences

Purdue University

703 Third Street

West Lafayette, IN 47907

Email: stay@purdue.edu

Phone: (765) 494-0715

Abstract

This study examines whether national income can have effects on happiness over and above personal income. To assess the incremental effects of national income on happiness, cross-sectional multilevel analysis was conducted on 838,151 individuals across 158 nations. Although personal income was consistently related to higher SWB, we find that national income appears to be a boon to life satisfaction but a bane to daily feelings of well-being; individuals in richer nations experience more worry and anger on average. Moderating effects were found such that national income strengthened the income-happiness relationship. This might be explained by culture-norms, where money is valued more in richer nations. The SWB of more residentially mobile individuals were less affected by national income. Overall our results suggest that wealth of the nation one resides in has consequences for happiness beyond personal income.

Keywords: national income, personal income, happiness, spillover effects, multilevel

Living among the Affluent: Boon or Bane?

Does national income incrementally influence our happiness beyond the income one makes? Whether happiness improves or deteriorates as a function of national income is controversial because of differing value judgments about societal pursuit of money. Differing opinions notwithstanding, bringing scientific evidence to bear on this issue is critical as nations increasingly seek economic progress. Unraveling whether raising the average income of citizens has positive or negative effects on happiness will potentially have important implications for economic and public policy (Oswald, 1997).

Although many studies show that personal income robustly predicts happiness (e.g., Stevenson & Wolfers, 2008), little is known if national income incrementally predicts greater happiness. Previous research examining regional wealth on happiness has focused primarily on social comparison effects. One perspective has been to examine how income norms, operationalized as average income of demographically matched data, predicts happiness over and above individual income (e.g., Ferrer-i-Carbonell, 2005). Another perspective is to examine how ranking of income is more predictive of happiness as compared to absolute income (e.g., Boyce, Brown, & Moore, 2010). By contrast, studies that directly examine effects of regional wealth are few. For example, Luttmer (2005) examined neighborhood wealth and found negative effects beyond individual income. Yet, to our knowledge, no studies have actually examined incremental national income effects on happiness, which we henceforth term “spillover effects”.

It has been proposed that regional wealth can generate negative spillovers for a variety of reasons. Wealth increases frequently co-occur with industrialization and environmental degradation, which in turn can lower happiness (Di Tella & MacCulloch, 2008). Further, Ng et al. (2009) proposed that as a society grows richer, societal members are likely to experience greater

levels of worry and anxiety because of a faster pace of life (Levine & Norenzayan, 1999) and overabundance of choices (Schwartz, 2004). Striving to make the best choice under time pressure can be detrimental for happiness. Negative spillovers can also take the shape of social processes such as upward income comparisons, which can lead to individuals to experience lower happiness in a richer nation compared to a poorer one despite having the same absolute income level.

Despite potential negatives, national wealth can also produce benefits. National income has been shown to be associated with higher levels of material welfare for citizens such as having basic needs like food and shelter met (Diener, Ng, Harter, & Arora, 2010). Further, national income leads to better infrastructure such as transportation, communication, sanitation, and healthcare, thereby improving the standard of living for individuals beyond personal income. Alluding to this, Levine and Norenzayan (1999) found that a faster pace of life was associated with higher levels of life satisfaction and happiness, and attributed this to economic productivity and prosperity in wealthier societies.

Empirically, positive or negative spillover effects would be evident when differential magnitudes of relations are observed between levels of analysis, indicating that aggregate income affects SWB over and above individual income. In our illustrations in Figure 1, positive spillover occurs when the relation between income and SWB is higher at the national level as compared to the individual level. This shows that for the same level of absolute income, individuals living in a richer nation experience positive spillover from national income. Conversely, negative spillover occurs when country income shows a weaker relation with SWB than individual income.

There are good reasons to expect that national wealth may exert either positive or negative spillovers on happiness but the direction of effect may depend on the type of happiness measured. Happiness, or subjective well-being (SWB), consists of life evaluations, positive feelings, and negative feelings (Diener, 1984). Research suggests that income is more strongly associated with life evaluations but less so with daily emotional experiences (Kahneman & Deaton, 2010). It has been proposed that life evaluations correspond more to external living conditions compared to daily emotional experiences which are more sensitive to life events (Tay, Chan, & Diener, 2013). Hence at the national level, higher levels of national income may increase life evaluations as reports of happiness are linked to observed national living conditions but have less bearing on feelings as they are tied to daily events more circumscribed by individual lifestyles and choices.

Aside from spillover effects, national wealth may moderate the extent to which individual income is linked to happiness. According to the culture-norm hypothesis, societies prize attributes for which they are high on (Fulmer et al., 2010). Because money is valued more in richer nations (Myers, 2000), national wealth may amplify the effect of income on happiness. As a result, the link between income and SWB would be stronger among richer nations compared to poorer ones. We note that culture-norm effects are distinct from decreasing marginal utility of income (e.g., Inglehart, Foa, Peterson, & Welzel, 2008). Decreasing marginal utility states that income buys more happiness at low levels compared to higher levels. However, the culture-norm perspective proposes that although decreasing utility holds within countries, its effect could be weakened in richer nations. This is because the income-happiness link is stronger in richer nations; the same proportion increase will yield more SWB in a rich nation leading to fewer

declines in utility. Therefore, we expect that national wealth will moderate the relation between income and SWB such that societal income enhances the effects of income on happiness.

Finally, we propose that effects of national income on happiness are more likely felt by individuals who identify more strongly with their environments. Indeed, the socioethological perspective of self and social behaviors posits that identity and well-being is more context dependent for less residentially mobile individuals (Oishi, 2010; Oishi, Lun, & Sherman, 2007). As such, we hypothesize that national income will be more strongly related to the SWB of individuals who are less mobile as compared to those who are more mobile.

Method

Data. We used data from the Gallup World Poll (GWP) data which surveyed income and happiness across 158 nations collected from 2005 to 2011. This comprised 838,151 individuals with an average of 5,305 (SD = 3,020) individuals per country.

Measures. Current life evaluations was measured using a single item from Cantril's Self-Anchoring Ladder measuring on a 0 (*worst possible life*) to 10 (*best possible life*) scale (Cantril, 1965). Affective well-being was assessed by aggregating indicators that tapped feelings experienced a lot in the previous day, on a dichotomous scale format (1 = *yes*, 0 = *no*). Positive feelings indicators included "smile/laugh" and "enjoyment"; negative feelings indicators included "worry," "sadness," and "anger."

Annual household income based on International dollars was calculated from the World Bank Purchasing Power Parities (PPP). This value was log-transformed. Logged annual household income was averaged to the nation level as a measure of national income. Because most variability in national income were attributable to nation differences (96.8% of variance) rather than within-nation income changes over time (3.2% of variance), we averaged national

annual household income across the years treating yearly observations as repeated measures. Averaging across waves yielded a high reliability of .99 for national income. Residential mobility was measured by whether respondents planned to move to another country in the next 12 months (yes/no).

Analyses. To disentangle the effects of individual-level income and average income within nations, we used a cross-sectional random coefficients multilevel modeling (Raudenbush & Bryk, 2002). We included random coefficients that were significant at $p < .05$. To determine whether national income has significant incremental effects on subjective well-being, we used group-mean centered individual-level and uncentered national-level income. An incremental effect can be tested by examining whether the effect of national income is significantly different from individual income (see Enders & Tofighi, 2007). In all our analyses, we included control variables age, sex, and education level at the individual-level. The multilevel is specified as follows,

$$\text{Level 1: } SWB_{ij} = \beta_{0j} + \beta_{1j}Age + \beta_{2j}Gender + \beta_{3j}Education + \beta_{4j} [\log(Income) - \overline{\log(Income)}] + r_{ij}$$

Level 2:

$$\beta_{0j} = \beta_{00} + \beta_{01}\overline{\log(Income)} + u_0$$

$$\beta_{1j} = \beta_{10} + u_1$$

$$\beta_{2j} = \beta_{20} + u_2$$

$$\beta_{3j} = \beta_{30} + u_3$$

$$\beta_{4j} = \beta_{40} + \beta_{41}\overline{\log(Income)} + u_4$$

where coefficient β_{4j} represents the effect of pooled within-country individual-level income; this is achieved by within-nation centering, taking logged income minus the average logged income of a nation formulated as $\overline{\log(Income)}$. Further, coefficient β_{01} represents the effect of between nation income, which is the average of logged income for a nation.

Results

Testing for the presence of context effects. The intraclass correlation (ICC) represents the proportion of SWB variance that can be accounted for by national conditions such as national income. We found that the ICCs were moderate to large at the national level ($ICC_{\text{evaluations}} = .23$; $ICC_{\text{positive}} = .06$; $ICC_{\text{negative}} = .04$). This implies that there exist contextual effects for SWB at the national level. About 23% of the variability in life evaluations is attributable to the country one lives in as compared to 5% of the variability in affective SWB. Therefore, there is an empirical basis for incremental effects of national income. This also shows that national contexts matter more for life evaluations but less so for feelings.

Incremental effects. We found significant incremental effects of national income over and above individual income ($ps < .001$). The effects of national income were stronger than individual-level income for life evaluations ($\beta_{\text{national}} = 1.98 > \beta_{\text{individual}} = 1.20$). This demonstrated that national wealth enhances life evaluations over and above individual income. Although national income was positively linked to positive feelings, it was weaker than individual income ($\beta_{\text{national}} = .04 < \beta_{\text{individual}} = .12$). This indicates negative spillover of national wealth on SWB. For negative feelings, negative spillover was large. National income was associated with higher negative feelings although individual income was linked to lower negative feelings ($\beta_{\text{national}} = .02 > \beta_{\text{individual}} = -.08$). Post-hoc analyses on specific aspects of negative emotions showed that societal income was linked to more worry and anger ($ps < .05$), but not sadness (*n.s.*), which is consistent with the idea that economic development results in a faster pace of living that is more stressful (Levine & Norenzayan, 1999; Ng, et al., 2009). Overall, Figure 2 shows that national income is a boon to evaluative SWB but a bane to affective SWB.

Moderating effects. Confirming the culture-norm hypothesis, national wealth enhanced the effect of individual income on SWB as seen in the significant interaction terms ($\beta_{evaluations} = .26$; $\beta_{positive} = .02$; $\beta_{negative} = -.04$; $ps < .05$). As confirmed in Figure 2, steeper lines are found for higher national incomes particularly for life evaluations and negative feelings, but the effects are less pronounced for positive feelings.

Mobility. Residential mobility moderated the effect of national income on life evaluations ($\beta = -.22$, $p < .05$) but not affective SWB ($ps > .05$). As shown in Figure 3, the effects of national income were stronger for individuals who were not planning to move but weaker for those who were.

Discussion

Can regional income influence happiness beyond personal income? To our knowledge, this is the first study to disentangle the effects of national and personal income to show that national income has spillover effects on happiness. We found evidence that SWB could be accounted for by where one lives and we estimated that 23% of life evaluation scores can be accounted for by the nation one resides in. This shows that national context effects are strong for SWB, especially life evaluations. Pursuing happiness is not merely an individual affair as national contexts and views of one's country matter for personal happiness (Morrison, Tay, & Diener, 2011). Whether one lives in a rich nation such as the Netherlands or in a poor country such as Zimbabwe would dramatically affect one's sense of well-being.

We tested conflicting proposals that national wealth can generate positive or negative effects beyond individual income. There was support for both propositions despite finding that individual-level income was consistently associated with higher SWB. National income had positive spillovers on life evaluations but negative spillovers on affective SWB. To obtain

practical effect sizes, Table 1 presents predicted SWB values of individuals with a fixed level of income living in nations of varying wealth. The differential between the 90th and 10th percentile of nations on income shows large effects. Evaluative SWB moves about one point higher on a 0-10 scale, which is about 1/10 of the scale. Affective SWB shows even greater movements, up to about .20 lower on a 0-1 scale, which is about 1/5 of the scale.

This presents a nuanced picture of the effect of national income on happiness. Positive spillovers occur for life evaluations, but negative spillovers occur for daily affective SWB. This suggests that both positive and negative contextual effects are at work. Compared to neighborhood wealth (Luttmer, 2005), national wealth more likely translates into better infrastructure usable by people residing in the nation which in turn benefits not only the wealthy but also the poor. These types of infrastructure and conveniences may be more easily evaluable and translated into higher life evaluations (see Hsee & Zhang, 2010). Nevertheless, in richer nations, environmental degradation, faster pace of life, and upward comparisons, may be detrimental to *everyday experiences* and feelings of happiness. Policy implications deriving from this suggest that wealth generation of a region spills over to create, on average, higher levels of life evaluations among people, but not necessarily for daily affective SWB.

Moderating effects of regional income on the income-happiness relationship were also clearly evident. Although there is decreasing marginal utility of personal income, people living in richer nations, compared to poorer ones, are more likely to have higher levels of SWB given the same increase in personal income. These results are in line with the culture-norm hypothesis which predicts that individuals more similar to the majority are more likely to enjoy greater happiness (Fulmer, et al., 2010); in this case, richer individuals are happier in richer societies.

When making judgments on their SWB, less residentially mobile individuals weigh national wealth and possibly other aspects of national quality of life as more important than those who are less mobile. Specifically, living in a rich nation like the United States (average annual household income \approx \$60,000) results in lower life evaluations of .18 for more mobile individuals, but residing in a poor nation like Rwanda (average annual household income \approx \$2,000) results in life evaluations being .14 higher for those more mobile. The range of the effect is about .32 on the 0-10 scale, or a 3% movement. While the scale-level effect appears small, it can translate to large practical effects when considering a population perspective to life evaluations. On the other hand, there was less evidence that residential mobility influences daily affective SWB. Consistent with the other findings, this suggests that cognitive SWB is more sensitive to external macro environments whereas daily affective SWB is less so because it may be more closely tied to daily life events (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004).

In conclusion, although personal income relates to higher happiness, we now know that national wealth can influence happiness above and beyond personal income. Living among the affluent is both a boon and a bane: it can promote life evaluations but the opportunity cost is lower feelings of happiness -- unless one is wealthy. Also, we find that money is more strongly linked to happiness in wealthy countries likely because such places put a higher value on money and materialistic goods (Kasser, 2002). However, having plans to leave the country can reduce contextual effects of income. The relationship between income and happiness has been studied for some time, but past work has examined the relative influence of personal and national income independently. The present study illustrates the importance of examining them together and for multiple measures of SWB. Personal income and national wealth both matter for SWB, but the

relationships observed depend on how rich you are, how tied you are to your country and which measure of SWB you look at.

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Table 1. Predicted happiness for individuals with different income levels living in poor and rich nations

Gallup Data Median Worldwide Income (2005-2011) = \$6,847	National Income					90% - 10% Differential
	Very Poor ^a 10%	Poor ^b 25%	Average ^c 50%	Rich ^d 75%	Very Rich ^e 90%	
Life Evaluations (0-10)	4.80	4.99	5.28	5.50	5.69	0.88
Positive Feelings (0-1)	0.75	0.72	0.67	0.62	0.56	-0.19
Negative Feelings (0-1)	0.20	0.22	0.26	0.30	0.36	0.16
U.S. Census Bureau Median U.S income (2007-2011) = \$52,762						
Life Evaluations (0-10)	5.59	5.82	6.19	6.47	6.74	1.15
Positive Feelings (0-1)	0.92	0.89	0.85	0.80	0.75	-0.17
Negative Feelings (0-1)	0.15	0.16	0.19	0.22	0.27	0.12

Note. Predicted values are based on multilevel estimates. Example countries include: ^aEthiopia, Mali, Indonesia ^b India, Yemen, Nigeria ^cMacedonia, Ecuador ^d Greece, Cyprus, Portugal ^eFinland, Japan, UK, Germany, Hong Kong

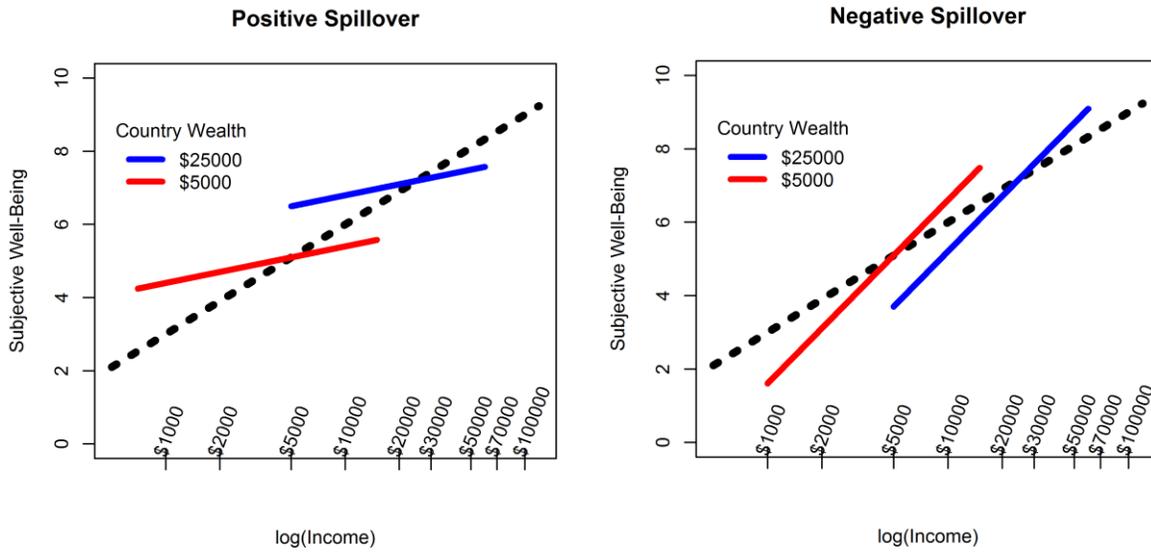


Figure 1. Illustrative examples of positive and negative spillovers of country wealth

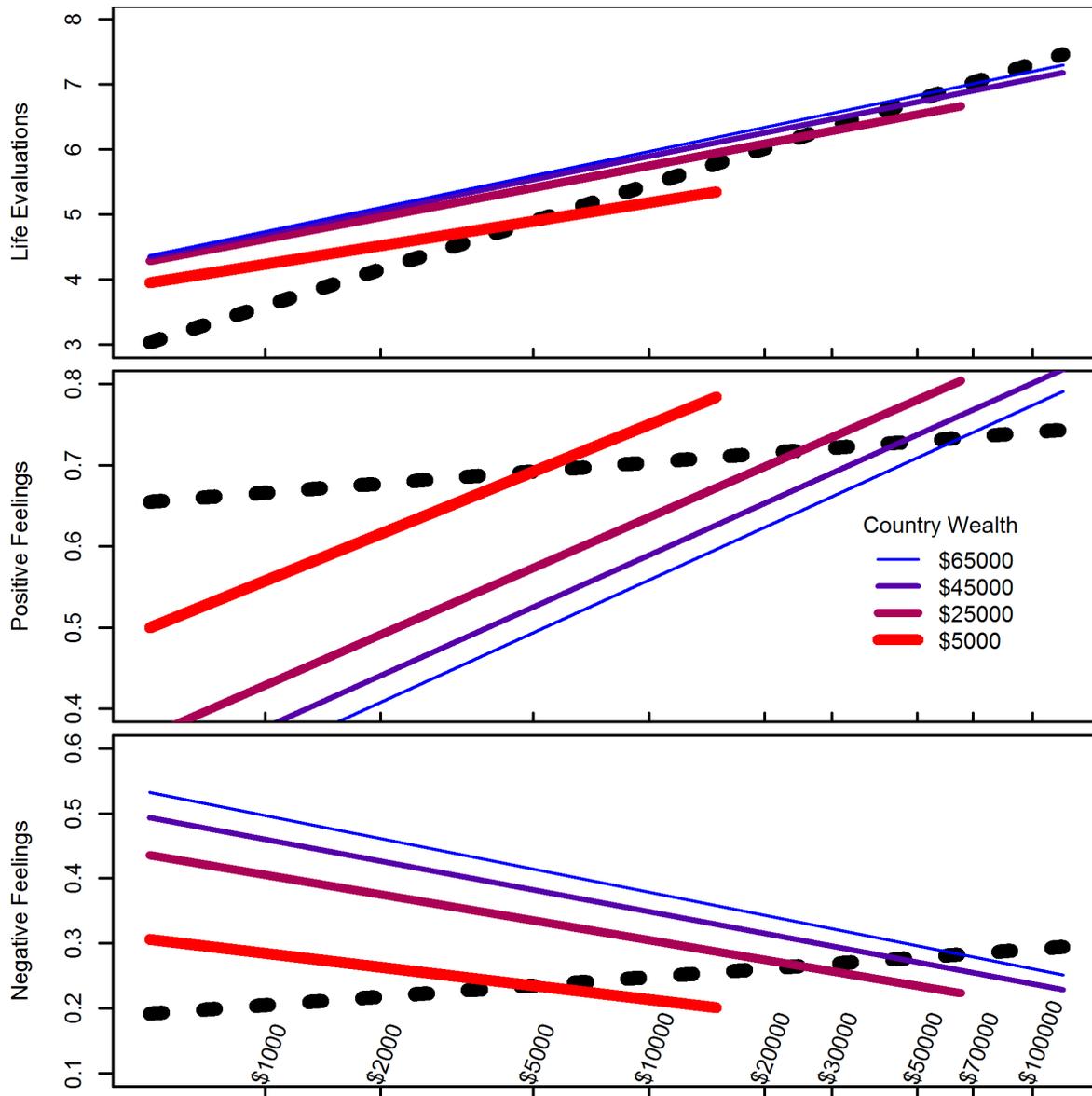


Figure 2. Relation between log household income and SWB: Within-nation and National-level analysis

Note. Between-country predicted regression line is shown as black dotted line. Within-country predicted regression line is shown by colored lines; line end points are based on household income that spans $\pm 2SD$ in the respective country wealth banding.

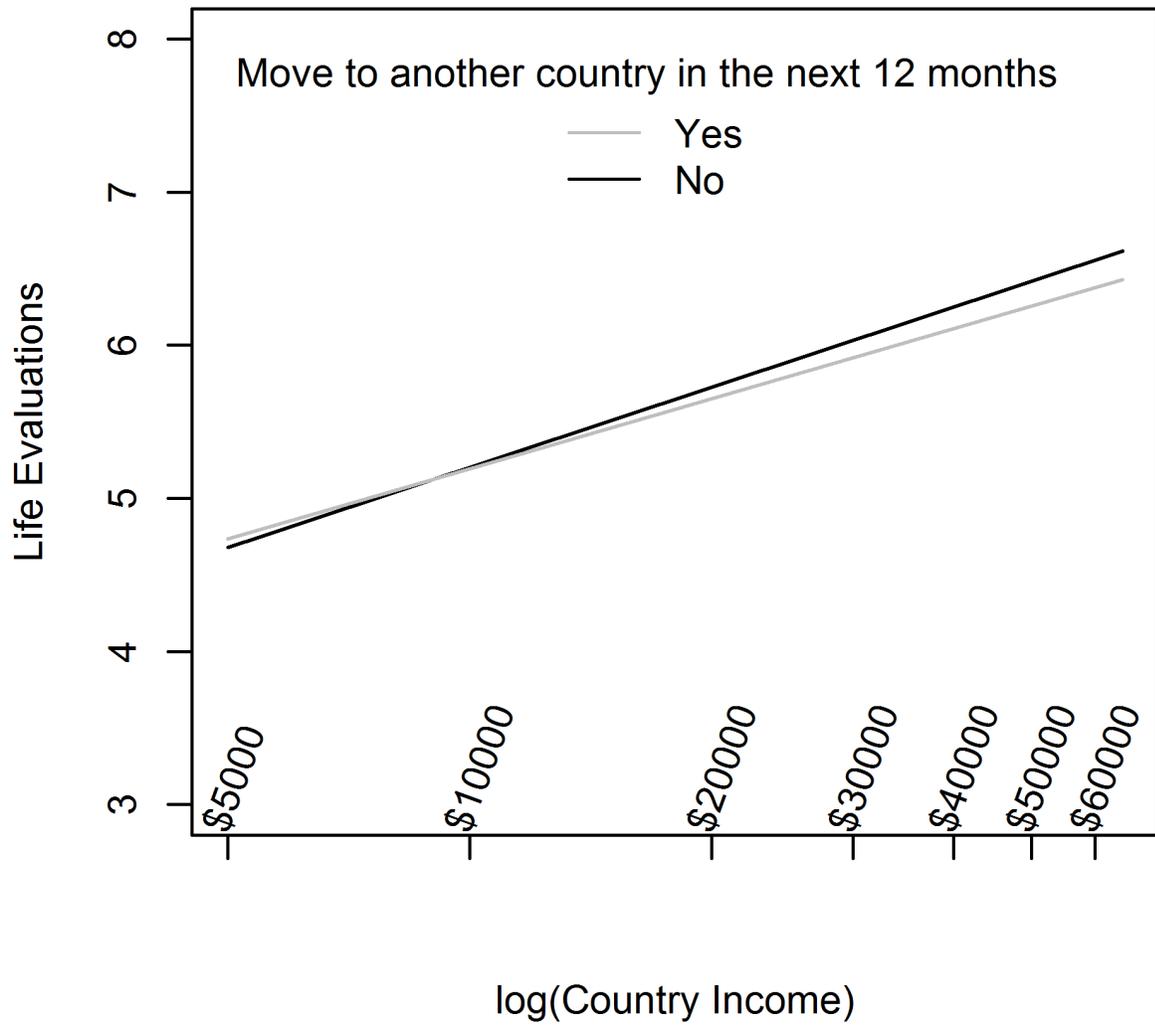


Figure 3. Intention to move moderates the relation between log country income and SWB