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RESEARCH PAPER

Personal Goals, Socio-Economic Context and Happiness: Studying a Diverse Sample in Peru

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Abstract Past research demonstrates that happiness is higher to the extent people prioritize intrinsic goals (for self-acceptance, affiliation, and community feeling) over extrinsic goals (for financial success, popularity, and image). Because most of the research on personal goals and wellbeing has been conducted in economically-developed nations, we collected data from a sample of 500 Peruvians living in five districts illustrating the socio-economic and geo-political diversity of the country. Participants living further away from the rich district of Lima placed greater importance on extrinsic and less importance on intrinsic goals. Further, happiness was generally higher when people focused on intrinsic goals than when they prioritized extrinsic goals. Interestingly, in a slum of Lima, a focus on intrinsic goals was negatively associated with well-being. This finding is in line with past studies showing that pursuing intrinsic goals in situations that frustrate their attainment is associated with lower well-being.

Keywords Happiness · Personal goals · Developing countries · Income · Peru

1 Introduction

Research on personal goals suggests that people are happier to the extent that they place a high priority on intrinsic goals (personal growth, affiliation, community feeling and physical health) relative to extrinsic goals (financial success, image and popularity) (Kasser 2002; Kasser and Ryan 1996). Peoples' relative prioritization of intrinsic goals tends to decline the more that they are exposed to threats that generate psychological insecurity

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(Kasser et al. 2004), including those related to poverty, interpersonal marginalisation, and death. Specifically, when people experience situations or live in such contexts, they tend to focus less on goals that are inherently interesting and satisfying, turning instead to goals that provide more immediate external rewards (Sheldon and Kasser 2008).

Most research examining these dynamics between personal goals, happiness, and threat have been conducted using student and adult samples from Western societies or student samples in less economically-developed countries. As such, these studies have typically not addressed people from the diverse backgrounds that one finds in Latin American countries, which are often characterised by vast socio-economic inequalities and marked geographic and ethnic differences. The current paper contributes to the literature on the relationships between personal goals, subjective wellbeing, and threat by studying a heterogeneous sample of participants living in the South American nation of Peru. We address two research questions. The first enquires about the relationship between the varied socio-economic contexts one finds in Peru and people's goal orientations. The second concerns whether the relationship between goal orientation and happiness is moderated by participants' personal income or location of residence, two important socio-economic markers.

The paper is organised as follows. First, we introduce the literature on personal goals and subjective wellbeing and provide an overview of our research questions. Then we discuss the methodology and the measures used for the analysis. Next, we present the results of a series of regression analyses addressing our two research questions and several sub-questions. Last we discuss our results, their limitations, and their implications.

2 Literature Background

2.1 Intrinsic versus Extrinsic Goals and Values

Kasser and Ryan (1996) proposed a fundamental dimension along which the content of people's goals and values can vary. Goals and values for personal growth, affiliation, community feeling, and physical health have been characterized as *intrinsic*, given their focus on aims that are generally satisfying in and of themselves and that do a relatively good job of satisfying psychological needs. In contrast, goals and values for financial success, image, and popularity have been characterized as *extrinsic*, given that they focus on aims concerning external rewards and the praise of other people and that they are usually pursued as a means to some other end. The distinction between intrinsic and extrinsic goals and values has been documented in numerous cultural groups with analyses revealing that these two types of goals load on distinct factors (e.g., Ryan et al. 1999; Schmuck et al. 2000) and stand in psychological opposition to each other (Grouzet et al. 2005).

Numerous research studies have also consistently reported that personal well-being is higher to the extent that individuals more strongly prioritize intrinsic goals relative to extrinsic goals. Such findings have been reported across a variety of ways of measuring well-being (including self-reports of happiness, life satisfaction, depression, and anxiety; diary measures of positive and negative affect; and interviewer ratings of functioning (e.g., Kasser and Ryan 1993, 1996; Sheldon and Kasser 1995) and of assessing the content of participants' goals and values (including ratings and rank-orderings of experimenter-generated goals (Kasser and Ryan 1996), participant generation of goals (Sheldon and Kasser 1995, 1998, 2001), and implicit measures of goals (Schmuck 2001). Findings also replicate in samples from numerous cultures, including China (Lekes et al. 2010), Germany

(Schmuck et al. 2000), Hungary (Martos and Kopp 2012), Russia (Ryan et al. 1999), Singapore (Kasser and Ahuvia 2002), South Korea (Kim et al. 2003), Spain (Romero et al. 2011), and the United States (Kasser and Ryan 1996).

Investigators have also explored the factors that lead individuals to focus on one set of goals and values or the other. Kasser et al. (2004) divided these factors into two primary types. First, when people are exposed to messages in their environment that one or another type of goals is relatively important, they are likely to orient towards the goals they see modelled (see e.g., Kasser et al. 1995; Twenge and Kasser 2013). Second, when people experience threats that cause feelings of psychological insecurity, they often orient away from intrinsic and towards extrinsic goals. Such findings have been documented specifically for people's experience of economic threat. For example, US children growing up in relatively poor socio-economic situations tend to rate values such as money and possessions as more important and to de-emphasize intrinsic values, compared to their wealthier peers (Cohen and Cohen 1996; Kasser et al. 1995; although see DeVoe et al. 2013 for some contrary findings in a sample of UK adults). One experiment similarly showed that after thinking about graduating from college in economically-bad (vs. good) times, students placed higher priority on extrinsic relative to intrinsic goals (Sheldon and Kasser 2001).

Such findings are consistent with the hypotheses of the political scientist Inglehart (1990), who drew on Maslow's (1970) classifications of lower and higher order needs to distinguish between *materialistic* (or what we would call extrinsically-oriented) and *post-materialistic* (or what we would call intrinsically-oriented) values. Arguing that as societies become richer, people cultivate post-materialistic values (such as self-expression, belonging and aesthetic satisfaction) and de-emphasize materialistic concerns (such as for economic and physical security), Inglehart (1997) found evidence for this thesis at the cross-national level after analysing data from more than 40 countries using different waves of the World Values Survey. Similar results have been documented over time in the United States, with Twenge and Kasser (2013) finding that cohorts of youth were more strongly oriented more towards materialistic (extrinsic) values when they had grown up during times of societal instability and disconnection.

While this body of literature has explored a variety of topics relevant to the associations between well-being and the content of people's goals, these studies have by and large been conducted in economically-developed English-speaking nations (the US and the UK) and in Western Europe (e.g., Germany), with a few others in Asia (South Korea and Singapore). Notably under-represented in this group are samples of individuals from economically-developing nations, with only a few studies conducted in China and India and some Eastern European nations. Further, those studies that have been conducted in economically-developing nations typically use student samples; this is of course problematic given that college students are clearly not representative of individuals in such nations, given their wide economic disparities. One important contribution of the present study is therefore to examine whether similar results occur in the economically-developing, Latin American nation of Peru.

2.2 Personal Goals and Wellbeing in Peru

Peru is an upper-middle income country[1] in South America where high levels of inequality and poverty remain despite a decade of 5 % average annual real GDP growth. In 2010, the

[1] In 2012, Peru's Gross National Product (GNP) per capita based on purchasing power parity (PPP) was 10,765 current international dollars (http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD).

top income quintile accounted for 53 % of the national income while 31 % of the population remained under the national poverty line; poverty was particularly prevalent in rural regions, where 54 % of the population was poor (World Bank 2010). In Peru, the pervasiveness of inequality and poverty is related to the diverse geographical, political, cultural, ethnic and historical characteristics of the country's main regions. Coastal regions, including the capital city Lima, have the lowest levels of poverty, the best public infrastructure, and the highest connection to international markets; they also host the most influential centres of political power. That said, high levels of poverty still exist in the large urban areas, with over 3 million individuals estimated to live in the slums surrounding Lima (Protzel 2011). As one moves away from the coast towards the highlands and the rain forest, poverty levels rise, public infrastructure becomes precarious, political influence weakens, and indigenous culture and values become more prevalent (Contreras and Cueto 2010; Copestake 2008; Thorp and Paredes 2010).

Personal goals and their relationship with subjective well-being in Peru have been previously studied by the Wellbeing in Developing countries (WeD) ESRC Research Group (Yamamoto et al. 2008), although with a different approach than the intrinsic–extrinsic distinction described above. The WeD data collection involved 550 participants from seven Peruvian locations selected to reflect some of the geo-political and socio-economic diversity in the country; most participants were poor by Peruvian standards, with 90 % under the national poverty line (Copestake 2008). A sequential process was used to derive local goals and values using ethnographic methods, semi-structured interviews, and surveys (Yamamoto et al. 2008). Results from (Yamamoto et al. 2008) showed that in urban slums, goals associated with material improvement were especially important, but, at the same time, people living in urban slums were less satisfied with their achievement of these goals than were residents of poorer rural and peri-urban localities.

Other research using WeD data confirmed the challenges for wellbeing of living in urban slums. Guillen-Royo and Velazco (2012) found that slum dwellers identified happiness as dependent on satisfaction with one's personal and material achievements, contrary to non-urban dwellers, who were more likely to define happiness in terms of virtue and feeling that one acts properly in one's relations with others and towards one's self (Rojas 2007). In addition, the authors found that people living in slums who understood happiness as stoicism (renunciation, austerity and moderation) were unhappier than people who had the same understanding of happiness but lived in a peri-urban or rural site. The authors suggested that the competitive and consumerist environment of an urban slum made it difficult for stoics to live consistently with their values, which resulted in lower levels of wellbeing.

2.3 The Present Research

Our first question is whether the varied socio-economic contexts in which Peruvian citizens live would influence their goal orientation. As noted above, past research has shown that when individuals experience psychological threat and insecurity, they often orient away from intrinsic and towards extrinsic goals (Sheldon and Kasser 2008). This body of research suggests that among the heterogeneous sample of Peruvians we tested, individuals are likely to report relatively stronger relative prioritization of intrinsic over extrinsic goals as their personal wealth increases and as they live in settings that are more economically and physically secure.

Our second question concerns the associations between people's goal orientation and their happiness. Given past research, we expected to find that happiness is positively

correlated with the relative importance people place on intrinsic goals and negatively correlated with the relative importance people place on extrinsic goals. That said, we were also interested in exploring two potential moderators of this relationship.

The first potential moderator is the personal income of participants. A recent meta-analysis of the literature reported that the negative association between materialism (often measured via a focus on extrinsic values) and well-being is relatively unaffected by personal income (Dittmar et al. 2013). Most past studies have, however, been conducted in relatively wealthy nations and with samples that do not reach the levels of poverty typical of some areas of Peru. As such, it remains unclear whether associations between goal orientation and happiness might be moderated by personal income levels when these associations are examined in a national context of extreme wealth disparity and in samples that are quite poor.

The second potential moderator is the locality in which participants reside. When Kasser (1996) studied individuals residing in a maximum-security prison, he found that placing relatively high importance on the intrinsic goal of self-acceptance was associated with more depression and placing relatively high importance on the intrinsic goal of affiliation was associated with lower self-actualization and greater levels of obsessional symptoms; these findings were understood as occurring due to the constrained opportunities for pursuing such goals in a prison setting. Such findings parallel results from the WeD study (Guillen-Royo 2011; Guillen-Royo and Velazco 2012; Yamamoto et al. 2008) showing that individuals who live in slums are less satisfied with their achievement of their goals and are less happy when they understand happiness in non-materialistic terms. This suggest the possibility that happiness may decline when individuals living in urban slums focus on the intrinsic goals that typically satisfy psychological needs and bring well-being (see Kasser 2002, Niemiec et al. 2009), as attempts to attain those goals may be frequently frustrated by the circumstances in which they live.

3 Survey and Data

Data were collected between August and November 2011 in one rural and four urban districts of Peru via an individual self-completion questionnaire. 500 completed questionnaires were collected by the research leader (the first author) and a team of local assistants. Non-random quota sampling was used to select participants by age group and gender, drawing on district-level data from the 2007 national census.[2] Only individuals age 18 and over who belonged to different households were approached for participation. Most questionnaires were completed by the participants themselves, although some participants preferred being interviewed (32 %) and a few, all living in the wealthiest district, chose to answer on-line (7 %). No significant differences in responses to the survey questions emerged as a function of mode of interview. The questionnaire had four sections. The first comprised questions about personal goals, the second inquired about sustainability and people's ideas about the meaning of national progress (questions not relevant to the present study), the third assessed demographic and socio-economic data, and the last addressed subjective well-being.

The five Peruvian districts from which we sampled were chosen to reflect some of the cultural, geo-political and socio-economic diversity in the country. The sample included three districts of Lima, representing upper-middle-income (Miraflores), lower middle-

[2] Data from the 2007 national census is available on-line at http://www.inei.gob.pe.

income (Breña) and poorer marginal-income (i.e., slum, Huaycan) socio-economic groups (APEIM 2011). We also collected data in one rural Andean (Acostambo) and one urban Andean (Huancayo) district from Peru's central highlands. Table 1 presents the socio-economic characteristics of participants in the study by district of residence, illustrating the differences between districts on several factors commonly used to identify socio-economic groups (APEIM 2011).

Differences between the characteristics of our sample presented in Table 1 and representative data from the 2007 national census concerning the same variables were not substantial for any of the districts except the Andean urban district of Huancayo, where our participants were slightly richer (owning more electric appliances) than the average population in the district.

3.1 Measures

Participants' personal goals were assessed through 42 closed-ended questions following the Aspiration Index (AI) developed by Kasser and Ryan (1996) and expanded by Grouzet et al. (2005); the latter researchers previously validated the scale in samples of undergraduate students from three Spanish-speaking countries (Colombia, the Dominican Republic, and Spain). Participants were asked to rate the importance of each goal on a scale from 1 (not at all important) to 5 (extremely important). Exploratory factor analysis was conducted to identify items that loaded on intrinsic or extrinsic categories, following Kasser and Ryan (1996). 34 items were retained for further analysis after discarding those that did not load above 0.4 or that cross-loaded on more than one factor. Items associated with self-acceptance and affiliation loaded on the same factor, perhaps reflecting the less individualistic understanding of personal psychological growth in Peru, where family and one's close social networks are of vital importance for one's self-regard (Copestake 2008); other research has also confirmed the close association of these two types of goals (see Figure 3 of Grouzet et al. 2005).

We applied the standard scoring procedure used to obtain measures of intrinsic and extrinsic goals by computing the mean of the relevant items for each of the seven specific domains identified by Kasser and Ryan (1996). Alpha coefficients of reliability ranged from 0.62 for physical fitness to 0.83 for social recognition; these lie within the usual range for these types of studies (Kasser and Ryan 1996; Grouzet et al. 2005). Higher order factor analysis was conducted to confirm the subscales' classification into intrinsic and extrinsic goals. Table 2 presents the factor loadings after principal component analysis with varimax rotation and Kaiser normalisation. As can be seen, the intrinsic goals of self-acceptance/affiliation, community feeling, and physical fitness loaded on factor 1, whereas the extrinsic goals of financial success, attractive appearance, and social recognition loaded on a second factor. Such findings are consistent with factor analyses conducted in the US (Kasser and Ryan 1996) and Germany (Schmuck et al. 2000), as well as with the circumplex structure of goals presented by Grouzet et al. (2005) for participants from 15 cultures. We therefore averaged sub-scale scores of the relevant domains so as to obtain summary intrinsic and extrinsic importance scores; alpha coefficients of reliability were 0.66 and 0.74, respectively.[3]

[3] In order to explore the robustness of the intrinsic/extrinsic classification in our Peruvian sample we asked an open question on the most important goal in the participant's life. Goals were coded depending on whether they included an economic concern or not. The resulting variables correlated positively with extrinsic values ($r = 0.13$, $p < 0.01$) and negatively with the intrinsic goal score ($r = -0.11$, $p < 0.05$).

Table 1 Participant households' socio-economic indicators by district

	Lima			Central highlands	
	Miraflores	Breña	Huaycan	Huancayo	Acostambo
University education	66	49	21	56	14
Material of floor in house[a]					
Earth/sand	–	2	9	12	81
Cement	9	37	73	47	15
Parquet	60	33	–	16	1
Ownership of three or more electric appliances (computer, fridge, washing machine, radio, color TV)	96	89	67	80	14
People in 4th and 5th income quintiles in the total sample	85	42	21	40	4
Sample size	100	100	100	100	100

[a] Percentages do not add to 100 as there are other floor materials not included in the Table

Table 2 Factor loadings of aspiration subscale scores

	Factor 1	Factor 2
Self-acceptance and affiliation	0.82	0.01
Community feeling	0.83	0.07
Physical fitness	0.61	0.34
Financial success	−0.02	0.84
Attractive appearance	0.28	0.73
Social recognition	0.10	0.82

Numerous indicators of socio-demographic data were also collected, among them net monthly household income. This was assessed through a question that presented participants with a list of eight income brackets in Nuevos Soles, the national currency of Peru. Income thresholds were generated using 2010 data from the Peruvian Household National Survey (Encuesta Nacional de Hogares), with the lowest category corresponding to the net monthly household income of the poorest 5 % (under 300 Nuevos Soles) and the highest category to the income of the richest 1 % (over 10,300 Nuevos Soles). In order to include the income variable in the analysis, the mean value of each income band was calculated and the income variable recoded accordingly.[4] Monthly household income was transformed to per capita terms using the square root equivalence scale (OECD 2008) obtained by dividing household income by the square root of the number of household members. Household income per capita was introduced into regression equations after calculating the natural logarithm so as to account for the decreasing marginal utility of income (Clark et al. 2008).

The last section of the survey asked about participants' subjective wellbeing. Happiness was assessed through a single question asking the extent to which participants felt happy or

[4] We used the average income of the poorest 5 % (150 Nuevos Soles) and the average income of the richest 1 % (17.583 Nuevos soles) from the 2010 *Encuesta Nacional de Hogares* to assign values to the lower and upper thresholds.

unhappy in general,[5] thus capturing an aspect of SWB close to life evaluation (Helliwell and Wang 2012). Answers were presented on a five-point verbal scale from 'very happy' to 'very unhappy'.[6]

4 Descriptive Statistics: Happiness and Values by Income Level and Location

Table 3 presents participants' answers to the happiness question in the five Peruvian districts. Most people in the sample report that they are 'quite happy' (42 %). Differences in mean happiness by districts and geographical areas are not statistically significant ($p > 0.1$). The common statistic 'Percentage of scale maximum' (%SM; Cummins 1995) used to compare scores from different scales yields a value of 65 % for our sample. This is below the suggested life-satisfaction *gold standard* (75 %) for developed countries (Cummins 1995), but differs little from the value obtained for Latin America (64 %) using 2011 data from the Gallup World Poll.[7]

As Table 4 presents, goal orientation follows the pattern observed in other studies, with goals representing intrinsic values being viewed as more important than goals representing extrinsic contents. Differences across locations were notable, but did not consistently reflect economic conditions. In Miraflores, where upper–middle class people live, participants were more intrinsically and less extrinsically oriented than in most other districts (ps < 0.05) except Breña, a much poorer district in the capital city, where there was no significant difference regarding intrinsic orientation. When districts were grouped by geographical location, differences became more evident, as participants from the Central Andean districts had significantly lower intrinsic and higher extrinsic scores than did those from the capital city ($p < 0.001$). This trend was also reflected when a term capturing the relative difference between intrinsic and extrinsic goal importance ratings was calculated (i.e., importance of intrinsic goals minus the importance of extrinsic goals). Analyses with this variable confirmed that participants from Huancayo and Acostambo in the Andes gave more similar priorities to extrinsic compared to intrinsic goals than did their Lima counterparts, even if these two locations were very different in terms of income levels. That is, while they still rated intrinsic goals as relatively more important than extrinsic goals, this prioritization was less magnified in Huancayo and Acostambo, compared to other districts.

In order to answer our first research question concerning the effect of socio-economic markers on goals, we examined participants' personal income and district of residence as determinants of goal orientation (descriptive statistics in Table 6). Table 5 presents results from the OLS regressions with intrinsic goals, extrinsic goals and the relative intrinsic–

[5] The question in Spanish was: '¿En general como se siente normalmente de feliz/infeliz? 'Answers were presented on a semantic scale from *muy feliz*, *bastante feliz* to *ni feliz ni infeliz*, *no tan feliz* and *muy infeliz*.

[6] The fact that happiness and goals were captured in the same survey suggested we could have a potential common method bias, affecting the validity of findings concerning the relationship between the two measures. One way we tried to reduce this bias was by placing the happiness question at the end of the questionnaire and the questions on goals at the beginning, with attitudinal and socio-economic questions in between. We also conducted the Harman's single-factor test using exploratory factor analysis (Podsakoff et al. 2003). A two factor solution emerged with goals and happiness loading on two separate factors, contrary to the one factor solution we found when investigating the life satisfaction and vitality scores that we also had collected. This led us conclude that the risk of common method bias was relatively low for the happiness variable, thereby confirming its suitability as our chosen dependent variable.

[7] Calculations have been done using Gallup World Poll data for 2011 as presented in the World Happiness report (Helliwell et al. 2012).

Table 3 Happiness and location in Peru (counts)

	Lima			Central Andes		Total
	Miraflores	Breña	Huaycan	Huancayo	Acostambo	
Very unhappy	1	3	4	0	4	12
Not so happy	7	11	6	13	15	52
Neither happy nor unhappy	25	33	30	27	25	140
Quite happy	59	37	38	44	33	211
Very happy	8	16	21	16	23	84
Total	100	100	99	100	100	499
Average happiness[a]	3.66	3.52	3.67	3.63	3.56	3.61

[a] Average happiness is calculated by assigning the following scores to each of the five verbal scales: Very unhappy (1), not so happy (2), neither happy nor unhappy (3), quite happy (4), very happy (5)

Table 4 Goals, location and income in Peru

	Lima			Central Andes		Total average
	Miraflores	Breña	Huaycan	Huancayo	Acostambo	
Intrinsic goals	4.01	3.89	3.83	3.79	3.72	3.85
Extrinsic goals	2.56	2.80	2.72	2.90	2.92	2.78
Intrinsic–Extrinsic[a]	1.46	1.09	1.11	0.89	0.80	1.07
Personal income (district average)	2.600	640	476	608	139	895

[a] The relative intrinsic–extrinsic term is calculated by subtracting average extrinsic scores from average intrinsic scores

extrinsic term as dependent variables, respectively. Results confirm the link between place of residence and personal goals. As one gets further away (geographically and socio-economically) from the upper-class district of Miraflores (the district of reference in these analyses), people become less intrinsically and more extrinsically oriented. As Table 5 shows, while personal income is significantly positively associated with the prioritization of intrinsic goals, it is not significantly associated with the prioritization of extrinsic goals or of the relative intrinsic–extrinsic term. This finding suggests, that in our sample, the structural characteristics of the different districts may be more relevant to understanding the threats and insecurities experienced by our participants than is their personal income alone.

5 Happiness and Personal Goals in Peru

Participants could answer the happiness question using one of five alternatives that represent an inherent ordering of happiness levels. Given arguments that regression results are not highly sensitive to the choice of estimation methods (Ferrer-i-Carbonell and Frijters 2004), we treat happiness as cardinal and use OLS procedure to estimate the equations. All equations described below have also been estimated using an Ordered Probit model with five and three alternatives for the dependent variable (in the latter case, clustering *very unhappy* with *not so happy* and *quite happy* with *very happy*). As expected, we did not find

Table 5 Income and goal orientation in Peru

	Intrinsic goals	Extrinsic goals	Intrinsic–Extrinsic[a]
Personal income	0.0424**	0.0128	0.0282
Breña[b]	−0.0541	0.2318***	−0.2859***
Huaycan	−0.0891	0.1898**	−0.2789***
Huancayo	−0.1467**	0.3507***	−0.4974***
Acostambo	−0.1484**	0.4143***	−0.5627***
Constant	0.0860*	−0.2338***	1.3898***
Number of observations	482	482	482
R^2	0.0610	0.0522	0.1478

* p value < 0.1, ** p value < 0.05, *** p value < 0.01

[a] The relative intrinsic–extrinsic term is calculated by subtracting average extrinsic scores from average intrinsic scores

[b] Miraflores is the district of reference for the four dummy variables identifying district of residence

important differences between signs and significance of the independent variables between the different estimation techniques (results not shown), suggesting that the results presented below are robust to the selection of estimation method.

To investigate the inter-relationship between personal goals, income, location, and happiness, we used the following specification:

$$H = \alpha_0 + \alpha_1 Gen + \alpha_2 Age + \sum_{i=1}^{3} \theta_i Civ_i + \alpha_3 Health + \sum_{i=1}^{5} \delta_i Edu_i + \alpha_4 Que + \alpha_4 Y + \sum_{i=1}^{2} \beta_i Goal_i + \sum_{i=1}^{4} \varphi_i Dis_i + \mu \quad (1)$$

where H refers to happiness on a 1–5 scale; *Gen* is a dichotomous variable for gender; *Age* is the age of the respondent in years; Civ_i is a vector of three dichotomous variables describing civil status (cohabiting, separated and widowed, with single as the category of reference); *Health* refers to health status in a 1–5 scale; Edu_i is a vector of five dichotomous variables identifying the highest level of education achieved (no level, primary, secondary, higher non-university and postgraduate studies, with higher university as the category of reference); *Que* identifies whether the person has Quechua as his/her mother tongue; *Y* refers to the natural logarithm of household income per capita; $Goal_i$ identifies intrinsic and extrinsic goal orientation and Dis_i is a vector of four dichotomous variables referring to participants' district of residence (with Miraflores as the district of reference).

Age, gender, civil status and health status are commonly used as demographic controls in happiness studies (Frey and Stutzer 2002). Education is not always included, as it is often believed to be associated with happiness through income (Helliwell et al. 2012). Nonetheless, we kept education in the model because it captures personal characteristics linked to opportunities and status that are not always well-reflected by people's personal income in economically-developing countries (Graham 2009). A similar argument applies to the variables identifying location, as in addition to being a socio-economic marker, they represent aspects of people's experiences linked to geography, culture, traditions, social cohesion and political influence that are not always captured through income. We also include a variable identifying whether a person's mother tongue is the indigenous language

Quechua. Although other indigenous languages are also spoken in Peru, participants in our study had mostly Spanish or Quechua as their mother tongue. The latter is a common approximation for indigenous background in Peru (Thorp and Paredes 2010) and several studies suggest that the characteristics of the indigenous Andean culture (based on reciprocity, cooperation, a spiritual link with nature, and frequent social celebrations) might make indigenous people more prone to experience positive feelings than their non-indigenous counterparts (Copestake 2008). Table 6 below provides descriptive statistics for the control and independent variables.

Model (1) was estimated in three steps. First, we studied the direct relationship between income, goals, district of residence and happiness (model a), second, the interaction of personal goals with income (results not shown), and, third, the interactions between personal goals and location (models b and c). We used both OLS and 2SLS procedures to estimate the three different specifications of Model (1). Two stage least squares (2SLS) estimates are preferred when there are reasons to believe that one or more of the independent variables are endogenous, as ordinary least square (OLS) estimators are not consistent under endogeneity (Wooldridge 2013). Endogeneity is very common in happiness studies as measurement error, omitted variables and simultaneity are likely to bias upwards or downwards the parameter estimates for income (Fafchamps and Shilpi 2006; Kingdon and Knight 2007; Powdthavee 2010).

In order to account for endogeneity of personal income through the use of 2SLS, we need to find a new variable or variables (typically called "instruments") that are uncorrelated with the main equation's error term (i.e., are exogenous) but are correlated with personal income (i.e., are relevant) (Wooldridge 2013). Two variables collected in our survey seemed promising in this regard. The first variable provides information about the type of floor in the dwelling (an ordinal variable identifying type of flooring from less to most costly) and the second, a dichotomous variable, captures whether the participant was born in another district or not, which, following the migration patterns in Peru, identifies people with a lower economic background (Copestake 2008). These two variables are likely to satisfy the two main requirements for suitable instruments (i.e., exogeneity and relevance) and should not affect happiness except through income.

Table 7 and Table 8 in the "Appendix", present the results of the 2SLS (with income instrumented) and the OLS (without income instrumented) regressions, respectively. We use robust standard errors, as disturbances are not likely to be independently and identically distributed given the specification of the model allowing for district fixed effects. Both parameter estimates and their significance are reported in the tables. Regression results exploring interactions between goal scores and income and between goal scores and location that did not yield significant coefficients for the interaction term are not shown; only results of the two significant interactions are presented (see specifications b and c in Table 7 and in Table 8). The presence of multicollinearity in each specification was examined through various collinearity statistics, none of which indicated that the equations contained unstable predictors.

As the last four rows of Table 7 show, 2SLS estimation results suggest that personal income should be instrumented and that the instruments chosen are indeed both exogenous and relevant. Type of floor in the dwelling is significantly correlated with personal income at the 1 % confidence level and migrant dummy at the 10 % confidence level. The Kleibergen-Paap Wald rk F statistic testing the relevance of the instruments confirms the absence of weak-instrument bias, as the value is larger than 10 (Staiger and Stock 1997. In addition, the level of the Hansen J statistic ($p > 0.1$) indicates that, in the three specifications, the two instruments (i.e., flooring type and immigration status) are uncorrelated

Table 6 Descriptive statistics for the control and independent variables

Variable	Description	Obs.	Mean	SD	Min	Max
Personal characteristics						
Age	Participant's age in years	500	40.30	17.31	18	95
Female	Gender dummy: 1 if female	500	0.53	0.50	0	1
Cohabiting	Cohabiting dummy: 1 if married or lives with partner	500	0.46	0.50	0	1
Separated/divorced	Separated dummy: 1 if divorced or separated	500	0.10	0.30	0	1
Widowed	Widowed dummy: 1 if widowed	500	0.04	0.21	0	1
Health status	Self-reported health status: from 1 if very bad to 5 if very good	500	3.58	0.81	1	5
Education (no level)	No education level dummy: 1 if no formal education	500	0.03	0.18	0	1
Education (primary)	Primary education dummy: 1 if finished primary school	500	0.09	0.29	0	1
Education (secondary)	Secondary education dummy: 1 if finished secondary school	500	0.27	0.42	0	1
Education (higher non university)	Higher non-university education dummy: 1 if finished higher non-university studies	500	0.24	0.43	0	1
Education (postgrad)	Postgraduate education dummy: 1 if finished postgraduate education	500	0.07	0.25	0	1
Quechua	Indigenous dummy: 1 if mother tongue is Quechua	500	0.23	0.42	0	1
Income						
Personal income	Natural logarithm of household income per capita	482	6.57	1.30	3.69	9.77
Goals						
Intrinsic goals	Average intrinsic goals score: from 1 'not at all important' to 5 'very important'	500	3.85	0.38	2.37	4.94
Extrinsic goals	Average extrinsic goals score: from 1 'not at all important' to 5 'very important'	500	2.78	0.59	1.05	4.74
Location dummies						
Breña, Huaycan, Huancayo, Acostambo	1 if individual lives in the district; reference group Miraflores	500	0.2	0.40	0	1

with the error term in (1) and hence exogenous (Baum et al. 2007). Instrumenting income makes a notable difference both to the income and location coefficients, each of which becomes non-significant in Table 7 compared to the non-instrumented findings using OLS presented in Table 8. These results suggest that instrumenting income is necessary as it might be correcting for omitted variable bias (i.e. the over estimation of the income coefficient due to a missing causal factor).

5.1 General Findings

Gender and age are not significantly associated with happiness in our sample. The former has often been found not to have a significant effect on subjective wellbeing, particularly in

Table 7 Happiness and goal orientation with personal income instrumented (2SLS)

	(a)	(b)	(c)
Personal characteristics			
Age	0.0023	0.0019	0.0020
Female	0.0231	0.0126	0.0112
Cohabiting	0.0545	0.0540	0.0506
Separated/divorced	−0.2707	−0.2411	−0.2846*
Widowed	0.1502	0.1767	0.1740
Health status	0.2502***	0.2539***	0.2464***
Education (no level)	−0.9232***	−0.8500***	−0.9370***
Education (primary)	−0.1983	−0.1419	−0.2104
Education (secondary)	−0.1715	−0.1421	−0.1523
Education (higher non university)	−0.0324	−0.0235	−0.0252
Education (postgrad)	0.3029**	0.2890**	0.2757*
Quechua	0.2506*	0.2233	0.2449*
Income			
Personal income[a]	0.0142	0.0270	0.0057
Goals			
Intrinsic goals	0.2432*	0.2116*	0.2655**
Extrinsic goals	−0.1363	−0.1377*	−0.1412*
Location			
Breña	0.0795	0.1063	0.0487
Huaycan	0.3366	0.3559	0.2899
Huancayo	0.3081	0.3600	0.3083
Acostambo	0.2880	0.3611	0.2282
Goal × Location			
Intrinsic goals score × Huaycan		−0.9929***	
Intrinsic goals score × Huancayo			0.6913**
Constant	2.4037***	2.3625***	2.4707***
Number of observations	476	476	476
Centred R-squared	0.1067	0.1274	0.1149
First-stage regression of personal income[b]			
Type of floor in the dwelling	0.2842***	0.2845***	0.2837***
Migrant dummy	−0.1862*	−0.1887*	−0.1856*
Kleibergen-Paap Wald rk F statistic	12.72	12.81	12.73
Sargan test/Hansen J statistic, for overidentification of all instruments (p val)	0.6766	0.7530	0.6693

* p value < 0.1, ** p value < 0.05, *** p value < 0.01

[a] Instrumented variable using *Type of floor in the dwelling* and a *migrant dummy* as instruments

[b] Coefficients and significance levels of the two variables used to instrument income in the first-stage regression with personal income as dependent variable

Peru (Copestake 2008; Graham and Pettinato 2002). The latter has frequently been reported to present a U-shaped relation with SWB, with lowest levels of SWB in middle-age (Frey and Stutzer 2002; Helliwell et al. 2012). However, as in many studies before us (Bechetti et al. 2011; Guillen-Royo 2011; Herrera et al. 2006) we did not find a significant

effect of age on happiness in Peru, nor was the curvi-linear equation significant (results not shown). Regarding civil status, only being separated/divorced is significantly and negatively associated with happiness, although results are not robust, as they are only significant in model (c) that accounts for the interaction between intrinsic goal orientation and living in the Huancayo district.

Compared with having a higher university education, people with a lower degree are less happy; the opposite applies to those who hold a postgraduate degree. Holding other variables constant, the 3 % of our sample who have no formal education experience happiness levels that are nearly one point lower than their University-educated counterparts. Those with a postgraduate degree (7 %) are, on average, one fourth of a point happier than people with higher University education. As expected, being in good health is a robust positive determinant of happiness. For each change of one unit in self-perceived health status, happiness changes 0.25 units, when all other variables are kept constant. These results are similar to those found in previous studies on happiness determinants in Latin America in general (Rojas 2008) and in Peru in particular (Bechetti et al. 2011; Herrera et al. 2006).

The variable Quechua, identifying indigenous origin through the participants' mother tongue, is significantly associated with happiness in two of the three specifications presented in Table 7. In general, those who reported having an indigenous background were 0.25 points happier than those who did not report having Quechua as mother tongue; controlling for income, personal goals and location of origin, among other socio-economic variables. These results are consistent with claims that the Peruvian indigenous population may have a greater disposition to experience positive feelings (Chirif 2010; Copestake 2008) than do people without indigenous background or traditions.

Personal income (i.e., the natural logarithm of household income per capita) had a positive and significant effect on happiness in the non-instrumented equations (see Table 8 in the "Appendix"). However, because, as expected, instrumenting income corrects for endogeneity, thereby accounting for the potential effects of reverse causation and omitted variables on the parameter estimates, the coefficient of personal income becomes non-significantly different from zero in all three models using 2SLS. Thus, it can be concluded that income has no significant effect on happiness in our sample after instrumenting, controlling for personal characteristics, socio-economic variables, location and goal orientation.

Several studies have reported a negative relationship between SWB and living in large cities compared to small cities or rural areas (Graham and Felton 2006; Kingdon and Knight 2007; Guillen-Royo and Velazco 2012). Taking Miraflores (the upper–middle class district of Lima) as the district of reference, we found that living in an outskirts slum, in an urban Andean city or in a rural Andean district was positively associated with happiness after controlling for income, values, and the other socio-economic variables before instrumenting personal income (see Table 8). As Table 7 shows, however, after instrumenting income the size of the coefficients for the district variables decrease and become non-significant, probably reflecting the 2SLS correction for omitted variables bias.

5.2 Personal Goals and Interactions with Income and Residence

As Table 7 presents, the importance participants place on intrinsic goals (for self-acceptance, affiliation, community feeling, and physical fitness) is a positive correlate of happiness controlling for the importance placed on extrinsic goals, income and the other demographic variables. The relationship is significant ($p < 0.05$) or marginally significant ($p < 0.10$) in the three equations. As expected, the importance people give to extrinsic

goals (for financial success, appearance and popularity) is negatively related to happiness. The coefficient is not significant in the general equation (a) and marginally significant ($p < 0.10$) in the two equations with interactions (see below). The direction of these results is consistent with those reported previously in various nations around the world (e.g., Kasser and Ryan 1996; Lekes et al. 2010; Ryan et al. 1999), even if they are somewhat weaker in this sample.

Interactions between goal orientation and the variables indicating participants' socio-economic background were introduced in model (1). Our purpose was to study whether income and district of residence modify the relationship between goals and happiness. First, we examined interactions between goal orientation and personal income, with and without dummy variables representing the location where participants reside. None of these interaction coefficients were significant (and so the regression results are not shown). These results match those from past studies in more economically-developed nations which have shown that the relationship between goal orientation and happiness is not moderated by the income level of participants (Dittmar et al. 2013; Kasser and Ryan 1996).

In contrast, district of residence *did* moderate the relationship between intrinsic goals and happiness.[8] Specifically, two of the interaction terms between district of residence and intrinsic goals yielded significant results at $p < 0.05$. Table 7, specification (b), presents the results concerning the interaction of the importance placed on intrinsic goals and the dummy variable representing living in Huaycan (the urban slum of Lima). The interaction coefficient has a negative and significant sign whilst the intrinsic goal orientation coefficient maintains its positive sign. Thus, compared with living in Miraflores, living in Huaycan and prioritising intrinsic values is related to a lower level of happiness. All other things equal, a one point-score increase in the importance a person from Huaycan gives to intrinsic values is associated with a one-point reduction in his/her happiness score, compared to that of a resident in Miraflores.

Table 7, specification (c), shows another significant interaction, this one concerning the Andean urban district of Huancayo. Keeping all the other variables constant, in this case a person from Huancayo who increases by one point the importance given to intrinsic values will be 0.69 happier than a resident in Miraflores experiencing the same increase in intrinsic goal prioritization. The signs and strength of the interaction variables were also present when we ran separate regressions by district (results not shown) using the same controls and independent variables as in model (a). The coefficient for personal goals was negative and significant in Huaycan, and positive and greater than in Miraflores in Huancayo.

6 Discussion and Concluding Remarks

6.1 Overview of Findings

This study examined a number of questions concerning happiness and the distinction between intrinsic goals (for self-acceptance, affiliation, community feeling, and physical fitness) and extrinsic goals (for financial success, attractive appearance, and social recognition) in a diverse sample of Peruvian adults. Consistent with past psychological research in economically-developed nations (e.g., Cohen and Cohen 1996; Kasser et al.

[8] Interactions between extrinsic goals and district were also tested but yielded non-significant results and are therefore not reported here.

1995) and cross-cultural work in political science (Inglehart 1997), results showed that Peruvian citizens living in wealthier, more stable neighbourhoods in Lima placed higher importance on intrinsic and lower importance on extrinsic goals than an urban slum of Lima and two districts in the Andean central highlands. Such a finding supports propositions from past theorists that feelings of security, stability, and safety help individuals orient towards intrinsic, post-materialistic values whereas threats of various sorts can increase the relative prioritization of extrinsic, materialistic aims in life (see Inglehart 1990; Sheldon and Kasser 2008).

Our analyses regarding the associations of goals with happiness also, by and large, supported past research (e.g., Kasser and Ryan 1996; Romero et al. 2011; Ryan et al. 1999). As predicted, those Peruvians who placed a relatively high importance on intrinsic goals reported higher levels of happiness and the opposite applied to those placing a relatively high importance on extrinsic goals.

One primary contribution of the present study was that the heterogeneous Peruvian sample we collected allowed for examination of the extent to which these results were qualified by individuals' personal income and by the locality in which they lived. Consistent with some past research (e.g., Kasser and Ryan 1996) and with a recent meta-analysis (Dittmar et al. 2013), we found no evidence that the association between personal goals and happiness was moderated by personal income. While personal income did not moderate the relations between goal prioritization and happiness, the strength and direction of the associations between intrinsic values and happiness did vary by the district in which our participants resided. The positive association between happiness and placing a relatively high importance on intrinsic values was particularly strong in the urban Andean district of Huancayo, but in the urban slum of Huaycan a *negative* association was observed, such that individuals living in this slum who viewed the intrinsic goals of self-acceptance, affiliation, community feeling and physical fitness as being especially important were *less* happy than their peers who did not prioritize such goals. This finding is in line with past studies in Peru (Guillen-Royo and Velazco 2012) and with studies that have sampled individuals living in a maximum-security prison (Kasser 1996), as well as with other projects that have reported that when people successfully attain their intrinsic aspirations, well-being is particularly high, but when people find themselves in situations that block the attainment of intrinsic goals, their well-being is likely to decline (Kasser and Ryan 2001; Niemiec et al. 2009; Sheldon and Kasser 1998).

Almost certainly there is no single factor that can be identified to explain why the urban Andean district of Huancayo is a particularly supportive locality in which to pursue intrinsic goals whereas the urban Lima slum of Huaycan is a particularly difficult place to pursue such aims. There are many differences between the two districts. Huancayo is the economic, political and financial centre of the Central highlands region, hosting many modern public and private centres that offer health care and education services together with a thriving commercial life. Modern amenities and services are found in the wealthier neighbourhoods but are still accessible to those individuals living in poorer areas of the district. As the most important city in the region, Huancayo reflects a distinctive hybrid *mestizo* identity, characterised by a combination of consumerist practices and traditional Andean customs that has resulted from a gradual integration of indigenous and colonial traditions (Alvarez et al. 2008). In contrast, few of these features are present in the urban slum of Huaycan.

Parallel to arguments in previous studies (Copestake 2008; Guillen-Royo and Velazco 2012), it may be that slum dwellers with strong intrinsic goals experience substantial cognitive dissonance living in a context where jobs are precarious, short-term, and subject

to intense competition (Copestake 2008), and where nuclear families are usually split. Further, the sense of community in Huaycan may be relatively low, given its history of institutional and neighbourly mistrust since it became the stronghold of the Shining Path Maoist guerrilla movement in Lima during the early nineties, and given the continuous flow of migrants and the lack of cooperation between local administrations (Manrique 2002; Alvarez et al. 2008). Together, this variety of factors likely makes this urban slum a rather difficult place to successfully pursue intrinsic aims even if, on average, people are wealthier than in rural districts such as Acostambo. Akin to the arguments provided by Kasser (1996) about maximum-security prisoners, it thus seems likely that individuals who prioritize intrinsic goals in Huaycan may experience lower levels of happiness because they frequently experience frustration of their goals and thus have relatively low levels of psychological need satisfaction.

6.2 Limitations

A few limitations of our project are particularly noteworthy. First, our sample is not representative of the Peruvian population and thus it limits the external validity of our results. Following Copestake (2008) we chose districts that were illustrative of the diversity of a Latin American country like Peru, considering geo-political and socio-economic arguments to make our choice of location. In addition, and due to budget constraints, we did not use random sampling but instead used quota sampling when approaching respondents, thus limiting further generalisation claims. Second, the present study only assessed the relative importance of goals, not their perceived attainment; given that past and current results suggest that the attainment of intrinsic versus extrinsic goals is particularly relevant to people's happiness (e.g., Niemiec et al. 2009), future studies would do well to include such ratings. Third, although we accounted for the endogeneity of personal income, we could not study whether endogeneity influenced the relationship between personal goals and happiness. Even though common method variance seems not to present a problem in our study (see Footnote 6) and measurement error might also be limited due to the cross-country validity of the goal measure (Grouzet et al. 2005) and other robustness checks undertaken in this study, we cannot discard the presence of reverse causation. The lack of a suitable instrumental variable for personal goals in our survey makes the exploration of the endogeneity of values an issue for further study. Finally, it may be worth using multi-level modelling approaches in data sets such as ours to explore in more detail how relationships among person-level variables may differ across districts.

6.3 Concluding Remarks

We believe that our results point to the importance of developing programs that help individuals living in slums better succeed at pursuing their intrinsic goals and that diminish the contextual factors that frustrate such attainment. Said differently, happiness is likely to improve for slum dwellers in Peru when they have the same opportunities to meet their goals of growing as a person, of being close to their family and friends, of contributing to the community, and of being physically healthy as do individuals living in other contextual settings. Many different sorts of approaches have been identified that seem to hold substantial promise towards these ends (see, e.g., Kasser 2011).

Appendix

See Table 8.

Table 8 Happiness and goal orientation without personal income instrumented (OLS)

	(a)	(b)	(c)
Personal characteristics			
Age	0.0027	0.0023	0.0024
Female	0.0478	0.0305	0.0372
Cohabiting	0.0395	0.0404	0.0356
Separated	−0.2804*	−0.2521	−0.2932*
Widowed	−0.0754	0.1105	0.0978
Health status	0.2357***	0.2417***	0.2312***
Education (no level)	−0.8176***	−0.7644***	−0.8260***
Education (primary)	−0.1071	−0.0677	−0.1147
Education (secondary)	−0.1068	−0.0903	−0.0851
Education (higher non university)	−0.0078	−0.0115	0.0159
Education (postgrad)	0.2542*	0.2466*	0.2260*
Quechua	0.2579*	0.2281	0.2530*
Income			
Personal income	0.1118**	0.1068**	0.1078**
Goals			
Intrinsic goals	0.2130*	0.1840*	0.2344*
Extrinsic goals	−0.1211	−0.1219	−0.1258
Location			
Breña	0.1811	0.1885	0.1552
Huaycan	0.4368***	0.4354***	0.3965**
Huancayo	0.3999***	0.4305***	0.4045***
Acostambo	0.4798**	0.5138**	0.4302**
Goal × location			
Intrinsic goals score × Huaycan		−0.9823***	
Intrinsic goals score × Huancayo			0.6819**
Constant	2.3103***	2.2889***	2.3730***
Number of observations	480	480	480
R^2	0.1115	0.1301	0.1207

* p value < 0.1, ** p value < 0.05, *** p value < 0.01

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