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Working Paper

Relative Deprivation in Tanzania

IZA Discussion Papers, No. 12719

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Suggested Citation: Bédhat Atsebi, Jean-Marc; Ferrer-i-Carbonell, Ada (2019) : Relative Deprivation in Tanzania, IZA Discussion Papers, No. 12719, Institute of Labor Economics (IZA), Bonn

This Version is available at:
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Jean-Marc Bédhat Atsebi
Université Clermont Auvergne

Ada Ferrer-i-Carbonell
IAE-CSIC, Barcelona GSE and IZA

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ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Relative Deprivation in Tanzania

This paper examines the importance of relative deprivation in Tanzania, a poor African country, using three waves of the Tanzanian National Panel Survey. We contribute to earlier literature in Africa by controlling for time persistent unobservable individual characteristics (panel data) and by using two measures of satisfaction (life and financial satisfaction) and two definitions of reference group. By comparing results between satisfaction measures and across definitions of reference groups we help to understand the mechanisms through which comparisons work in a poor setting. In contrast with earlier literature, we find strong evidence of relative deprivation in financial satisfaction of all individuals in Tanzania, and evidence for life satisfaction only for individuals with weaker ties with their community. For those with strong ties, we find evidence of a positive correlation between life satisfaction and the average consumption of close neighbors and argue that this can be explained by feelings of empathy.

JEL Classification: D63, D64, I32, O12

Keywords: Africa, financial satisfaction, life satisfaction, relative deprivation, Tanzania

Corresponding author:
Ada Ferrer-i-Carbonell
Institute for Economic Analysis (IAE-CSIC)
Campus UAB
08193 Bellaterra
Spain

E-mail: ada.ferrer@iae.csic.es

1. Introduction

Empirical evidence using subjective data as a proxy measure for utility shows a negative and statistically significant correlation between reported life satisfaction and the income of the reference group in Western countries (Clark and Oswald, 1996; Luttmer, 2005; and Ferrer-i-Carbonell, 2005), as well as in various Latin American countries, China, and Nepal (e.g., Fafchamps and Shilpi, 2008; see Clark and Senik, 2011, for an overview). In other words, empirical evidence points at the importance of relative concerns (or relative deprivation) for individuals' satisfaction with own life. The definition of the reference group varies across papers: while some of them focus on a geographical definition (from close neighbors to larger areas) others also include individual characteristics, such as age and education, to generate individuals' reference group. The evidence in Africa however is scarce and it is based on (repeated) cross-section data, and using life satisfaction only. Up until now this literature points to a positive relative income effect on life satisfaction (Ravallion and Lokshin, 2010; Kingdon and Knight, 2007; Bookwalter and Dalenberg, 2010) and on living conditions satisfaction (Clark and D'Ambrossio, 2017) in Africa. In concrete, these papers find that comparisons to others actually have a positive effect on life satisfaction in rural areas of Africa, for the poorest, and when the reference group is defined as close neighbors. This literature has pointed to two main reasons for this positive effect: (i) individuals perceive a higher income of the reference group as a sign of a larger probability to a higher own future income (Clark and D'Ambrossio, 2017); (ii) having richer neighbors is perceived as positive to the extent that they can help in times of economic hardship in societies where formal credit is scarce (Ravallion and Lokshin, 2010); or (iii) altruism existing especially in rural areas in relation to close neighbors (Kingdon and Knight, 2007). These papers however do find that relative concerns (negative effect of neighbors' average consumption on life satisfaction) appear in Africa when we take urban households or define the reference group as those living further away. Ravallion and Lokshin (2010) find that the positive relative income effect applies to the poorest of the sample (79%), and specially to those in rural areas. Kingdon and Knight (2007) find evidence of relative concerns when the comparison group is defined as individuals living in larger geographical areas.

This paper contributes to this literature in various ways. First, and in contrast with the current literature in Africa, it does not only focus on self-reported life satisfaction, but it also includes financial satisfaction. We argue that these two satisfaction measures represent two different proxies for utility and thus they can bring different results that in turn might help to understand the mechanisms behind relative concerns. Second, this paper uses also for the first-time panel data in an African country and thus allows controlling for individual fixed effects, which has been proven of crucial importance in the context of subjective questions, as its exclusion leads to biased results (Ferrer-i-Carbonell and Frijters, 2004). The within individual estimates allow to partially address causality concerns by estimating the effect of changes in the consumption of the reference group on changes on satisfaction, while maintaining individual unobservable characteristics constant. For example, it might well be that optimistic individuals have both a larger probability to be happier, richer, and to have weaker feelings of deprivation. Our data shows that including individual fixed effects changes the results significantly, reducing the size of the coefficient and its statistical significance in all cases. Third, we use two different definitions of the reference group. In line with the literature in African countries, we define the reference group at the geographical level; and, as in

Kingdon and Knight (2007), we use two different geographical areas that allow us examining whether results change if the reference group includes only close neighbors or individuals living further away. Defining the reference group using individual characteristics is difficult in rural Tanzania, where measures of education or occupation are not well defined and show little variation in rural areas. In short, the paper defines the reference group as those individuals living (i) in the same enumeration area (our data contains 3180 enumeration areas, 1433 if we drop those with less than 5 observations) and (ii) in the same ward (our data contains 1380 wards, 885 if dropping those with less than 5 observations)[1]. Since some argued that the positive reference income effect found in rural Africa is due to neighbors acting as positives and providing financial assistance in time of need (e.g., Ravallion and Lokshin, 2010), we would expect different coefficients for the two definitions of reference group. Although Kingdon and Knight (2007) also use different geographical definitions for the reference group to examine the effect of relative concerns for life satisfaction, their smaller geographical definition of the reference group is larger than our definition of the reference group as close neighbors. Fourth, the richness of our data allows to control for a large range of individual and household characteristics, such as household assets and appliances, climate, distance to the major road or larger town, and whether the households have faced some shock over the last year or have received formal or informal assistance. Although its inclusion reduces the coefficient and precision of own consumption as well as the consumption of the reference group, it is important to control for these variables in the context in which we measure individuals' income through consumption. Our results are also consistent to the inclusion of a smaller set of controls, as standard in the literature, and the precision of the consumption coefficients improves with the shorter list of controls.

This paper finds strong evidence of relative concerns on financial satisfaction of all individuals in Tanzania, regardless of the geographical size of the reference group. This result is new in the literature and shows that individuals in a poor setting also show feelings of relative deprivation in terms of their financial satisfaction. This is the first time that relative concerns in Africa are examined through a financial (and not a life) satisfaction question. For life satisfaction, however, and in line with the current literature, relative concerns show important heterogeneity: while we find weak evidence of relative concerns for non-rural individuals (32% of the sample), individuals in rural areas show a clear positive effect of the average consumption of their close neighbors (as in Ravallion and Lokshin, 2010 and Kingdon and Knight, 2007 for income), while the effect is negative if the reference group is defined as those living further away (as in and Kingdon and Knight, 2007 for income). Since we find a negative effect of the reference group consumption on financial satisfaction in all individuals (also in rural areas), it is hard to argue that the previously found positive effect of close neighbors' consumption on life satisfaction in rural areas is due to the positive externality of having richer neighbors who can help you in time of hardships (risk sharing) (Ravallion and Lokshin, 2010). If this would be the case, we would expect to also find a positive effect of average consumption of close neighbors on financial satisfaction. In addition, we perform other tests to reject the hypothesis that assistance in time of hardships by richer neighbors was driving the positive effects of neighbors' consumption on life

[1] The results are consistent if we drop clusters with less than 10, 8 or 2 observations in our data, but the coefficients become imprecisely estimated for the rural sample, as we drop a larger percentage of the observations.

satisfaction found in rural areas. For example, we looked for heterogeneous effects depending on the inequality in the region or on whether the households had received assistance or credits in the previous year. Therefore, we argue that having richer neighbors might have other positive externalities that affect life, but not financial satisfaction. Another obvious candidate would be positive externalities (other than financial help) that also correlate with the income of the community, such as better schools and roads, or having networks with higher human capital, an argument already put forward in western countries (see e.g., Clark, Kristensen, and Westergard-Nielsen, 2009 and Ifcher, Zarghamee, and Graham, 2016). Since our set of controls include variables related to the welfare level in the community (for example, distance to major roads and markets and climate variables) for which other papers could not control, we believe that this argument plays less of a role in our analysis. Finally, it might also be that individuals are happier to have richer neighbors due to pure empathy generated by proximity to each other, as already argued in Kingdon and Knight (2007) for South Africa. This last argument is aligned with the literature on social distance and generosity (see, for example, Gary and Gneezy, 2008; Burnham, 2003; Hoffman, McCabe, and Smith, 1996) that argues that generosity increases with decreasing social distance. In the paper we find that the positive effect of close neighbors' average consumption on life satisfaction in fact increases with the number of years that the individual lives in the community, which is consistent with this last argument. In rural Tanzania, it is easy to assume that social distance depends on geographical residence, as people living in the same area are likely to come from the same ethnic group or family. This might be less the case in urban areas. The introduction of individual fixed effects changes some of the results. For example, for the life satisfaction of the total sample, including individual fixed effects changes the sign of the reference group from negative and significant (showing evidence of relative concerns on life satisfaction, regardless of the definition of the reference group) to positive and non-significant (results presented in the paper, Table 3). In the paper however we only present the panel data estimates, as the cross-section estimators are biased. Our analysis confirms the importance of distinguishing among different reference group in terms of geographical proximity as well as distinguishing between financial and life satisfaction measures. The combination of the two contributes to understand the mechanisms and the importance of taking comparisons to others seriously when assessing and introducing welfare policies, also in less a very poor context.

2. Previous literature

The importance of relative preferences dates back to Veblen (1909), Knight (1922), Clark (1918), and Duesenberry (1949), but only over the last two decades there has been a growing empirical literature to test for the interdependence between each other's' income and utility proxied with a self-reported measure of life satisfaction or happiness. This literature estimates the importance of the income of the relevant others (reference group) on self-reported measures of life satisfaction and happiness (see Clark and Senik, 2011 for an overview). This literature points unequivocally to a negative correlation between the income of the reference group and self-reported satisfaction in western countries and argue about the importance of the feelings of relative deprivation or relative concerns (Blanchflower and Oswald, 2004; Card et al., 2012; Clark and Oswald, 1996; Ferrer-i-Carbonell, 2005; Graham and Felton, 2006; Luttmer, 2005; Ifcher, Zarghamee, and Graham, 2016; Vendrik and Woltjer, 2007). In more volatile economies, however, the literature finds (Russia and Poland until the year 2000) a positive correlation between life-satisfaction and

the income of the reference group (Senik, 2004; Senik, 2008) and argues (Senik, 2004) that in transition countries the income of the reference group plays an informational role, as individuals form their future income expectations based on the income of their reference group. In other words, the income of the reference group is understood as a sign of own income prospects, which outweighed the negative effect of relative concerns. In developing countries outside Africa, the evidence also points to a relative deprivation model. The existing evidence in Latin American and Asian countries shows a negative correlation between income or consumption of the reference group and own life satisfaction, for example: Fafchamps and Shilpi (2008) for Nepal; Appleton and Song (2008), Knight, Song, and Gunatilaka (2009), and Smyth and Qian (2008) for China; Carlsson, Gupta, and Johansson-Stenman (2009) for India; and Graham and Felton (2006) and Rojas (2007) for various Latin American countries.

In contrast, the current literature on few African countries shows a positive correlation between the income (often proxied with consumption) of those individuals living close by (reference group) and own life satisfaction, at least in rural areas or for poorer individuals. This literature is based on cross-section data and uses life satisfaction as a proxy measure for utility. We contribute to this literature by using panel data as well as two measures of satisfaction (financial and life) and, as in some of the previous literature, we compare the results using two different geographical definitions of the reference group. In addition, our data has a large set of controls. Ravallion and Lokshin (2010) use cross-section data for Malawi and find a positive effect on life satisfaction of the average consumption of fairly close neighborhoods (enumeration area level) for the 79% poorest sample. Ravallion and Lokshin (2010) argue that in poor contexts in which there is no access to formal credit, the income of the neighbors represents an insurance against difficult times. This might outweigh the negative effect that income of the others has on those individuals who experience relative concerns. They argue that this is especially true for poorer individuals with stronger credit constraints and their heterogeneity analysis supports their thesis as the positive effect of the average consumption of the reference group on own satisfaction is only found for the 79% poorest and for the rural sample. Instead, they find relative concerns (a negative coefficient of the average consumption of the neighbors on life satisfaction) for individuals living in urban areas. This paper is arguably the most comparable to our study, as Malawi is fairly similar to Tanzania in terms of demographics (both countries are largely rural) and geographic location, although the GDP per capita (2017) in Tanzania is larger (936.3US$) than in Malawi (338.5$)[2]. In our sample, we find little heterogeneity in terms of poverty or income. We do not find any heterogeneity in terms of income, and we only find a positive, but very imprecisely estimate coefficient for the effect of neighbors' mean consumption on financial satisfaction for poor individuals living in rural areas when the reference group is defined at the EA level (coefficient =0.21; sd=0.19). For all other 8 specifications, the effect of the mean consumption remains unchanged, while the interaction with being poor is close to zero and insignificant. Another relevant paper for our analysis is Kingdon and Knight (2007) who find in South Africa a positive effect of the income of close neighbors, but a negative effect when the reference group is defined at a larger geographical area. Consistent with these results, Bookwalter and Dalenberg (2010) find a positive correlation between individual subjective

[2] Current US$. World Bank: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD

satisfaction and median income at the cluster level in South Africa, while respondents who performed better than their parents were more likely to report higher scores of happiness. These last two papers however are much less comparable to ours. First, South Africa is a substantially richer economy with a GDP per capita (6160.7U$ in 2017) more than six times that of Tanzania and more similar to many Latin American countries. In addition, South Africa is much more urbanized (65% of population are urban) than Tanzania (32% urban) and Malawi (17% urban). Second, their geographical smallest area to define the reference group as very close neighbors is substantially larger than ours. Finally, Clark and D'Ambrossio (2017) use various African countries (repeated cross-sections for the Afro-barometer) and find a positive effect of deprivation on satisfaction with living conditions (not self-reported life or financial satisfaction). There are few other papers on Africa, but those are all based on very small samples of cross-section data survey or experimental data (e.g., Akay, Martinsson, and Medhin, 2012).

In other words, the literature on relative consumption and life satisfaction of people in Africa indicates that relative concerns in Africa depend on (i) the definition of the reference group, in terms of the geographical proximity of the reference group, (ii) their income level, and (iii) whether the individual lives in an urban or rural area. This literature, as discussed above, argues that the positive effect of average consumption of the reference group (defined as close neighbors) on life satisfaction might be explained by various factors: (i) the role of the community on providing social and financial assistance (risk sharing) in context where people do not have easy access to formal credits (Ravallion and Lokshin, 2010), (ii) the existence of stronger networks when looking for employment or other amenities and positive externalities from living in a richer community (e.g., Fafchamps and Gubert, 2007; and Ligon, Thomas, and Worrall, 2002); (iii) due to pure empathy motives, which might specially apply in smaller communities with stronger ties (Kingdon and Knight, 2007); or (iv), in volatile economies, due to the informational role of income of the reference group as an indication of own future prospects (Clark and D'Ambrossio, 2017 for Africa; and Senik 2004 and 2008 for East Europe). These explanations are also consistent with the literature in western countries (e.g., Ifcher, Zarghamee, and Graham, 2016 in the US) in which the authors typically argue that this is explained by the better provision of public goods, more human capital accumulation, and helpful networks in rich areas that benefit all families, also the ones relatively worse off (Clark, Kristensen, and Westergard-Nielsen, 2009 and Ifcher, Zarghamee, and Graham, 2016).

3. Empirical strategy

The empirical model uses self-reported satisfaction with life and with own financial situation as proxy measures for utility. There is now enough empirical evidence to be confident that individuals are able and willing to provide a meaningful answer when they are asked to value on a finite scale their satisfaction level with their own live or financial situation. In the data at hand individuals are asked "few questions about [their] level of satisfaction with various components of [their] life". In this paper we use the answer to the questions on satisfaction with their "financial situation" and "their life as a whole". Respondents can cast their answer on a scale from very satisfied (1) to very dissatisfied (7), and we recoded them to go from very dissatisfied (1) to very satisfied (7). Cantril (1965), Wilson (1967), and Bradburn (1969) are considered the fathers of subjective measures of satisfaction, for they developed and first introduced such questions in

large questionnaires. The validity and meaningfulness of these satisfaction measures have been largely discussed in the literature and we refer to different surveys for an overview of its validity as well as the use of these measures for, among others, understanding individuals' preferences (Ferrer-i-Carbonell, 2013; Clark, Frijters, and Shields, 2008; van Praag and Ferrer-i-Carbonell, 2004; Frey and Stutzer, 2002).
We estimate the following equation:

$$U_{itar} = \alpha + \beta' X_{itar} + \gamma \quad C_{itar} + \delta \bar{C}_{tar} + \lambda' W_{itar} + \theta_r + \rho_t + \sigma_i + \varepsilon_{it} \qquad (1)$$

where U_{itar} is the utility level of individual i in year t in area a in region/district r. Area a refers to the geographical area used to define the reference group, while region r refers to the largest region where the individual lives. Utility is proxied by the answer to the self-reported satisfaction questions and we refer to it as financial and life satisfaction. The main parameters of interest are γ and δ, i.e., the coefficients for own consumption and average consumption of the reference group, respectively. Consumption C is the log adult equivalent annual household consumption in real terms (using regional prices). The equation includes as controls individual and household characteristics (X) as well as location variables (W). Some location variables W only change over time (t) for those individuals who move (e.g., distance to a market or to the main road), while others do change over time and are common to all individuals living in the same area a at the same moment of time (e.g., rain fall in a particular time and year). Given the characteristics of the country, the regression analysis includes a fairly large set of variables that are typically not included in these regressions, both the variables included in W and X. For example, X includes the possibility of receiving assistance in case of need, whether the individual has experience some shocks, and ownership of a large set of durable goods and appliances. Although the inclusion of these variables reduces the coefficient of own consumption, its inclusion is crucial in a context in which consumption (often imprecisely estimated) is used as a proxy for income. In order to account for time persistent regional characteristics, our regressions include 8 regional dummy variables that we call districts (θ_r) (North, Central, Eastern, South, Southern Highlands, West, Lake, and Zanzibar); and three wave dummies (ρ_t) to take into account shocks that effect all regions in a given year. Our results are robust and very similar to include instead an interaction between district and time fixed effects ($\theta_r * \rho_t$) as well as to include 26 regional fixed effects, instead of the 8 district fixed effects.

In contrast with the existing literature in African countries, the data at hand is a panel and we can therefore control for individual fixed effects (σ_i). The self-reported satisfaction literature has showed that the exclusion of this time persistent unobservable individual characteristics biases the results (Ferrer-i-Carbonell and Frijters, 2004) and its inclusion is therefore crucial. In fact, by including individual time persistent unobservable fixed effects, we are able to partially address endogeneity issues by only exploiting within individuals' changes over time. Although we will not present the results, not including individual fixed effects does change our results, as discussed in the introduction. Ferrer-i-Carbonell and Frijters (2004) show however that assuming cardinality or ordinality of satisfaction questions does not change the results in terms of trade-offs between variables. Therefore, and for easiness of interpretation and imposed assumptions, the results presented in the paper are run with linear models (OLS with individual fixed

effects). Since the average consumption of the reference group ($\bar{C}_{at}$) is clustered at the region a (enumeration area or ward, depending on the specification), while our dependent variable is defined at the individual level, standard errors are clustered at the corresponding geographical level a. Our final data contains 1433 enumeration areas (of a total of 3180 in Tanzania) and 885 wards (of a total of 1380), and therefore a is always sufficiently large.

4. The context (Tanzania) and data description

4.1 The context (Tanzania)

Tanzania is located in East Africa with a population of just 53 million, 68% of which (2015) lives in rural areas. Tanzania GDP per capita is 1051 current US$ (World Bank, 2018), while the average in sub-Saharan Africa is 1574US$ (World Bank, 2018).[3] Tanzania is the 30th's poorest country in the world (among the 14% poorest countries), according to the World Bank (same source). Using the same data as in this paper, the National Bureau of Statistics of Tanzania estimates the incidence of poverty[4] and finds that poverty incidence, measured through basic needs, has increased substantially from 14.8% in wave 1 to 17.9 and 21% in waves 2 and 3, respectively. While in urban areas poverty has remained around 5% (5.7% in the last wave), in rural areas it has increased from 17.3% in wave 1 to 26.5% in the last wave. According to the same source, and using the Household Budget Survey poverty in rural areas was 33.3% in 2011/2012[5]. The average happiness in Tanzania, according to the World Happiness Report (Helliwell, Layard, and Sachs, 2019) was 3.231 on a 0 to 10 scale, which placed Tanzania as the fourth unhappiest country in the world (153/156). According to Veenhoven (2016) data the average happiness in sub-Saharan Africa in 2011 was 4.37 on a 0 to 10 scale, which is substantially below the average in western Europe (7.48 in 2005), North America (7.29), and Latin America (6.35) and similar to regions such as East Asia (4.86) (see also Moller et al., 2017 on the unhappiness in Africa and its evolution over time). In sum, this paper studies the feelings of relative deprivation for own life and financial satisfaction in a setting of a poor and unsatisfied country and region.

4.2 Data description

The paper uses the Tanzania National Panel Survey (TNPS), a representative household survey implemented by the National Bureau of Statistics of Tanzania and with the technical support from the LSMS team of the World Bank. The data has a panel structure and although there are currently four waves available: 2008/2009; 2010/2011; 2012/13; and 2014/2015, the last wave is a complete refreshed sample and therefore cannot be used in the empirical analysis, as we aim at controlling for individual fixed effects. The first wave included 3,265 households, the second one 3,924, and the third wave included 5,010 households. Tanzania is divided in various administrative levels and the sampling of the data was based on the list of enumeration areas of the 2002 Population and Housing Census. In the data, and following the census of the Tanzania Bureau of Statistics, households' addresses are classified into regions, districts, ward, villages, and enumeration areas (EA). The EAs are the primary sampling unit of the Tanzania census

[3] Current US$. World Bank: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD

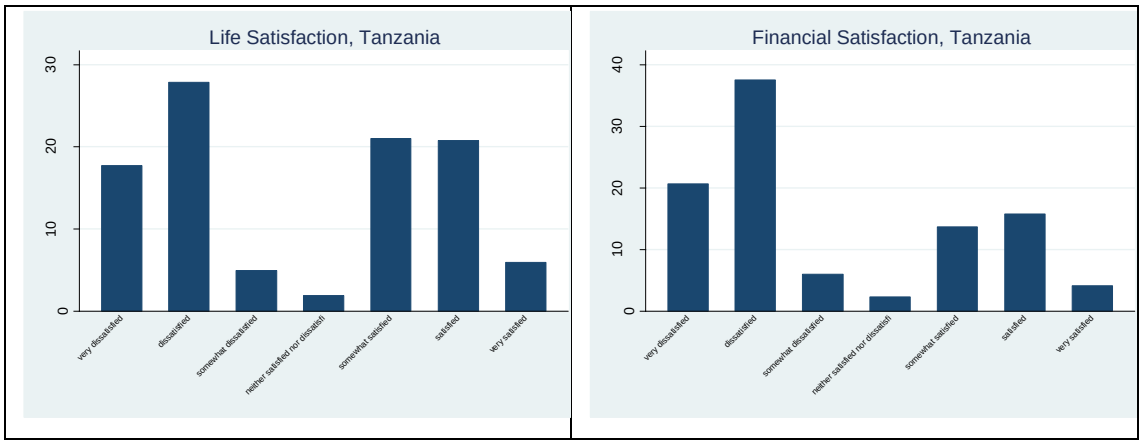
[4] NPS_Wave_3%20_Final%20_Report.pdf

[5] https://www.nbs.go.tz/nbs/takwimu/references/Tanzania_in_Figures_2018.pdf

and our smaller definition of the reference group. In the 2002 Tanzania Census an EA was designed to have between 60 to 100 households.[6]

The distribution of the answer to the life and financial satisfaction question for our sample is, in contrast with most western countries, fairly polarized, especially for life satisfaction. While in most western countries life satisfaction is skewed to the right, in our sample financial satisfaction is skewed to the left and life satisfaction is polarized. In our data, the average life satisfaction is 3.67 on a 1 to 7 scale and 3.14 for financial satisfaction (Figure 1).

Figure 1: Life and Financial Satisfaction, Tanzania NPS, average over the first three waves.



The data set includes information on total annual household consumption, which is our proxy measure of income. Consumption includes in kind income, which might be substantial in Tanzania. For the empirical analysis we transform annual household consumption value to adult equivalent and to real terms using regional prices. In order to account for decreasing marginal utility of consumption, we introduce this variable in logarithm terms. Although the correlation between own consumption and the average consumption of the reference group is high (0.754 using the smaller Enumeration Area definition and 0.679 with the larger ward definition), the two variables are not identical, In addition, and giving our very large set of controls, we are also not afraid of picking up some error in the measurement of own consumption that might be attenuated when we take the average of the community. In fact, if we regress financial satisfaction as in equation (1), but we do not include own consumption, the coefficient of the average consumption of the reference group defined as very close neighbors remains negative, although as expected it decreases in size and estimated precision.

Our satisfaction regressions includes a large set of individual and household characteristics: a dummy for the gender of the head of the household and one for the gender of the respondent; household size; number of elders (individuals older than 65) in the household; number of workers in the household; age and age squared; education level (no-education, primary, secondary –reference-, tertiary education, or still in

[6] In our data the largest enumeration area has 48 individuals and the largest ward 118.

school); marital status (divorced, married, single, or widow –reference-); working situation (employed, student, looking for a job –reference-); disable or inactive; whether the respondent visited the doctor over the last 4 weeks; number of years in the community (village or neighborhood communities -mtaa-); whether the individual has recently received some assistance (financial or in-kind) by governmental or non-governmental institutions (e.g., food or school scholarships) or received a (micro) credit from the community or from a financial institution and what is the money value of it; whether the household had gone through some recent shocks (e.g., drought or floods, severe water shortage, or death of household member); ownership of household assets or appliances (mobile phone, freezer, computer, motorcycle, bicycle, vehicle, land, agricultural tools, etc.); distance to the nearest major road, larger town (+20000), and market; climate and temperature. The regression includes some dummy variables for missing observations in which case the original variable is replaced with the mean value. Table 1 shows the descriptive statistics for some of the variables.[7]

Table 1: Descriptive statistics LSM-Tanzania

Variable	Mean	Std. Dev.	Min	Max
Life Satisfaction	3.67	2.05	1	7
Financial Satisfaction	3.14	1.96	1	7
Consumption in real terms	817,314	697,128	43,481	15,200,000
Mean consumption ref. group (EA)	811,934	524,666	100,181	6,423,196
Mean consumption ref. group (Ward)	830,634	502,850	138,138	4,978,549
Head of household is a man	0.80	0.40	0	1
Household size	3.94	2.34	1	25
Number of workers in household	2.99	1.92	0	23
Number of elder in household	0.30	0.58	0	3
Age of the respondent	36.89	17.03	16	108
Respondent is a male	0.45	0.50	0	1
Respondent's education:				
No education	0.002	0.04	0	1
Primary education	0.54	0.50	0	1
Secondary education	0.13	0.34	0	1
University education	0.01	0.07	0	1
Missing info in education	0.24	0.43	0	1
Still in school	0.08	0.28	0	1
Respondent main occupation:				
Has not job	0.04	0.20	0	1
Student	0.09	0.29	0	1
Works	0.85	0.36	0	1
Disable	0.02	0.13	0	1
Respondent marital status:				
Single	0.27	0.44	0	1
Married	0.60	0.49	0	1
Divorced	0.07	0.25	0	1
Individual visited doctor last 4 weeks	0.16	0.37	0	1
Number of observations	22,223, except financial satisfaction with 22,009			

Note: Descriptive only include those respondents included in the regressions.

[7] For reasons of space, the full list of descriptive statistics is not printed, but available upon request

4.3 Reference group definition

A key issue in this literature is how to define the reference group of each individual. While some authors define the reference group using individual characteristics (notably age, gender, education, or employment) (e.g., Clark and Oswald, 1996 and Ferrer-i-Carbonell, 2005), in this paper we follow the literature that defines the reference group using geographical proximity (e.g., Ifcher, Zarghamee, and Graham, 2016; Luttmer, 2005; Ravallion and Lokshin, 2010). On one side, in rural area Tanzania there is little variation on individuals' education, occupation, or employment. On the other side, mobility of poorer individuals is very limited, which makes the links within the community strong, rather than within socio-economics groups that might live elsewhere. Therefore, and as most other papers in Africa, we use geographical proximity to define the reference group. In other words, we assume that individuals compare themselves to those living in the same area (*a* in equation (1)). As discussed earlier, and in order to shed some light on the mechanisms that drive relative income concerns (ranging from feelings of deprivation to positive externalities of close neighbors or feelings of empathy), we define two different reference groups: closer neighbors (1433 Enumeration Area's –EAs- in our data, after dropping those 1747 with less than 5 individuals in our sample) and those living in the same somewhat larger geographic area (885 wards in our final data, after dropping 495 wards in which there were not EAs with more than 4 individuals). Our results are robust, although loose some statistical significance, to dropping only those EAs with 2 or less people (as well as those with less than 8 and 10 people). The first definition of reference group is similar to Ravallion and Lokshin (2010 in Malawi) who also use EAs, but it is a smaller geographical area than the definition of close neighbors used in Kingdon and Knight (2007 in South Africa). The EAs, which were created and defined for census proposes, are designed to have in Tanzania an average population of 60 to 100 households,[8] and therefore represent fairly small areas, where most people know each other. In Kingdon and Knight (2007) study in South Africa their smaller reference group has an average of 2900 individuals or 580 households, which is significantly larger than our definition. Our second definition of the reference group uses the ward, an administrative division in Tanzania that can be an entire village, a part of it in case of larger cities, or in rural areas a ward can contain more than one village. In other words, it tests whether relative concerns change if the reference group is not formed only for those individuals with whom the individual might have stronger ties, but it includes a larger population. A ward is the lowest administrative structure and it usually does not include more than 20,000 people, although some are as small as representing around 2,500 individuals. For example, Daar es Salaam area, which has 4.3 million inhabitants according to the 2012 census and is the largest city of Tanzania, is divided into 73 wards; Arusha with 416,000 inhabitants according to the 2012 census is divided into 18 wards. This is the larger geographical area we use to define the reference group, as our next geographical division are the 26 regions with many of them having more than one million individuals. Using these large regions to define the reference group might pick up other confounding factors, such as the development level of the region, for which we control in our analysis by means of district and region fixed effects. Since wards are larger areas than EAs, the positive externalities from having richer neighbors should be less important in wards than in EAs. Therefore, the distinction between these two different size areas, in combination with the use of financial

[8] https://ihi.eprints.org/2169/1/Age_Sex_Distribution.pdf

and life satisfaction, will contribute to understand the motives behind relative concerns in poor Africa. We expect that the average consumption of those individuals living in the same enumeration area might have a positive effect on life satisfaction, if relative concerns are over weighted by empathy or by the positive externalities of having richer neighbors.

5. Results: Relative deprivation and empathy

We first examine the results for the total sample. All the regressions include individual fixed effects, regional and time fixed effects, and errors are clustered at the same geographical level as the definition of the reference group. Table 2 shows the results for the life and financial satisfaction equation in which we do not control for relative concerns (i.e., we do not include the average consumption of the reference group). The table presents the results with the long list of controls described in section 4.2 as well as with fewer controls, as standard in the literature. The longer specification will be the one used in the rest of the paper, even though our results are consistent to including fewer controls. Including fewer controls does increase the coefficient for own consumption as well as the precision of some of our estimates. However, we opt to present the results with the long list of controls, as its inclusion is very relevant in a context in which we need to proxy income with consumption. Since consumption is only a proxy for income, the longer set of controls reduces a possible bias due to omitted variables. For example, two households with a similar yearly consumption, might have a different economic status depending on whether they have certain durable goods accumulated over time or whether they have access to credit. Table 2 also shows robustness to controlling for two different levels of regional fixed effects: 8 districts or 26 regions. The rest of the tables presented in the paper will include 8 district fixed effects, although the results do not change if controlling for region (26) fixed effects.

Table 2: Satisfaction, own consumption, and robustness to controls

	(1)	(2)	(3)	(4)
	Financial Satisfaction		Life Satisfaction	
	Large set controls	Short set controls	Large set controls	Short set controls
District (8) FE				
Ln(Consumption)	0.075	0.099**	0.140***	0.173***
	(0.049)	(0.047)	(0.050)	(0.050)
Regional (26) FE				
Ln(Consumption)	0.082*	0.104**	0.158***	0.188***
	(0.049)	(0.048)	(0.050)	(0.050)
Number Observ.	22023	22023	22223	22223

Standard errors in parentheses clustered at EAs * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Full tables for specifications (2) and (4) are shown in the Appendix (Table A1). For reasons of space, the full tables for the other two regressions are not printed, but are available upon request.

As expected, and in line with the literature, the coefficient for own consumption (in real per capita terms) is positive and, surprisingly, slightly larger for life than for financial satisfaction, and this difference is statistically different. Including a large set of controls reduces the coefficient of consumption, as some of the included controls in the long specification (e.g., ownership of appliances and whether the households

has recently suffered an economic shock) might pick up part of the effect of the consumption variable. The coefficient for own consumption of specification (1) with district FE (0.049) does not have any star in the table, but the standard error (0.79) is similar to all other shown coefficients and its statistically significant at 12.3%. Including district instead of regional fixed effects does not statistically significantly change the consumption (or other) coefficients or their precision.

Table 3 presents the results to test for relative deprivation. From now onwards the regression includes the large set of controls (as in specifications 1 and 3 of Table 2) and controls for district (8) and wave fixed effects. The average consumption of the reference group is included following the two different reference group definitions and standard errors are clustered at the same geographical level *a* as the reference group. Specifications (1) and (3) present the results when the reference group is defined as those living in the same Enumeration Area (EA). This is the smaller geographical unit that typically includes 60 to 100 households and aims at capturing the role of relative deprivation within close neighbors. Specifications (2) and (4) instead define the reference groups as those living in the same ward, a larger geographical unit that, in rural Tanzania, can include more than one village. As in Table 2, own consumption positively correlates with financial and life satisfaction and these coefficients are precisely estimated. The coefficient of own consumption on life and financial satisfaction is very similar in size and precision, and the difference between the two is not statistically significant.

Table 3: Satisfaction and relative consumptions

	(1)	(2)	(3)	(4)
	Financial Satisfaction		Life Satisfaction	
	Ref: EAs	Ref: Ward	Ref: EAs	Ref: Ward
Ln(consumption) LnC_{itar}	0.129**	0.146***	0.128**	0.163***
	(0.051)	(0.050)	(0.055)	(0.052)
Ln(avg.cosump.ref.group) $Ln\bar{C}_{tar}$	-0.201**	-0.416***	0.043	-0.131
	(0.080)	(0.098)	(0.091)	(0.113)
Number Observations	22023	22023	22223	22223

Standard errors in parentheses clustered either at EAs or Wards. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Regressions include the long set of controls, and district and time fixed effects. Errors are cluster at the enumeration area (specifications 1 and 3) and ward level (specification 2 and 4). The long tables are available upon request.

The results show that individuals' financial satisfaction is negatively (and statistically significant) correlated with the average consumption of their reference group, regardless of how we define the reference group. The negative coefficient of the reference consumption however is twice as large when the reference group is defined at the ward (larger) geographical level. This might indicate that, when the reference group is defined as close neighbors, the negative effect due to relative deprivation is partly outweighed by the positive externalities of having richer neighbors or empathy generated by proximity. Nevertheless, the effect is negative, which indicates that individuals in a poor African country do have strong feelings of deprivation in terms of their financial satisfaction. We cannot compare this finding with earlier literature,

as none of the previous articles had used financial satisfaction to examine relative deprivation in Africa. For life satisfaction, instead, we find very imprecise estimates that are also smaller in size than those for financial satisfaction, both in absolute terms as well as relative to the coefficient of own consumption. These results contrast with the literature that find an average positive effect of the income of close neighbors in Africa with cross-section data. When we present the analysis separating the urban and rural sample, we will see that the imprecise estimates for life satisfaction are the result of heterogeneous effects.

As robustness we excluded individual fixed effects, as usual in the literature in Africa, and this changed our estimates of interest. For life satisfaction, the average consumption of the reference group turns into negative and it is statistically significant if individual fixed effects are not included in the regression, both when the reference group is defined at the EAs and at the ward level. In other words, if we were not to control for individual time persistent characteristics, we would find a relative deprivation effects, also in terms of life satisfaction. The result shows thus the importance of controlling for individual fixed effects (Ferrer-i-Carbonell and Frijters, 2004). For financial satisfaction excluding individual fixed effects slightly changes the coefficients, but the results remain qualitatively unchanged.

If the positive sign of average consumption on life satisfaction that some studies find is due to positive externalities from close neighbors (risk sharing, neighbors' income as a source of insurance, public goods in the neighborhood, empathy, etc.), we would expect the size of the positive effects to depend on the strength of the ties between members of the reference group. Since rural households typically live in closer communities with stronger ties, we expect them to benefit more from having richer neighbors than urban households. In other words, while we might expect urban individuals to show a negative coefficient for the average consumption of their reference group (relative concerns), the opposite might be true for rural households for which the relative deprivation feelings might be outweighed by the positive externalities of living close to rich people. In fact, the existing literature using African data finds that the positive correlation between the income or consumption of those individuals living close by and own life satisfaction is stronger or only appears for the rural or the poorest sample (Bookwalter and Dalenberg, 2010; Kingdon and Knight, 2007; Ravallion and Lokshin, 2010). To test for this in our data we introduce and interaction term between the average consumption of the reference group and a dummy variable that takes 1 if the individual lives in a rural area. Please note that the dummy variable for living in a rural area was also included as a control in Tables 2 and 3. In our data, and as expected, the rural sample is also much poorer (55% of the average urban consumption) than the urban sample, although is also more equally distributed (urban consumption standard deviation is twice as large). Table 4 shows the results for financial and life satisfaction.

Individuals show clear relative concerns in terms of financial satisfaction, regardless of how we define the reference group and whether they live in rural or urban areas. The coefficient of the average consumption of the reference group is larger when defined at the ward level (larger geographical area), but both coefficients are large and negative (-0.268 and -0.395), and the difference between them (0.125) is around one standard error of each coefficient (0.109 and 0.137) (z of the difference = 0.71). The interaction between the average consumption and whether the individual lives in a rural area is very small, also in relation to

the average consumption coefficient (0.092 and -0.031), and very imprecisely estimated. Therefore, we conclude that individuals in Tanzania, regardless whether in rural or urban area show clear relative deprivation in terms of financial satisfaction. In other words, relative concerns in terms of financial satisfaction do not seem to depend much on whether the reference group is defined as close neighbors or those living in larger areas, and on whether the individual lives in a rural (with stronger social ties) or urban area. This contrast with the findings with life satisfaction as a proxy for utility and seems to indicate that the positive relationship between income of the reference group and life satisfaction does not run through economic reasons, such as richer neighbors acting as a source of insurance in time of hardship.

Table 4: Heterogeneity in relative deprivation: rural vs urban households

	(1) Finance Satisfaction	(2) Life Satisfaction	(3) Finance Satisfaction	(4) Life Satisfaction
Ln(consumption)	0.128**	0.125**	0.147***	0.162***
	(0.051)	(0.054)	(0.050)	(0.052)
Ln(avg. cosump.ref.group $Ln(\bar{C}_{EAt})$	-0.268**	-0.159		
	(0.109)	(0.130)		
Rural* $Ln(\bar{C}_{EAt})$	0.092	0.279**		
	(0.119)	(0.136)		
Ln(avg. cosump.ref.group $Ln(\bar{C}_{Wardt})$			-0.393***	-0.315**
			(0.137)	(0.160)
Rural* $Ln(\bar{C}_{Wardt})$			-0.031	0.255
			(0.140)	(0.163)
Rural	-1.266	-3.773**	0.409	-3.458
	(1.615)	(1.843)	(1.898)	(2.189)
N	22023	22223	22023	22223

Standard errors in parentheses clustered either at EAs or Wards; * p < 0.1, ** p < 0.05, *** p < 0.01.
Regressions include the long set of controls, district and time fixed effects.

Instead, individuals living in rural areas show a positive coefficient (also precisely estimated) of the average consumption on life satisfaction when the reference group is defined as close neighbors, only for those living in rural areas. The interaction term between the average consumption of the reference group and living in a rural area is 0.279 and precisely estimated (se=0.136). The coefficient of the average consumption instead is also large (-0.159) and negative, but very imprecisely estimated. This seems to indicate that the relative deprivation is unclear for those in urban areas. This is, individuals in urban areas do not show a positive correlation between happiness and the average consumption of the reference group. For this group (32% of the sample) the coefficient is negative but very imprecisely estimated, although with one standard deviation the point estimate still does not cross the zero (-0.159; se=0.130). The large standard error (0.130) combined with a non-small coefficient (-0.159) might point to some heterogeneity across individuals that we have not been able to capture. In contrast, individuals seem to show evidence of relative deprivation in terms of life satisfaction when the reference group is defined at the ward level, i.e., the larger geographical region, in both rural and urban areas. The interaction term between living in rural areas and the reference consumption at the ward level however is positive and very large, but imprecisely estimated. If we were to take this coefficient as precisely estimated, individuals in rural areas would also show relative deprivation, although the coefficient would be much smaller (-0.315+0.255).

In short, all individuals in Tanzania show clear relative concerns in terms of financial satisfaction, regardless of how we define the reference group and whether they live in rural or urban areas. For life satisfaction, instead, we find a clear positive effect of the average consumption for rural individuals (68% of the sample) when the reference group is defined as close neighbors (EAs); and a negative effect when the reference group is defined as those living in larger areas.

Since we find an always negative effect of the reference group consumption on financial satisfaction, which is fairly similar regardless of the definition of the reference group or whether the individual lives in a rural or urban area, it is hard to argue that the positive effect of close neighbors' consumption on life satisfaction is due to the positive externality of having richer neighbors who can help you in time of hardships (risk sharing) (Ravallion and Lokshin, 2010). We also perform other tests to reject the hypothesis that assistance in time of hardships by richer neighbors was driving the positive effects of neighbors' consumption on life satisfaction found in rural areas. For example, we looked for heterogeneous effects depending on the inequality in the region or on whether the households had received assistance or credits in the previous year. All tests were rejected. Therefore, we argue that having richer neighbors might have other positive externalities that are not strictly related to financial, but rather to life satisfaction. There are two main additional arguments the literature has putted forward to the positive effect of neighbors' income on happiness: (i) positive externalities in terms of a better public environment (e.g., better public services – schools, roads,…- or access to a higher educated network) (see e.g., Clark, Kristensen, and Westergard-Nielsen, 2009 and Ifcher, Zarghamee, and Graham, 2016) or (ii) pure empathy generated by proximity (see also the literature on social distance and generosity, e.g., Gary and Gneezy, 2008; Burnham, 2003; Hoffman, McCabe, and Smith, 1996). Since our regression includes variables related to the welfare level in the community (five climate variables and distance to major road, large town, or market) for which other papers could not control, we think that it is difficult to argue that the first explanation is playing an important role. For example, a regression of these variables (five climate variables and distance to major road, large town, or market) explains 18% of the variance of the average consumption of the reference group. Nevertheless, to test for this hypothesis we regress life satisfaction as in Table 4, specification (2), but we include ward fixed effects (wards are the geographical definition used to define the larger reference group as in specifications (3) and (4) of Table 4). We argue that wards fixed effects will capture a large part of the socio-economic characteristic of the EAs to the extent that there is spatial correlation of socio-economic variables (a ward is an area that contains only few EAs). In other words, including ward fixed effects would largely capture the positive externalities derived from living in a high economic status EA. The regression with ward fixed effect gives very similar results, although the coefficients are less precisely estimated. The coefficient for the average consumption of the reference group is, as in the Table 4, not statistically significant -0.141 instead of -0.159 (se=0.135) and the interaction is 0.218 instead of 0.279, but now only significant at 12.7% (se=0.143). In other words, controlling for Ward fixed effects and thus for a large part of the possible positive externalities in terms of a better public environment of living in a richer neighborhood, does not change the positive correlation between the average consumption of close neighbors the reference group on the life satisfaction of those living in rural areas. Therefore, and as in line with Kingdon and Knight (2007) we argue that the positive effect of average consumption of close

neighbors on life satisfaction is due to pure empathy generated by proximity. It might also be that households receive financial help only from family members rather than neighbors and better off family members often migrate to urban areas or abroad. Therefore, we cannot capture these positive externalities by looking at neighbors' income.

In order to test for the hypothesis that the positive effect of average consumption of close neighbors on life satisfaction is due to pure empathy we interact the average consumption of the reference group with the number of years that the individual lives in the community. The results are presented in Table 5.

Table 5: Heterogeneity in relative deprivation of rural households: years in the community

	(1) Finan. Sat.	(2) Life Sat.	(3) Finan. Sat.	(4) Life Sat.
Ln(consumption)	0.128**	0.127**	0.146***	0.160***
	(0.051)	(0.055)	(0.050)	(0.052)
Years in the community	-0.063**	-0.136***	-0.043	-0.162***
	(0.031)	(0.038)	(0.035)	(0.042)
Ln(avg. cosump.ref.group $Ln(\bar{C}_{EAt})$	-0.336***	-0.238*		
	(0.105)	(0.122)		
Years in the community*$Ln(\bar{C}_{EAt})$	0.005**	0.010***		
	(0.002)	(0.003)		
Ln(avg. cosump.ref.group $Ln(\bar{C}_{Wardt})$			-0.506***	-0.459***
			(0.122)	(0.147)
Years in the community*$Ln(\bar{C}_{Wardt})$			0.003	0.012***
			(0.003)	(0.003)
N	22023	22223	22023	22223

Standard errors in parentheses clustered either at EAs or Wards; * p < 0.1, ** p < 0.05, *** p < 0.01.
Regressions include the long set of controls, district and time fixed effects.

Now all the coefficients of the average consumption of the reference group are negative, both for financial and life satisfaction and regardless of the definition of the reference group. Nevertheless, its interaction with the number of years in the community turns the coefficient to positive for some sub-samples. Let us first look at the results for financial satisfaction. In this case, the coefficient of the interaction term is precisely estimated and significant only when the reference group is defined at the EAs level. Nevertheless, the interaction term is very small and implies that the consumption of the reference group only turns into a very small and positive coefficient for the 3% of the sample who have lived 68 years or more in the same community (0.004=-0.336+0.005*68). This means that it is also a very old sample. When the reference group is defined at the ward level, the interaction of relative consumption with years living in the community is not significant, and very small. In short, and consistently with all the previous results, all individuals in Tanzania show relative concerns in terms of financial satisfaction regardless of how we define the reference group. For life satisfaction instead, interesting patterns appear, and these are again consistent with the idea that the positive coefficient of average income of close neighbors on life satisfaction runs through empathy and therefore depend on the strength of the ties between members of the same community (same reference group). The effect of the average consumption on life satisfaction is negative (individuals show relative concerns), but turns into positive for those individuals living more than 24 years in the community, when the reference group is defined as close neighbors, and 33 years when we take the ward as the reference group. In our sample, 47% of the population has been living for more than 24 years

in the community, and this percentage goes from 54% for the rural population to 30% for the urban population. In Table 5 all coefficients are either precisely estimated or very small, which means that we might have detected the variable defining the heterogeneity that shapes relative concerns in life satisfaction.

6. Conclusions

This paper finds evidence of relative concerns on financial satisfaction of all individuals in Tanzania, regardless of the definition of the reference group, whether the individual lives in a rural or urban environment, and quite independently of the number of years in the community (proxing for the strength of the ties with the reference group). In short, we find important feeling of relative deprivation (comparisons) in a poor context in terms of financial satisfaction. This finding is robust at controlling for different regional fixed effects, individual fixed effects, and a large set of controls. This is the first paper that tests for relative concerns using a financial and not life satisfaction question and therefore it is the first one to find relative deprivation in a poor context once we examine financial and not life satisfaction. For life satisfaction, however, we find important heterogeneity and the most interesting pattern is that we find a positive effect of average consumption of the reference group on life satisfaction depending on the strength of the ties that individuals have with their reference group, measured with years living in the same community. In concrete, for 47% of our sample who has lived for more than 24 years in the community (this percentage is 54% for the rural population and 30% for the urban population), the effect of the average consumption is positive on life satisfaction, when we define the reference group as close neighbors. When the reference group is defined as a larger geographical area (ward) this percentage goes to 24%. Since we find an always negative effect of the reference group consumption on financial satisfaction, it is hard to argue that the positive effect of the reference consumption on life satisfaction is due to the positive externality of having richer neighbors who can help you in time of hardships (Ravallion and Lokshin, 2010). We also empirically test whether the positive effect of having richer neighbors on life satisfaction might be related to other positive externalities, notably a better public environment (an argument already put forward in western countries) and find that this is largely improbable. We therefore argue that the positive effect might be due to empathy feelings that increase with closeness to the other members of the reference group (years in the community and size of the are over which we define the reference group).

Our analysis confirms the importance of distinguishing among different reference group in terms of geographical proximity as well as distinguishing between financial and life satisfaction measures. These distinctions contribute to understand the importance of taking comparisons to others seriously when assessing and introducing welfare policies, also in less developed countries. The importance of examining not only life, but also financial satisfaction to assess relative concerns in relation to poverty and economic welfare seems straightforward. In fact, our data shows a low correlation (0.55) between those two measures. If we are concerned not only about absolute poverty, but also about subjective poverty (financial satisfaction) and well-being, this paper points to the importance of taking comparisons to others seriously when assessing and evaluating welfare policy also in less developed countries. The results are robust to the inclusion of larger or smaller set of controls as well as to the size of the regional fixed effects. Also

important, this paper uses panel data and can thus control for individual time fixed effects, which helps to address causality and has proven to change the results (Ferrer-i-Carbonell and Frijters, 2004).

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Appendix

Table A1: Full table for specifications with short controls in Table 2

	(1)	(2)	(3)	(4)
	Finance Satisf.	Life Satisf.	Finance Satisf.	Life Satisf.
	District FE (8 districts)		Region FE (26 regions)	
Ln(consumption)	0.075	0.140	0.082	0.158
	(0.047)	(0.050)	(0.048)	(0.050)
Head hh is a male	0.213*	0.113	0.225**	0.120
	(0.109)	(0.114)	(0.111)	(0.115)
# of elders in hh	-0.011	0.011	-0.015	0.014
	(0.077)	(0.083)	(0.077)	(0.083)
# of workers in hh	0.005	-0.029	0.007	-0.028
	(0.029)	(0.033)	(0.030)	(0.034)
Hh size	0.043	0.076***	0.045*	0.078***
	(0.026)	(0.029)	(0.026)	(0.029)
Age	-0.084***	-0.133***	-0.085***	-0.129***
	(0.024)	(0.027)	(0.024)	(0.027)
Age Squared	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Male	-0.293	-0.175	-0.351	-0.232
	(0.305)	(0.420)	(0.297)	(0.409)
Education (ref: secon.):				
Still in School	0.235	0.172	0.236	0.216
	(0.167)	(0.184)	(0.168)	(0.183)
Less than primary	-0.160	-0.207	-0.219	-0.210
	(0.332)	(0.373)	(0.333)	(0.372)
Primary	-0.134	-0.255**	-0.139	-0.237**
	(0.096)	(0.104)	(0.096)	(0.105)
University	0.855***	0.007	0.865***	0.007
	(0.294)	(0.355)	(0.299)	(0.361)
Missing inf. education	-0.194*	-0.277**	-0.197*	-0.264**
	(0.111)	(0.114)	(0.112)	(0.115)
Single	0.507***	-0.133	0.501***	-0.128
	(0.139)	(0.153)	(0.140)	(0.153)
Married	0.264**	0.077	0.260**	0.067
	(0.122)	(0.133)	(0.123)	(0.133)
Divorced	0.164	0.020	0.160	0.014
	(0.127)	(0.143)	(0.127)	(0.143)
Disable	-0.028	-0.001	-0.029	-0.003
	(0.045)	(0.046)	(0.045)	(0.046)
Years in community	0.001	-0.003	0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	3.630***	4.251***	3.747***	3.844***
	(0.930)	(1.016)	(1.043)	(1.175)
N	22023	22223	22023	22223

Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Wave and region fixed effects included.