Income and Happiness: A Philippine Context

Rosalina Palanca-Tan*

Department of Economics, Ateneo de Manila University
Quezon City, National Capital Region 1108 Philippines

This paper adds to the relatively scant developing country perspective in the economic literature on happiness by investigating the relationship between income and happiness in the context of Koronadal, a low-income city in Mindanao, Philippines. Subjective happiness and potential contributory factors to happiness (demographic, economic, and social capital variables) are elicited through a survey and analyzed using descriptive and regression analyses. The study provides empirical evidence for the "happy poor" image of the Filipinos, with its survey data revealing that despite high poverty incidence and generally low-income levels, people in Koronadal are pretty happy with a mean self-reported happiness score of 6.75 on a scale of 0–10. The study also lends some empirical support to the modified Easterlin hypothesis: an increase in income increases happiness marginally, but there exists a threshold level – a monthly income of about PHP 20,000 – beyond which further increase in income ceases to increase happiness. Further, survey data reveal that happier people are younger, female, possessing a mobile phone, living in houses with more bedrooms, with savings and no outstanding loans, and are members of credit cooperatives. In so far as these findings reveal some socially favorable economic and institutional conditions, they serve to provide inputs and directions to government officials and policymakers in terms of social programs formulation and implementation.

INTRODUCTION

Since Pigou, economists have generally distinguished between two concepts of welfare: the broader concept of social welfare or happiness and the narrower concept of economic welfare that is measured in terms of income (Abramovitz 1959). In 1920, Pigou published his book "The Economics of Welfare," which gave rise to what has been referred to as Pigou's dictum: "Changes in economic welfare indicate changes in social welfare in the same direction, if not in the same degree" (Abramovitz 1959). Easterlin (1974) had shown that the dictum holds for within-country cross-sectional data, but not for time-

series data and multi-country comparisons, which became known as the Easterlin hypothesis or paradox – constant happiness despite income growth. Current literature on the income-happiness relationship yields mixed and divergent results – some papers providing further evidence for the Easterlin hypothesis (Andrews 1986; Argyle 1999; Diener 1984) and others with contradictory results (Deaton 2008; Sacks *et al.* 2012). There are also studies that suggest the existence of an income threshold, beyond which income ceases to have an impact on well-being. Clark *et al.* (2008) argue that there comes a point where further economic prosperity ceases to buy more happiness. Di Tella and MacCulloch (2008) assert that people adjust fully to further economic growth once basic needs are met. Empirical evidence for the existence of a threshold

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*Corresponding Author: rtan@ateneo.edu

in the income-happiness relationship has been found in Layard (2005), Frey and Stutzer (2002), and Stevenson and Wolfers (2013).

Pittau *et al*. (2010) observed that different conclusions reached using different data sets reveal local differences in life satisfaction and highlight the need for localized studies. This paper investigates the income-happiness relationship in the context of Koronadal, a low-income but growing city in Mindanao, Philippines. The Philippine context in the happiness literature is interesting, as Filipinos are known to project the image of the happy poor (Jimenez 2018). In the 2017 global survey of Gallup International, the Philippines ranked third among 55 countries in terms of the happiness index, surpassing highly developed and fast developing countries in Europe, the Americas, and Asia (Gallup International 2017). The 2018 World Happiness Report that covered countries about thrice that of Gallup International, placed the Philippines in the upper 50% happy counties, ranking number 71 among 156 countries (Helliwell *et al.* 2018). And yet, the Philippines's official poverty incidence of 21.6% ranked third in Southeast Asia, only next to Myanmar and Laos (ADB 2019). This government-reported poverty incidence in the Philippines is even considered grossly underestimated, as the poverty threshold on which it is based is criticized for being unrealistically low (IBON Media 2019). Stevenson and Wolfers (2013) note that the cross-country happiness data of the International Social Survey Program results in a negative relationship between income and well-being for the sub-set of low-income countries entirely due to a single influential observation which is the Philippines.

The specific tasks pursued by this study are as follows:

1. To come up with an indicator of people's overall welfare in Koronadal – a semi-urban, low-income city in Mindanao, Philippines – by eliciting self-reported happiness in a survey;

2. To determine the relationship between economic welfare (income) and overall welfare (happiness) in the context of a low-income city; and

3. To determine the impact of other variables – demographic, asset ownership, food consumption, financial behavior, and social capital – on happiness.

Results of empirical studies on happiness or people's well-being can provide relevant inputs in the formulation and implementation of welfare-enhancing policies and public programs. Frey and Stutzer (2002) point out that empirical analyses serve mainly as information on favorable economic and institutional conditions that can guide policymakers, civic organizations, and the citizens in identifying appropriate approaches and tools that can be

taken up and proposed in the political process. Empirical evidence, for instance, may shed light on the relative desirability of income-augmenting assistance (such as the conditional cash transfer) *vis-à-vis* the provision of specific goods and services or other forms of assistance.

To date, studies on the correlates of happiness in the Philippine context are largely confined in the disciplines of psychology and sociology [most recent literature includes Diego *et al*. (2018), Lumontod (2019), Reyes (2016), and Tolentino and Dullas (2015)]. Diego *et al.* (2018) looked at the phenomenological experience of Filipinos aged 60–80 yr and identified six categories of happiness among this group – family, self-worth, health and well-being, recreational activities, time for oneself, and financial independence. Lumontod (2019) focused on the association between happiness and academic performance among college students in the Philippines, which was found to be significant. Tolentino and Dullas (2015), on the other hand, focused on Filipino farm children and found that in spite of farm work hardships, farm children are happy and have positive evaluations of life. Reyes (2016), including income in the analysis, reached the conclusion that subjective socioeconomic status – not actual family income – was the significant predictor of subjective happiness. Literature on the economic analysis of the effect of income on happiness using household-level data in the Philippines is still scant. Graham and Pettinato (2002) noted that most studies on the relationship between happiness and income have been done in the context of advanced industrial countries, and only very few have sought evidence in developing countries and countries in transition. This paper investigates the income-happiness relationship using surveyed socio-economic data of households in the Philippines to address these gaps in the happiness literature.

MATERIALS AND METHODS

Study Site
Koronadal is a low-income, semi-urban city in Mindanao, southern Philippines. Mindanao lags behind the other two island groups in the country (Luzon and Visayas) in terms of income growth and development. Except for two, all regions in Mindanao have *per capita* income that is substantially lower than the national average. In 2018, *per capita* gross domestic product (GDP) in three of the six regions in Mindanao (including Region XII to which Koronadal belongs) was just about half of the Philippine *per capita* GDP (PSA 2019b). Though Mindanao is home to about a quarter of the country's population, it accounts for just 15% of the country's GDP. Poverty is most pronounced in the regions in Mindanao where about

a third of the country's poor can be found.

Koronadal is the capital city of the province of South Cotabato and the administrative center of Region XII, one of 17 regions in the Philippines. While Koronadal's land area of 277 km^2 occupies only 7% of the total land area of South Cotabato, its population of 174,942 (PSA 2015 Population Census) accounts for almost a fifth (19%) of the province's population, making Koronadal's population density of 630 people per km^2 almost triple that of South Cotabato's 230. The city is mixed urban-rural, with half of the population residing in eight urban *barangays*[1], while the other half reside in 19 rural *barangays*. Due to the gradual spread of urbanization and development from the city to the predominantly rural municipalities, which induce some migration, Koronadal's average annual population growth rate in 2010–2015 of 1.92% is slightly lower than South Cotabato's 1.95%. Koronadal's poverty index of 22.41%, although higher than the national poverty index of 21.6%, is lower compared to the province-wide index of 23.6% and Region XII's 37.4% (PSA 2018).

Data Collection
This study used primary data collected through a household survey. The paper utilized answers to basic demographic questions about the respondent and socio-economic questions about his/her household. Responses to questions on subjective happiness, income, food consumption, housing assets, saving and borrowing behavior, membership in organizations, and government financial assistance received by the household were utilized and analyzed in this paper. The survey was conducted during the entire month of November 2019. All 27 *barangays* of Koronodal were included in the sampling frame. The number of respondents in each *barangay* was set in proportion to the share of the *barangay* in the total city population. A systematic sampling procedure was employed in selecting the respondents within each *barangay*. Permission and assistance to conduct the survey were secured from the *barangay* office. With maps provided by the *barangay* office, starting points were randomly identified and enumerators were instructed to approach the 50th house from a starting point. In case of refusal to participate, the next house would be approached[2]. Every succeeding respondent approached had to be at least the 50th house from the last responding

household. The survey was conducted through personal interviews with the household head or the member making expenditure decisions in the family.

Economic Welfare and Happiness Measurement
Economists distinguish between two levels of welfare: 1) economic welfare and 2) social or overall welfare. Economic welfare is most commonly measured in terms of income, while social or overall welfare is equated with happiness (Little 1950; Mishan 1968; Easterlin 1974). Frey and Stutzer (2002) argue that although happiness is not identical to the traditional concept of utility in economics, the two are closely related. They contend that even if happiness may encompass more aspects of human well-being than the standard concept of utility, the former can be considered a useful approximation to utility, thus allowing empirical analysis of a previously mainly abstract theoretical construct.

Also referred to as "self-reported happiness," subjective happiness is based on statements by the individual about his/her happiness, usually elicited through a survey. This approach in measuring happiness assumes that the individual is the best judge of his/her feelings. Frey and Stutzer (2002) explain that a subjective view of utility acknowledges individual notions of happiness, which are not completely reflected in observed behavior. People's happiness can be captured in a straightforward manner by asking them how happy or contended they are with their life. In so far as their evaluation and rating of their life satisfaction or happiness are done in comparison with other people plus past experiences and expectations of the future, this subjective measure of well-being can serve as a proxy for utility.

A number of studies have shown that self-reported happiness is generally consistent and significantly correlated with objective indicators of happiness such as gestures (Fernández-Dols and Ruiz-Belda 1990) and physical health (Cohen *et al.* 2003; Kiecolt-Glaser *et al.* 2002), as well as evaluations of psychological states such as self-esteem, depression, and suicidal tendencies (Bradburn 1969; Koivumaa *et al.* 2001; Robinson and Shaver 1973). Fordyce (1988) had found that different measures of happiness correlate well with one another. Sandvik *et al.* (1993) validated both self- and non-self reports of well-being with factor analysis, revealing a single unitary construct underlying both measures. Further, Robinson and Shaver (1973) have shown that self-reported happiness does not fluctuate widely over short periods of time and, hence, can be considered stable and reliable. Ehrhardt *et al.* (2000) have also shown that subjective well-being is moderately stable and sensitive to changing life circumstances. Accordingly, subjective well-being data have been utilized increasingly in economic

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1 A barangay is the smallest administrative division in the Philippines.

2 Based on enumerators' accounts, very rare instances of rejection occurred only when the prospective respondent was about to go somewhere, in which case they would usually delegate another family member to represent him/her. It was actually the enumerators who declined to interview just any member of the household, as they had been instructed to interview only the household head or spouse of the head or a family member mainly responsible for expenditure decisions of the household. Thus, the likelihood of a sampling bias due to rejection can be considered very low.

research. Kahneman and Krueger (2006) note that more than 100 papers were written using data on self-reported life satisfaction in 2001–2005 compared to only four in 1991–1995.

Slightly different ways and phrasing of questions and scales of answers have been used in life-satisfaction or happiness surveys. Some surveys just ask a single well-being question, while others have multiple well-being questions. Cantril (1965) and Inglehart *et al*. (2000) asked only one question following a 10-point numerical rating scale. Davis *et al*. (2001) asked only one question and presented only three categories for the response – very happy, pretty happy, and not too happy. On the other hand, Pavot and Diener (1993) asked five questions and used a seven-point scale.

For this paper, the main indicator used for economic welfare is household income, measured as the sum of incomes earned by household members from all sources. For happiness, the indicator used is self-reported or subjective happiness. The paper adopts the 10-point numerical rating scale of Cantril (1965) and Inglehart *et al.* (2000). The happiness question posed in the survey is: "How happy or satisfied are you with your life? Please answer using a scale of 0-10 where 0 is completely unhappy and dissatisfied and 10 is completely/perfectly happy and satisfied." The numerical rating scale is selected over broad categories of happiness since focus group discussions conducted for this study revealed that Filipino respondents are more at ease stating numerical evaluations, instead of stating directly whether they are happy or not.

Happiness and Income Relationship
With ample literature suggesting self-reported happiness to be a satisfactory empirical approximation to individual utility, the effects of economic variables on happiness have been analyzed. Pigou's dictum (1920) is the earliest conceptual framework for a direct relationship between income (economic welfare) and happiness (social welfare). Easterlin (1974) found extensive empirical support for Pigou's dictum but only with cross-sectional data from 30 within-country surveys in the United States, Europe, Asia, Africa, and Latin America. In each of the country surveys, he found that individuals in a higher income group were happier on average than those in a lower income group. Andrews (1986), Argyle (1999), and Diener (1984) likewise arrived at a significant positive relationship between income and happiness using an individual-level or cross-sectional data from national surveys. However, a much weaker association between happiness and income has been found for time series data and multi-country comparisons. Easterlin (1974, 2001) has reached the conclusion that happiness tends to be

constant over the life cycle despite income growth. He argues that aspirations, while increasing over time with income, negatively affect happiness, thus offsetting any positive influence income may have on happiness. Some recent studies have challenged Easterlin's hypothesis using new and more comprehensive data that yield a significant positive relationship between happiness and income even across countries and over time. Deaton (2008) found that life satisfaction is strongly related to *per capita* national income and that the positive relationship is even slightly stronger among rich countries. Sacks *et al.* (2012) found a robust positive relationship between well-being and income, as well as between economic growth and growth in well-being, within a country and across countries. Further, some authors have suggested a "modified" Easterlin hypothesis, arguing that income becomes unrelated to happiness (the Easterlin hypothesis) only after a certain income threshold is reached while acknowledging a positive relationship before the income threshold (Frey and Stutzer 2002; Diener and Seligman 2004; Clark *et al.* 2008). Di Tella and MacCulloch (2008) assert that further economic growth will not lead to greater well-being once all basic needs are met, effectively equating the income threshold to subsistence income. Most recent income-happiness studies using either micro-level data for a single country (Ma *et al.* 2018; Rukumnuaykit 2016; Ferrer-i-Carbonell 2005) or a panel of micro-level data for multiple countries (Reyes-Garcia 2019; Awaworyi *et al.* 2019) reveal only a small effect of income on well-being but nonetheless is statistically significant.

This paper first investigates the relationship between income and happiness using descriptive analysis and regression. Then, it tests the modified Easterlin hypothesis following the approach of Stevenson and Wolfers (2013). The Easterlin hypothesis or paradox posits that income does not increase happiness. On the other hand, the modified Easterlin hypothesis acknowledges the positive relationship between income and happiness but maintains that there is an income threshold, beyond which further income does no longer increase happiness (strong version) or changes happiness at a much weaker rate (weak version). Stevenson and Wolfers' (2013) framework entails testing econometrically if there is a change in the gradient of the linear relationship between income and happiness at the assumed threshold income. The gradient is hypothesized to be significantly positive for income levels before the threshold; thereafter, the gradient may be zero (in the strong version of the modified Easterlin hypothesis, the positive income-happiness relationship disappears after the threshold income), or may still be positive but significantly less than the gradient before the threshold income (weak version). The equation to be estimated is:

$$HS = \alpha + \beta_{poor} D(I < I_k) \times (log(I) - log(I_k)) +$$
$$\beta_{rich} D(I \geq I_k) \times (log(I) - log(I_k)) + \varepsilon \quad (1)$$

where *HS* is subjective happiness, *I* is the actual income, and I_k is the threshold income level where a kink or change in gradient occurs. The explanatory variables are the interaction of the difference between actual income (*I*) and assumed threshold income (I_k) in log form with a dummy variable, indicating whether the actual income is below I_k (*i.e. D(I < I_k) = 1* if $I < I_k$, or *D(I < I_k) = 0* if $I < I_k$) or above I_k (*i.e. D(I $\geq$ I_k) = 1* if $I \geq I_k$, or *D(I $\geq$ I_k) = 0* otherwise). The coefficient β_{poor} is the happiness-income gradient among "poor" people (those with income less than I_k), while β_{rich} is the gradient among the "rich" (those with income greater than or equal to I_k). Thus, this specification allows for a kink in the regression line at the threshold level I_k but rules out a discontinuous shift. The modified Easterlin hypothesis is supported by $\beta_{poor} > 0$ together with $\beta_{rich} = 0$ for the strong version, or $\beta_{poor} > \beta_{rich}$ for the weak version.

Other Factors Contributing to Happiness
Multiple regression analysis is done to identify and establish the impacts of other factors that significantly contribute to happiness. The empirical model specifies subjective happiness score (HS_i) as a function of income and a vector of other economic variables (*ECO*), a vector of demographic variables (*DEMO*), and social capital (*SC*):

$$HS_i = \alpha + \beta I_i + \gamma ECO_i, \, \delta DEMO_i, \, \eta SC_i + \varepsilon_i \quad (2)$$

Particular socio-economic circumstances such as asset ownership, consumption, and financial activities are also found to have bearing on happiness. Empirical evidence on the influence of possessions and consumption activities on happiness exists. For instance, Whillans *et al.* (2017) found a link between greater life satisfaction and possession of time-saving goods. de Francisco Vela *et al.* (2014) and Xiao *et al.* (2009) have shown that positive financial behaviors contribute to life satisfaction. More specifically, Kahn and Isen (1993) have found that happy individuals are more likely to save, while Natali *et al.* (2016) argue that conditional cash transfers have the potential for long-term sustainable improvements in household well-being by promoting savings and facilitating productive investments among low-income rural households. For this paper, other economic variables included in the regression are the ownership of a mobile phone, the number of bedrooms, dummy variables for a household with saving and outstanding loans, a dummy variable for a household receiving conditional cash transfer, and frequency of meat consumption.

For demographic variables, age, gender, education, household size, and a dummy variable for those residing in urban *barangays* are used in the study. Among demographic variables, age is the most commonly investigated. The literature review of Ulloa *et al.* (2013) reveals that economic theory has failed to produce an unambiguous hypothesis on the relationship between age and well-being and that empirical studies have divergent results, with studies yielding a happiness-against-age curve that is U-shaped (van Landeghem 2012; Blanchflower and Oswald 2008), inverted U-shaped (Mroczek and Spiro 2005; Easterlin 2006), negative linear (Deaton 2008), and constant linear (Costa *et al.* 1987; Myers and Diener 1995; Easterlin and Sawangfa 2007).

Two other demographic variables commonly included in happiness models are the area of residence and education. Sander (2011) argues that the place of residence does not only influence one's lifestyle but also affects perception of happiness. A number of studies have found that people residing in rural areas are slightly happier than those in urban (Pateman 2011; Pew Research Center 2006; Sander 2011). Easterlin *et al.* (2011) note that life satisfaction in urban areas is remarkably greater than in rural areas in the case of less developed economies where urban is favored over rural in terms of income, educational, and occupational structures. In more developed or advanced economies, they argue that differential economic conditions disappear and rural life satisfaction comes close to or even surpasses urban life satisfaction.

For education, Clark and Oswald (1996) posit that holding everything else constant including income, life satisfaction is expected to decline with the level of education as higher education induces greater aspirations. Graham and Pettinato (2001), however, have found mixed results with some data sets yielding the insignificant effect of education on happiness and others yielding significant positive effects.

For social capital, the paper focuses on the interpersonal networks dimension – specifically, membership in formal associations and engagements advanced by Putnam (2000). Social capital is claimed to be one of the most robust correlates of subjective well-being (Helliwell and Putnam 2004). Helliwell and Barringtron-Lee (2010) contend that social capital is even more important than economic differences when explaining life satisfaction differences. Powdthavee (2009) has found that increasing the frequency of social contacts increases life satisfaction proportionately. The specific variable used in this paper is the dummy variable for membership in cooperatives.

RESULTS

Respondents' Profile
The average respondent is 44 yr old. Just a little over a fourth (26%) are male. About 13% of respondents had gone to elementary school, 50% to high school, 5% to vocational school, and 31% up to college level. Only very few had no formal education or had pursued graduate studies. The average household has five members. The average monthly household income is PHP 19,444 (USD 384.20). Only a little over half (52%) reside in urban areas. Most respondents have mobile phones (96%). On average, the respondent's household lives in a two-bedroom house and consumes meat only two days a week. There are more respondents with outstanding loans (59%) than savings (50%). Almost 15% of respondents are members of cooperatives, nearly three-fourths (72%) of which are in credit cooperatives (please refer to Appendix Table I for a summary table of the socio-economic profile of respondents).

The average household in our sample appears to be comparable in terms of income to the average household in Region XII of Southern Mindanao but is below the average household in the whole of the Philippines. The sample's average monthly household income of PHP 19,444 is reasonably close to the regional average household income of PHP 20,229 but is substantially lower than the national average of PHP 26,112 (PSA 2019a). More than a third (35.44%) of the respondents' households are below the provincial poverty and regional poverty threshold – a proportion that is above but quite close to the Mindanao poverty incidence of 31.6% in 2018 – suggesting that the sample is fairly representative of the study population. Compared to the national poverty incidence of 21.6%, the sample's poverty incidence is substantially higher as is the case for the whole of Mindanao.

Happiness-Income Relationship
Survey results reveal that people in Koronadal are generally pretty happy. On a scale of 0–10, the average reported happiness of respondents is 6.75, quite above the neutral score of 5. Koronadal City, despite being a provincial capital and a regional center, is still a low-income city in the Philippines. Yet Koronadal residents are generally happy, which is rather consistent with the prevalent Filipino image of poor but happy people.

Even the lowest income group, those with a monthly household income of less than PHP 10,000, which is lower than the subsistence income level, has a mean happiness score of 6.31. The table also reveals that those with higher income are slightly happier. The mean happiness score increases gradually from 6.31 to 7.57 for those with an income of PHP 50,000 and more (please refer to Appendix Table II for the mean happiness score of respondents by income groups). The result is consistent with findings using cross-section, individual, and household data from national surveys in the United States, Europe, Asia, Africa, and Latin America (Easterlin 1974).

Findings from the descriptive analysis above are supported by simple regression analysis relating respondent's happiness scores with household income. The ordinary least squares procedure yields a statistically significant positive relationship between income and happiness, but the magnitude of impact is very small – only a 0.016 increase in the happiness score for every PHP 1,000 increase in monthly income. The small positive but nonetheless statistically significant effect of income on happiness is consistent with findings of most recent studies using individual-level data within a country [Ma *et al.* (2018) for China, Rukumnuaykit (2016) for Thailand, and Ferrer-i-Carbonell (2005) for Germany], and for a panel of microdata for developing countries (Reyes-Garcia 2019), as well as for a combination of developing and developed countries (Awaworyi *et al.* 2019).

Regression results for the Stevenson and Wolfers' (2013) specification undertaken to check if the data set will provide some support for the modified Easterlin hypothesis are presented in Appendix Table III. Using Koronadal's actual poverty threshold of PHP 12,504 as I_k, the weak version of the modified Easterlin hypothesis appears to hold with β_{poor} being slightly greater than β_{rich}. Nonetheless, the big overlap of the confidence intervals of the two coefficients compels the author to be cautious in suggesting that this is a clear kink in the income-happiness line. As in Stevenson and Wolfers' (2013), alternative income cut-off levels or I_k values are tested. It appears that the strong version of the modified Easterlin hypothesis is satisfied at around the income level PHP 20,000. From PHP 20,000, $\beta_{poor} > \beta_{rich}$, β_{poor} is significantly positive (higher income increases the likelihood of moving to the next higher happiness score) while β_{rich} is not significantly different from zero (income does no longer affect happiness). As I_k is increased, β_{rich} becomes smaller and more statistically insignificant. From an income level of PHP 50,000, β_{rich} turns negative but still statistically insignificant.

Other Factors Contributing to Happiness
Results of the regression analyses that include demographic and socio-economic variables are presented in Appendix Table IV. The ordinal generalized linear model (OGLM) procedure was employed as the dependent variable (*HS*) is not a continuous variable, and the Brant test indicated that the influence of household income, age, mobile phone, and conditional cash transfer is not proportional across each

category of self-rated happiness. Three regression runs were undertaken. The first run added basic demographic variables as explanatory variables. The second and third runs included additional socio-economic variables such as asset ownership, consumption, and financial conditions.

The positive relationship between happiness and household income is statistically significant for Runs 1 and 2 but is slightly off the 10% significance level in Run 3. Among the demographic variables, age and gender turn out to be statistically significant. In the case of Koronadal, the probability of having a higher happiness score is higher for older and female individuals. The other variables that significantly contribute to happiness are the number of bedrooms, ownership of mobile phone/s, savings, loans, and membership in cooperative/s. The probability of moving to a higher happiness score increases with the number of bedrooms. The likelihood of having a higher happiness score is higher for those with mobile phone/s than those without. People with savings are likely to have a higher happiness score than those without, while those with outstanding loans to pay are less likely to be happier. Membership in cooperative/s increases the probability of moving to a higher happiness score. With results indicating only a small positive impact of income on happiness, an interaction effect of urban residence and household income is incorporated to test if the income effect is moderated by socio-economic factors, particularly, the area of residence – urban *versus* rural barangay. Regression results reveal that there is no statistically significant interaction effect.

CONCLUSION

The findings from this study and their policy implications are summarized as follows.

First, the results generally indicate that the magnitude of the impact of income on happiness, although statistically significant, is rather minute. This finding reflects that people in Koronadal are generally happy even with low incomes, which is consistent with the happy poor image of the Filipino poor. As they are already happy and content with their life, to begin with, the statistically significant but small positive coefficient implies that the increase in happiness due to income is marginal and yet somewhat negligible in the practical sense.

Second, survey data from Koronadal fit into Stevenson and Wolfer's specification – yielding a threshold income of about PHP 20,000 – the level at which further income ceases to increase happiness (a strong version of the modified Easterlin hypothesis). Di Tella and MacCulloch (2008) suggest that the threshold income level corresponds to the level that is just sufficient to meet basic needs and

may be interpreted as the poverty threshold. The threshold income found in this paper is higher than the official poverty threshold set by the Philippine government, lending some support to criticisms of underestimation of poverty threshold and poverty incidence in the country.

Third, notwithstanding evidence for a significant positive impact of income on happiness, the small magnitude of the impact of income on happiness *vis-à-vis* the relatively larger impact of other factors can serve as an important guide on the directions and kinds of public welfare programs and policies that may be prioritized in Koronadal.

Seemingly small and simple things such as having mobile phones or having more rooms in the house have a far larger impact on happiness. Interestingly, the study provides empirical support to a Philippine journalist's claim that a mobile phone is a vital tool for Filipinos, even insinuating that depriving them of its use without reason may have serious consequences (Jimenez 2018). Policy-wise, this finding does not augur well for proposals to impose excise taxes on texting but instead points to the desirability of programs for improved telecommunications infrastructure to raise accessibility and affordability in low-income, semi-urban, and rural areas. Likewise, the number of rooms in the house has a substantial impact on happiness, underscoring the ever-pressing need for a program that provides adequate and decent housing for the poor.

Moreover, the study finds that financial security and stability (having savings and not having outstanding loans to worry about, and being a member of a credit cooperative to which people can run in case of financial need) also contribute to people's well-being relatively more. In contrast, the conditional transfer program of the national government, a direct income transfer, is found to have no significant influence on happiness in Koronadal. Thus, overall, the results suggest that other programs such as increasing accessibility and affordability of goods and services that make daily life convenient and comfortable as well as free of financial uncertainties and worries (*e.g.* incentives and other support for credit cooperatives) may be more effective in raising people's life-satisfaction or well-being than direct income-augmenting programs.

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REFERENCES

ABRAMOVITZ M. 1959. The Welfare Interpretations of Secular Trends in National Income and Output. In: The Allocation of Economic Resources: Essays in Honour of Bernard Francis Haley. Abramovitz M *et al.* eds. Stanford, CA: Stanford University Press. p. 1–22.

ANDREWS FM. 1986. Research on the Quality of Life. Survey Research Center, Institute for Social Research. University of Michigan, Ann Arbor, MI.

ARGYLE M. 1999. Causes and Correlates of Happiness. In: Well-Being: The Foundations of Hedonic Psychology. Kahneman D, Diener E, Schwarz N eds. New York: Russell Sage Foundation. p. 353–373.

[ADB] Asian Development Bank. 2019. Poverty in the Philippines. Retrieved on 02 Feb 2020 from https://www.adb.org/countries/philippines/poverty

AWAWORYI CS, APPAU S, FARRELL L. 2019. Religiosity, income and wellbeing in developing countries. Empirical Economics 56(3): 959–985.

BRADBURN NM. 1969. The Structure of Psychological Well-being. Chicago, IL: Aldine.

BLANCHFLOWER D, OSWALD A. 2008. Is well-being U-shaped over the life cycle? Social Science & Medicine 66(8): 1733–1749.

CANTRIL H. 1965. The Pattern of Human Concerns. New Brunswick, New Jersey: Rutgers University Press.

CLARK AE, FRIJTERS P, SHIELDS MA. 2008. Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and Other Puzzles. Journal of Economic Literature 46(1): 95–144.

COHEN S, DOYLE WJ, TURNER RB, CUNEYT AM, SKONER DP. 2003. Emotional Style and Susceptibility to the Common Cold. Psychosomatic Medicine 65(4): 652–657.

COSTA P, ZONDERMAN A, MCCRAE R, CORNONI HUNTLEY J, LOCKE B, BARBANO H. 1987. Longitudinal analyses of psychological well-being in a national sample: stability of mean levels. Journal of Gerontology 42(1): 50–55.

DAVIS JA, SMITH TW, MARSDEN PV. 2001. General Social Survey, 1972–2000: Cumulative Codebook, Roper Center for Public Opinion Research, Storrs, CT.

DEATON A. 2008. Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll. Journal of Economic Perspectives 22(2): 53–72.

DE FRANCISCO VELA S, CASAIS M, DESMET P. 2014. Feeding Your Piggy Bank with Intentions: A Study on Saving Behaviour, Saving Strategies, and Happiness. In: Salamanca J, Desmet P, Burbano A, Ludden G, Maya J eds. Proceedings of the Colors of Care: The 9th International Conference on Design & Emotion; 06–10 Oct 2014; Bogotá, Colombia.

DIEGO AL, DE LA CERNA LC, AGDEPPA JY. 2018. Happiness Among Selected Filipino Elderly: A Consensual Qualitative Research. Advanced Science Letters 24(4): 2611–2615.

DIENER E. 1984. Subjective well-being. Psychological Bulletin 95(3): 542–575.

DIENER E, SELIGMAN MEP. 2004. Beyond Money: Toward an Economy of Well-Being. Psychological Science in the Public Interest 5(1): 1–31.

DI TELLA R, MACCULLOCH R. 2010. Happiness Adaptation to Income beyond 'Basic Needs'. In: International Differences in Well-Being. Diener E, Helliwell J, Kahneman D eds. New York: Oxford University Press. p. 217–247.

EASTERLIN RA. 1974. Does Economic Growth Improve the Human Lot? In: Nations and Households in Economic Growth: Essays in Honour of Moses Abramovitz. David PA, Reder MW eds. New York: Academic Press Inc. p. 89–125.

EASTERLIN RA. 2001. Income and Happiness: Toward a Unified Theory. The Economic Journal 111: 465–484.

EASTERLIN RA. 2006. Life cycle happiness and its sources: intersections of psychology, economics, and demography. Journal of Economic Psychology 27(4): 463–482.

EASTERLIN RA, SAWANGFA O. 2007. Happiness and domain satisfaction: theory and evidence. IZA Discussion Paper No. 2584, Institute of Labor Economics (IZA). p. 1–35.

EASTERLIN RA, ANGELESCU L, ZWEIG JS. 2011. The Impact of Modern Economic Growth on Urban-Rural Differences in Subjective Well-Being. World Development 39(12): 2187–2198.

EHRHARDT JJ, SARIS WE, VEENHOVEN R. 2000. Stability of Life-Satisfaction over Time. Journal of Happiness Studies 1(2): 177–205.

FERNÁNDEZ-DOLS JM, RUIZ-BELDA MA. 1990. Are Smiles a Sign of Happiness? Gold Medal Winners at the Olympic Games. Journal of Personality and Social Psychology 69(6): 1113–1119.

FERRER-I-CARBONELL A. 2005. Income and well-being: An empirical analysis of the comparison income effect. Journal of Public Economics 89(5–6): 997–1019.

FORDYCE MA. 1988. A Review of Research on Happiness Measures: A Sixty Second Index of Happiness and Mental Health. Social Indicators Research 20: 355–381.

FREY BS, STUTZER A. 2002. What Can Economists Learn from Happiness Research? Journal of Economic Literature 40(2): 402–435.

GALLUP INTERNATIONAL. 2017. Happiness, Hope Economic Optimism: Gallup Internationals' 41st Annual Global End of Year Survey, October–December 2017. Retrieved on 02 Feb 2020 from https://www.gallup-international.com/wp-content/uploads/2017/12/2017_Happiness_Hope_Economic-Optimism.pdf

GRAHAM C, PETTINATO S. 2002. Frustrated Achievers: Winners, Losers, and Subjective Well Being in New Market Economies. Journal of Development Studies 38(4): 100–140.

GRAHAM C, PETTINATO S. 2001. Happiness, Markets, and Democracy: Latin America in Comparative Perspective. Journal of Happiness Studies 2(3): 237–268.

HELLIWELL JF, PUTNAM RD. 2004. The Social Context of Well-being. Philosophical Transactions of the Royal Society London B: Biological Sciences 359(1449): 1435–1446.

HELLIWELL JF, BARRINGTON-LEIGH CP. 2010. How Much is Social Capital Worth? (NBER Working Paper No 16025). Retrieved from National Bureau of Economic Research website: https://www.nber.org/papers/w16025

HELLIWELL JF, LAYARD R, SACHS JD. 2018. World Happiness Report 2018. New York: Sustainable Development Solutions Network.

IBON MEDIA. 2019 (07 December). Govt Methodology Underestimates Number of Poor Filipinos—IBON. Retrieved on 02 Feb 2020 from https://www.ibon.org/govt-methodology-underestimates-number-of-poor-filipinos-ibon/

INGLEHART R *et al.* 2000. World Values Surveys and European Values Surveys, 1981–84, 1990–93, 1995–97 [Computer File]. ICPSR version. Ann Arbor, MI: Institute for Social Research.

JIMENEZ J. 2018 (08 June). Why are Filipinos Too Poor and Yet Too Happy? The Freeman. Retrieved on 02 Feb 2020 from https://www.philstar.com/the-freeman/opinion/2018/06/08/1822702/region

KAHN BE, ISEN AM. 1993. The Influence of Positive Affect on Variety Seeking among Safe, Enjoyable Products, Journal of Consumer Research 20(2): 257–270.

KAHNEMAN D, KRUEGER AB. 2006. Developments in the Measurement of Subjective Well-being. Journal of Economic Perspectives 20(1): 3–24.

KIECOLT-GLASER JK, MCGUIRE L, ROBLES TF, GLASER R. 2002. Psychoneuroimmunology: Psychological Influences on Immune Function and Health. Journal of Consulting and Clinical Psychology 70(3): 537–547.

KOIVUMAA HH, HONKANEN R, VIINAMAEKI H, HEIKKILAE K, KAPRIO J, KOSKENVUO M. 2001. Life Satisfaction and Suicide: A 20–Year Follow-up Study. American Journal of Psychiatry 158(3): 433–439.

LAYARD R. 2005. Happiness: Lessons from a New Science. London: Penguin.

LITTLE IMD. 1950. A Critique of Welfare Economics. London and New York: Oxford University Press.

LUMONTOD III RZ. 2019. The Role of Goal Concordance on Happiness and College Students' Academic Performance. International Journal of Research Studies in Psychology 8(1): 63–78.

MA J, DONG G, CHEN Y, ZHANG W. 2018. Does satisfactory neirghborhood environment lead to a satisfying life? An investigation of the association between neighborhood environment and life satisfaction in Beijing. Cities 74: 229–239.

MISHAN EJ. 1968. Welfare Economics. International Encyclopedia of the Social Sciences. New York: Macmillan. p. 504–512.

MYERS D, DIENER E. 1995. Who is happy? Psychological Science 6(1): 10–19.

MROCZEK D, SPIRO A. 2005. Change in life satisfaction during adulthood: findings from the Veterans Affairs Normative Aging Study. Journal of Personality and Social Psychology 88(1): 189–202.

NATALI L, HANDA S, PETERMAN A, SEIDENFELD D, TEMBO G, ZAMBIA CASH TRANSFER EVALUATION TEAM. 2016. Making Money Work: Unconditional Cash Transfers Allow Women to Save and Re-invest in Rural Zambia (Innocenti Working Paper No. 2016-02). Retrieved from UNICEF Office of Research: https://www.unicef-irc.org/publications/827-making-money-work-unconditional-

cash-transfers-allow-women-to-save-and-re-invest. html

PATEMAN T. 2011. Rural and Urban Areas: Comparing Lives Using Rural/Urban Regional Trends. Retrieved on 07 Dec 2019 from http://www.neighbourhood. statistics.gov.uk/HTMLDocs/images/rt43-ruralurban-areas_tcm97-107562.pdf

PAVOT W, DIENER E. 1993. The Affective and Cognitive Context of Self-Reported Measures of Subjective Well-Being. Social Indicators Research 28(1): 1–20.

PEW RESEARCH CENTER. 2006. Are We Happy Yet? Washington, DC. Retrieved on 07 Dec 2019 from http://www.pewsocialtrends.org/2006/02/13/are-we-happy-yet/

PIGOU AC. 1920. The Economics of Welfare. London: Macmillan and Co.

PITTAU MG, ZELLI R, GELMAN A. 2010. Economic Disparities and Life Satisfaction in European Regions. Social Indicators Research 96: 339–361.

POWDTHAVEE N. 2009. Putting a Price Tag on Friends, Relatives, and Neighbours: Using Surveys of Life Satisfaction to Value Social Relationships. The Journal of Socio-Economics 37(4): 1459–1480.

[PSA] Philippine Statistics Authority. 2015. 2015 Census of Population. Retrieved from https://psa.gov.ph/ population-and-housing

[PSA] Philippine Statistics Authority. 2018. Official Poverty Statistics of the Philippines. Quezon City, Philippines.

[PSA] Philippine Statistics Authority. 2019a. Family Income and Expenditure Survey 2018, Table 3a. Retrieved on 07 Feb 2019 from https://psa.gov.ph/ content/annual-family-income-estimated-php-313-thousand-average-2018

[PSA] Philippine Statistics Authority. 2019b. Gross Regional Domestic Product Tables. Retrieved on 14 Feb 2020 from https://psa.gov.ph/regional-accounts/ grdp/data-and-charts

PUTNAM RD. 2000. Bowling Alone—The Collapse and Revival of American Community. New York: Simon & Schuster.

REYES JAL. 2016. Exploring Leisure Time Activities and Sociodemographic Indicators of Subjective Happiness and Self-Perceived Health Among Filipinos. Austrian Journal of South-East Asian Studies 9(2): 269–288.

REYES-GARCIA V, ANGELSEN A, SHIVELY GE, MINKIN D. 2019. Does income inequality influence subjective well-being? Evidence from 21 developing countries. Journal of Happiness Studies 20(4): 1197–1215.

RUKUMNUAYKIT P. 2016. Does income matter for subjective well-being in developing countries? Empirical evidence from Thailand microdata. Journal of Human Behavior in the Social Environment 26(2): 179–193.

SACKS DW, STEVENSON B, WOLFERS J. 2012. The New Stylized Facts about Income and Subjective Well-Being. Emotion 12(6): 1181–1187.

SANDER W. 2011. Location and Happiness in the United States. Economics Letters 112(3): 277–279.

SANDVIK E, DIENER E, SEIDLITZ L. 1993. Subjective Well-Being: The Convergence and Stability of Self-Report and Non-Self-Report Measures. Journal of Personality 61(3): 317–342.

STEVENSON B, WOLFERS J. 2013. Subjective Well-Being and Income: Is There Any Evidence of Satiation? American Economic Review: Papers & Proceedings 103(3): 598–604.

TOLENTINO MN, DULLAS AR. 2015. Subjective Well-being of Filipino Farm Children. International Journal of Research Studies in Psychology 4(4): 47–60.

WHILLANS AV, DUNN EW, SMEETS P, BEKKERS R, NORTON MI. 2017. Buying Time Promotes Happiness. In: PNAS Proceedings of the National Academy of Science of the United States of America. Fiske ST ed. Princeton, NJ: Princeton University. Retrieved on 07 Dec 2019 from https://www.pnas.org/ content/early/2017/07/18/1706541114

ROBINSON JP, SHAVER PR. 1973. Measures of Social Psychological Attitudes (Revised ed.). Institute of Social Research, University of Michigan, Ann Arbor, MI.

ULLOA BFL, MOLLER V, SOUSA-POUZA A. 2013. How does subjective well-being evolve with age? A literature review. IZA Discussion Paper No. 7328.

VAN LANDEGHEM B. 2012. A test for convexity of human well-being over the lifecycle: longitudinal evidence from a 20-year panel. Journal of Economic Behavior and Organization 81(2): 571–582.

XIAO JJ, TANG C, SHIM S. 2009. Acting for Happiness: Financial Behavior and Life Satisfaction of College Students. Social Indicators Research 92(1): 53–68.

APPENDICES

Table I. Respondents' profile.

	Mean
Age (yr)	43.99
Gender (proportion of male respondents, %)	25.95%
Education (proportion of respondents, %)	100.00%
No formal education	0.19%
Elementary	13.19%
High school	50.10%
Vocational	5.16%
College	31.17%
Graduate	0.19%
Household size (number of household members)	5.04
Monthly household income (PHP/USD)	19,444/ 384.20
Urban residence (proportion of respondents, %)	52.11%
No. of bedrooms	2.14
Possessing mobile phone (proportion of respondents, %)	96.36%
Financial condition (proportion of respondents, %)	
With savings	49.81%
With outstanding loans	58.81%
Food consumption (no of days per week)	
Meat	2.28
Membership in cooperatives (proportion of respondents, %)	14.56%

Table II. Happiness at various levels of income.

Monthly household income groups (PHP)	Mean happiness score	Number of respondents
All income groups	6.75	522
Below 10,000	6.31	184
10,000–19,999	6.87	168
20,000–49,999	7.02	140
50,000 and over	7.57	30

Table III. Stevenson and Wolfer's equation test for the modified Easterlin hypothesis, OGLM coefficients.

I_k	β_{poor}	β_{rich}
PHP 12,504	0.8936** (0.029)	0.6964* (0.078)
PHP 20,000	0.8756*** (0.005)	0.6093 (0.277)
PHP 30,000	0.8354*** (0.002)	0.5788 (0.494)
PHP 40,000	0.8374*** (0.001)	0.3653 (0.768)
PHP 50,000	0.8531*** (0.000)	–0.2303 (0.895)
PHP 60,000	0.8517*** (0.000)	–0.9028 (0.714)
PHP 70,000	0.8353*** (0.000)	–1.2219 (0.727)

Note: numbers in parenthesis after the coefficients are the *p*-values. Asterisks after coefficients denote level of significance: * for 0.10, ** for 0.05, and *** for 0.01.

Table IV. OGLM results.

Explanatory variable	Run 1	Run 2	Run 3
Log household income	0.3301**	0.2338*	0.1941
Age (yr)	–0.0146**	–0.0160**	–0.0199***
Gender (male = 1, female = 0)	–0.3078*	–0.3816**	–0.3616**
Education	0.1716**	0.1082	0.0793
Household size	–0.0238	–0.0358	–0.0723
Urban residence	–0.8819	–1.9200	–1.7599
Membership in cooperatives		0.4446*	0.4584*
With mobile phone		0.9543**	1.0094**
With outstanding loans		–0.6218***	–0.5895***
Meat consumption (no. of days per week)			–0.0837
No of bedrooms			0.2866***
With savings			0.4988***
Receiving conditional cash transfer			0.1106
Urban residence x log household income	0.1136	0.2263	0.2087
Log likelihood	–948.29	–937.52	–927.41
LR Chi2	31.59***	53.14***	73.34***

Notes: number of observations, n = 522; asterisks after coefficients denote level of significance: * for 0.10, ** for 0.05, and *** for 0.01; Breusch-Pagan (H$_o$: constant variance): Chi2 = 2.51, *p*-value = 0.1131; White's (H$_o$: constant variance): Chi2 = 110.54, *p*-value = 0.1473; mean VIF = 1.16; Durbin (H$_o$: all variables are exogenous): Chi2 = 0.8358, *p*-value = 0.3606; Wu-Hausman (H$_o$: all variables are exogenous): F = 0.8130, *p*-value = 0.3677.